This report documents the environmental impact assessment (EIA) and public participation activities conducted for the ECC application of the proposed road project of Department of Public Works. The Project is a 65.6 km high standard highway with a 60 m road-right of way that will traverse 2 cities and 4 municipalities of Misamis Oriental and

ENVIRONMENTAL IMPACT STATEMENT (Annex) May 2024

CENTRAL MINDANAO HIGH STANDARD HIGHWAY

Misamis Oriental and Bukidnon, Region X

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS – CENTRAL OFFICE

Bonifacio Drive Port Area, 652 Zone 068, Manila

Preparer

Amet-Asia, Inc.

Unit 303, One Corporate Center, Meralco Ave. corner Julia Vargas Avenue, Ortigas Center, San Antonio, Pasig City 1605





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Annex 1. Laboratory report of soil analysis

Low rainfall



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magailanea, 1232 Malast City, Philippines Office: +502,7729,4327 Fax No: +632,8864,8365 Email: Info@hiadvance.com.ph Website: www.hiadvance.com.ph

14 May 2021

WO# M21D418

Ms. Pamella Andrea L. Pomida

Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Pasig, PHILIPPINES

RE: Soil Analysis

Enclosed are the results of analyses for samples received by the laboratory on 28-Apr-21 11:30.

If you have any questions concerning this report, please feel free to contact our Laboratory Manager-Ms. Princess Galvez or our Quality Manager.

Our Laboratory is a DENR Recognized laboratory with CR No. 046/2019 valid until 25th of July 2022.

While our DOH recognition with accreditation number 13-0006-2020-LW-2, is valid until 31st of December 2022.

Sincerely,

Project Manager



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Axia, Inc.	Project	Soil Analysis	
Unit 303, One Corporate Center, Julia Vergas Ave. Cor. Mecalco Ave.	Project Number:	Inosel	Reported:
Panig PHILIPPINES,	Project Manager	Ms. Pamella Andrea L. Pomida	14-May-21 12:04

DE BALL				
Sample ID	Laboratory ID	Metrix	Date Sampled	Date Received
51	M21(3418-0)	Soil	26-Apr-21 08:41	28-Apr-21 11:30

HiAdvance Philippines Incorporated

The results in this report apply in the suspice analyzed in accombance with the chain of custody decreases. This analysis analyzed report must be reproduced in its employed.

Report Propared By:

Reviewed By:

Certified Correct By:

Annithelia Hangoy, Project Manager

Mariagin D. Bendana, Department Supervisor

Chem. Tech. PRCs 0007128

Princbs S. Visitives, Laboratory Manager

Chem. Tech. PRCs 0007128

Page 1 of 7



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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met Ania, Ing. nii 303, One Corporata Center, Julia Vergas Av sig PHILIPPINES,	r. Cor. Menalco Ave. Project No	Voject: <u>Sell Analysis</u> umber: Inonel anager: Mr. Pamella Andrea I.	. Pomida	Reported: 14-May-21 12:01
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Report Prepared By:

Reviewed By:

Certified Correct By:

Marrizon D. Bendana, Department Supervisor

Chem. Fech. PRCs 000128

Prince(S. S. Olikez, Laboratory Manager)

Page 2 of 7





HiAdvance Philippines Incorporated

Annabelle Bangoy, Project Manager

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Unit 303, One Corporate Pasig PHILIPPINES.	Center, Julia Vargas Ave. Cor. Menalco Ave. Project Nun	ject <u>Seil Analysis</u> iber: Inonel ager: Ms. Pamella.		Reported: 14-May-21 12
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ren D. Bendana, Department Supervisor Chem. Tech. PRC# 5001128

The results in this report apply to the samples analysed in accordance with the chain of exceeds document. The analysis of report must be reproduced in its

Certified Correct By

Pringers S/Galvez, Laboratory Man.

Chemist PRC# 9307





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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Ameri Ania, Inc. Unit 303, One Corporate C Pasig PHILIPPINES,	lenter, Julia Vargas Ave. Ci	ut Memleo		et Number		de a Andrea L. I	Pomida		Report 14-May-21	
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			iAdvance P	hilippines	Incorporat	ed				
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HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in reconfision with the chain of custody document. This analyzed in part must be reproduced in its receive.

Report Propared By

Reviewed By

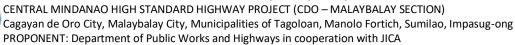
Certified Correct By:

Annabelle Bengoy, Project Manager

Marizen D. Bendena, Department Supervisor

Chem. Tuch PRCS 2001728

Page 5 of 7



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HiAdvance Philippines Incorporated 3F Maga Certer, Sen Antonio St., Paseo de Magalianes 1232 Mekati City, Philippines Office: +852.7728.4327 Fax No: +632.8854.8365 Email: nilo@hiadvance.com.ph Websits: www.hadvance.com.ph

Amet Asia, Inc.	Project	Soil Analyzia	
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.	Project Number:	Inonel	Reparted
Pusig PHILIPPINES,	Project Manager	Ms. Pamella Andrea L. Pomida	14-May-21 12:04

Conventional Chemistry Parameters by EPA Methods - Quality Control

HiAdvance Philippines Incorporated

Assilyte	Regult	Reporting Limit	Uses	Spike	House House	MARKET	Same Inch	1070	RPD Limit	Noise 1
Butch 21D0279 - pH APHA 4500-H										
LCS (21D0279-BS1)				Prepared &	Analyzed:	28-Apr-21				
pH	7.21	1.00	pH Units	7.20		100	97-104			T-02
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při	7.21	1.00	pH Units	7.20		100	97-104	0.00	10	T-02
Duplicate (ZLD0279-DUP1)	Sor	orce: M21D41	8-01	Prepared &	Analyzed:	28-Apr-21				
pH	8.31	1.00	pH Units		8.30			0.120	111	T-02a

HiAdvance Philippines Incorporated

The results in this report apply to the samples analysed in accordance with the chain of existing document. This analysis of report was be reproduced in its entirety.

Report Propered By:

Reviewed By:

Certified Correct By:

Fig. 4

Annuabelle Bingoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech. PRC8 000128

Princess S. Galvez, Laboratory Manager

Chem. Tech. PRC8 000128

Page 6 of 7





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.	Project:	Soil Agalysis	
Unit 303, One Corporate Certer, Julia Vargas Ave. Cor. Meralco Ave.	Project Number:	foorel	Reported:
Pasig PHILIPPINES,	Project Manager	Ms. Pamella Andrea L. Pomida	14-May-21 12:04

Notes and Definitions

Report Specific Notes T-02a The reported temperature is 22.8°C. T-02 The reported temperature is 22.7°C. This sample was analyzed outside EPA/APHA recommended holding time. 1-66 1-05 This sample was received outside EPA/APHA recommended holding time. The laboratory proceeded with the analysis as per client request Laboratory Reporting Conventions: Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate). ND Not Reported NR dry Sample results reported on a day weight basis. Reporting Limits have been corrected for % Solid, RPD Relative Persont Difference. (RPDs calculated using Results, not Percent Recoveries) MRI. METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table DIL. Dilutions are calculated based on deviations from the standard dilution performed for an analysis and may not represent the Dilution found on the analytical raw data. Begorting Reporting limits (MDLs and MRLs) are adjusted based on vertations in sample preparation amou analytical dilutions and percent solid, where applicable Limit Prepared Date indicated is the same as Extraction Date Estimates of measurement of uncertainty available upon request

----- END OF TEST REPORT-----

HiAdvance Phillippines Incorporated

The results on this region apply to the complete analyzed in accordance with the choice of executly document. This analytical report must be rejenshood in its instance.

Report Prepared By:

Reviewed By:

Certified Correct By:

VC Line

nabelle Bangoy, Project Manager Marisan D. Bendana, Department Supervisor Princess S. Gabez, Lapsanatory Man Chem. Tech. PRCB 2001128 Chem. PhCB 2207

Page 7 of 7

ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MAL



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines

HAAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magatianes, 1232 Makadi City, PHILIPPINES Office 1:4832.729.4327 Fax No:+832.854.8365 philippines@Nedvance.com

22 May 2021

WO# M21D418

Ms. Pamelia Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Soil Analysis

Enclosed are the results of analyses for samples received by the laboratory on 28-Apr-21

11:30. If you have any questions concerning this report, please feel free to contact me.

Note: HIAdvance Philippines Incorporated is former NCALABS Phils. Inc.

Sincerely,

Annabelle Bango Project Manager

${\bf ENVIRONMENTAL\ IMPACT\ STATEMENT\ REPORT-Preparatory\ Survey}$





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines

HAAvence Philippines Incorporated 3F Mage Center, San Antonio St. Passo de Magatienes, 1232 Manati Cry, PHILIPPINES Office : +632.729.4327 Fax No : +632.854.6385 philippines@hiedvance.com

Americasia. Inc.
Project: Soil Analysis

Unit 303), One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: [none] Reported:
Pasig PHILIPPINES, Project Manager: Ms. Pareella Andrea L. Poerida 22-May-21 07:33

ANALYTICAL REPORT FOR SAMPLES						
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received		
SI	M21D418-01	Soil	26-Apr-21 08:41	28-Apr-21 11:30		

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its universe.

Annabelle Bangov, Project Manager

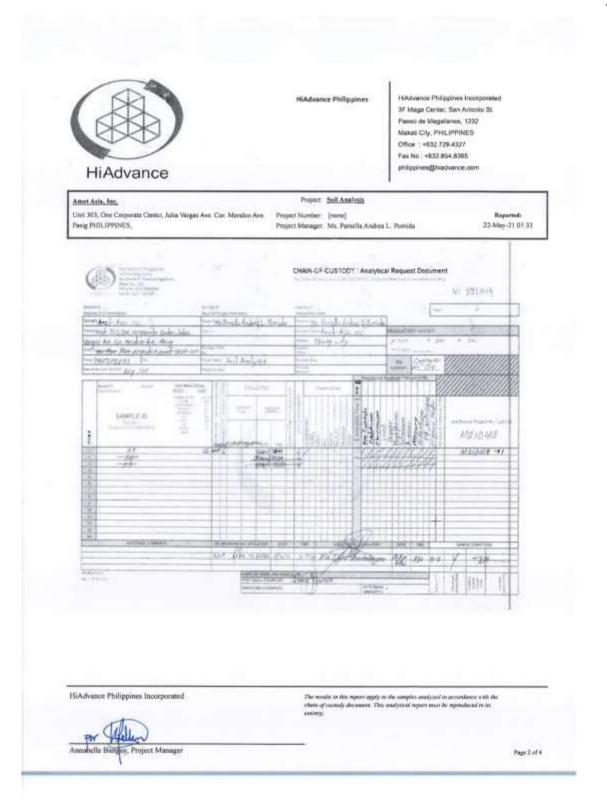
Page 1 of 4



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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvanco Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magatlande, 1232 Masaro City, PHILIPPINES Office: +532.729.4327 Fax No: +532.854.8365 philippines@thisdvance.com

Americania, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralico Ave.
Project Number: [none] Requestels
Project Manager: Mr. Pariella Andrea L. Ponida 22-May-21 07:33

LOGIN SAMPLE RECEIPT CHECKLIST

HiAdvance Philippines Incorporated

The results in this superi apply in the samples analyzed in accordance with the chain of cosmid-discount. This assigned in pair near he reproduced in the section.

Annabelle Bangoy, Project Manager

Page 3 of 4

Annabelle Basgoy, Project Manager

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes





DENR Recognized Laboratory with C.R No. 011/2018

CERTIFICATE OF ANALYSIS

Customer : HIADVANCE PHILIPPINES INCORPORATED

Address : 3F Maga Center Bldg. Paseo de Magallanes, Makati City

Attention : MS. ANNABELLE BANGOY

Contact Information: (02) 854-8365

Original Issue
Duplicate issue by request
Revision Copy

CAN : C21-05-438 Date of Issue : 5/21/2021

RAN :R21-04-725

INVOICE # :

Date Received: 4/30/2021

Date Sampled:-

Date Analyzed: 4/30-5/18/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Methods
Soil Sample				
M21D418-01	Total Nitrogen (N)	0.05	%	Kjeldahil
4/26/2021	Total Phosphorus (P)	0.031	%	Titrimetric
0841H	Total Potassium (K) *	0.045	%	Direct Air-Acetylene Flame
	Organic Matter	1.189	%	Walkley - Black
	* Total Selenium (Se) *	< 0.002	mg/kg	Manual Hydride Generation AAS
	Total Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Total Mercury (Hg) h	< 0.08	mg/kg	Cold Vapor AAS
	* Free Cyanide (CN*)	<1.0	mg/kg	Cyanide - Selective Electrode (w/o distillation)
	Total Copper (Cu) *	39.90	mg/kg	Direct Air-Acetylene Flame
	Total Chromium (Cr) *	37.44	mg/kg	Direct Air-Acetylene Flame
	Total Cadmium (Cd) *	< 0.03	mg/kg	Direct Air-Acetylene Flame
	Total Arsenic (As) *	<0.01	mg/kg	Manual Hydride Generation AAS

Note: Metals are on dry weight basis.

* Parameter(s) which is/are outside the laboratory's PNS ISO/IEC 17025:2017 scope of accreditation.

Total Analysis: 12

The customer is given 7 days upon receipt to raise questions or clarifications on any part or content of the certificate, otherwise the result(s) is/are deemed accepted.

Total No. of Samples: 1 Total

Sample Submission : Submitted by the Customer

Reference : "USEPA Method 3050B.; "USEPA Method 245.5.

Remarks : Results relate only to the items tested and received by the laboratory.

Certified Correct by:

MA. CRISTINA F. BEFERENTE, RCh PRC No. 0007398 Laboratory Head Approved by:

ALVIN P. BASCO, RCh PRC No. 0011786 Head of Operations

Not valid without OMLI dry seal

Page 1 of 1

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PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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14 May 2021

WO# M21E004

Ms. Pamella Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Soil Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21 08:00.

If you have any questions concerning this report, please feel free to contact our Laboratory Manager- Ms. Princess Galvez or our Quality Manager.

Our Laboratory is a DENR Recognized laboratory with CR No. 046/2019 valid until 25th of July 2022.

While our DOH recognition with accreditation number 13-0006-2020-LW-2, is valid until 31st of December 2022.

Sincerely

Annabelle Bangoy Project Manager



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio Sa, Paseu de Magallaneo 1232 Makati City, Philippines Citico: 4532,7729-4327 Fax No. +632-8054,056 Email: Info@lindvasce.com.ph Website: www.hiadvance.com.ph

Ameri Asia, Inc.
Unit 301, One Corporate Center, Julia Vargas Ave. Cor.
Project Number: Jacob 1
Project Manager: Ms. Paruella Andrea L. Pomida 14-May-21 30:11

Sample ID	ANALYTICAL RE	ANALYTICAL REPORT FOR SAMPLES							
	Laboratory II)	Matris	Date Sampled	Date Received					
52	MZ1E004-01	Soil	30-Apr-21 12:09	03-May-21 08:00					
83	M211004-02	Soil	29-Apr-21 08 08	03-May-21 08:00					

HiAdvance Philippines Incorporated

The results to this export apply to the samples analyzed in accordance with the viage of costsuly document. This analysical region must be expreshed in its patients.

Report Prepared By :

Reviewed By:

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizon D. Benduna, Department Supervisor

Princess Calvez, Laboratory Mannay

Chees. Tech PRC# 8605128

figure 1 of 8





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maga Certer, San Antonio St., Passer de Magallanes, 1332 Makell City, Philippines Office: +632.7729.4327 Fax No: +632.88 §4.8365 Email: Integritudivance.com.ph Websits: www.hiadvance.com.ph

met Asia, Inc.	Project: Soil Analysis		
it 303, One Corporate Center, Julia Vargus Ave. Cor. ig PHILIPPINES.	Project Number: Inunel Project Manager: Ms. Pamella Ar	ndrea L. Fornida	Reported: 14-May-21 10:11
Section 1 Sectio	CHAIN-OF-CUSTODY / As-	alytical Request Document Assessmentances is a repaid assessment No. 1994 Pro- P	2 321968 White Properties Lance CALLE TO 4 AMERICA SERVICE THE
	The results as size report as	ply in the sumption analysis of a sens	The Annual Part of the state of the contracts.
nanelle Hungoy, Project Manager Mariner D. Ben		Contified Correct By :	





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maja Center, San Activio St., Paseu cla stagalane 1332 Mekati City, Philippines Office: +532.7728.4327 Fax No: +632.88543365 Emait: info@filiadvance.com.ph Website: www.hiadvance.com.ph

met Asia, Inc.	1	roject Soil Anal	nain .	
it 303, One Corpor sig PHILIPPINES,		umber: Inonel imager: Ms. Pame	lla Andres L. Pomida	Reported: 14-May-21 [0:11
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(da	8)		50 - 001 50 - 001	
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

net Asia, Inc.		Projec	: Soil An	afesis		
nt 303, One Co sig PERLIPPE	Corporate Center, Juliu Vargas Ave. Cor. Project Namber: Inionel 1865. Project Manager: Ms. Pamella Andrea L. Pomida				Reportel: 14-May-21 10:11	
()		Mildrane Philippins	And process of the comments of the language of the comments of	
-	sa 10	Consumers are trust Society for Booking	7			
1-2	1	here are no discrepansies between the sample ESL on the containers and the	7			
-	34	000	1			
1		weple collection date/limit is provided.	7			
-		turnples are received at least five (5) days after sumpling	7			
13		lepropriate sample consumers are used.	1	But If held to	and the same of th	
	19 1	Lamples are recoved within mobiling Time	7	lot of hold for Regular 197	/	
18		f necessary, staffs have been informed of any short hald time or quick fiall mids.	17	Regular TAT		
		lample bottles are completely filled.	T			
1	22	There is sufficient volume for all requested analysis, including any MS/MSO	7			
144		oguest.	NA			
-		VDA serraile well district have headspace or hubble is a financi (1,44°) in councits	NA.			
-		tail samples are free-of air space.	100			
317		Multiphase samples are not present or + 10% montains of solids/sepolation	NA			
100	44	lungile appearance is rotted.	NA.			
	-	Samples did not require splitting or compositing.	T.			
	78	Sample preservation verifiest (pH circle) s 2.1.	NA			
	29	Trip blank provided by the lab.	NA			
	10	hip blanks used are those provised for this roccife site.	NA		16	
	-027				MALEDOY Y	
CH	ent Con	firmation				
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dvance Phi	lippin	es Incorporated 7her	esador on elos de document	report upply to the samples analysis. This analysis of report near he rep	of in accombance with the school of reduced in its contents.	
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ort Prepares	d Hy:	Reviewed By :		Certified Corre	NI By :	
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1) 71	5	futuralani		N.F		
mbelle Bung	goy, I	roject Manager Marizen/D, Bendana, Depart	ment Supe	arvisor Prisonals, Galv	rea, Laboratory Magagest	
		Chem. Tech PRC# 000	1128	Chemi	PRC# 9997 Page 4 of 5	
					1 age 4 01 0	



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Mega Center, San Antonio St., Poseo de Megaliene 1232 Makali City, Philippines Other: +632,7720-4327 Fax No: +632,8654,8365 Email: milejilindevisor.com.ph Website: www.hadvance.com.ph

Amer Asia, Inc.	Project	Soil Analysis	
Unit 303, One Corporate Center, Julia Vargus Ave. Cor. Pasig PHILIPPINES,	Project Number Project Manager	Inonel Ms. Pamella Andrea L. Pomida	Reported: 14-May-21-10:11
	52 M21E004-01 (SoiD	

Limit Units Dilution Batch Prepared An

HiAdvance Philippines Incorporated

The results in this report apply to the samples assurpted or accordance with the chart of costing disconnect. This analyzed agrees must be reproduced to its convey.

Report Prepared By:

Reviewed By:

Certified Correct By:

Absolute Balagoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Fech. PRCS 0001128

Princesch Calver, Laboratory Manager

Chem. Fech. PRCS 0001128





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maja Cester, San Artionio St., Paseo die bispallane 1232 Mekali City, Philippines Office: 4632.7729 A327 Fox No: 4632.8854.8955 Emait: Infoglinde/wno: cost.ph Website: www.hiadvance.com.ph

Project: Soil Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor-Project Number: Innec! 14-May-21 (9:11 Pasig PHILIPPINES, Project Manager: Ms. Pennella Andrea L. Pomide 83 M21E004-02 (Soil)

HiAdvance Philippines Incorporated

Conventional Chemistry Parameters by EPA Methods 1.00 pH Units

HiAdvance Philippines Incorporated

Annabelle Bungoy, Project Manager

The resides in this report apply to the samples analyzed in accombance with the chain of controls discussion. This analytical report must be reproduced in an entropy.

Certified Correct By:

Report Prepared By 1

dolanie Marizen D. Bendana, Department Supervisor Chem. Tech PRC# 0007128

Reviewed By:

Pringers S. Julvez, Laboratory Manner PRC# 9303

he=6 of 8





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Amet Asia, Inc.	Project	Soil Anabole	
Unit 303, One Corporate Center, Julia Vargas Ave. Cor.	Project Number:	Inone1	Reported
Pwig PHILIPPINES,	Project Manager	Ms. Pamella Andrea L. Pomida	14-May-21 10:11

Conventional Chemistry Parameters by EPA Methods - Quality Control

HiAdvance Philippines Incorporated

Ašolyte	Result	Limit	Unin	Level	Result	Sanc	Limits	RPD	Linit	Notes
Batch 21E0106 - pH APHA 4500-H										
LCS (21E0106-BS1)				Prepared of	& Analyze	d: 03-May	-21			
pit	7.18	1.00	pH Units	7.20		99.7	97-104			T-02
LCS Dup (21E0106-BSD1)				Prepared a	& Amilyzo	d: 03-May	21			
pli	7.19	1.00	pH Units	7.20		99.0	97-104	0.139	10	T-92a
Duplicate (21E0106-DUP1)	Se	urer: M21E0	04-01	Prepared &	& Analyzo	ž. 03-May-	21			
pld	8.19	1.00	pH Units		8.20			0.122	1	1-05, 1-06,

HiAdvance Philippines Incorporated

The results in this report apply to the samples analysed in accordance with the classe of castedy-stransvers. This analysised report must be reproduced in its interest.

Report Prepared By:

-6

Reviewed By :

Certified Correct By:

elle Bungoy, Project Manager

Marizen D. Bendana, Department Supervisor

Cham. Tech. PRC# 0001128

Incess of Charles Laboratory Managy



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Juit 303, C	the Corporate Center, Julia Vargas Ave. Coc.	Project Number: Insue1	Reported:
Pasig PHIII.		Project Manager: Ms. Pamella Andrea L. Pomida	14-May-21 10:11
		Notes and Definitions	
Report Sp	occific Notes		
T-02d	The reported temperature is 23.0°C.		
1-02ε	The reported temperature is 22.8°C.		
Т-02ь	The reported temperature is 22.5°C.		
T-02a	The reported temperature is 21.1°C.		
T-02	The reported temperature is 20.9°C.		
1-06	This sample was analyzed outside EPA/API	4A recommended holding time.	
1-05	This sample was received outside EPA/API client request	A recommended holding time. The laboratory proceeded	d with the analysis as per
Laborato	ry Reporting Conventions;		
ND	Analyte NOT DETECTED at or above the report	ing limit (MDL, or MRL, as appropriate).	
NR.	Not Reported		
dry	Sample results reported on a <u>dry weight basis</u> . I	Reporting Limits have been corrected for % Solid,	
RPD	Relative Percent Difference. (RPDs calculated us	ing Resulta, not Percent Recoveries).	
MRL.	METHOD REPORTING LIMIT, Reporting level	at, or above, the lowest level standard of the Calibration Table	
DIL.	Dilutions are calculated based on deviations from and may not represent the Dilution found on the a		
Beperting	Reporting limits (MDLs and MRLs) are adjusted	based on variations in sample preparation amounts,	
Limit	analytical dilutions and percent solid, where appli-	icable	
	Prepared Date indicated is the same as Extraction	Date	
Note I	Estimates of measurement of uncertainty available	le upon roquest	
	*************	**** END OF TEST REPORT************************************	

Marizen D. Bendana, Department Supervisor

Chwm. Twon PRC# 8001128

ngoy, Project Manager

Certified Correct By:

Stan Boll

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvence Philippines Incurporal 3F Maga Carrier, Sen Antonio St. Paseo de Magalleneo, 1232 Makati City, PHILIPPINES Office : +632,729,4327 Flux No : +632,854,8365 philippines@hiadvence.com

22 May 2021

WO# MZ1E004

Ms. Pamella Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Soil Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21

08:00. If you have any questions concerning this report, please feel free to contact me.

Note: HiAdvance Philippines Incorporated is former NCALABS Philis. Inc.

Sincerely,

Annabelle Bango Project Manager

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maga Center, Sen Antonio St. Passo de Magallanes. 1232 Makati City, PHILIPPINESI Office 1:4832.729.4327 Fax No.* 4932.654.8985 philippines@hiadvance.com

Amet Asia, Inc.	Project:	Soil Analysis	
Unit 303, One Corporate Center, Julia Vergas Ave. Cor. Meralco Ave.		[none]	Reported:
Pesig PHILIPPINES,		Ms. Persolla Andrea L. Pomida	22-May-21 07:46

TO THE PERSON NAMED IN	ANALYTICAL RE	PORT FOR SAMPLE	ES	NO STATE
Semple ID	Laboratory ID	Matrix	Date Sampled	Date Received
S2	M21E004-01	Soil	30-Apr-21 12:09	03-May-21 08:00
53	M21E004-02	Soil	29-Apr-21 08:08	03-May-21 08:00

HiAdvance Philippines Incorporated

The results in this report apply to the samples peolysical in accordance with a their of custody document. This analytical report must be reproduced in its military.

Annabelle Hanson, Project Manage

Page 1 of 6



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HIAdvance Philippines incorporated 3F Maga Conter, San Antonio St. Paseo de Magalianes, 1232 Makas City, PHLIPPINES Office : +632.729-4327 Fax No: +632.854.8385 philippines@thiodvance.com

Amer Asia, Inc.

Unit 303, One Corporate Cereer, Julia Vargas Ave. Cor. Mersico Ave.
Project Number: [none] Reported:
Project Manager: Ma. Pamella Andrea L. Pomida 22-Mmy-21 07:46

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The results in this report again; an this report apply to the samples analytical in accombinate with the chain of custody discussions. This analytical report must be reproduced in its analytical paper must be reproduced in its analytical paper.

Admitted bringery, Project Manager

Page 2 of 4

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HAdvance Philippines Incorporated 3F Mage Center, San Antonio St. Passo de Magellanes, 1232 Maiszo Chy, PHILIPPINES Office: +832.729.4327 Fax No: +632.854.8365. philippines@tredvence.com

philippines@hisdwance.com HiAdvance Amet Asia, Inc. Project: Soil Analysis Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Panig PHILIPPINES, Reported: 22-May-21 07:46 Project Number: [none] Project Manager: Ms. Pamella Andrea L. Pomida LOGIN SAMPLE RECEIPT CHECKLIST NA The cooler's sustanty rest, if present, in most Comm No. he could be sensite for the supporter has Samples are revenied on six. If applicable COC is present. COC # 5 2 /9/8 COOk Medicular PS and In highly. CCC is Nimbury with off additions informat number of continent thomas tracks with CO Supple contained time legible lates. 11 Sample containers provided by the oil.

HiAdvance Philippines Incorporated	The results to this report apply to the samples analyzed in accordance with the chain of causaly abcument. This analysis in report must be reproduced in its entires.	
Annhelle Bangoy, Project Manager		Page 3 of 4



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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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DENR Recognized Laboratory with C.R No. 011/2018

CERTIFICATE OF ANALYSIS

Customer : HIADVANCE PHILIPPINES INCORPORATED

Address : 3F Maga Center Bldg. Paseo de Magallanes, Makati City

Attention : MS. ANNABELLE BANGOY

Contact Information: (02) 854-8365

Original Issue
Duplicate Issue by request
Revision Copy

CAN : C21-05-357
Date of Issue : 5/19/2021

RAN : R21-05-02

INVOICE #

Date Received: 5/3/2021

Date Sampled:-

Date Analyzed: 5/3-18/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Methods
Soil Samples				
M21E004-01	Total Nitrogen (N)	0.3	%	Kjeldahl
4/30/2021	Total Phosphorus (P)	0.013	%	Titrimetric
1209H	Total Potassium (K) *	0.072	96	Direct Air-Acetylene Flame
	Organic Matter	9,448	%	Walkley - Black (Colorimetric)
	* Total Scienium (Se) *	0.057	mg/kg	Manual Hydride Generation AAS
	Total Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Total Mercury (Hg) *	<0.08	mg/kg	Cold Vapor AAS
	* Free Cyanide (CN*)	<0.1	mg/kg	Cyanide - Selective Electrode (w/o distillation)
	Total Copper (Cu) *	72.94	mg/kg	Direct Air-Acetylene Flame
	Total Chromium (Cr)*	36.75	mg/kg	Direct Air-Acetylene Flame
	Total Cadmium (Cd) *	< 0.03	mg/kg	Direct Air-Acetylene Flame
	Total Arsenic (As) *	2.75	mg/kg	Manual Hydride Generation AAS
M21E004-02	Total Nitrogen (N)	0.3	%	Kjeldahl
4/29/2021	Total Phosphorus (P)	0.052	%	Titrimetric
0808H	Total Potassium (K) *	0.079	%	Direct Air-Acetylene Flame
	Organic Matter	3.675	56	Walkley - Black (Colorimetric)
	* Total Selenium (5e) *	0.176	mg/kg	Manual Hydride Generation AAS
	Total Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Total Mercury (Hg) h	<0.08	mg/kg	Cold Vapor AAS
	* Free Cyanide (CN*)	<0.1	mg/kg	Cyanide - Selective Electrode (w/o distillation)

Not valid without OMLI dry seal

Page 1 of 2

C21-05-35

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Sample Descriptions	Parameters	Results	Units	Methods
	Total Copper (Cu) *	65.03	mg/kg	Direct Air-Acetylene Flame
	Total Chromium (Cr) *	44.43	mg/kg	Direct Air-Acetylene Flame
	Total Cadmium (Cd) *	< 0.03	mg/kg	Direct Air-Acetylene Flame
	Total Arsenic (As) *	2.36	mg/kg	Manual Hydride Generation AAS

Note: Metals are on dry weight basis.

* Parameter(s) which is/are outside the laboratory's PNS ISO/IEC 17025:2017 scope of accreditation.

MA. CRISTINA F. REFERENTE, RCh PRC No. 0007198

The customer is given 7 days upon receipt to raise questions or clarifications on any part or content of the certificate, otherwise the result(s) is/are deemed accepted.

Total No. of Samples: 2 Total Analysis : 24

Sample Submission: Submitted by the Customer

Reference: "USEPA Method 30508.; "USEPA Method 245.5.

Remarks : Results relate only to the items tested and received by the laboratory.

Certified Correct by

Approved !

ALVIN P. SALGO, RCS PRC No. 003,778 Head of Operations

Not valid without OMLI dry seal

Page 2 of 2

21-05-357

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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High rainfall



HiAdvance Philippines

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magallanes, 1232 Makati City, Philuppines Office: +632,729,4327

Fax No : +632.854.8365 philippines@hiadvance.com

Amet Asia, Inc.	Project	Soil Analysis	
Unit 393, One Corporate Center, Julia Vargas Ave. Cor, Mirralco Ave.	Project Number:	(none)	Reported:
Pasig PHILIPPINSS,	Project Manager	Ms. Pamelle Andrea L. Pernida	15-Sep-21 15:25

	ANALYTICA	ANALYTICAL REPORT FOR SAMPLES						
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received				
SI	M21H229-01	Sail	26-Jul-21 11 40	16-Aug-21 8:00				
\$3	M21H229-02	Seil	27-Jul-21 08:20	16-Aug-21 8:00				
52	M21H229-03	Soil	29-/ul-21 13:30	16-Aug-21 8:00				

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Annabelle Bungoy, Project Munager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes





CAN

DENR Recognized Laboratory with C.R.No. 011/2018

CERTIFICATE OF ANALYSIS

Customer : HIADVANCE PHILIPPINES INCORPORATED

Address : Unit 5 & 6 Maga Centre, Paseo de Magallanes, Makati City

Attention : MS. ANNABELLE BANGOY

Contact Information: (02) 854-8365

Original Issue

Duplicate issue by request Revision Copy

:C21-09-305A Date of Issue :9/15/2021 RAN :R21-08-523

INVOICE #

Date Received: 8/17/2021

Date Sampled:-

Date Analyzed: 8/17-9/6/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Methods
Sail Samples				
M21H229-01	Iron (Fe) *	4.49	N	Direct Air-Acetylene Flame
1140H	Manganese (Mn) *	833.07	mg/kg	Direct Air-Acetylene Flame
7/26/2021	* Molybdenum (Mo) *	< 0.20	mg/kg	Direct Nitrous Oxide-Acetylene Flam
	Nickel (Ni) *	150.73	mg/kg	Direct Air-Acetylene Flame
	Zinc (Zn) *	78.34	mg/kg	Direct Air-Acetylene Flame
	Boron (B)	0.41	%	Titrimetric
	* Chloride (CIT)	13.051	ppm	Titrimetric
M21H229-02	Iron (Fe) *	7.25	96	Direct Air-Acetylene Flame
0820H	Manganese (Mn) *	737.67	mg/kg	Direct Air-Acetylene Flame
7/27/2021	* Molybdenum (Mo) *	<0.20	mg/kg	Direct Nitrous Oxide-Acetylene Flam
	Nickel (Ni) *	37.71	mg/kg	Direct Air-Acetylene Flame
	Zinc (Zn) *	112.40	mg/kg	Direct Air-Acetylene Flame
	Boron (B)	0.41	%	Titrimetric
	* Chloride (Cl*)	1.684	ppm	Titrimetric

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Page 1 of 2

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Sample Descriptions	Parameters	Results	Units	Methods
M21H229-03	fron (Fe) =	4.53	%	Direct Air-Acetylene Flame
1330H	Manganese (Mn) *	1438.57	mg/kg	Direct Air-Acetylene Flame
7/29/2021	* Molybdenum (Mo) *	< 0.20	mg/kg	Direct Nitrous Oxide-Acetylene Flam
	Nickel (Ni) *	461.17	mg/kg	Direct Air-Acetylene Flame
	Zinc (Zn) *	76.22	mg/kg	Direct Air-Acetylene Flame
	Boron (B)	0.30	%	Titrimetric
	* Chloride (CI*)	0.842	ppm	Titrimetric

Note: Cancels and supersedes C21-09-107 dated September 8, 2021.

Metals are on dry weight basis.

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Total No. of Samples: 3 Total Analysis : 21

Sample Submission : Submitted by the Customer Reference : "USEPA Method 30508.

Remarks : Results relate only to the items tested and received by the laboratory.

Cartified Correct by:

MA. CRISTINA F. REPERENTE, RCh PRC No. 0007398 Laboratory Head Approved by:

ALVIN P. BASCO, RCh PRC No. 0011786 Head of Operations

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Parameter(s) which is/are outside the laboratory's PNS ISO/IEC 17025:2017 scope of accreditation.





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Annexes

Annex 2. Laboratory report of bottom sediment



HiAdvance Philippines

HAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Passo de Magailanes, 1732 Makati Oty, PHILIPPINES Office: +632,729,4327 Fax No: +632,854,8365 philippines@hisdvance.com

Tirtuvario

Pasia PHILIPPINES.

Ames Asia, Inc.
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Menalco Ave.

Project Sail Analysis (Sediments)

Project Number: [none]

Project Manager: Ms. Pamelle Andrea L. Pomida

15-Sep-21 15:18

ANALYTICAL REPORT FOR SAMPLES Laboratory ID Matrix Date Sampled Date Received AF-1 (Tagaloan River) Naturnolan M21H228-01 Soil 26-Jul-21 10:55 16-Aug-21 08:00 AF-2 (Diclum River) Diclum M21H228-02 Soil 25-Jul-21 14:10 16-Aug-21 08:00 AF-10 (Sewaga River) Kalasungay M21H228-03 Soil 27-Jul-21 08:35 16-Aug-21 08:00 AF-9 (Sawaga River) Patpet M21H228-04 Sail 27-Jul-21 10:15 16-Aug-21 08:00 AF-8 (Komotal/Kubatan River) La Fortuna M21H228-05 Soil 27-Jul-21 11:45 16-Aug-21 08:00 AF-3 (Titala River) M21H228-06 30-Jul-21 11:59 16-Aug-21 08:00 AF-4 (Puntian) M21H228-07 Soil 29-Jul-21 11:47 16-Aug-21 08:00 AF-5 (Poblacion/Kisolon) M21H228-08 29-Jul-21 11:10 16-Aug-21 08:00 AF-6 (Vista Villa/Culssi) M21H228-09 29-Jul-21 09:27 16-Aug-21 08:00 AF-7 (Impalutao River) M21H228-10 29-Jul-21 07:55 16-Aug-21 08:00

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Annabelle Bangoy, Project Manager

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INVOICE # :-

Revision Copy

Date Received: 8/17/2021

Date Sampled:-

Date Analyzed: 8/17-9/6/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Methods
Soil Samples				
M21H228-01	Cadmium (Cd) *	< 0.03	mg/kg	Direct Air-Acetylene Flame
1055H	Chromium (Cr)*	64.48	mg/kg	Direct Air-Acetylene Flame
7/26/2021	Mercury (Hg) h	< 0.08	mg/kg	Cold Vapor AAS
	Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) *	< 0.01	mg/kg	Manual Hydride Generation AAS
M21H228-02	Cadmium (Cd) *	<0.03	mg/kg	Direct Air-Acetylene Flame
1410H	Chramium (Cr) *	59.10	mg/kg	Direct Air-Acetylene Flame
7/26/2021	Mercury (Hg) *	<0.08	mg/kg	Cold Vapor AAS
	Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) *	<0.01	mg/kg	Manual Hydride Generation AAS
M21H228-03	Cadmium (Cd) *	<0.03	mg/kg	Direct Air-Acetylene Flame
0835H	Chromium (Cr) *	45.08	mg/kg	Direct Air-Acetylene Flame
7/27/2021	Mercury (Hg) 6	<0.08	mg/kg	Cold Vapor AA5
	Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) *	<0.01	mg/kg	Manual Hydride Generation AAS
M21H228-04	Cadmium (Cd) *	<0.03	mg/kg	Direct Air-Acetylene Flame
1015H	Chromium (Cr) *	14.35	mg/kg	Direct Air-Acetylene Flame
7/27/2021	Mercury (Hg) *	< 0.08	mg/kg	Cold Vapor AAS
	Lead (Pb) *	<0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) *	<0.01	mg/kg	Manual Hydride Generation AAS

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C21-D9-305

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Sample Descriptions	Parameters	Results	Units	Methods
M21H228-05	Cadmium (Cd) *	< 0.03	mg/kg	Direct Air-Acetylene Flame
1145H	Chromium (Cr) *	14.95	mg/kg	Direct Air-Acetylene Flame
7/27/2021	Mercury (Hg) h	< 0.08	mg/kg	Cold Vapor AAS
	Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) *	<0.01	mg/kg	Manual Hydride Generation AAS
M21H228-06	Cadmium (Cd) *	<0.03	mg/kg	Direct Air-Acetylene Flame
1359H	Chromium (Cr) *	19.97	mg/kg	Direct Air-Acetylene Flame
7/30/2021	Mercury (Hg) "	< 0.08	mg/kg	Cold Vapor AAS
	Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) *	< 0.01	mg/kg	Manual Hydride Generation AAS
M21H228-07	Cadmium (Cd) *	<0.03	mg/kg	Direct Air-Acetylene Flame
1147H	Chramium (Cr) *	22.04	mg/kg	Direct Air-Acetylene Flame
7/29/2021	Mercury (Hg) *	<0.08	mg/kg	Cold Vapor AAS
	Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) 4	< 0.01	mg/kg	Manual Hydride Generation AAS
M21H228-08	Cadmium (Cd) *	<0.03	mg/kg	Direct Air-Acetylene Flame
1110H	Chromium (Cr) *	B.57	mg/kg	Direct Air-Acetylene Flame
7/29/2021	Mercury (Hg) *	<0.08	mg/kg	Cold Vapor AAS
	Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) *	< 0.01	mg/kg	Manual Hydride Generation AAS
M21H228-09	Cadmium (Cd) *	< 0.03	mg/kg	Direct Air-Acetylene Flame
0927H	Chromium (Cr)*	< 0.20	mg/kg	Direct Air-Acetylene Flame
7/29/2021	Mercury (Hg) h	<0.08	mg/kg	Cold Vapor AAS
	Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) *	< 0.01	mg/kg	Manual Hydride Generation AAS
M21H228-10	Cadmium (Cd) *	<0.03	mg/kg	Direct Air-Acetylene Flame
0755H	Chromium (Cr) *	23.11	mg/kg	Direct Air-Acetylene Flame
7/29/2021	Mercury (Hg) *	<0.08	mg/kg	Cold Vapor AAS
	Lead (Pb) *	< 0.10	mg/kg	Direct Air-Acetylene Flame
	Arsenic (As) *	< 0.01	mg/kg	Manual Hydride Generation AAS

Note: Cancels and supersedes C21-09-107 dated September 8, 2021.

Metals are on dry weight basis.

The customer is given 7 days upon receipt to raise questions or clarifications on any part or content of the certificate, otherwise the result(s) is/are deemed accepted.

Total No. of Samples: 10 Total Analysis : 50

Sample Submission: Submitted by the Customer

Reference : "USEPA Method 3050B.; "USEPA Method 245.5.

Remarks : Results relate only to the items tested and received by the laboratory.

Certified Correct by:

MA, CRISTINA F, REPRENTE, RCh PRC No. 0007398 Laboratory Head Approved by:

ALVIN P. BASCO, RCh PRC No. 0011786 Head of Operations

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Annexes

Annex 3. Key Informant Interview on Biodiversity Experts



Central Mindanao High Standard Highway Construction Project (Cagayan de Oro - Malaybalay Section)

Key Informant Interviews (KIIs) on Regional Ecology and Biodiversity along the Proposed Road Alignment

Final Report

AMET Asia, Inc.

March 2021





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Central Mindanao Standard Highway Construction Project (Cagayan de Oro – Malaybalay Section)
Key Informant Interviews (Kils) on Regional Ecology and Biodiversity along the Proposed Road Alignment
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Central Mindanao Standard Highway Construction Project (Cagayan de Oro – Malaybalay Section)
Key Informant Interviews (Kils) on Regional Ecology and Biodiversity along the Proposed Road Alignment
Final Report





Executive Summary

Key Informant Interviews (KIIs) with regional experts on the ecology and biodiversity of the proposed bypass road spanning Cagayan de Oro, Misamis Oriental and Malaybalay, Bukidnon held on February 27, 2021 and March 8, 2021 suggest that impacts on movement and nesting behavior of Philippine Eagles are considered unlikely as the location of the nesting sites in Mts. Tago and Kitanglad, and elsewhere in the mountain ecosystems of Bukidnon Province is too distant from the proposed road alignment. Remnant forest patches in deep ravines and along riparian zones provide dispersing areas for immature Philippine eagles in search of territories to colonize. Impacts on stream biota are also considered insignificant as erosion arising from road construction is temporary and freshwater stream biota is generally of Least Concern under the IUCN Red List criteria. Regional experts agree on two sampling periods to cover rainfall distribution in the area: during the 1st quarter of the year or March-April for low rainfall season and 3rd quarter, particularly July-August, for high rainfall season. Aquatic sampling may also be carried out only once, but sampling must be duplicated upstream and downstream of the proposed bridge location or where the stream intersects with the proposed road. Plant surveys can also be conducted once, but ideally during summer when trees are flowering, and plant reproductive parts can be collected for taxonomic identification.





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Key Informant Interviews (Kils) on Regional Ecology and Biodiversity along the Proposed Road Alignment
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1. Introduction

Amet-Asia, Inc. spearheaded by the Ecology Consultant Dr. Jaime Namocatcat conducted Key Informant Interviews (KIIs) on regional ecology and biodiversity along the proposed Cagayan de Oro – Malaybalay Section road construction project with regional experts, namely:

- Dr. Jason Ibañez on Philippine Eagle and nesting sites in the mountain ecosystems of Bukidnon Province on February 27, 2021
- Dr. Fulgent Coritico on plant community structure of Mt. Tago and Mt. Kitanglad, and along proposed road alignment on March 8, 2021
- Dr. Sonnie Vedra on freshwater ecology and Philippine gobies on March 8, 2021

2. Key Informant Interviews

2.1 Philippine Eagle and nesting sites in the mountain ecosystems of Bukidnon Province

2.1.1 Institutional and Research Profile



Name: Dr. Jason Ibañez

Institution: Director, Research and Conservation

Philippine Eagle Foundation

Davao City

Senior Lecturer, UP Mindanao

Academic Background: Ph.D. Natural Resource Management

Charles Darwin University, Australia

Research Interest: Wildlife Conservation, Biodiversity

2.1.2 Transcript of Interview

Dr. Jaime Namocatcat:	First and foremost, thank you for your time this afternoon Dr. Jayson, I understand that you are a very busy person, so thank you very much. We called for this meeting/interview because this relates to the proposed project of constructing a bypass road from Cagayan De Oro (CDO) to Malaybalay, Bukidnon. The bypass road project sort of cuts across the three IBAs; from CDO, both sides of the proposed road, we have the Mt. Kitanglad to your left and Mt. Tago to your right, and somewhere out there is the Mt. Kaluayan-Kinabalian complex, but basically its more of the Mt. Kitanglad and Mt. Tago. Is it correct to assume that in all areas in the Philippines, is Bukidnon, Mindanao a major eagle habitat?
Dr. Jayson Ibañez:	Right, True, the mountain ranges you mentioned, these are essentially the nesting territories of the Philippine Eagles.
Dr. Jaime Namocatcat:	Currently, what are the current initiatives of the Philippine Eagle Foundation on the area?





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Dr. Jayson Ibañez:	Well, if you talk about the Mt. Kitanglad Range Natural Park, [there is] very minimal intervention we have there. It's more of monitoring of the breeding success of [our] known pairs. We have at least two (2) active testing pairs, one in the municipality of Lantapan, and then another in Malaybalay, Bukidnon. These are old nesting sites and we've been monitoring them across the years and fortunately, [they are] consistent, the pair is breeding every two years.
	And then there are also sightings of pairs and young birds in two more areas, one in the Municipality of Baungon and another in Lantapan so practically, about four pairs in Mt. Kitanglad. It also become an experimental site in Mt. Kitanglad in the past.
	On Mt. Tago, we have an existing partnership with the Municipality of Manolo Fortich to manage a 16,000 ha Philippine Eagle sanctuary for two Philippine Eagle pairs and what Manolo Fortich LGU did was to declare the Philippine Eagle as their flagship species, so they do have a resolution, they celebrate an annual Tabanog festival in honor of their resident Eagle pairs so that's an undergoing project.
	We're helping a community take care of two Philippine domestic [inaudible]. We're also monitoring Philippine Eagle pair in the municipality of Impasug-ong, we have two pairs there and also in Malaybalay in Mt. Tago site and these sites are more of monitoring of breeding pair.
	In Mt. Kinabalian complex, is it the mountain range near the municipality of Claveria or Tinguog, correct?
Dr. Jaime Namocatcat:	I think, the Mt. Kinabalian is next to Mt. Tago.
Dr. Jayson Ibañez:	Ah. Okay. Right so again, [there's] monitoring only [in that area]. We found a pair in Hagpa, still part of impasug-ong, I think [still] connecting the Pantaron Range and Mt. Kinabalian complex. So, we worked with an IP group there monitoring this Philippine Eagle. It's basically working with the indigenous communities organizing, training and then, engaging forest guards; monitoring the breeding success. I think those are [our] major activities in those mountain ranges.
Dr. Jaime Namocatcat:	So, it looks like most of the Eagle habitats that we come to know of late, almost all are found in Bukidnon, right?
Dr. Jayson Ibañez:	True, they have the highest number of wild pairs as of our latest count. Eleven plus the one discovered confiscated eaglet so 12 Philippine Eagle nesting pairs in the province and that's the greatest number of wild pairs in the Philippines per province basis.
Dr. Jaime Namocatcat:	Is that good news, in terms of Philippine Eagle conservation?
Dr. Jayson Ibañez:	Well, I guess so because we still have this large area and they are also finding out that they have very critical role of these large natural areas as source population of smaller mountains because based on our telemetry studies, we are attaching GPS tracker in Philippine Eagles and they are actively moving between mountains which is really very interesting, for example, we have a juvenile eagle trapped and tagged in Mt. Apo last 2014 and this bird migrated from Mt. Apo to Bukidnon.
	The bird is now in San Fernando and she used smaller forest patches as dispersal pathways or stepping stones. We have evidences that it is moving around without our knowledge and are using forest patches and this bigger mountain ranges are becoming the sources of surplus birds that apparently replace the dying individuals in the other mountains.
Dr. Jaime Namocatcat:	In the case of Mt. Kitanglad having the biggest area, how many individual eagles can it accommodate given that its individual is highly territorial?





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Final Report





Dr. Jayson Ibañez:	Yes, we think the maximum maybe would be five (5) Philippine Eagle pairs, if I'm not mistaken around 60-70,000 [m³] are its forest cover area but apart from the territorial pairs, we also have floaters or suppressed birds that are hanging around waiting for the territories to be vacant.
	During one of our releases, we released a captive- bred there, we saw three surplus birds in one particular area. We know that they're non-territorial because they are still immature based on its feathers, so we think that especially the protected areas, they're becoming sanctuaries of these surplus birds and those are their staging point before they go to other places so it's possible, they were born and raised there or they are also new arrivals from other mountains.
Dr. Jaime Namocatcat:	So, it looks like Eagles from Mt. Kitanglad are likely to move around the area going to [Mt.] Tago.
Dr. Jayson Ibañez:	Yes.
Dr. Jaime Namocatcat:	Like to say, from January to December, what are the usual months when the eagles breed?
Dr. Jayson Ibañez:	Well, the nesting season in Mindanao, it starts as early as September and then they can still breed until January. So, they begin their courtship] as early as July and nest build until August and then starting an egg in September, this is the earliest.
	So, for example, the one eaglet we rescued was already three (3) months old so most probably it was laid in November. So that's their typical nesting season, September to January.
Dr. Jaime Namocatcat:	So, let us say between February to August, they just particularly move around in like feeding trips.
Dr. Jayson Ibañez:	Yes, so its breeding cycle is two (2) years. If they lay an egg in September, the egg would hatch November for the two (2) months' incubation then after that they care for their young for the next six (6) months on the nest; after that, the eaglet flies off the nest and take care of it for one year until it becomes independent. So once in every two (2) years.
	So, you would find the parents in a particular year either preparing to breed, early breeding stage or already rearing an eaglet [inaudible] of the nest. So, I think that's their pattern. However, there are also cases where they missed breeding attempt so you have a year that they will not breed for unknown reasons. Perhaps the lack of prey or weather changes but normally they will breed once every two years.
Dr. Jaime Namocatcat:	If you are on a mission to observe eagles, how rare is it to observe a flying Philippine Eagle?
Dr. Jayson Ibañez:	Very challenging, it takes a lot of observation and cohorts. If you're lucky, if you're observing within a nesting site, means a nest would be within say 500-m radius or one (1)-km radius, there is a high chance that you can observe them but if you're observing outside the nesting site, you have very limited detection rate.
	So just imagine 7,000 ha territory so it's very challenging however, through the years, we refined our protocols. We zoomed in on places where there are reliable reports, historical records of nesting, any secondary data and then often, the average you spend for example you observed during nesting season, you're lucky if within a month you can observe the bird. So the detection rate's very challenging.
	I think that is also the challenge in modelling made by our colleagues. They're relying on the presence-absence data, transect walks and you can't detect it. You have to occupy one observation post and you have to stay there for several weeks.



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	So, very challenging. But once you find an active nest, because they are very loyal to the places where they breed, as long as it's intact, you can go back to the same place then find the birds when they're nesting. Their nest sites occur in a same general place like within 500 ha, their alternate nests are present. One pair can have alternate nests. In Mt. Apo, we have 11 nesting trees for a pair confined in a five (5) ha nesting site and they use it repeatedly across the years, even their ancestors
	as it's an ancient nesting site.
Dr. Jaime Namocatcat:	So is it the same pair of birds that will mate?
Dr. Jayson Ibañez:	It depends, of course, as long as they're alive but if the mate dies, they can be replaced by the surviving mate. Pairs can die and then they can be replaced by another individual or another pair.
	In Mt. Apo, we've been monitoring it since 1970s, in the early part of the conservation program they discovered it during Dr. Bob Kennedy time and amazingly until now, it [nesting site] is still used by one pair. So very loyal. I think in terms of the conservation measures or environmental impacts, I think it's really very important that we mapped out these ancient nesting sites and avoid habitat losses, and destruction of the ancient nesting sites.
Dr. Jaime Namocatcat:	Dr. Jayson, back to our road alignment, we tried to plot the road alignment vis-a-vis the location of the two IBAs. I think for Mt. Kitanglad, the very edge of its forests is about six (6)-eight (8) km away.
Dr. Jayson Ibañez:	Oh, it's far.
Dr. Jaime Namocatcat:	It's far, right. Although the impression of Bukidnon is that it is highly forested, looking at the detailed snapshots, it's a mosaic of plantation, rice fields. Looking at these detailed snapshots, it's already deforested on the proposed road alignment, will it somehow impact the movement or breeding of nesting eagles in Mt. Tago and Mt. Kitanglad?
Dr. Jayson Ibañez:	I think it depends on the actual location of the road. If you're saying that the proposed road is, say, seven (7) km from the forest edge. For example, the Mt. Kitanglad with its conspicuous boundaries, I don't think you can make a road across the PA. It's already chunked so if the road is seven (7)- eight (8) km [away], definitely [has] less impact in the Philippine Eagles but I think it would be very challenging and have a huge impact is if your road is traversing a Philippine Eagle habitat specially if it's a no nesting territory or nest site. So, for example, the Philippine Eagle in Manolo Fortich, the actual nest tree we know two (2) nest trees by a single pair. If the location of your road, like are you familiar with the Manolo Fortich-Kalabugaw concrete road. That road is 300 km of the actual nesting tree and it's the road is newly constructed. But the bird is still breeding so you can say that in this sense, the Philippine Eagle was able to in a way adopted to the existence of the road.
	The only danger it has is if it will be an avenue for more deforestation. I think that is really the challenge but in this particular case, where relatively strong ownership of the IP in the area, I think, my personal opinion, the presence of the road will be a very important infrastructure and economy of the IP. As long as the deforestation is prevented, the Philippine Eagle will thrive, and we have evidences that they can really adjust to the change of environment.
Nina Arra Rivera	Dr. Jaime Namocatcat, can I share your power point for [reference] only.
Dr. Jaime Namocatcat:	Jayson, this is our plotted [map]. These are the boundaries of Kitanglad and Tago. This is based on Birdlife data. We still have to validate the exact boundary for the Mt. Tago because CENRO Manolo Fortich is actually preparing the documentation for application as a natural park.





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	So looking at the boundary of the Mt. Tago and the white line as the proposed bypass road, we have areas of intersection near Impasugong and Malaybalay City. You mentioned a nesting site, is it near the green area?
Dr. Jayson Ibañez:	In Mt. Kitanglad Mountain range. The nesting site in Malaybalay City is in the Mt Kitanglad range. And also in Mt. Tago, the red line as boundary right? In the area of Bulunay. In Malaybalay, you have a diagonal pointing to the green patch, that's the area of Bulunay nesting site.
Dr. Jaime Namocatcat:	So, it's one nesting site?
Dr. Jayson Ibañez:	Yes. Within the ancestral domain of the Buhita. Bukidnon-Hiligaynon Tribal Association.
Dr. Jaime Namocatcat:	So, we have one here, and the other nesting pair in the area of Impasugong.
Dr. Jayson Ibañez:	Yes, there. So, I think its location would be the dark green polygon.
Dr. Jaime Namocatcat:	These are the remaining primary forest cover in Mt. Tago.
Dr. Jayson Ibañez:	Right, and then your Manolo Fortich is in the primary forest too in the northwestern side within Manolo Fortich. There are two (2) nesting sites with two nesting pairs.
Dr. Jaime Namocatcat:	Which is outside of the Mt. Tago?
Dr. Jayson Ibañez:	Still within Mt. Tago range, approximately above the 9.3 km label and near the diagonal line, above it, there are two (2) nesting pairs.
Dr. Jaime Namocatcat:	So, there are two and another one below. Interesting, looks like there is a rise of individuals observed or there is an improved sighting activity of our Philippine Eagle.
Dr. Jayson Ibañez:	Yes, I think, there are more reports maybe due to the increase awareness. When we think of social media too because of the exposure of the IP communities through the use of social media also enhances the reporting frequency making rise.
Dr. Jaime Namocatcat:	Dr. Jayson, these location of nesting sites in Mt. Tago, is it reflected in your publications?
Dr. Jayson Ibañez:	We still haven't published. Well, because we really don't publish the exact location of the Philippine Eagles. In my thesis, I think it only included in Lantapan which is in Mt. Kitanglad mountain range, but we did not publish any actual location as we tried to make it confidential. But again, for the purpose of planning, protected area establishment, and like this, of course to minimize the impacts, we are very open in sharing the locations.
Dr. Jaime Namocatcat:	Doc Jayson, every time there is a flying event of the Philippine Eagle, how high can it fly in terms of vertical height?
Dr. Jayson Ibañez:	Very high, beyond the clouds, I don't know the exact altitude, but they can do that, they can disappear among the clouds specially the adults and from there, they can glide straight to the other mountain range.
	We've seen that several times so for example in Mt. Kitanglad, we were observing an adult bird, he started flying in spirals, right thermals, and then up to the clouds and then we followed it on our field scopes, and it glides going to Kalatungan, the other protected area.
	So, we also saw a Philippine Eagle from Mt. Apo doing that flying to a forest in North Cotabato so they can practically do that. But for the juveniles, or immatures like two (2)-four (4) years old, we think that they don't do that or seldom do that, often they fly low and then transfer from one forest to the other. So that's how they disperse like from one forest patch like 500 m to one (1) km and then perched again in another forest area and stay there for a few days.
Dr. Jaime Namocatcat:	Next slide please, so this is a clearer view on the locations of Mt. Tago and Mt. Kitanglad and farther side: Mt. Kaluayan-Mt Kinabalian complex.





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	The sections near Malaybalay city and Impasugong, can we have the next slide please just to illustrate. This is the one near Manolo Fortich, as you can see, there is still some forest cover here then the white line is the proposed road alignment, so looking at it, it really has poultry farms.
Dr. Jayson Ibañez:	Yes, it's already an open area.
Dr. Jaime Namocatcat:	Open areas, combination of farm, plantations. Next slide please. Also, this is the intersections, but we still have to validate the boundaries of Mangtarok because we have an intersection here, but looking at the profile of this figure, it's the same, containing forest patch, you have your structures here and houses. Next, just the same, these is the proposed road alignment. It cuts across farmlands, and then houses. Next slide, so that's it.
Dr. Jaime	Doc Jayson, these locations in Mt. Tago, is it okay to ask for their coordinates or ever
Namocatcat: Dr. Jayson Ibañez:	locations near to the actual [sites]? I can provide a general location and I'll put coordinates, definitely not the exact coordinates of the nesting sites but at least close to that area.
Dr. Jaime Namocatcat: Dr. Jayson Ibañez:	So. Which means that if you traverse the area between the Kitanglad and Tago, in the proposed [road] alignment, it really is rare or difficult to observe one flying Philippine Eagle Yes, I agree, the chances that you can observe Philippine Eagle there is only dispersing or immatures because I was looking at the proposed road between Manolo Fortich and Impasugong, it traverses in the Kulaman river.
	There are large river systems that because its deep and steep, there are still remnants riparian forests. We've seen Philippine Eagle used this riparian forest as their dispersal areas. But I assume there will be a constructed bridge. So, if you can observe a Philippine Eagle purposely like you're going to survey, perhaps that site will be the area that you may observe [Philippine Eagle]. It is also far from their primary habitats.
Dr. Jaime Namocatcat:	Okay, I think I have no more questions for Doctor Jayson. Maybe you have [questions] Nina
Nina Arra Rivera	Dr. Jayson, I only have one question, Sir, based on the regional ecosystems of the Philippine Eagle as well as the climate in Northern Mindanao, in terms of survey sampling, can we conduct a one season sampling or two season sampling? Wet and dry?
Dr. Jayson Ibañez:	Maybe two (2) seasons sampling, would be appropriate, but I think in Bukidnon, it's climate is all rains across the year, but you can do sampling during period during lowest rain and then period during highest rain. So, if it's Philippine Eagle sampling with distinct climate, would recommend doing it as first quarter and then 3 rd quarter of the year just to make sure you could cover the distribution of rains.
Dr. Jaime Namocatcat:	Basically, Bukidnon is Type IV, so more or less even rainfall distribution. Maybe we will the this 1st quarter and 3sd quarter sampling but this area near the river is the most probable location where we can spot. Hopefully and maybe if our luck is on our side, we can observe Philippine Eagles or maybe other raptors.
Dr. Jayson Ibañez:	Right, there are other raptors like for example the Hawk Eagle, Pinsker's hawk eagle, IUCN endangered, most probably, you can also spot it in the same habitat. But I agree, in general, the road looking at the mosaic of the land cover types, mostly are
	pineapple plantations, exotic plantation of species, farms. Looking at it, the woodlands that are natural are in the ravines, riparian forests. There are many deep ravines present in Bukidnon, which is suitable for other wildlife like owls but for Philippine Eagle, it could be a dispersing area but not a nesting site.
Dr. Jaime Namocatcat:	Okay, I think you have answered our questions particularly Dr. Jayson. Thank you very much







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Dr. Jayson Ibañez:	You're welcome.
Dr. Jaime Namocatcat:	If we still need additional info, we hope that we can have your time.
Dr. Jayson Ibañez:	Sure, Thank you too. Thanks for the opportunity to share [inaudible]
Dr. Jaime Namocatcat:	Finally, we've met today. I hope we can meet in person if ever I can come to Davao city.
Dr. Jayson Ibañez:	Please, do drop by. I'm also happy because we cited your paper on our new bird paper for Mt. Busa. You wrote a paper on birds on Mt. Busa.
Dr. Jaime Namocatcat:	A long time ago. Yes. Thank you very much Dr. Jayson
Dr. Jayson Ibañez:	Welcome, Stay safe, Bye.
Dr. Jaime Namocatcat:	See you soon.

2.1.3 Photodocumentation







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2.2 Plant community structure of Mt. Tago and Mt. Kitanglad

2.2.1 Institutional and Research Profile



Name: Dr. Fulgent Coritico

Institution: Central Mindanao University

Valencia, Bukidnon

Academic Background: Ph.D. Biology

Central Mindanao University

Research Interest: Plant Ecology

2.2.2. Transcript of Interview

Dr. Jaime Namocatcat	Referring to Mt. Tago vegetation surveys:
	Were your survey points, were they closer to the breeding sites of the Philippine Eagle? Or were they too far from the nesting site?
Dr. Fulgent Cortico:	Actually, the Philippine Eagle is somewhere in the northern part of Mt. Tago.
Dr. Fulgent Cortico:	Our study is more on the Southern part of Mt. Tago, here in Malabalay, Manalog, and Gibalabad areas.
Dr. Jaime Namocatcat:	So, in terms of land architecture how is Mt. Tago different from Mount Kitanglad?
Dr. Fulgent Cortico:	Actually, if compare the vegetation, most likely they are about the same. Mt. Tago is just like Mt. Kitanglad where the lower part is devoid of original vegetation. As you approach the barangay, that's the start of the lower montane forest. We categorize it as lower montane forest since the original typical lowland vegetation is long gone, although, there are some remnants of trees like Lawaan in the montane forest but it is not that dominant unlike in the lowland forest where majority are Lawaan trees.
Dr. Jaime Namocatcat:	In your survey along an elevational gradient, what is the dominant vegetation from top to bottom?
Dr. Fulgent Cortico:	It is really montane vegetation. At the higher elevation, upper and lower montane vegetation is the more dominant vegetation type. Upper part is mossy. Mt. Tago is unique compared to Mt. Kitanglad. Although, Mt. Kitanglad is good, but only in Mt. Tago where I saw at the peak, in the topmost part bonsai or ultramafic vegetation just like in Mt. Hamiguitan, but it is just a few hectares minute as it is in the upper elevation, unlike in Mt. Hamiguitan where you can see thousands of hectares. It is unique because the top most part is pygmy vegetation, and the plants similar to Mt. Hamiguitan, with several pitcher plants.
	But it is just the northern part. We were not able to penetrate the main peak of Mt. Tago at the southern part.



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Dr. Jaime Namocatcat:	So basically Mt. Tago is, much of what remains in Mt. Tago is the crown in montane forest. At the lowland or the base, it is basically a secondary forest.
Dr. Fulgent Cortico:	Yes.
Dr. Jaime Namocatcat:	When you did you your sampling, was it a one-shot sampling or you considered a two (2)- season sampling, like a wet and dry, something like that.
Dr. Fulgent Cortico:	During our sampling, my dissertation research is really Mt. Tago, and it was enhanced because we have an ongoing project funded by the Department of Science and Technology (DOST).
	I did my sampling every week, carried out gradually, first at the lower montane, then upper montane, and mossy forest. I kept coming back to the site for almost two {2} months because I established eight (8) units of 20x20 m plots per vegetation type and was enhanced by the project by adding additional plots across several types of vegetation. That is our frequency when we do a sampling in the area. And for transects, we had several; we kept coming back from the foot of the barangay to the peak of Mt. Timbawon, part of Mt. Tago range.
Dr. Jaime Namocatcat:	I understand that Bukidnon is basically Type IV climate. So, when we say Type IV, more or less, it means rainfall is evenly distributed throughout the year. In the case of plants surveys, I think it makes sense that we only conduct surveys once in a year, something like that there is no need for, in the context of Bukidnon, there is no need for the wet and dry season.
Dr. Fulgent Cortico:	Yes, that is allowed. Actually, the difference is that for animals it is both wet and dry season sampling, but for plants, in my opinion one season sampling is fine, although we need to consider the summer season since plants flower during this period, especially trees. Last time, I was just lucky that I was able to conduct my sampling during summer and in January. I was able to collect fertile reproductive part of plants, as this is the most important part for identification. That is why some of my collections were not yet identified down to species level because there were no flowers.
Dr. Jaime Namocatcat:	Ideally, we have to conduct our plant survey during summer so that we can survey plants that are in flowering stage to aid us in, more or less, on-site or off-site taxonomic identification.
	Dr. Fulgent, I will show you a map.
Dr. Jaime Namocatcat:	Pointing to the map, this is our Mt. Tago Range and this is our Mt. Kitanglad. The proposed bypass road will transect between two IBAs. I think the distance from the proposed bypass road to the edge of Mt. Kitanglad is I think about 10 km, a minimum of 10 km.
	So, along this course are there any unique vegetation types or critical habitats that you can find in the area? I think this is all dominated by bBuyo-buyo (Piper aduncum), the open spaces, unless there are plantations in the area.
Dr. Fulgent Cortico:	You mean this normal road?
Dr. Jaime	Yes, the normal road, because if we take detailed snapshots you will see more or less
Namocatcat:	plantations and households. No original vegetation remains here.
Dr. Fulgent Cortico:	Actually, along the road, that is already disturbed with plantations, although there is a little remnant vegetation in Manolo, but I have never been to this part of Manolo. According to some students (research students), there is still remnant vegetation, but these are already disturbed areas along the road.





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Dr. Jaime Namocatcat:	Disturbedand when you travel from Davao to Bukidnon, the vast open spaces are typically invaded by buyo-buyo (Piper aduncum). It is hard to rehabilitate or reforest these areas.
	Buyo-buyo (Piper aduncum) is all over the place. Buyo-buyo (Piper aduncum) originated in Malaysia and was used as reforestation species. It has tiny flowers and seeds are dispersed by the wind. We observed a small nectar-feeding bird feeding on Buyo-buyo (Piper aduncum). This species of bird is found in Malaysia and Philippines and aids in seed dispersal, and the area is now vastly covered with Buyo-buyo (Piper aduncum).
	What is your ongoing botanical work in Bukidnon?
Dr. Fulgent Cortico:	We have a recently completed project in Marilog, Bukidnon-Davao. We have comprehensive data along Marilog. There are remaining forest patches, we also established plots. Our results suggest there are still unique species remaining in the area, but Buyo-buyo has already invaded the area, becoming a problem for the local villagers. We interviewed the local and they had contrasting views on Buyo-buyo, whether they are of use or not. Buyo-buyo has already invaded Marilog but not inside the forest patch. They are found in the periphery, but they dominate the open areas.
Dr. Jaime Namocatcat:	Same thing with Mt. Busa here in South Cotabato, I mean Sarangani Province-South Cotabato border. If there is an open space in the forest or the canopy has open areas, that becomes the entry point for Buyo-buyo. That's how invasive Buyo-buyo is.
	Along the proposed road, there will be impacts as far as road construction is concerned. Ideally what can we do in this area to improve vegetation cover. Should we replant Philippine endemic species?
Dr. Fulgent Cortico:	Actually, along the road I also notice that they planted invasive or alien species. Just like in Musuan, we are happy about the road widening because Mahogany trees are being felled down. We wonder why mahogany trees were planted on both sides of the road. I hope whoever is involved in planning will plant indigenous trees, as Mahogany, being exotic is not ideal for reforestation.
Dr. Fulgent Cortico:	Thank you, Dr. Fulgent for your time. Next time I visit Bukidnon, I may drop by at CMU. I am friends with Dr. Amoroso, Dr. Leaño, and most importantly, Dr. Reggie Dela Cruz as we are colleagues at PSBMB Mindanao.
Dr. Fulgent Cortico:	Actually, if you need data, we also have data that you may want to see, although some data have been published.
Dr. Jaime Namocatcat;	Yes, preferably the published data. Our major concern is along the road, what are the remaining critical habitats, taking into account that Kitanglad Mt. Tago Range and Mt Kitanglad are KBAs and IBAs. With your statements, over time, this area has been degraded to the point there is no forest cover except patches. The area is basically plantation, agirucltural areas, plantation.
Dr. Fulgent Cortico:	Actually, the forest is now at higher elevation since the lower areas have been converted into agricultural areas. The lowland forest has been decimated.
Dr. Jaime	At what elevation you begin to observe forest cover.
Namocatcat:	
Dr. Fulgent Cortico:	For Mt. Tago, Malaybalay part, it starts around 1,000+ m, 1,100 m. It varies, some forest cover starts at 1,200 or 1,300 m, but basically the lower part along the Barangay has been converted into plantation.
Dr. Jaime Namocatcat:	These are lands owned by the IPs. Is it CADT or CADC?
Dr. Fulgent Cortico:	If you are familiar with the Buhita, they control Mt. Tago. It's their claim. That is their ancestral domain.
Dr. Jaime Namocatcat:	In Mt. Kitanglad, who has the CADT?







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Dr. Fulgent Cortico:	It's Datu Vic Saway and several others. Honestly, in Mt. Kitanglad, we had a previous encounter with the locals. That is why, for now, we take a respite from doing field work in Mt. Kitanglad. There was a conflict among Datus and we were caught in between. DENR is slowly working out to get us back to do Biodiversity assessment for Mt. Kitanglad. Right now, we have no ongoing assessment at Mt. Kitanglad. We focus more on Mt. Tago and Pantaron. These are our current study sites.
Dr. Jaime Namocatcat:	You also have a publication on sundews. Where is it collected.
Dr. Fulgent Cortico:	Yes sir, at the lower part, also in Mt. Tago. It's the first record of sundews for the Philippines.
Dr. Jaime Namocatcat:	Is it the same sundew species found abroad?
Dr. Fulgent Cortico:	Yes, in Japan, Korea, and northern hemisphere ang distribution. But then, it was found in Mindanao, but in that specific locality, a very small area at the peak. at the pack. It grows with the sphagnum moss
	-The interview ended with pleasantries -

2.2.3 Photodocumentation







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2.3 Freshwater ecology and Philippine gobies

2.3.1 Institutional and Research Profile



Name: Dr. Sonnie A. Vedra

Institution: Mindanao State University - Naawan

Misamis Oriental

NGO: Balay Kalinaw

Academic Background: Ph.D. Environmental Science

University of the Philippines-Los Baños

Research Interest: Aquatic Ecology, Philippine Gobies

2.3.2 Transcript of Interview

Dr. Jaime Namocatcat:	Dr. Vedra, thank you for your time today. Thank you for accommodating us. I will introduce my members or our colleagues for this interview. I have Patricia Lim from AMET and then we also haveI think Kath is joining us, and yes Nina, since this morning we had Kath.
Dr. Jaime Namocatcat:	We call for this interview to ask for your expertise as there is a project that will connect Cagayan de Oro City and Malaybalay, Bukidnon through a bypass road. The considerations are the potential ecological impacts on the area, in particular on aquatic ecology.
Dr. Sonnie Vedra:	Let's proceed on whatever idea I can share with you regarding aquatic ecology.
Dr. Jaime Namocatcat:	One of our concerns with the Road Project why we ask for this interview, of course your expertise on aquatic ecology, is with regards to potential impacts, as the bypass road will traverse some streams or maybe some segments of the river. Basically, it is just a road construction project, but do you see any aquatic ecology concern like impact on guppies, small fishes.
Dr. Sonnie Vedra:	Yes. I can see that there are really no significant impacts, as long as the stream is not blocked. Besides, our freshwater fishes in Northern Mindanao are generally Least Concern under the IUCN Red List. So, it is allowable to construct a road, as it is only a road. There are no impacts really. Also, in the case of Pigok (Mesopristes cancellatus), this is not really a common fish. If we take a look, for example, a resident freshwater fish in Luzon, it is very expensive, but here in Mindanao there are really no cause for concern.
Dr. Jaime Namocatcat:	In the context of ecological sampling, is it really necessary to conduct wet and dry season sampling?
Dr. Sonnie Vedra:	Well, yes, absolutely. For some species, since I'm an expert on gobies, it is in their life history that during flooding (wet season), the gobies go with the flow. The pregnant gobies will hatch their eggs in the sea. After that, the <i>pispis</i> or post-larvae will migrate back to their stream or river of origin.





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	If we will just build a road, there are really no impacts, in all honesty. It is just turbidity but that is not really detrimental.
Dr. Jaime Namocatcat:	So, it is not really necessary to conduct wet and dry season sampling for the aquatic biota
Dr. Sonnie Vedra:	Yes. But if budget allows, it can be conducted only once, both wet and dry. So far, that's what I did. There is really no significant difference between wet and dry seasons. For diversity and abundance, there is none. There is no significant difference.
Dr. Jaime	What is your background on regional ecology of Northern Mindanao, particularly
Namocatcat:	Bukidnon area as far as aquatic ecology is concerned?
Dr. Sonnie Vedra:	Well, so far, well I am not based in Bukidnon but I have a friend there (Dr. Imbang) who was with me in Surigao and she was also involved in the study of fishes.
	So far, the fish composition, gobies, guppies, trichogaster are practically the same. If we check the IUCN Red IList, they are also of least concern.
	If a bypass road happens to run through a stream or river, that is still alright.
Dr. Jaime Namocatcat:	So, there are no remarkable aquatic species that will be potentially impacted by the road project?
Dr. Sonnie Vedra:	Yes. In a road project, it is usually the terrestrial ecology that is affected because of tree- cutting; the birds and other wildlife are affected.
	But if we talk about rivers, it is just soil erosion, especially during construction, but that is short-lived and won't take long, since we are not really building large bridges here. Then, usually in our streams, the water level is low during dry season, so building road is fairly alright.
Dr. Jaime	In terms of Bukidnon climate, in your experience, when is it ideal to conduct wet and dry
Namocatcat:	season sampling. When do we start wet and dry season sampling sampling?
Dr. Sonnie Vedra:	Well, the peak of gobies, is more on, meaning they will spawn during summer, I mean they will go with the flood, September-October, and the eggs are hatched during summer January-February, and then return to their stream or river of origin. So most probably, dry season sampling could be March-April, and July-August for well access seasons.
Dr. Jaime Namocatcat:	season sampling. 50, it is not possible during September as the gobies are already pregnant by that time.
Dr. Sonnie	Yes, pregnant. And when the flood season comes October-November, the gobies go with
Vedra:	flow.
Dr. Jaime Namocatcat:	So, gobies have varying life histories in particular.
Dr. Sonnie Vedra:	Yes, they have varying life histories.
Dr. Jaime Namocatcat:	So, is there a higher chance of capturing eels in stream, during dry season?
Dr. Sonnie Vedra:	Yes. Well, during spawning, the eels also migrate downstream, along with gravid freshwater shrimps, crabs.
5 11	But usually, there are really no eels in Bukidnon, I don't know, eels are not easily captured
Dr. Jaime Namocatcat:	So we also cannot claim that is not a migration area for eels?





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Dr. Sonnie	In my experience with Mandulog River in Iligan City, we really did not capture eels when
Vedra:	did my sampling for one year. So eels were not really captured during this season.
Dr. Jaime Namocatcat:	Which means, there are particular rivers in the Philipines where we could capture eels but not that commonplace and it is not a guarantee that if there are streams or rivers, there
13901199900000	are eels. So I think it depends on which rivers or streams the eels are imprinted.
Dr. Sonnie	That is why they will migrate back to their place of origin. Since dams will not be built, that
Vedra:	is also allowable; they will just install posts, so that is fairly alright.
Dr. Jaime	Nina may have questions
Namocatcat Nina Arra	About the sampling, I would just like to confirm if it is alright to do it one season.
Rivera:	About the sampling, I would just like to confirm II it is alright to do it one season.
Dr. Sonnie	Usually, there is wet and dry but Bukidnon climate
Vedra:	osasiy, there is wet and any out banding chinates.
	It is very important to have wet and dry sampling to account for the total species number
	and what species are involved during dry and wet season. Gobies, in particular have
	varying life histories.
	But within to Builden to be assessed from the second tills date (Ontice to be)
	But usUally in Bukidnon, it is common freshwater species, like dalag (Ophicephalus
	striatus), hito (catfish), gobies, local, I mean indigenous species of carps, Pontius binotatus (paitan). Based on IUCN Red Llist, they are of Least Concern.
	* P = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 =
	Regarding the sampling, it is better to have wet and dry seasons. But if the budget is off
	one season sampling is alright.
	But the sampling area has to be duplicated from upstream and downstream. This is the
	bridge; there is sampling above the bridge and below the bridge. Something like that.
Patricia Lim:	If the area is Type IV, can we say one season sampling is allowable?
Dr. Sonnie	Rains distributed throughout the yearyes. But there are portions of Bukidnon that have
Vedra:	distinct dry and wet season.
Dr. Sonnie	That is why during our Lake Mainit sampling, we preferred to do it for one year to comply
Vedra:	or picture out the total number of species that we could capture, since they have varying
	life histories. Some go with the flow during flooding and some migrate back, those larva species spawned and hatched in the sea to their river of origin.
Patricia Lim:	Sir, you said if it is not possible, sampling could be done one season but it has to be
	duplicated. What are the most ideal months if that is the recommendation?
Dr. Sonnie	Well, it could be done any month to make it cost-effective, especially if the team is already
Vedra:	in the area. They could sample any time to be cost-effective according to the availability
	of the project team members
Dr. Jaime	Basically, the approach is multi-station sampling, at least ten (10) stations throughout the
Namocatcat:	curvature of the river or stream. But usually small streams, unless the project cuts across
	a major river system.
Dr. Sonnie Vedra:	Yes
Dr. Jaime	Anything else, Pat.
Namocatcat:	Anything else, Fat.
Patricia Lim:	If rivers and streams are cut across, especially if bridges will be built, will that have impacts
	on species?
Dr. Sonnie	Not really, since it is just a bridge. Usually the impacts are soil erosion, which for Bukidnor
Vedra:	is fairly normal since it is an agricultural area and sedimentation and silt deposition are
	usual in river systems. Which means, erosion is only enhanced if there is road construction, but the potentia
Dr. Sonnie	





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Dr. Jaime Namocatcat:	What is your current project with MSU Naawan?
Dr. Sonnie Vedra:	There is none so far but I have a Feasibility Study proposal. I just completed my study on Lake mainit gobies.
Dr. Jaime Namocatcat:	Actually, for one project, what we did for lake mainit is revisit the fish migration phenomenon but the data could not be disclosed since those are project data.
Dr. Sonnie Vedra:	Since Nina has no more questions, Dr. Sonnie thank you for your time, thank you for accommodating us. At the very least, we heard your expert opinion on whether we do whether we have to do wet and dry season sampling, or one sampling so long as it is a multi-station sampling, and what months of the year to cover the dry and wet season sampling. Thank you very much and see you soon.
Nina Arra Rivera:	Thank you, Dr. Sonnie
Dr. Sonnie	Alright, then.

2.3.3 Photodocumentation



3. Summary of Key Points

3.1 Philippine Eagle and Nesting Sites

- Nesting season for Philippine Eagles in Mindanao starts as early as September until January; breeding cycle is two years
- Chances of observing Philippine Eagle on site are very rare and challenging. Dispersing immatures of Philippine Eagles may be observed in remnant forest of deep ravines and riparian rivers, particularly Kulaman River as these are used as dispersal areas of immature Philippine Eagles
- Two-season sampling, would be appropriate: 1st quarter and then 3rd quarter to cover rainfall distribution







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 The proposed road construction will not impact eagle movement or nesting activities as nesting habitats are too distant from the proposed road alignment

3.2 Vegetation of Mt. Tago and Mt. Kitanglad

- One-season sampling is allowed for plants, preferably in the summer during the flowering stage to collect fertile reproductive part of plants to aid in taxonomic identification
- Actual forest is now located at higher elevation, around 1,000 m+ (asl) since the lower areas have been converted into agricultural areas; lowland forest has been decimated.
- Areas along the proposed road alignment are plantation areas, farm lots, households, or colonized with the invasive buyo-buyo (Piper aduncum)

3.3 Freshwater Ecology, Philippine Gobies

- Low rainfall season sampling is March-April, and July-August for high rainfall season sampling.
- One-season sampling could be done since fish diversity and abundance do not really vary, so long as sampling is duplicated upstream or downstream, or multi-station sampling is employed
- There are really no significant impacts of road construction to streams, as long as the stream is not blocked. Freshwater fishes in Northern Mindanao are generally of Least Concern under the IUCN Red List. Erosion is also temporary during construction and is not viewed detrimental to aquatic biota





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Annex 4. Laboratory report of surface water quality analysis

Low rainfall



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Passo de Magallanes, 1232 Makati City, Philippines Office: +632.7728-4327 Fiss No: +632.8854.8365 Emai: into@Niadvance.com.ph Website: www.hiadvance.com.ph

12 May 2021

WO# M21D417

Ms. Pamella Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 28-Apr-21 11:30.

If you have any questions concerning this report, please feel free to contact our Laboratory Manager-Ms. Princess Galvez or our Quality Manager.

Our Laboratory is a DENR Recognized laboratory with CR No. 046/2019 valid until 25th of July 2022.

While our DOH recognition with accreditation number 13-0006-2020-LW-2, is valid until 31st of December 2022.

Sincerely,

Project Manager





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Website: www.hiadvance.com.ph

SUMMARY OF RESULTS

REPORT NO. M21D417Rev01

Project Customer Sampling Date : Water Analysis

Amet Asia, Inc. April 26, 2021

Sample ID	Analysis	Unit	Results of Analysis	Remarks
	pH on-site	pH Units	7.97	
	Dissolved Oxygen on-site	mg/L	5.85	- 2
	COD	mg/L	45.0	
M21D417-01	Oil and Grease	mg/L	ND	
WQI	Dissolved Oxygen on-site mg/L	ND	J-01b	
	Residual Chlorine	pH on-site pH Units COD mg/L Oil and Grease mg/L Cyanide (free) mg/L Residual Chlorine mg/L Temperature on-site mg/L Cyanide (free) pH Units Dissolved Oxygen on-site mg/L Oil and Grease pH Units Dissolved Oxygen on-site mg/L Cyanide (free) mg/L Cyanide (free) mg/L Residual Chlorine mg/L Cyanide (free) mg/L Residual Chlorine mg/L Temperature on-site mg/L Cyanide (free) mg/L Nessolved Oxygen on-site mg/L Oil and Grease mg/L Oil on-site pH Units COD mg/L Oil on-site pH Units Dissolved Oxygen on-site mg/L Cyanide (free) mg/L COD mg/L Oil and Grease mg/L Cyanide (free) mg/L Residual Chlorine mg/L Residual Chlorine mg/L	ND	
	Hexavalent Chromium	mg/L	ND	*
	Temperature on-site		33.5	
	pH on-site	pH Units	5.60	85
i i	Dissolved Oxygen on-site	mg/L	5.60	*
3	COD	mg/L	41.0	-
M21D417-02	Oil and Grease	mg/L	ND	+:
WQZ	Cyanide (free)	mg/L	ND:	J-01a
	Residual Chlorine	d Oxygen on-site	ND	-
	Hexavalent Chromium		ND ND	
	Temperature on-site		*	
	pH on-site	pH Units	6.26	*2
	Dissolved Oxygen on-site	mg/L	6.26	
	COD	mg/L	44.0	+
M21D417-03	Oil and Grease	mg/L	ND ND	
WQ3	Cyanide (free)	mg/L	ND ND	3-01
	Residual Chlorine	mg/L	ND	-
	Hexavalent Chromium	mg/L	ND	
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HiAdvance Philippines Incorporated

Annabelle Bangoy Project Manager

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SUMMARY OF RESULTS

REPORT NO. M21D417Rev01

Project Customer

Water Analysis Amet Asia, Inc. April 26, 2021

Sampling Date :

Sample ID	Analysis	Unit	Results of Analysis	Remarks
M21D417-01	Salinity	Salinity Units	ND ND	-
WQ1	Total Dissolved Solids	mg/L	134	1-06
M21D417-02	Salinity	Salinity Units	ND	- 5
WQ2	Total Dissolved Solids	mg/L	92.0	1-06
M21D417-03	Salinity	Salinity Units	ND ND	
WQ3	Total Dissolved Solids	mg/L	95.0	I-06

References:

Standard Methods for the Examination of Water and Wastewater 23st Edition, APHA/AWWA EPA 9213 "Potentiometric Determination of Cyanide in Aqueous Samples and Distillates with Ion-Selective Electrode", Rev. 0, 1936

Definition of Terms:

Salinity - is the saltiness or dissolved salt content of a body of water.

Total Dissolved Solids (TDS) is the portion of solids that passes through a filter of 2.0µm (or smaller) nominal pore size under specified conditions.

Note: M21D471 Water Analysis Rev01: This report was revised to separate the Total Dissolved Solids and Salinity results as per customer's request. This final report replaces the one generated on 12 May 2021 at 11:45H. All other data results are not affected; data results remain unchanged.

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Annabelle Bangoy Project Manager





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Amer Asia, Inc.

Project Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone! Project Manager: Ms. Pamella Andrea L. Pomida

Reported:

12-May-21 11:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix.	Date Sampled	Date Received
WQ1	M21D417-01	Water	26-Apr-21 10:10	28-Apr-21 11:30
WQ2	M21D417-02	Water	26-Apr-21 12:53	28-Apr-21 11:30
WQ3	M21D417-03	Water	26-Apr-21 16:21	28-Apr-21 11:30

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Report Prepared By:

Reviewed By:

Certified Correct By :

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Princes S Galvez/Laboratory Manager

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Project: Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone! Reported: Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 12-May-21 11:45

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Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Metalco Ave.

Project Number: Inone!

Project Manager: Ms. Pamella Andrea L. Pomida

12-May-21 11:45

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Report Prepared By

Reviewed By :

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor Chem. Tech. PRC# 0001128 Princes S. Galvez, Laboratory Manager

H PRC# \$207

Page 4 of 16





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated
3F Maga Center, San Antonio St., Paseo de Magallanes,
1232 Makati City, Philippines
Office: +632.7729.4327 Fax No: +632.8854.8365
Emall info@hiadvance.com.ph
Website: www.hiadvance.com.ph

Amet Asia, Inc.

Project Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inonel

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 12-May-21 11:45



Disposar (Programe)

Prince of the control of the control

LOGIN SAMPLE RECEIPT CHECKLIST

count April 120 /re	
Project Hame: World Analysis	
Nork Dider: REALDHY T Daty Received: 28 Per 34/	
Creator MING	

item z	Question	T/F/WA	Remarks
1	Raticacivity either in rot precured at if measured is at an tellow background.	MA	
1	The capler's outbyly text, if present, a most, Coder No.	NA.	
1	The stanler or samples did not appear to have been compromised or samples.	P.	
4	Samples are received on ite, if applicable.	1	
3	Cooler temperature is acceptable, plemperature should be < 6.75	5	
.5	Cooler temperature is recorded 2.7.5	5	
7	COCHIPPENT COCH 32195	2	
8	COC is Miled out in ink and is legible.	E	
3	COC Is filled but, with all pertinent information.	7	
10	Is the field Langton's name gregors on COCT	F	
17	Number of consistery received match with COC.	1	
12	Sample pystalvers have legitire labels	7	
15	Sample conceiver/s provided by the SWs.	T	

1

MP-575-007-FIS No. 25, 12 Nov. 2514

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of escuely document. This analytical report must be reproduced in its antions.

Report Prepared By:

Reviewed By .

Certified Correct By

Annabelle Bangoy, Project Manager

Marizen B-Bendana, Department Supervisor Chem, Tech PRC# 0001128

Chemist PRES 9203

Pag Pag

Galvez, Laboratory Manager

Page 5 of 16





Amet Asia, Inc.

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Annexes



HiAdvance Philippines Incorporated
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1232 Makati City, Philippines
Office: +632,8854,8365
Ermit: info@hiadvance.com.ph
Website: www.hiadvance.com.ph

				Wildrams Philippin	A Major (prior to the prior to	
.04	Containing was not brown or lending.		T			
.15	There are no discrepancies between the completible of COC.	or the containers and the	7			
16	Sample union to salartime is provided		1.5			
1)	Samples are received at least five (6) days after samp	rig.	T			
18	Appropriate sample containers are send		17			
. 15	Sangles are received within Halling Tare.		9	Out of hold fo	- 745	
20	Enecessary, slaffs have been informed of any short in	eid time or quick TAT	T	Regular 187		
25	fungle histles are completely filled.		100			1
22	There is sufficient volume for all requested anatores, resums.	relading any MS/MSD	5			1
23	FC6 winds eats 66 not have headquist or 3,40%	s s firmer (1/4") in illuminis.	MA			
24	Set samples are free of air space		NA			
- 25	Multiphase samples are not present or < 10% mixture	r of salids/liquids/oil	+			
26	Sample appearance is noted.		F	pare yellor 51	ght tarked	
27	Samples and not require spilling or compositing.		7	-		
26	Sungle preservation renfield gas sitture is 2)		1	Bit majusted s	20 fer 026	
29	Trip blank provided by the lab. Trip blanks used are those provided for this approvided.		NA.			
Client C	Confirmation				M210417 1	
		1			MP 571-007-70 Rev. QU, 17 Nov 221	
Prepared B	oines Incorporated y Review	The results in this report apply to the samples analyzed in according of exitedly document. This analyzed report must be report entirely. Reviewed By: Certified Correct By:				
		Galvez, Laborator)			





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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 Ameri Asia, Inc.
 Project
 Water Analysis

 Unit 3/03, One Corporate Center, Julia Vargas Ave. Cor. Mendeo Ave.
 Project Number.
 Inone!
 Reported:

 Pasig PHILLIPPINES,
 Project Manager.
 Ms. Pamella Andrea L. Pomida
 12-May-21 11:45

WQ1 M21D417-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Barch	Prepared	Analyzed	Method	Notes
	-1	fiAdvance P	hilippines 1	ncorporat	ed				
Physical Parameters by APHA/AWV	VA Methods								
pH on-site	7,97		pH Units	1.	23E0019	26-Apr-21	26-Apr-21	APHA 4500-H	T-04
Salimity	ND	0.212	Salinity units		21E0110	07-May-21	07-May-21	APHA 2520	
Total Dissolved Solids	134	7.41	mg/L	4	21530104	06-May-21	07-May-21	APHA 2540C	1-0
Temperature on-site	33.5		"C		21E0055	26-Apr-21	26-Apr-21	APHA 2550 B	
Inorganic Non-Metallic Constituents	by APHA/AWWA 3	Methods							
Dissolved Oxygen on-site	5,85	0.200	mg/L		21E0017		26-Apr-21	APHA 4500-O G	
Aggregate Organic Constituents by	APHA/AWWA Meth	ods							
Chemical Osygen Demand	45,0	4.61	mg/L	1	21E0013	03-May-21	01-May-21	APHA 52200	
Oil & Grease	ND	2.00			21E0009	03-May-21	03-May-21	APHA 55208	
Conventional Chemistry Parameters	by EPA Methods								
Cyanide (free)	ND	0.0635	mg/L	1	2150014	03-May-21	03-May-21	EPA 9213	2.011
Miscellaneous Physical/Conventiona	I Chemistry Parame	ters							
Residual Chlorine	ND	0.200	mg/L	J.	2160114	26-Apr-25	28-Apr-21	DPD Chlorine Test Kit	
Metals by APHA/AWWA Standard	Methods								
Hexavalent Chromium	ND	0.00500	mg/L	1:	21/00470	30-Apr-21	36-Apr-21	APHA 3300-Cr B	

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The results to this report apply to the samples analyzed to accordance with the chain of custody document. This analysical report must be reproduced to its entirety.

Report Prepared By :

Reviewed Dy :

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Princess S Galvez, Vaboratory Man

Page 7 of 16



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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 Amet Asia, Inc.
 Project
 Water Analysis

 Unit 3/03, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES.
 Project Number: I losnel
 Reported: 12-Muy-21 11/45

WQ2 M21D417-02 (Water)

Audyte	Result	Reporting Limit	Units	Disting	Batch	Prepared	Analyzed	Method	None
	H	(Advance P	hilippines 1	ncorporat	ed				
Physical Parameters by APHA/A	WWA Methods								
pH on-site	5.6		pH Units	1	21E0019	26-Apr-21	26-Apr-21	APHA 4500-H	T-0
Salimity	ND	0.212	Salinity units		21E0110	07-May-21	07-May-21	APHA 2520	
Total Dissolved Solids	92.0	7.41	mg/L		31E0104	06-May-21	07-May-21	APHA 2540C	34
Temperature on-site	30.7		°C	*	2180055	26-Apr-21	26-Apr-21	APHA 2550 B	
Inorganic Non-Metallic Constitu	ents by APHA/AWWA M	lethods							
Dissolved Oxygen on-site	5,60	0.200	mg/L	.1	21E0017	*	26-Apr-23	APHA 4500-O G	
Aggregate Organic Constituents	by APHA/AWWA Meth	ods							
Chemical Oxygen Demand	41.0	4.61	mg/L	(4	21E0013	93-May-21	03-May-21	APHA 5220D	
Oil & Grease	ND	2.00			210,0009	03-May-21	03-May-21	APHA 5520B	
Conventional Chemistry Parame	ters by EPA Methods								
Cyanide (free)	ND	0.0635	mg/L	1	21E0014	03-May-31	03-May-21	EBX 9213	840
Miscellaneous Physical/Conventi	onal Chemistry Parame	fers							
Residual Chlorine	ND	0.200	mg/L	1	2100114	26-Apr-21	28-Apr-21	DPD Chlorine Test Kit	
Metals by APHA/AWWA Standa	rd Methods								
Hexavalent Chromium	ND	0.00500	mg/L	1	31D0470	30-Apr-21	30-Apr-21	APHA 3500-Cr B	

HiAdvance Philippines Incorporated

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Report Prepared By

Reviewed By

Certified Correct By

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor Chem. Tech. PRC# 0001128

Princess J. Galvez, Laboratory Manager

Chemist PRC#9297

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Ameri Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Pasig PHILIPPINES,

Project Managor

Nr. Pamella Andrea L. Pomida

12-May-21 11:45

WQ3 M21D417-03 (Water)

Analyte	Result	Reporting Limit	Units	Düution	Betch	Prepared	Analyzed	Method	Notes
	н	iAdvance Pl	hilippines I	ncorporat	ed				
Physical Parameters by APHA/AWV	VA Methods								
pH on-site	6.26		pH Units	1	21E0019	26-Apr-21	36-Apr-21	APHA 4500-H	Tel
Salinity	ND	0.212 5	alinity units	-	2160110	07-May-21	07-May-21	APRA 2520	
Total Dissolved Solids	95.0	7.41	mg/L	-	21E0104	06-May-21	07-May-21	APNA 2540C	10
Temperature on-site	28,9		°C		21E0055	26-Apr-21	26-Apr-21	APHA 2550 B	
Inorganic Non-Metallic Constituents	by APHA/AWWA M	lethods							
Dissolved Oxygen on-site	6.26	0.200	mg/L	[1]	21E0017		36-Apr-21	APHA 4300-O G	
Aggregate Organic Constituents by	APHA/AWWA Meth	ods							
Chemical Oxygen Demand	44,0	4.61	mg/L	OI.	21E0013	03-May-21	03-May-21	APHA 52260	
Oil & Grease	ND	2.00		4	21E0009	03-May-21	03-May-21	APHA 5520B	
Conventional Chemistry Parameters	by EPA Methods								
Cyanide (free)	ND	0.0635	mg/L	1	21E0014	63-May-21	03-May-21	EPA 9213	3-01
Miscellaneous Physical/Conventiona	Chemistry Parame	ters							
Residual Chlorine	ND	0.200	mg/L	1	31E0114	26-Apr-21	28-Apr-21	DPD Chimme Test Kie	
Metals by APHA/ AWWA Standard	Methods								
Hexavalent Chromium	ND	0.00500	mg/L	1	21D0476	30-Apr-21	30-Apr-21	APHA 3500-Ct B	

HiAdvance Philippines Incorporated

The results in this report apply in the samples analyzed in accordance with the cleate of custody obcoment. This analytical report must be reproduced in its autivers.

Report Prepared By:

Reviewed By :

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor Chem. Tech. PRC8 0001128 Princess S Galvez, Laboratory Manager

Page 9 of 16



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Email: info@hiadvance.com.ph
Website: www.hiadvance.com.ph

Amet Asia, Inc.	Project:	Water Analysis	
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,	Project Number: Project Manager	Inonel Ms. Pamella Andrea L. Pomida	Reported: 12-May-21 11 45

Physical Parameters by APHA/AWWA Methods - Quality Control HiAdvance Philippines Incorporated

Reporting Spike Source Scric RPD Result Limit Units Level Result SAREC Limits RPD Limit Notes

Blank (21E0104-BLK1)				Prepared: 06-Ma	y-21 Analyzed:	07-May-21		
Total Disselved Solids	ND	7.41	mg/L					
LCS (21E0104-BS1)				Prepared: 06-Ma	ry-21 Analyzed	07-May-21		
Total Dissolved Solids	47.0	7.41	mg/L	50.0	94.0	80-120		
LCS Dup (21E0104-RSD1)				Prepared: 06-Ma	ny-21 Analyzed:	07-May-21		
Total Dissolved Solids	44,0	7.41	mg/L	50.0	88.0	80-120	6.59	10
Duplicate (21E0104-DUP1)	Sour	ce: MZ1E00	3-01	Prepared: 06-Mz				
Total Disselved Solids	85.0	7.41	mg/L	8:	5.0		0.00	10
Batch 21E0110 - Residual Chlorine								
Blank (21E0110-BLK1)				Prepared & Anal	yzed: 07-May-2	0.		
Salinity	ND	0.212	Salinity units					
LCS (21E0110-BS1)				Prepared & Anal	yzed: 07-May-2	90		
Salinity	35.8	0.212	Salimity units	35.0	102	80-120		
LCS Dup (21E0110-BSD1)				Prepared & Anal	yzed: 07-May-2	0.0		
Salinity	35.4	0.212	Salimity units	35.0	101	80-120	1.12	20
Duplicate (21E0110-DUP1)	Sour	ce: M21D41	7-01	Prepared & Anal	yzed: 07-May-2	1		
Salinity	ND	0.212	Salinity	N	ID .			10

HiAdvance Philippines Incorporated

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Report Prepaped By

Reviewed By

Certified Correct By:

Annabelle Bangoy, Project Manager

freserolane

Marizen-D. Bendana, Department Supervisor Chem. Tech. PRC# 0001128 rinces S. Galvez, Laboratory Manager

Page 10 of 16





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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 AmeriAsia, Inc.
 Project
 Water Analysis

 Unit 3G3, One Corporate Center, Julia Vangas Ave. Cor. Metalco Ave. Pasig PHILLIPPINES,
 Project Number: Inonel Inone In

Aggregate Organic Constituents by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Bendt	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Bu(ch 21E0009 - O&G APHA 5520B										
Blank (21E0009-BLK1)				Prepared d	k Analyzed	03-May-2	É.			
Oil & Grease	ND	2.00	mg/L							
LCS (21E0009-BS1)				Prepared 8	k Analyzed	03-May-2	1			
Oil & Grease	109	2.00	mg/L	112		97.0	80-120			
LCS Dup (21E0009-BSD1)				Prepared 8	k Analyzed	03-May-2	6			
Oil & Grease	108	2.00	mg/L	113		96.0	80-120	0.922	10	
Duplicate (21E0009-DUP1)	Sour	ce: M21D416	6-01	Prepared & Analyzed: 03-May-21			1			
Oil & Greate	ND	2,00	mg/L		ND				10	
Matrix Spike (21E0009-MS1)	Sour	ce: M21D41	6-01	Prepared 8	& Analyzed	03-May-2	1			
Dil & Grease	144	2.00	mg/L	150	ND	96.3	80-120			
Batch 21E0013 - COD - Closed Reflux Al	PHA 5220D									
Blank (21E0013-BLK1)				Prepared 8	. Analyzed	03-May-2	i i			
Chemical Oxygen Demand	ND	4.61	mg/L	- 1						
LCS (21E0013-BS1)				Prepared 8	k Analyzed	03-May-2	1			
Chemical Oxygen Demand	49.0	4,61	mg/L	50.0	The second second	98.0	80-120			
LCS Dup (21E0013-BSD1)				Prepared 8	k Analyzed	03-May-2	1			
Chemical Oxygen Demand	49.0	4.61	mg/L	50.0		98.0	80-120	0.00	20	
Duplicate (21E0013-DUP1)	Sour	ce: M21D40	7-01	Prepared & Analyzed: 03-May-2			1			
Chemical Oxygen Demand	20.0	4.61	me/L	1000000	20.0	toropout Maria		0.00	20	

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Report Prepared By :

Reviewed By :

Certified Correct By :

Annabelle Bangoy, Project Manager

Marizen, D. Bendana, Department Supervisor Chem. Tech. PRC# 0001128 Finces S. Gulvez, Laboratory Manager Chemist PRC# 9207

Page 11 of 16





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inonel Reported:
Project Manager: Ms. Pamella Andrea L. Pomida.

12-May-21 11:45

Aggregate Organic Constituents by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

Reporting Spille Source SUREC RPD
Analyse Result Limit Units Level Result SHEC Limits HPD Limit States

Batch 21E0013 - COD - Closed Reflux APHA 5220D

 Matrix Spike (21E0013-MS1)
 Source: M21D407-01
 Prepared & Analyzed: 03-May-21

 Chemical Oxygen Demand
 69.0
 4.61
 mg/L
 50.0
 20.0
 98.0
 80-120

HiAdvance Philippines Incorporated

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Report Prepared By

Reviewed By:

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor Chem. Tech PRC# 0001128

Princese S. Galvez, Laboratory Manag Chemiat PRC# 9207

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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 Amert Asia, Inc.
 Project
 Water Analysis

 Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Menilco Ave. Pasig PHILLIPPINES.
 Project Number: Toose!
 Reported: 12-May-21 11:45

 Project Manager: Mrs. Pamella Andrea L. Pomida
 12-May-21 11:45

Conventional Chemistry Parameters by EPA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyse	Reult	Reporting Limit	Linin	Spike Level	Source Result	WREC	SAREC Limits	KPD	RPD Limit	Notes
Batch 21E0014 - General Preparation										
Blank (21E0014-BLK1)				Prepared 8	Analyzed:	03-May-21				
Cyanide (free)	ND	0.0635	mg/L							
LCS (21E0014-BS1)				Prepared &	Analyzed:	03-May-21				
Cyanide (free)	1.99	0.0635	mg/L	2.00	2011/2017/06/2011	99,5	80-120			
LCS Dup (21E0014-BSD1)				Prepared 8	Analyzed:	03-May-21				
Cyanide (free)	1.96	0.0635	mg/L	2:00		98.0	80-120	1.52	200	
Duplicate (21E0014-DUP1)	Soc	orce: M21D41	7-01	Prepared 8	Analyzed:	03-May-21				
Cyanide (free)	0.0565	0.0635	mg/L		0.0565			0.00	20	3-018
Matrix Spike (21E0014-MSI)	Su	orce: M21D41	7-01	Prepared 8	k Analyzed:	03-May-21				
Cyanide (free)	2.06	0.0635	mg/L	2.00	0.0565	100	75-125			

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the closin of civilody discussion. This analysical report wort be reproduced in its entirety.

Report Prepared By:

Reviewed By:

Certified Correct By:

Annabelle Bargoy, Project Manager

Marizen D. Bendana, Department Supervisor Chem. Tech. PRC# 0001128

Chemiat PROS 8202

Page 13 of 16





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amert Asia, Inc.

Unit 103, One Corporate Center, Julia Virgas Ave. Cer. Meralco Ave.
Project Number: Fnorel Reported:
Project Manager: Ms. Pamella Andrea L. Pomida 12-May-21 11:45

Metals by APHA/AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting Limit	Units	Level	Result	SCREE	Limits	RPD	Lindt	Notes
Batch 21D0470 - Cr+6 APHA 3500-CrB										
Blank (21D0470-BLK1)				Prepared &	Analyzed	30-Apr-21				
Hexavulent Chromium	ND	0.00500	mg/L							
LCS (21D0470-BS1)				Prepared &	Analyzed	30-Apr-21				
Hexavalent Chromium	0.149	0.00500	mg/L	0.150		99,3	80-121			
LCS Dup (21D0470-BSD1)				Prepared 8	Analyzed	30-Apr-21				
Hexavalent Chromium	0.150	0.00500	mg/L	0.150		100	80-121	0.669	20	
Duplicate (21D0470-DUP1)	Sec	arce: M21D41	7-01	Prepared &	Analyzed	: 30-Apr-21				
Hexavelent Chromium	ND	0.00500	mg/L		ND				20	
Matrix Spike (21D0470-MS1)	Sec	urce: M21D41	7-01	Prepared 8	Analyzed	30-Apr-21				
Hexavalent Chromium	0.152	0.00500	me/L	0.150	ND	101	68.6-117			

HiAdvance Philippines Incorporated

The results in this report apply to the samples analysed in accordance with the chain of cistody disconnect. This analytical report must be reproduced in its antirely.

Report Prepared By

Reviewed By

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

or

Princess S. Galvez, Laboratory Manufect

Chemist PRC# 9207-

Page 14 of 16





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Maixati City, Philippines Office: +632,7729.4327 Fax No: +632,8854.8365 Email: arlo@hiadvance.com.ph Website: www.hiadvance.com.ph

Amet Asia, Inc.	Project:	Water Analysis	
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Menalco Ave.	Project Number:	Inonel Ms. Pamella Andrea L. Pomida	Reported:
Passig PHILIPPINES,	Project Manager:		12-May-21 11:45

Notes and Definitions

Repor	t Specific Notes	
T-04b	33.5°C is the temperature taken in the field at the time of sampling.	
T-04a	25.9°C is the temperature taken in the field at the time of sampling.	9
T-04	25.6°C is the temperature taken in the field at the time of sampling.	
J-01b	0.0565 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for the analysis.	
J-01s	0.0370 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for the analysis.	
J-01	0.0190 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for the analysis.	
1-06	This sample was analyzed outside EPA/APHA recommended holding time:	
Labor	atory Reporting Conventions;	
ND	Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).	
NR	Not Reported	
dry	Sample results reported on a dry weight havin. Reporting Limits have been corrected for % Solid.	
RPD	Rulative Percent Difference. (RPDs calculated using Results, out Percent Recoveries).	

MRL METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table
DIL Dilutions are calculated based on deviations from the standard dilution performed for an analysis

Dill. Dilutions are calculated based on deviations from the standard dilution performed for an analy and every not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

Limit unalytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date

Note I Estimates of measurement of uncertainty available upon request

HiAdvance Philippines Incorporated

The results within report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Princess 5

Report Prepared By:

Reviewed By:

Certified Correct By:

Annabelie Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor Cham. Tech. PRC# 0001128

Chemist PROF 9207

Galvez, Laboratory Manager

Page 15 of 16





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated
3F Mega Center, San Antonio St., Paseo de Magalianes,
1232 Makati City, Philippines
Ciffice: +632.7729.4327 Fax No: +632.8854.8365
Email: Info@Miadvance.com.ph
Website: www.hiadvance.com.ph

 Amet Asia, Inc.
 Project: Water Analysis

 Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,
 Project Number: Inone! Reported;

 Project Manager: Ms. Pamella Andrea I. Pomida
 12-May-21 11:45

HiAdvance Philippines Incorporated

The results in this region apply to the samples analyzed in accombinee with the chass of custody document. This analytical report must be reprinted in its entirety.

Report Prepared By:

Reviewed By :

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor Chem. Tech. PRC# 0001128

Chemist PRC# 9207

Princess S. Galvez, Laboratory Manager

9207 Page 16 of 16



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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12 May 2021

WO# M21D417

Ms. Pamella Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meraico Ave. Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 28-Apr-21 11:30.

If you have any questions concerning this report, please feel free to contact the undersigned or our

Laboratory Manager- Ms. Princess Galvez or our Quality Assurance Manager.

Sincerely,

Annabelle Bangoy Project Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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SUMMARY OF RESULTS

REPORT NO. M21D417

Project

Water Analysis Amet Asia, Inc. April 26, 2021

Customer Sampling Date :

Sample ID	Analysis	Unit	Results, as received	Remarks
	Arsenic	mg/L	<0.00416	A-02a
M21D417-01	Cadmium	mg/L	<0.000727	A-02
WQ1	Lead	mg/L	<0.00517	A-02b
	Mercury	ug/L	<0.070	
	Arsenic	mg/L	<0.00416	A-02a
M21D417-02	Cadmium	mg/L	<0.000727	A-02
WQ2	Lead	mg/L	<0.00517	A-02b
	Mercury	ug/L	<0.070	
	Arsenic	mg/L	<0.00416	A-02a
M21D417-03	Cadmium	mg/L	<0.000727	A-02
WQ3	Lead	mg/L	<0.00517	A-02b
	Mercury	ug/L	<0.070	

References:

U.S. EPA, 1996, "Method 6010B – Inductively Coupled Plasma Atomic Emission Spectroscopy" from "Test Methods for the Evaluation of Waste", 5W-B46, Revision 2

Perinition of Terms:

Arsenic is a natural component of the earth's crust and is widely distributed throughout the environment in the air, water and land. It is highly toxic in

Arsenic is a natural component of the earth's crust and is widely distributed throughout the environment in the air, water and land. It is highly toxic in its inorganic form.

Cadmium exerts toxic effects on the kidney, the skeletal and the respiratory systems, and is classified as a human carcinogen. It is generally present in the environment at low levels. However, human activity has greatly increased those levels.

Lead is a toxic metal whose widespread use has caused extensive environmental contamination and health problems in many parts of the world.

Note:

<0.000727 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.
<0.00416 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.
<0.00517 The analyte was detected at a level which is below the method detection and reporting limit for the analysis. A-02a A-02b

HiAdvance Philippines Incorporated

Annabelle Bangoy Project Manager

The residts in this report apply to the samples analyzed to accordance with the chain of castedy document. This numerory is only a part of the complete analysical report and most be reproduced in its entirety.



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Amet Asia, Inc. Project: Water Analysis Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone! Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 12-May-21 10:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WQI	M21D417-01	Weinr	26-Apr-21 10:10	28-Apr-21 11:30
WQ2	M21D417-02	Water	26-Apr-21 12:53	28-Apr-21 11:30
WQ3	M21D417-03	Water	26-Apr-21 16:21	28-Apr-21 11:30

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Annabelie Bangoy, Project Manager

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S. Galvez, Laboratory Mapager Page 1 of 12





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HiAdvance Philippines Incorporated

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1232 Makali City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365 Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Project Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone! Reported: Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 12-May-21 10:22

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HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Bangoy, Project Manager

The results in this report apply to the samples onalyzed in accordance with the chain of custody document. This analysical report must be reproduced in its Certified Correct By :

S. Galvez Laboratory Manager Chemist PRC# 9207 Page 2 of 12



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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1232 Makan City, Philippines Office: +632,7729,4327 Fax No: +632,8654,8365 Emait: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Project: Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inonel Reportedi Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 12-May-21 10:22

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HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Bangoy, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be repealeded in its Certified Correct By

Princess S Gaivez, Laboratory Manager Chemist PROS 9207 Page 3 of 12





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Ames Asia, Inc.	Project:	Water Analysis	
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Muralco Ave. Passig PHILIPPINES,	Project Number: Project Manager	Inonel Ms. Pameila Andrea L. Pomida	Reported: 12-May-21 10:22

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HiAdvance Philippines Incorporated

The results in this report apply to the samples ontifyed in accordance with the chain of curredy document. This analysical report must be reproduced in its Certified Correct By

Annabelle Bangoy, Project Manager

Report Prepared By

Princess & Galvez, Laboratory Manager

PRC# 9207

Fags 4 of 12





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Ameri Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Pasig PRILLEPPINES,

Project Manager: Ms. Pamella Andrea L. Posnida 12-Mary-21 10-22



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LOGIN SAMPLE RECEIPT CHECKLIST

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3	The cooler or samples old net aggest to have been campromised or lampared.	7	
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10	is the Field Sangler's name present on COC?	7	
11	Number of containers received match with COC	2.	
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ĭ

NA-SPL-007-F01 Rev. 03: 12 Nov 2014

HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

The results to this report apply to the samples untiljeed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Certified Correct By

Princess S. Galvez, Laboratory Manager
Chemist PRGS 3207 Page 5.

Page 5 of 12



Amet Asia, Inc.

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Annexes



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1232 Makati City, Philippines Office: +632,7729,4327 Fax No: +632,8854,8365 Email: inlo@hiadvance.com.ph Website: www.hiadvance.com.ph

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17	Samples are recoverful least five 15 days after complete.	1	
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19	Samples are received within Instaling, line.	#	Cut of hold for TAE
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22	There is sufficient you've for all required statutes, including any MS/NSD request.	P	
23	VDA sample was did not have headspace or pubble is 4 finish (1/41) in diameter.	NA	
21	Soil samples are have of air agains.	WA	
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25	Sample appearance is noted.	- 15	pale yellow stight twist
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29	Trig blank provided by the lab.	10	
10	Trig blanks used are those provided for this specific side.	NA	
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HiAdvance Philippines Incorporated

Annabelle Bangoy, Project Manager

The results in this report apply to the samples analysed in accordance with the chain of custody document. This analytical report must be reproduced in the

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Princess & Galvez, Laboratory Managar FRC# 9207 Page 6 of 12

NIP-SF1-067-F01 Rev. DL, 13 Nov-3014





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Project: Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone! Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea I., Pomida 12-May-21 10:22

WQI M21D417-01 (Water)

Analyte	Result	Reporting Limit	tions	Distint	Butch	Prepared	Analyzed	Method	Notes
				18: 0					

HiAdvance Philippines Incorporated

Metals by APHA/ AWWA S	tandard Methods										
Amenic	< 9.00416	0.0100	mg/L	 21E0079	06-May-21	06-May-21	APHA 3120 B	A-02a			
Cadmium	< 0.000727	0.00200		21E0082	06-May-21	06-May-21		A-02			
Load	< 0.00517	0.0200		 21E0083	06-May-21	06-May-21		A-02b			

HiAdvance Philippines Incorporated

Annabelle Hangoy, Project Manager

Report Prepared By :

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analysical report must be reproduced in its Certified Correct By:

Princess S. Galvez, Laboratory Manager PRO9 9307





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inonel

Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

Reportedi 12-May-21 10:22

WQ2 M21D417-02 (Water)

Analyte	Result	Limit	Units	Diluttor	Hatch	Prepared	Analyzed	Method	Nates
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Arsenic	< 0.00416	0.0100	mg/L	1	21E0079	06-May-21	06-May-21	APHA 3120 B	A-02a
Cadmium	< 0.000727	0.00200	-	4	21E0082	06-May-21	06-May-21	*	A-02
Lead	< 0.00517	0.0200			21E0083	06-May-21	06-May-21		A-02b

HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Baneoy, Project Manager

The results in this report apply in the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its

Certified Correct By:

Princess S. Galvez, Laboratory Manager Chepter PRC# 9207 Page 8 of 12





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632.7729.4327 Fax No: +632.8854.6365

Email: Info@hiadvance.com.ph Website: www.hiadvance.com.ph

Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralcu Ave.

Project Number: Inonel

Reported

Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

13-May-21 10:22

WQ3 M21D417-03 (Water)

Analyte	Result	Linds	Units	Dilution	Hatch	Prepared	Analyzed	Method	Notes:
		iAdvance Pi	illippines	Incorporat	ed				
Metals by APHA/AWWA Arsenic	Standard Methods < 0.00416	0.0100	rog/L	-1	21E0079	06-May-21	06-May-21	APHA 3120 B	A-02a
Cadmism	< 0.000727	0.00200	*	+	21E0082	06-May-21	06-May-21		A-02
Lead	< 0.00517	0.0200			21E0083	96-May-21	06-May-21		A-026

HiAdvance Philippines Incorporated

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Certified Correct By:

Report Prepared By :

Annabelle Bangoy, Project Manager

Princess S. Galvez, Laboratory Manager

PRG# 9207

Page 9 of 12





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maga Certer, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8965 Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Amet Asia, Inc.	Project:	Water Analysis	
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,	Project Number: Project Manager	Inonel Ms. Pamelia Andrea L. Pomida	Reported: 12-May-21 10:22

Metals by APHA/AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Smally be	Keralt	Reporting Limit	Units	Spike Level	Source Result	SHEC	%REC Limits	RPD	RPD Limit	Notes
Batch 21E0079 - As Total ICP APHA 3	3120 B									
Blank (21E0079-BLK1)	79.97500			Prepared a	& Analyzed:	06-May-2	É			
Arsenic	ND	0.0100	mg/L							
LCS (21E0079-BS1)				Prepared a	& Analyzed:	06-May-2	1			
Arsenic	0.503	0.0100	mg/L	0.500		101	80-120			
LCS Dup (21E0079-BSD1)				Prepared -	& Analyzed:	06-May-2	î .			
Arsenic	0.484	0.010.0	mg/L	0.500		96.8	80-120	3.85	20	
Duplicate (21E0079-DUP1)	Sor	rce: M21D41	7-01	Prepared of	& Analyzed	06-May-2	1			
Arsenic	< 0.00416	0.0100	mg/L		< 0.00416				20	A-02s
Matrix Spike (21E0079-MS1)	Sor	erce: M21D41	7-01	Prepared s	& Analyzed:	06-May-2	1:			
Arsenic	0,481	0.0100	mg/L	0.500	< 0.00416	96.2	80-120			
Matrix Spike Dup (21E0079-MSD1)	Sor	arce: M21D41	7-01	Prepared a	& Analyzed:	06-May-2	t-			
Arsenic	0.484	0.0100	mg/L	0.500	< 0.00416	96.8	80-120	0.622	20	
Batch 21E0082 - Cd Total ICP APHA	3120 B									
Blank (21 E0082-BLK1)				Prepared -	& Analyzed:	06-May-2	í.			
Cadmium	ND	0.00200	mg/L		***************************************					
LCS (21E0082-BS1)				Prepared -	& Analyzed:	06-May-2	1			
Cadmium	0.295	0.00200	mg/L	0.300		98.3	80-120			
LCS Dup (21E0082-BSD1)				Prepared a	& Analyzed:	06-May-2	1			
Cadmium	0.312	0.00200	mg/L	0.300		104	80-120	5.60	20	

HiAdvance Philippines Incorporated

Report Prepared By

Annabelle Bangoy, Project Manager

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Certified Correct By

Princes S. Calvez, Luboratory Manager
Chemist PRC# 9207 Page 10 of 12



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HIAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632,7729,4327 Fax No: +632,8854,8365 Emait: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Project: Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Virgas Ave. Cor. Meralco Ave. Reported: Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 12-May-21 10:22

Metals by APHA/AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting Limit	Uein	Spike Level	Source Result	WREC	%REC Limin	RPD	RPD Limit	Notes
Batch 21E0082 - Cd Total ICP APHA	3120 B									
Duplicate (21E0082-DUP1)	So	urce: M21D41	7-01	Prepared	& Analyzed:	06-Mm-21				
Cadmium	< 0.000727	0.00200	mg/L		< 0.000727	1			20	A-03
Matrix Spike (21E0082-MS1)	So	urce: M21D41	7-01	Prepured	& Analyzod:	06-Mm-21				
Cadmium	0.292	0.00200	mg/L	0,300	< 0.000727	97.3	80-120			
Matrix Spike Dup (21E0082-MSD1)	Se	urce: M21D41	7-01	Prepared	& Analyzed:	06-May-21	1			
Cadmium	0.268	0.00200	mg/L	0.300	< 0.000727	893	80-120	8.57	20	
Batch 21E0083 - Pb Total ICP APHA	3120 B									
Blank (21E0083-BLK1)				Prepared	& Analyzod (06-May-21	ř.			
1.ead	ND	0.0200	mg/L							
LCS (21E0083-BS1)				Prepared	& Analyzed (06-May-21	6			
Lead	2.93	0.0200	mg/L	3.00	(II) pieces le Manero de la	97.7	80-120			
LCS Dup (21E0083-BSD1)				Prepared	& Analyzed: (06-May-21	ř			
Lead	3.32	0.0200	mg/L	3.00		111	80-120	12.5	20	
Duplicate (21E0083-DUP1)	Sor	uree: M21D41	7-01	Prepared	& Analyzed (06-May-21				
Lend	< 0.00517	0.0200	mg/L		< 0.00517	and the same			20	A-028
Matrix Spike (21E0083-MS1)	Sor	arce: M21D41	7-01	Prepared	& Analyzed: (06-May-21	la .			
Lead	3.19	0.0200	mg/L	3.00	< 0.00517	106	80-120			
Matrix Spike Dup (21E00R3-MSD1)	See	orce: M21D417	7-01	Prepared	& Analyzed: (06-May-21	E			
Lead	3.23	0.0200	mg/L	3.00	< 0.00517	108	80-120	1.25	20	

HiAdvance Philippines Incorporated

Report Prepared By

belle Bangoy, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of existedy document. This analytical report must be reproduced in its

Certified Correct By

Princess S. Galvez, Laboratory Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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1232 Mekab City, Philippines Office: +632,7729,4327 Fax No: +632,8854,8365 Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

12-May-21 10:22

Notes and Definitions

Report Specific Notes

A-02b <0.00517 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

A-02a <0.00416 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

A-02 <0.000727 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

< 0.00517 < b

< 0.00416 < 8

< 0.000727

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

dry Sample results reported on a dry weight basis. Reporting Limits have been corrected for % Solid,

RPD Relative Percent Difference (RPDs calculated using Results, not Percent Recoveries).

MRL METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table

DIL. Dilutions are calculated based on deviations from the standard dilution performed for an analysis and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

Limit analytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the

Annabelle Bangoy, Project Manager

Certified Correct By

Princes S. Gillvez, Laboratory Manager Page 12 of 12



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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21 May 2021

WO# M21D417

Ms. Pamella Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 28-Apr-21

11:30. If you have any questions concerning this report, please feel free to contact me.

Note: HiAdvance Philippines Incorporated is former NCALABS Phils. Inc.

Sincerely,

Annabelle Bangoy Project Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone!

Project Manager: Ms. Pamella Andrea L. Pomida

Project Water Analysis

21-May-21 09:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory 1D	Matrix	Date Sampled	Date Received
wQ1	M21D417-01	Water	26-Apr-21 10:10	28-Apr-21 11:30
WQ2	M21D417-02	Water	26-Apr-21 12:53	28-Apr-21 11:30
WQ3	M21D417-03	Water	26-Apr-21 16:21	28-Apr-21 11:30

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Annabelic Bangoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Passig PHILIPPINES,

Project Number: Inonel Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 21-May-21 09:40

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Annabelle Bangoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines

HiAdvance Philippines incorporated 3F Maga Center, San Antonio St. Paseo de Magallanes, 1232 Makati City, PHILIPPINES Office: +632,729,4327 Fax No:+632,854,6365 philippines@hiadvance.com

Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Metalco Ave. Pasig PHILIPPINES, Project: Water Analysis

Project Number: Inonel

Project Manager. Ms. Pamella Andrea L. Pomida

Reported: 21-May-21 09:40

HAIN-OF CUSTODY / Analytical Requires Document

An investigation of the company o

HiAdvance Philippines Incorporated

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Annabelle Bangoy, Project Manager

Page 3 of 12





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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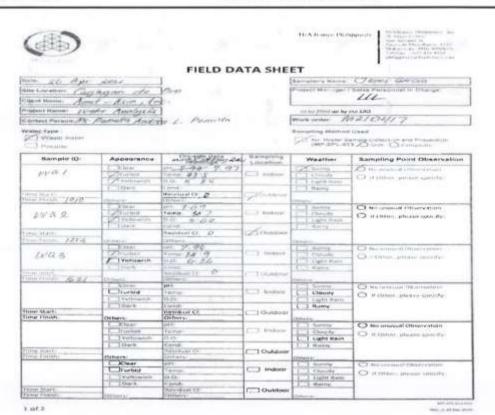


HiAdvance Philippines

HAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magalianes, 1232 Makari City, PHILIPPINES Office: +632.729.4327 Fax No: +632.854.8365 philippines@fisadvance.com

Amet Asia, Inc.
Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Mersico Ave.
Pasig PHILIPPINES,
Project Manager: Ms. Pamelia Andrea L. Pomida 21-May-21 09:40



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Annabelle Bangoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Project Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Metalco Ave.
Pasig PHILLIPPINES,

Project Number: Inone1 Reported:
Project Manager: Ms. Pamella Andrea L. Pomida 21-May-21 09 40

Other Field Notes:

good byhadase (C)	# iTte	******			Guidity Control	
Capacomer), I	ò.	100	pam-out		Managering I Figurer.	r spannann kib
Truffer Dietr	1	Bearing	TEMP	Element ID	WH (LEER 7: 200)	A.Y. 2. ASSESSED
are d	J.	27	-07-47	Mac/646	CHI CLOSED F. AM.	27-1
artin Y	6	78	e# 9	Miselber	Sample Dupitsule:	
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andwaterity Mater Californ	Nies Verttigetten	Gruitty Control	Conductivity utnum
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Ct Methor Worldson William 11 august 11	atric)	Quality Control				
Appropriate 419		Sample Coalinate	DO. HULL			
	DO. mg/L	14.4	5.24			
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67	W319/14/12	36		

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	(To be checked by SRO)	
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2 of 2		941, 11, 14 Tex. (0)41

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Annabelle Bangoy, Project Manager

Page 5 of 12

ENVIRONN CENTRAL N

ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Pasig PHILLIPPINES,

Project Number: Inone!
Project Number: Inone!
Project Manager: Ms. Parnella Andrea L. Pomida 21-May-21 09:40



Holomanya Perdigeriana Perdamban di Perdamba

LOGIN SAMPLE RECEIPT CHECKLIST

reator	Cuestion	17/9/NA	Remarks
1	Recognision within a not present of a financial many below being quick	NA	
2	The coder's cycletty seal, if present, a smart, Cooler No.	24	
3	The cooler or samples did not appear to have over compromised or tarspered	7	
-4	Sangard are received on on Papplindon.	3	
3	Cooler temperature is acceptable, (temperature should be < 6°C)	0	
	Content sense failure is inscribed # 7 %	7	
7	COC is present. COC s. 1821943	6	
1	COS to Piter and in cost and in legislate	7	
3	CDC is liked our with all pursioner inflamations.	7	
10	le the Field Sampler's nume present on CDCT	5	
11	Number of containent received trades with COC	7	
12	Sample containers have legible labels.	T	

MP-07L007+03 No. 01, 12 hor 2014

|--|

13 Sample consumer/s provided by the lab

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Annabelle Bangoy, Project Manager

Page 6 of 12

${\bf ENVIRONMENTAL\ IMPACT\ STATEMENT\ REPORT-Preparatory\ Survey}$





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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.
Project: Water Analysis
Unit 303, One Corporate Center, Julia Vargas Ave. Coc. Meralco Ave.
Praig PHILIPPINES,
Project Manager: Ms. Pamella Andrea L. Pomida 21-May-21 09:40

			39. Advance PM Depaires	of Stages of Sta
d	Comments and earlier or leaking	ナ		
5	There are no discrepanties between my sample CS, we the someone profite DDC.	7		
6	Surple safection principle is provided.	1		
7	Samples are removed at Islat five (1) days ofter compling.	7		
8	Representative sample containers are used	7		
i.	Samples are recovered within resisting Time.	7	aut of hold for	125
10	Finesting, staffs have been inflational of any short hand lime to quick TAT models.	7	let of hold for Regular PAT	
ii	Sample forces are completely filled.	5		
22	These is self-cover volume for all requested analyses, including any MS/MSD request.	5		
1	oCh sample valls (68) (10 thave feathers to 15 (10 (2.5) + 5 (4.5) (1/4") in diameter	AGA.		
14	Soil samples are free of air space	2056		
25	Multiphase samples are not present or < 10% mixture of soficial liquidizint.	1		
26	Sample appearance is noted	1	pare yellow stin	At Trobal
27	Samples and not require upiliting or companying	7	,	
28	Sample preservation without gath ordered in 22	1	pH adjusted se	for 016
29	True bank provided by the lab.	N.A.		
80	Trip tribrits used are those provided for this specific site.	111		

MM-SPL-SUT-FOI Nov. 10. CT Nov. 7014

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Annabelle Bangoy, Project Manager

Page 7 of 12



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Unit 303, One Corpoone Center, Julia Vargas Ave. Cor. Metalco Av Pasig PHILIPPINES. Project: Water Analysis

Project Number: Inonel

21.34

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 21-May-21 09:40

WQ1 M21D417-01 (Water)

Analyte	Handt	Reporting Limit	Units	Dilution	Heich	Prepared	Analysed	Mathed	Natus
	Pace A	nalytical Serv	rices, LLO	: - Minneap	olis Lab				
EPA 7470A									
Mercury	<0.070	0.20	ug/L	1	742753	17-May-21	18-May-21	7470AW	u

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Annabelle Battgoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Fax No: +632,854,8365 philippines@hiadvance.com

Amet Asia, Inc.

Project Water Analysis

Project Manager: Ms. Pamella Andrea L. Pomida

Project Number: Inonel

Reported: 21-May-21 09:40

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Memico Ave. Pasig PHILIPPINES.

> WQ2 M21D417-02 (Water)

Analyse	Result	Reporting Limit	Linio	Dilumin	Batch	Prepared	Analysed	Method	Notes
WAS COMPANY.	Pace An	alytical Serv	ices, LLO	C - Minneap	olis Lab				
EPA 7470A									
Mercury	<0.070	0.20	ug/L	1	742753	17-May-21	18-May-21	7470AW	U

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Annabelle Bangoy, Project Manager

Page 9 of 12

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magalianes, 1232 Makali Cky, PHILIPPINES Office: +632,729,4327 Fax No: +632,854,8365 philippines@hiadvance.com

Amet Asia, Inc.

Project Number: Inonel

Project Water Analysis

Reported:

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Memico Ave. Pasig PHILIPPINES.

Project Manager: Ms. Pamella Andrea L. Pomida

21-May-21 09:40

WQ2 M21D417-02 (Water)

Analyse	Result	Reporting Limit	Linio	Distriction	thatch	Prepared	Analysed	Method	Notes
HEAT CAPPENDANT!	Pace An	alytical Serv	rices, LLO	C - Minneap	odis Lab				
EPA 7470A									
Mercury	<0.070	0.20	ug/L	1	742753	17-May-21	18-May-21	7470AW	U

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Annabelle Bangoy, Project Manager

Page 9 of 12

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ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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philippines@hiadvance.com

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vergas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project: Water Analysis

Project Number: Inonel
Project Manager: Ms. Pamella Andrea L. Pornida

Reported: 21-May-21 09:40

WQ3 M21D417-03 (Water)

Analyte	Restr	Reporting Limit	Units "	Dilution	Butch	Prepared	Analyzed	Method	Notes
The second of the second	Pace An	alytical Serv	ices, LLC	- Minneap	olis Lab				
EPA 7478A									
Mercury	< 0.070	0.20	ug/L	1	762753	17-May-21	18-May-21	7470AW	U

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The results to this report apply to the samples analyzed in accordance with the chain of custody document. This analysical report must be reproduced in its entirety.

Annabelle Bangoy, Project Manager

Page 10 of 12





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Merakco Ave. Project Number: Inone!
Pasig PHILIPPINES. Project Manager: Ms. Pamella Andrea

Project Manager: Ms. Pamella Andrea L. Pomida 21-May-21 09:40

EPA 7470A - Quality Control

Pace Analytical Services, LLC - Minneapolis Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	WREC	SARKC Limits	RPD	KPD Limit	Notes
Batch 742753 - EPA 7478A										
BLANK (3959423)				Prepared:	17-May-21	Analyzed:	18-May-21			
Mercury	0.070	0.20	ug/L	- 100						U
LCS (3959424)				Prepared:	17-May-21	Analyzed	18-May-21			
Mercury	5.0	0.20	ug/L	5		99	80-120			
MS (3959425)	Soc	rce: M21D417	7-02	Prepared:	17-May-21	Analyzed:	18-May-21			
Mercury	4.9	0.20	ug/L	5	0.070	97	80-120			
MSD (3959426)	Son	rce: M21D417	7-02	Prepared	17-May-21	Analyzed:	18-May-21			
Mercury	4.8	0.20	ug/L	5	0.070	96	80-120	3.	20	

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Annabelle Banger, Project Manager

Page 11 of 12





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Project Number: Inone!

Reported:

Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

21-May-21 09:40

Notes and Definitions

Report Specific Notes

U Indicates the compound was analyzed for, but not detected.

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR Not Reported

dry Sample results reported on a dry weight basis. Reporting Limits have been corrected for % Solid,

RPD Relative Percent Difference. (RPDs calculated using Results, not Percent Recoveries).

MRL METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table

II. Dilutions are calculated based on deviations from the standard dilution performed for an analysis and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

Jmit an

analytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date

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The results in this regnet upply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its outroots.

Annabelle Bassoy, Project Manager

Page 12 of 12



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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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15 May 2021

WO# M21E003

Ms. Pamella Andrea L. Pomida

Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21 08:00.

If you have any questions concerning this report, please feel free to contact our Laboratory Manager-Ms. Princess Galvez or our Quality Manager.

Our Laboratory is a DENR Recognized laboratory with CR No. 046/2019 valid until 25th of July 2022.

While our DOH recognition with accreditation number 13-0006-2020-LW-2, is valid until 31st of December 2022.

Sincerely,

Annabelle Bango Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

SUMMARY OF RESULTS

REPORT NO. M21E003Rev01

Project Customer Sampling Date Water Analysis Amet Asia, Inc. April 30, 2021

Sample ID	Analysis	Unit	Results of Analysis	Remarks
	pH on-site	pH Units	7.62	-
	Dissolved Oxygen on-site	mg/L	5.34	+
	COD	mg/L	51.0	
M21E003-01	Oil and Grease	mg/L	ND ND	
M21E003-01 WQ4	Cyanide (free)	mg/L	ND ND	J-01
	Residual Chlorine	mg/L	ND	
	Hexavalent Chromium	mg/L	ND ND	
	Temperature on-site	9C	25.2	

References

Standard Methods for the Examination of Water and Wastewater 29th Edition, APHA/AWWA

EPA 9213 "Potentiometric Determination of Cyanide in Aqueous Samples and Distillates with Ioin-Selective Electrode", Rev. 0, 1996

Definition of Terms:

Chemical Oxygen Demand (COD) is the amount of oxygen required to degrade the organic compounds of water.

Cyanide can be measured either as free or total cyanide. Free cyanide consists of hydrogen cyanide (HCN) and the cyanide ion (CN-), which represent the more toxic forms of cyanide some consists of hydrogen cyanide (HCN) and the cyanide ion (CN-), which represent the more toxic forms of cyanide in the cyanide ion (CN-), which represent the more toxic forms of cyanide in the cyanide ion (CN-), which represent the oxygen ranking some cyanide in the cyanide in the cyanide ion (CN-), which represent the oxygen ranking in the cyanide in the solvent. It includes other material extracted by the solvent from an actified sample and not volatilized during the test.

Phil is a measurement of the hydrogen ion concentration reflecting alkalinity or actifity of the water. residual is Chlorine a low level of chlorine remaining in water after its initial application.

Temperature - The degree of hotness or coldness of a body or environment.

3-01 0.0230 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for the analysis.

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This isomorpy is only a part of the complete analytical report and tool be reproduced in its antirety:

Annabelle Bangoy Project Manager





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SUMMARY OF RESULTS

REPORT NO. M21E003Rev01

Project

Water Analysis Amet Asia, Inc.

Customer Sampling Date :

April 30, 2021

Sample ID	Analysis	Unit	Results of Analysis	Remarks
M21E003-01	Salinity	Salinity Units	ND	-
WQ4	Total Dissolved Solids	mg/L	85.0	

Standard Methods for the Examination of Water and Wastewater 23rd Edition, APHA/AWWA

EPA 9213 "Potentiometric Determination of Cyanicle in Aqueous Samples and Distillates with Ion-Selective Electrode", Rev. 0, 1996

Salinity - is the saltiness or dissolved salt content of a body of water.

Total Dissolved Solids (TDS) is the portion of solids that passes through a filter of 2.0µm (or smaller) numinal gore size under specified conditions.

Note: M21E003 Water Analysis Rev01: This report was revised to separate the Total Dissolved Solids and Salinity results as per customer's request. This final report replaces the one generated on 15 May 2021 at 13:15H. All other data results are not affected; data results remain unchanged.

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Ananbelle Bangoy Project Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Email: Info@hiadvance.com.ph Website: www.hiadvance.com.ph

Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inone1 Reported:
Project Manager: Ms. Pamella Andrea L. Pomida 15-May-21 13:15

ANALYTICAL REPORT FOR SAMPLES

 Sample ID
 Laboratory ID
 Matrix
 Date Sampled
 Date Received

 WQ4
 M216003-01
 Water
 30-Age-21 11:23
 03-May-21 08:00

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of curriedy document. This analytical report must be reproduced in its antirety.

Report Prepared By :

Reviewed By:

Certified Correct By :

Annabelle Hangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Princess S. Cialvez, Laboratory Manage Chamint PRCS 9207

Page 1 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Pasig PHILIPPINES.

Project Number: I sonel
Project Manager: Ms. Pamella Andrea L. Pomida

15-May-21 13:15

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Report Prepared By :	Reviewed By:	Certified Correct By :
Annabelle Bangoy, Project Manager	Marizen D. Bendana, Department Supervisor Chem. Fach PRC# 0001128	Princess & Calvez, Laboratory Manager Chemiat PRC# 9207 Page 2 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maça Center, San Anionio St., Paseo de Magallanes, 1232 Makati City, Philippines 1232 Makati City, Philippines 5 May 123 May 124 May 125 May 125

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Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,	Project Number:	Inonel	Reported;
	Project Manager:	Ms. Pamella Andrea L. Pomida	15-May-21 13:15

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Report Prepared By	Reviewed By:	Certified Correct By :
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Annabelle Bangoy, Project Manager	Marizen/D. Bendana, Department Supervisor Chem. Tech PRC# 0001128	Princess S Galvez, Laboratory Manager Chemist PRC# 9207 Page 3 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Project: Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargus Ave. Cor. Meralco Ave. Project Number: Toonel Reported: 15-May-21 13:15 Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida Other Field Notes: riccolo. APROLOGI 10.01 Vantoumorph 10 10 Conductivity Meter Calibration Ventication Remple Duplicate this was the arrival Residual Cotonina Workprofer 0

HiAdvance Philippines Incorporated

Checked by: _

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Report Prepared By:

Reviewed By:

(To be checked by SAG)

Certified Correct By:

Annabelle Bargoy, Project Manager

prounder Marizen D/Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Princes S Cialvez/Laboratory Manager

PRC#.8207

Page 4 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Office: +632.7724.4327 Fax No; +632.8854.8355
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Websile: www.hiadvance.com.ph

Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone!

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 15-May-21 13:15



LOGIN SAMPLE RECEIPT CHECKLIST

AZIRY Feeligi's Work Order: #12/EDV4 Date Received: (5 Millary 1921) 186

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Reviewed By:

Certified Correct By :

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Chemist PRC# 9207

S. Galvey, Laboratory Manager

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Amet Asia, Inc.	Project	Water	Analysis		
Unit 303, One Corporate Center, Julia Vargas A	ve. Cor. Meralco Ave. Project Number:	Inone	Fi.	Rep	errol:
Pasig PHILIPPINES,		Ms. P	amella Andrea L. Pomida	15-May	21 13:15
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Report Prepared By :	Reviewed By :		Certified Corre	ct By :	
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Annabelle Bangoy, Project Manager	Marizen B. Bendana, Departmen Chem. Tech PRC# 0001128	t Super		vez Laboratory Mana at 1950a 9207	ger



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HiAdvance Philippines Incorporated All Agrander Philippines in Corporated 38 Maga Center, San Antonio St., Peseo de Magallanes, 1232 Makati City, Philippines.
Office: +032.7729.4327 Fax No: +632.8854.8365 Email: info@hiadvance.com.ph
Website: www.hiadvance.com.ph

Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 15-May-21 13:15

> WO4 M21E003-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilotton	Hetch	Prepared	Analyzed	Method	Notes
	11	iAdvance P	hilippines l	ncorporat	ed				
Physical Parameters by APHA/AWW/									
pH on-site	7,62		pH Units	- 1	21E0161	38-Apr-21	30-Apr-21	APHA 4500-H	T
Salinity	ND	0.212 5	latinity units		21E0310	07-May-21	07-May-21	APHA 2520	
Total Dissolved Solids	85,0	7.41	mg/L	+	211:0104	06-May-21	07-May-21	APHA 2540C	
Temperature on-site	25.2		°C		21E0164	30-Apr-21	03-May-21	APHA 2556 B	
Inorganic Non-Metallic Constituents t	by APHA/AWWA N	lethods							
Dissolved Oxygen on-site	5.34	0.200	mg/L	1	211:0168		30-Apr-21	APHA 4500-0 G	
Aggregate Organic Constituents by Al	PHA/AWWA Metho	ods							
Chemical Oxygen Demand	51.0	4.61	mg/L	1	21E0095	07-May-21	07-May-21	APHA 5220D	
Oil & Grease	ND	2.00		.+	21E0131	10-May-21	10-May-21	APHA 5520B	
Conventional Chemistry Parameters I	by EPA Methods								
Cyanide (free)	ND	0.0635	mg/L		21E0014	03-May-21	03-May-21	EPA 9213	.54
Miscellaneous Physical/Conventional	Chemistry Parame	ters							
Residual Chlorine	ND	0.200	mg/L	3	21E0117	30-Apr-21	03-May-21	DPD Chlorine Test Kit	
Metals by APHA/AWWA Standard M	ethods								

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Gaivez Laboratory Manag Chemist PRC# 9207

Page 7 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Project: Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Reported: Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 15-May-21 13:15

Physical Parameters by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

Ambu	Result	Reporting Limit	Unin	Spike- Level	Source Result	WREC	%REC Limits	RPD	RPD Limit	Nesm
Batch 21E0104 - TDS APHA 2540-C										
Blank (21E0104-BLK1)				Prepared:	06-May-21	Analyzed:	07-May-21			
Total Dissolved Solids	ND	7.41	mg/L							
LCS (21E0104-BS1)				Prepared:	06-May-21	Analyzed:	07-May-21			
Fotal Dissofved Solids	47.0	7.41	mg/L	50.0		94.0	80-120			
LCS Dup (21E0104-BSD1)				Prepared:	06-May-21	Analyzed:	07-May-21			
Total Dissolved Solids	44,0	7.41	mg/L	50:0		88.0	80-120	6,59	10	
Duplicate (21E0104-DUP1)	So	urce: M21E00	3-01	Prepared:	06-May-2)	Analyzed:	07-May-21			
Total Dissolved Solids	85.0	7.41	mg/L	85.0				0.00	10	
Batch 21E0110 - Residual Chlorine						4				
Blank (21E0110-BLK1)				Prepared &	k Analyzed	07-May-2				
Salinity	ND	0,212	Salimity units							
LCS (21E0110-BS1)				Prepared 8	k Analyzed:	07-May-2	ř			
Salinity	35.8	0,212	Salinity units	35.0		102	80-120			
LCS Dup (21E0110-BSD1)				Prepared 8	R Analyzed	07-May-2	1			
Salinity	35.4	0.212	Salinity units	35.0		101	80-120	1.12	20	
Duplicate (21E0110-DUP1)	Sor	rree: M21D41	7-01	Prepared &	& Analyzed	07-May-2				
Salinity	ND	0.212	Salimity		ND				10	

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Report Prepared By :

Certified Correct By

oy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Princess S. Galvez, Laboratory Manu Wat PRC# 9207

Page 8 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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 Amet Asia, Inc.
 Project
 Water Analysis

 Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
 Project Number
 Inone1
 Reported:

 Pasig PHILLIPPINES,
 Project Manager
 Ms. Parmella Andrea L. Portida
 15-May-21 13:15

Aggregate Organic Constituents by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Results	Reporting Limit	Units	Spike Level	Saurer Result	NREC	%HEC Limits	RPD	Limit	Nates
Batch 21E0095 - COD - Closed Reflux Al	PHA 5220D									
Blank (21E0095-BLK1)				Prepared &	k Analyzed	07-May-21	10			
Chemical Oxygen Demand	ND	4.61	mg/L							
LCS (21E0095-BS1)				Prepared 8	k Analyzed	: 07-May-21	li.			
Chemical Oxygen Demand	49.0	4.61	mg/L	50.0		98.0	80-120			
LCS Dup (21E0095-BSD1)				Prepared 8	k Analyzed	07-May-21				
Chemical Oxygen Demand	50,0	4,61	mg/L	50.0	W. Chengalin	100	80-120	2.02	20	
Duplicate (21E0095-DUP1)	Sor	arce: M21E00	3-01	Prepared &	k Analyzed	07-May-21	i			
Chemical Oxygen Demand	51.0	4.61	mg/L		51.0			0.00	20	
Matrix Spike (21E0095-MSI)	Sec	arce: M21E003	5-01	Prepared 8	k Analyzed	07-May-21				
Chemical Oxygen Demand	96.0	4.61	mg/L	50.0	51.0	90.0	80-120			
Batch 21E0131 - O&G APHA 5520B										
Blank (21E0131-BLK1)				Prepared &	k Analyzed	10-May-21	t.			
Oil & Grease	ND	2.00	mg/L							
LCS (21E0131-BS1)				Prepared 8	k Analyzed	10-May-21	Ú			
Oil & Grease	104	2.00	mg/L	111		93.3	80-120			
LCS Dup (21E0131-BSD1)				Prepared &	k Analyzed	10-May-21	ř			
Oil & Grease	105	2.00	mg/L	112		93.8	80-120	0.957	10	
Duplicate (21E0131-DUP1)	Soc	arce: MZ1E033	3-01	Prepared 6	k Analyzed	10-May-21	1			
Oil & Grease	ND	2.00	ma/L	10000000	ND				10	

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Report Prepared By

Reviewed By:

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor Chem. Tech. PRC# 0001128

Princess & Galvey Laboratory Manager Chemist PRC# 9207

Page 9 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 15-May-21 13:15

Aggregate Organic Constituents by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

let of a little leve to		Reporting		Spiler	Secret :	1000	SWREET		aro	
Analyte	Result	Reporting Limb	Units	Level	Resti	WHEC.	Linits	RPD	Link	Notes

Batch 21E0131 - O&G APHA 5520B

Source: M21E033-01 Matrix Spike (21E0131-MSI) Prepared & Analyzed: 10-May-21 Oil & Grease 125 2.00 mg/L 95.3

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Report Prepared By:

Reviewed By:

Certified Correct By :

ile Bangoy, Project Manager

Landanie Marizen B. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Princess S. Galvez, Laboratory Manag PRC# 9207

Page 10 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Pasig PHIILIPPINES,

Project Manager, Ms. Pamella Andrea L. Pomida

Reported:
Project Manager, Ms. Pamella Andrea L. Pomida

Conventional Chemistry Parameters by EPA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Limit	tide	Level	Benefit	WREC	Links	RPD	Limit	Nates
Batch 21E0014 - General Preparation										
Blank (21E0014-BLK1)				Prepared &	& Analyzed:	03-May-2	E			
Cyanide (free)	ND	0.0635	mg/L							
LCS (21E0014-BS1)				Prepared &	k Analyzed	03-May-2	ſ			
Cyanide (free)	1.99	0.0635	mg/L	2.00		99.5	80-120			
LCS Dup (21E0014-BSD1)					Prepared & Analyzed: 03-May-21					
Cyanide (free)	1.96	0.0635	mg/L	2.00		98.0	80-120	1.52	200	
Duplicate (21E0014-DUP1)	Sou	rce: M21D41	7-01	Prepared & Analyzed: 03-May-21						
Cyanide (free)	0.0565	0.0635	mg/L		0.0565			0.00	20	J-01a
Matrix Spike (21E0014-MS1)	Sou	rce: M21D41	7-01	Prepared &	k Analyzed	03-May-2				
Cyanide (free)	2.06	0.0635	mg/L	2.00	0.0565	100	75-125			

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The results in this report apply to the samples onelyzed in accordance with the choin of custody document. This analytical report must be reproduced in its entirety.

Report Prepared By :

Reviewed By

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC8 0001128

rinces S. Galvez, Laboratory Maha

Page 11 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.	Project	Water Analysis	
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Passig PHILIPPINES.	Project Number:		Reported: 15-May-21 13:15
rang Philappinga,	Project Manager.	Ms. Pamella Andrea L. Pomida	13+May-21 13:13

Metals by APHA/ AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting Limit	Unite	level Level	Source Result	54305C	Circles .	RPD	RPD Limit	Notes
Batch 21E0033 - Cr+6 APHA 3500-CrB										
Blank (21 E0033-BLK1)				Prepared 8	. Analyzed	04-May-2	1 .			
Hexavalent Chromium	ND	0.00500	mg/L							
LCS (21E0033-BS1)				Prepared 8	. Analyzed	04-May-2	1			
Hexavalent Chromium	0.152	0.00500	mg/L	0.150		101	80-121			
LCS Dup (21E0033-BSD1)				Prepared &	k Analyzed	04-May-2	1			
Hexavalent Chromium	0.153	0.00500	mg/L	0.150		102	80-121	0.656	20	
Duplicate (21E0033-DUP1)	Sec	ree: M21E003	i-01	Prepared &	Analyzed	04-May-2	1			
Hexavalent Chromium	ND	0.00500	mg/L		ND				20	
Matrix Spike (21 E0033-MS1)	See	ree: M21E003	1-01	Prepared &	: Analyzed	04-May-2	1			
Hexavalent Chromium	0.140	0.00500	mg/L	0.150	ND	93.3	68.6-117			

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Report Preferred By :

Reviewed By

Certified Correct By :

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Princess S. Guivez, Laboratory Manager

Chem. Tech PRC# 0001128

Elemist PRC# 9207

Page 12 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inone! Reported:
Pasig PHILIPPINES, Project Manager: Ms. Parnella Andrea L. Pomida 15-May-21 13:15

Notes and Definitions

Report Specific Notes

T-04 25.2°C is the temperature taken in the field at the time of sampling.

J-01a 0.0565 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for

the analysis

J-01 0.0230 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for the analysis.

the anatysis.

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR Not Reported

dry Sample results reported on a <u>dry weight basis</u>. Reporting Limits have been corrected for % Solid,

RPD <u>Relative Percent Difference</u> (RPDs calculated using Results, not Percent Recoveries).

MRL METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table

Dil. Dilutions are calculated based on deviations from the standard dilution performed for an analysis and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts.

Limit analytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date

Note 1 Estimates of measurement of uncertainty available upon request

************* END OF TEST REPORT***********

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analysical report must be reproduced in its entires.

Report Prepared By:

Reviewed By

Certified Correct By:

Annabelie Bangoy, Project Manager

Marizen D. Bendana. Department Supervisor

Chem. Tech PRC# 0001128

Chemist PRC# 9207



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Email: info@hiadvance.com.ph
Website: www.hiadvance.com.ph

15 May 2021

WO# M21E003

Ms. Pamella Andrea L. Pomida Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21 08:00.

If you have any questions concerning this report, please feel free to contact the undersigned or our

Laboratory Manager- Ms. Princess Galvez or our Quality Assurance Manager.

Sincerely,

Annabelle Bangoy Project Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

SUMMARY OF RESULTS REPORT NO. M21E003

Project Customer Sampling Date Water Analysis Amet Asia, Inc. April 30, 2021

Sample ID	Analysis	Unit	Results of Analysis	Remarks
	Arsenic	mg/L	<0.00416	A-02a
M21E003-01	Cadmium	mg/L	<0.000727	A-02
WQ4	Lead	mg/L	<0.00517	A-02b
17.745.0	Mercury	ug/L	<0.070	

References:

U.S. EPA, 1994, "Method 200.7: Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry," Revision 4.4. Circinnati, Ori

Definition of Terms

Arsenic is a natural component of the earth's crust and is widely distributed throughout the environment in the air, water and land. It is highly toxic in its inormatic form.

Cadmium exerts toxic effects on the kidney, the skeletal and the respiratory systems, and is classified as a human carcinogen. It is generally present in the environment at low levels. However, human activity has greatly increased those levels.

Lead is a toxic metal whose widespread use has caused extensive environmental contamination and health problems in many parts of the world.

Notes

A-02 <0.000727 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

4-02a <0.00416 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

4-02b <0.00517 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

HiAdvance Philippines Incorporated

Annabelle Bangoy Project Manager The results in this report apply to the samples analyzed in accordance with the chain of custody document. This summary is only a part of the complete analytical report and must be reproduced in its entirety.





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargan Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project: Water Analysis

Project Number: Inone's

Project Manager: Ms. Pamella Andrea L. Pomida

Reported:

15-May-21 13:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory (D	Matrix	Date Sampled	Date Received
WQ4	M21E003-01	Water	30-Apr-21 11:23	03-May-21 08:00

HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

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Certified Correct By :

Chemist PRC# 9807 Page

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Website: www.hiadvance.com.ph

Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Pasig PHILIPPINES,

Project Number: Inone! Reported:
Project Manager: Ms. Pamella Andrea L. Pomida 15-May-21 13:10

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HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of castody document. This analytical report must be reproduced in its entirety.

Certified Correct By :

Princeso'S Galvez, Laboratory Manager Chemist PRC# 9207



Amet Asia, Inc.

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Annexes



HiAdvance Philippines Incorporated All Advance Philippines inCorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632.7728.4327 Fax No: +632.8854.8365 Email: Info@nisdvance.com.ph Website: www.hiadvance.com.ph

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HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Bangoy, Project Manager

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Certified Correct By:

Princess S. Galvez, Laboratory Manager Chemist PRC# 9207

Page 3 of 10





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated

elle Bangoy, Project Manager

Report Prepared By:

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magatanes, 1232 Makati City, Philippines Office. +632,7729.4327 Fax No: +632.8854.8365 Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Asia, Inc.			Project:	Water Analysis			
33, One Co HILIPPIN	AND REAL PROPERTY OF THE OWNER.	a Vargas Ave. Cor. Meralco Ave.	Project Number: Project Manager: 1	Inonel Ms. Pamella Andrea L. Pomio	a i	Reported 15-May-21 I	
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Certified Correct By:

Princes S. Galvez, Laboratory Manager

was PRC# 9207





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Amet Asia, Inc.

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone)

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 15-May-21 13:10



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LOGIN SAMPLE RECEIPT CHECKLIST

Client: Rampt: RCict | Inc. Project Name: RSEH/ Analysis

Work Order: #12/EDSS

Date Received:07 Masy 3424

Creator: JAR.

000,0	Question	T##/%A	Remarks
4	Radioactivity within in the previous of our of measured, is at the ballow transport and	NA.	
2	The capter's custody seal, if present, a which Cooks No	U.F	
3	The cooler or samples did not appear to have been compromised or tampered	T	
4	Samples are received on ice, if applicable	T	
5	Cooler (amperature is acceptable. (temperature about the KB TD)	美	
1	Cooler temperature is recorded. 5.3.10	7	
3	CCCirpment, CCC+ 52/963	7	
. 1	COC is 5 bird out in 744 and is legalled	7	
	CDC is filled out with all petitinent information.	T	
10	is the field Sumpley's many present on COCP	+	
11	Number of containers received match with COC.	+	
32	Sample contained have logifie labels.	T	
33	Sample contained a provided by the lat-	T	

1

M9-SPL-907-NO No. 81, 12 No. 2014

HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Bangoy, Project Manager

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Certified Correct By :

Princes S. Galvez, Laboratory Manager Chemist PRC# 9207

Page 5 of 10



jica

Amet Asia, Inc.

Pasig PHILIPPINES,

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Manager: Ms. Pamella Andrea L. Pomida

Project Number: Inone1

Annexes



Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

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1232 Makati Chy, Philippines
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Email: info@hiadvance.com.ph
Website: www.hiadvance.com.ph

Reported:

15-May-21 13:10

10000	D		All has mad \$10.0 pp to an	A Control of Control o	
Di.	Containers are not replace or leaking.	+			
15	There are took in open insperview the carrier to be a first and the cost.	T			
16	Sample collection state/time is provided.	T			
12	Samples are received at least five (5) they after sampling.	T			
in.	Appropriate sample containers and word.	T			
ò	Senges we received within Hotaling Tree.	T			
Xi.	it incorrupt, staffs have town informed at any stort rulibrane or quick TKT needs.	1	Regular THT		
23.	Sample Soldies are completely filled.	T			
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B	V24 sample vials did not have ferritigate or building is a famos (3/4") in diameter	125			
14	Soli samples are free of all space.	N'A			
15	Mortgham persons are not present or 1,375, minture of solide/Squide/oil.	T			
3	Sample appearance is nated	7			
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29	Trip blank provided by the lab.	1.18	7 4		
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HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

The results in this report apply so the samples analyzed in accombines with the chain of custody document. This analytical report must be reproduced in its entirity.

Certified Correct By

Princess Calvez, Laboratory Manager Chemist PRES 9207 Page 6





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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3F Maga Canter, San Antonio St., Paseo de Magallanes,
1232 Makas City, Philippines
Office: +632,7729.4327 Fax No: +632,8854.8365
Email: inlo@hliadvance.com.ph
Website: www.hiadvance.com.ph

Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inonel Project Manager: Ms. Pamella Andrea L. Pomóda Reported: 15-May-21 13:10

WQ4 M21E003-01 (Water)

Analyte	Revolt	Reporting Limit	Unin	Dilution	Batch	Perpared	Analysid	Method	Notes
		iAdvance Pi	hilippines	Incorporat	ed				
Metals by APHA/AWWA S Arsenic	Standard Methods < 0,00415	0.0100	mg/L	.1	21E0079	96-May-21	06-May-21	APHA 3120 B	A-02a
Cadmium	< 0.000727	0.00200			21E0082	06-May-21	06-May-21		A-02
Lend	< 0.00517	0.0200			21E0083	06-May-21	06-May-21	-	A-026

HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Bangoy, Project Manager

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Certified Correct By

Princess C. Galvez, Laboratory Manager Chemist 19907





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project Water Analysis

Unit 303, One Corporate Center, Julia Vingas Ave. Cor. Meralto Ave. Pasig PHILIPPINES,

Project Number: [none]

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 15-May-21 13:10

Metals by APHA/AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	WREC	14 REC Limits	RPD	RPD Limit	Notes
Batch 21E0079 - As Total ICP APHA	3120 8									
Blank (21E0079-BLK1)		-		Prepared 6	Analyzed	:06-May-2				
Arsenic	ND	0.0100	mg/L							
LCS (21E0079-BS1)				Prepared &	k Analyzed	06-May-2	i.			
Arsenic	0.503	0.0100	mg/L	0.500		101	80-120			
LCS Dup (21E0079-BSD1)				Prepared &	Analyzed	06-May-2				
Arsenic	0.484	0.0100	mg/L	0.500		96.8	80-120	3.85	20	
Duplicate (21E0079-DUP1)	Sou	rce: M21D41	7-01	Prepared &	Analyzet	06-May-21	1			
Arsenic	< 0.00416	0.0100	mg/L		ND				20	A-02
Matrix Spike (21E0079-MS1)	Sou	rce: M21D41	7-01	Prepared &	Analyzed	06-May-2	1			
Arsenic	0.481	0.0100	mg/L	0.500	ND	96.2	80-120			
Matrix Spike Dup (21E0079-MSD1)	Sou	ree: M21D41	7-01	Prepared &	Analyzed	: 06-May-21	1			
Amenic	0.484	0.0100	mg/L	0.500	ND	96.8	80-120	0.622	20	
Batch 21E0082 - Cd Total ICP APHA	3120 B									
Blank (21E0082-BLK1)				Prepared &	. Analyzed	06-May-2	t.			
Cadmium	ND	0.00200	mg/L							
LCS (21E0082-BS1)				Prepared 8	t Analyzed	06-May-2	i .			
Cadmium	0.295	0.00200	mg/L	0,300		98.3	80-120			
LCS Dup (21E0062-BSD1)				Prepared &	Analyzed	06-May-2	1			
Cadmium	0.312	0.00200	mg/L	0.300	COLUMN POLYMEN	104	80-120	5.60	20	

HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Bangoy, Project Manager

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Certified Correct By :

Princess S. Galvez, Laboratory Manager Chemist PRCs 9207

Page 8 of 10





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated HiAdvance Philippines Incorporated 3F Maga Certer, Sar Antonio St., Paseo de Magalianes, 1232 Makati City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365 Email: Info@hiadvance.com.ph Website: www.hiadvance.com.ph

Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone)

Project Manager: Ms. Pamella Andrea L. Pomida 15-May-21 13:10

Metals by APHA/ AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Anatyte	Roult	Reporting Limit	Unin	Spike Level	Source Result	WREC	%REC Limits	RPD	RPD Limit	Notes
Batch 21E0082 - Cd Total ICPAPHA	3120 B									
Duplicate (21E0082-DUP1)	Sec	arce: M21D41	7-01	Prepared 8	L Analyzod	06-May-21				
Cadmism	< 0.000727	0.00200	mg/L		ND				20	A-02
Metrix Spike (21E0082-MS1)	Son	urce: M21D41	7-01	Propared &	. Analyzed	: 06-May-21				
Cadmium	0.292	0.00200	mg/L	0.300	ND	97.3	80-120			
Matrix Spike Dup (21E0082-MSD1)	Sor	orce: M21D417	7-01	Prepared 8	Analyzed	:06-May-21				
Cadmium	0,268	0.00200	mg/L	0.300	ND	89.3	80-120	8.57	20	
Batch 21E0083 - Pb Total ICP APHA	3120 B									
Blank (21E0083-BLK1)				Prepared 8	Analyzed	06-May-21				
Lead	ND	0.0200	mg/L							
LCS (21E0083-BS1)				Prepared &	Analyzed	06-May-21				
Lead	2.93	0.0200	mg/L	3,00		97.7	80-120			
LCS Dup (21E0083-BSD1)				Prepared &	E Analyzed	06-May-21				
Lead	3.32	0.0200	mg/L	3.00		111	80-120	12.5	20	
Duplicate (21E0083-DUP1)	Sor	orce: M21D417	7-01	Propared &	. Analyzed	06-May-21				
Lead	< 0.00517	0.0200	mg/L		ND				20	A-02b
Matrix Spike (21E0083-MS1)	Sor	orce: M21D41	7-01	Prepared 8	: Analyzed	:06-May-21				
Lead	3,19	0.0200	mg/L	3,00	ND	106	80-120			
Matrix Spike Dup (21E0083-MSD1)	Soc	arce: M21D417	7-01	Prepared &	E Analyzed	06-May-21				
Lead	3,23	0.0200	mg/L	3.00	ND	108	80-120	1.25	20	

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Report Prepared By

He Bungoy, Project Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inonel
Project Manager: Ms. Pamella Andrea L. Pomida

15-May-21 13:10

Almaget. Wes Patteria Alfairez E. Polistia

Notes and Definitions

Report Specific Notes

A-02b <0.00517 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

A-02a <0.00416 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

A-82 <0.000727 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

< b < 0.00517

< a < 0.00416

< 0.000727

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate)

NR Not Reported

dry Sample results reported on a dry weight basis. Reporting Limits have been corrected for % Solid,

RPD <u>Relative Percent Difference</u> (RPDs calculated using Results, not Percent Recoveries).

MRL METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table

DIL Dilutions are calculated based on deviations from the standard dilution performed for an analysis and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

Limit analytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date

HiAdvance Philippines Incorporated

Report Prepared By:

Annabelic Bangoy, Project Manager

The manies in this report apply in the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Princess & Galvez, Laboratory Man

Page 10 of 10





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines

HiAdvance Philippines incorporated 3F Maga Center, Sen Antonio St. Paseo de Magalianes, †232 Makuti City, PHILIPPINES Office : +632,729,4327 Fax No : +632,654,8365 philippines@hisdvance.com

21 May 2021

WO# M21E003

Ms. Pamella Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21

08:00. If you have any questions concerning this report, please feel free to contact me.

Note: HiAdvance Philippines Incorporated is former NCALABS Phils. Inc.

Sincerely,

Annabelle Bangoy Project Manager



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Peseo de Magallanos, 1232 Mekati City, PHILIPPINES Office:+632.729.4327 Fax No : +632.854.8365

philippines@hiadvance.com

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Amet Asia, Inc.

Pasig PHILIPPINES,

Project: Water Analysis

Project Number: Inone?

Project Manager: Ms. Pemella Andrea L. Pomida

Reported 21-May-21 09:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Detr Sempled	Date Received
WQ4	M21E003-01	Water	30-Apr-21 11:23	03-May-21 08:00

HiAdvance Philippines Incorporated

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Annabelle Bangoy, Project Manager

Page 1 of 10





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Project Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone!
Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 21-May-21 09:45

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Page 2 of 10





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Amer Asia, Inc.

Project: Water Analysis
Unit 303. One Cornomic Center, Julia Varias Ave. Cor. Mendeo Ave.

Project Number: Inonel

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Menulco Ave. Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 21-May-21 09:45

CHARLOG-CUSTODY / Analytical Required Document
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Annabelle Bangov Project Manager

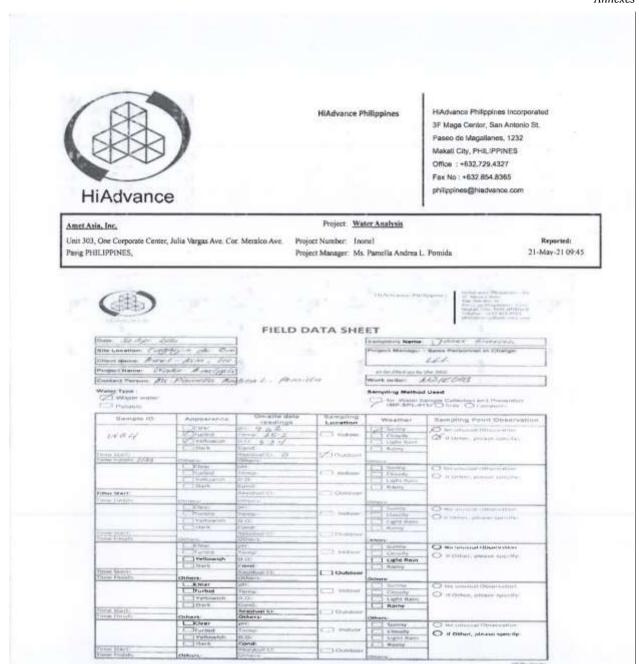
Page 3 of 10



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Annabelle Bangov, Project Manager	Daniel of 16



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Annexes



Amet Asia, Inc.

HiAdvance Philippines

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magatanes, 1232 Maket City, PHILIPPINES Office: +632,729,4327 Fax No: +632,854,8365

philippines@hiadvance.com

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Project Number: Inone1

Reported: 21-May-21 09:45

Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

Other Field Notes

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	(To be checked by SRO)
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Annabelle Bangoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Passig PHILIPPINES,

Project: Water Analysis

Project Number: Inone!

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 21-May-21 09:45



Tribrania Polippini

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Family Colors

LOGIN SAMPLE RECEIPT CHECKLIST

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Creator: JAR

len s	Questor	T/F/NA	Remarks
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4	Samples are received on ice, if approprie.	7	
1	Cooler temperature is acceptable. Demperature afours for + 6 °C)	T	
4	Code temperature is recoded. \$ \$ \$ \$	1	
7	cockpoors cock \$21983	T	
1	COLLIS Sted out in this and is rigitale.	7	
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Annabelle Bangoy, Project Manager

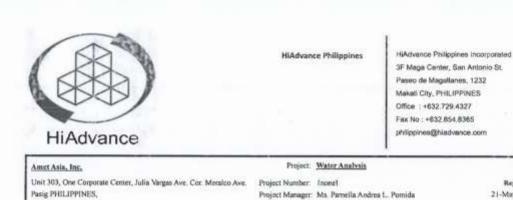
Page 6 of 10



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Reported: 21-May-21 09:45

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HiAdvance Philippines Incorporated

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Annabelle Bangoy, Project Manager

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Fax No: +632.854.8365 philippines@hiadvance.com

Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project: Water Analysis

Project Number: Inonel

Project Manager: Ms. Pamella Andrea L. Pomida

21-May-21 09:45

WQ4 M21E003-01 (Water)

Analyse	Result	Reporting Limit	Linits	Diletton	Batch	Prepared	Analyzed	Method	Notes
	Pace Ar	unlytical Serv	vices, LLO	' - Minnesp	olis Lab				
EPA 7470A									
Mercury	<0.070	0.20	ug/L	1	742753	17-May-21	18-May-21	7470AW	13

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analysical report must be reproduced in its

Annabelle Bangoy, Project Manager

Page 5 of 10





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Fax No : +632.854.8365 philippines@hiadvance.com

Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inone! Reported:
Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 21-May-21 09:45

EPA 7470A - Quality Control

Pace Analytical Services, LLC - Minneapolis Lab

Result	Reporting Limit	Units	Spike Level	Source Result	SHIC	WREC Linds	RPD	RPD Limit	Neter
			Prepared	17-May-21	Analyzed:	18-May-21			
0.070	0.20	ug/L				-			l
			Prepared	17-May-21	Annlyzed:	18-May-21			
5.0	0.20	ug/L	5		99	80-120			
Source: 10558914002			Prepared: 17-May-21 Analyzed: 18-May-21						
4.9	0.20	ug/L	5	0.070	97	80-120			
Source: 10558914002		Prepared: 17-May-21 Analyzed: 18-May-21			18-May-21				
4.8	0.20	ug/L	5	0.070	96	80-120	1	20	
	0.070 5.0 Soi 4.9 Soi 4.8	8 tenult Limit 0.070 0.20 5.0 0.20 Source: 10558914 4.9 0.20 Source: 10558914 4.8 0.20	Result Linute Units Units	Result Limit Units Level		Result Limit Units Level Result NIBLC Prepared 17-May-21 Analyzed	Result Limit Units Level Result Nation Limits Result Nation Result Nation Result Nation Result Nation Result Nation Result Nation Result Result	Prepared: 17-May-21 Analyzed: 18-May-21	Result Limit Units Level Result NUIC Limits RPD Limits

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirely.

Annabelle Bauguy, Project Manager

Page 9 of 10



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines

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Fax No : +632,854.8365 philippines@hiadvance.com

Amet Asia, Inc.

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inonel Project Manager: Ms. Pamella Andrea L. Pomida Reported: 21-May-21 09:45

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Notes and Definitions

Report Specific Notes

Indicates the compound was analyzed for, but not detected.

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR Not Reported

dry Sample results reported on a dry weight basis. Reporting Limits have been corrected for % Solid,

RPD <u>Relative Percent Difference</u> (RPDs calculated using Results, not Percent Recoveries).

MRL METHOD REPORTING LIMIT, Reporting level at, or above, the lowest level standard of the Calibration Table

Dilutions are calculated based on deviations from the standard dilution performed for an analysis and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

Limit analytic

analytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date

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Annabelle Bangoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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18 May 2021

WO# M21E006

Ms. Pamella Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21 08:00,

If you have any questions concerning this report, please feel free to contact our Laboratory Manager-Ms. Princess Galvez or our Quality Manager.

Our Laboratory is a DENR Recognized laboratory with CR No. 046/2019 valid until 25th of July 2022.

While our DOH recognition with accreditation number 13-0006-2020-LW-2, is valid until 31st of December 2022.

Sincerely,

Project Manager



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Email: Info@hiadvance.com.ph Website: www.hiadvance.com.ph

SUMMARY OF RESULTS

REPORT NO. M21E006Rev01

Project

Water Analysis Amet Asia, Inc.

Customer Sampling Date :

April 29 & 30, 2021

Sample ID	Analysis	Unit	Results of Analysis	Remarks
	pH on-site	pH Units	7.40	
	Dissolved Oxygen on-site	mg/L	5.86	
	COD	mg/L	12.0	
M21E006-01	Oil and Grease	mg/L	ND	J-01a
WQ5	Cyanide (free)	mg/L	ND	
	Residual Chlorine	mg/L	ND	
	Hexavalent Chromium	mg/L	ND.	
	Temperature on-site	°C	24.3	- 38
	pH on-site	pH Units	7.38	
1	Dissolved Oxygen on-site	mg/L	6.14	
	COD	mg/L	23.0	
M21E006-02	Oil and Grease	mg/L	ND	-
WQ7	Cyanide (free)	mg/L	ND	
	Residual Chlorine	mg/L	ND	
Ī	Hexavalent Chromium	mg/L	ND	18
	Temperature on-site	°C	32.4	
	pH on-site	pH Units	7.22	
	Dissolved Oxygen on-site	mg/L	7.70	
	COD	mg/L	20.0	
M21E006-03	Oil and Grease	mg/L	ND	
WQB	Cyanide (free)	mg/L	ND	- 4
222	Residual Chlorine	mg/L	ND	- 14
1	Hexavalent Chromium	mg/L	ND	-
Ī	Temperature on-site	oC.	24.6	-

Archrennoss: Sundard Hemods for the Examination of Water and Wastewater 23th Edition, APHA/WWWA End of Control of Water and Wastewater 23th Edition, APHA/WWWA End of Control of Control of Agueous Samples and Oralitates with Ton-Selective Electrode*, Res. 0, 1996

conside
Disported copygins analysis measures the amount of gaseous copygin (Cr) disported in an aqueous solution
Historialistic chromium (chromium VI) refers to chemical compounds that contain the element chromium in the +6 pockation state. Chromium+6 is generally associated with industrial processes, though it does occur naturally in very small amounts.

Oil and Gresses is defined as any material recovered as a substance solution in the solvent. It includes other material extracted by the solvent from an additional sample and not votettissed during the test.

pH is a measurement of the hydrogen ion concentration reflecting aliability or addity of the water.
residual is Chloride a low level of obtainer remaining in water after its Intid application.

Temperature - The degree of hotness or coldness of a body or environment.

Notes:

Note: 3-81a 1.29 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for the analysis

HiAdvance Philippines Incorporated

Annabelle Bangoy Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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1232 Mekali City, Philippines
Office: +632.7729.4327 Fax No: +632,8854.8365
Email: Info@hiadvance.com.ph
Websile; www.hiadvance.com.ph

SUMMARY OF RESULTS

REPORT NO. M21E006Rev01

Project Customer Water Analysis Amet Asia, Inc. April 29 & 30, 2021

Customer : Sampling Date :

Sample ID	Analysis	Unit	Results of Analysis	Remarks
M21E006-01	Salinity	Salinity Units	ND	
WQS	Total Dissolved Solids	mg/L	60.0	-
M21E006-02	Salinity	Salinity Units	ND	
WQ7	Total Dissolved Solids	mg/L	85.0	- 34
M21E006-03	Salinity	Salinity Units	ND	-
WQ8	Total Dissolved Solids	mg/L	80.0	

References:

Standard Methods for the Examination of Water and Wastewater 23° Edition, APHA/AWWA EPA 9213 "Potentiometric Determination of Cyanide in Aqueous Samples and Distillates with Ion-Selective Electrode", Rev. 0, 1996

Definition of Terms

Salimity - is the saltiness or dissolved salt content of a body of water.

Total Dissolved Solids (TDS) is the portion of solids that passes through a filter of 2.0µm (or smaller) nominal pore size under specified conditions.

Note: M21E006 Water Analysis Rev01; This report was revised to separate the Total Dissolved Solids and Salinity results as per customer's request. This final report replaces the one generated on 18 May 2021 at 08:23H. All other data results are not affected; data results remain unchanged.

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Annabelle Bangoy Project Manager The results in this report apply to the samples analyzed in accordance with the chain of costsuly document. This summary is only a part of the complete analytical report and must be reproduced in its entirely.





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Menalco Ave.
Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 18-May-21 08:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WQ5	M21E006-01	Water	30-Apr-21 09:30	03-May-21 08:00
WQ7	M21E006-02	Water	29-Apr-21 11:55	03-May-21 08:00
WQ8	M21E006-03	Water	29-Apr-21 10:15	03-May-21 08:00

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Report Prepared By:

Reviewed By:

Certified Correct By:

Annabolie Bangoy Project Manager

Marizon D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Princess S. Galvez, Laboratory Managa

Chemist PRC# 9207

Page 1 of 17





Amet Asia, Inc.

Pasig PHILIPPINES,

HiAdvance Philippines Incorporated

Annabelle Bangoy, Project Manager

Report Prepaged By,

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Manager: Ms. Pamella Andrea L. Pomida

Project Number: Inonel

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Reported:

18-May-21 08:23

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Reviewed By

Marken D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Page 2 of 17

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Certified Correct By

Princess S. Gillvez, Laboratory Manage





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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Number: Inone!

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Report Prepared By:

Reviewed By:

Certified Correct By:

Marizony D. Bendana, Department Supervisor

Chem. Tech. PRC# 0001128

Page 3 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Amet Asia, Inc.	Project:	Water Analysis	
Unit 303, One Corporate Center, Julia Vargas Ave. Cor: Meralco Ave. Pasig PHILIPPINES,	Project Number: Project Manager:	Inonel Ms. Pamella Andrea L. Pomida	Reported: 18-May-21 08:23

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Report Prepared By:

Certified Correct By:

Annabelle Hangoy, Project Manager

Marizen IV Bendana, Department Supervisor

Chem. Tech. PRC# 0001128

Page 4 of 17





Amet Asia, Inc.

HiAdvance Philippines Incorporated

Annabelle Bangoy, Project Manager

Report Prepared By:

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Number: Inone!

Annexes



Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632.8854.8365 Email: Info@hiadvance.com.ph Website: www.hiadvance.com.ph

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Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be represented in its

Certified Correct By:

Chemist PRC# 9207

148 | Page

Page 5 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Annabelle Bungery, Project Manager

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Passo de Megallanes, 1232 Makell City, Philippines Office: +632.7729.4327 Fax No: +632.8654.8365 Email: info@hiadvance.com.ph Website: www.riadvance.com.ph

Asia, Inc. 13, One Corporate Center, Julia Vargas Ave. Cor. Metalco Ave. PHILIPPINES,	Project Number: In	<u>ater Analysis</u> sonel Is, Pamella Andrea L. Pomid	Reported: 18-May-21 08:2:
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Marizen/D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Page 6 of 17

Princess S, Jialvez, Laboratory Manager

Chemist PRC# 9207





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Amet Asia, Inc. Project. Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone!

Project Manager: Ms. Pamella Andrea L. Pomida

Reported:

18-May-21 08:23



SEAS-Law Philippines

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LOGIN SAMPLE RECEIPT CHECKLIST

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HiAdvance Philippines Incorporated

The needs in this report apply to the samples analyzed in accombance with the chain of custody document. This unalytical report must be reproduced in its entirets.

Report Prepared By:

Reviewed By:

Certified Correct By

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Princess S Galvez, Laboratory Manager

Chem. Tech PRC# 0001128

Page 7 of 17





Amet Asia, Inc.

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Number: Inonel

Annexes



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Reported:

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HiAdvance Philippines Incorporated

The results in this request apply to the samples analysed in accordance with the claim of custady discount. This analysical report outsit to reproduced in its entirety.

Report Prepared 69:

Reviewed By:

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Cham. Tech PRCs 0001128

Page 8 of 17



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meratco Ave. Pasig PHILIPPINES,

Project Number: Inone! Project Manager: Ms. Pamella Andrea L. Pomida Reported:

18-May-21 08:23

WQ5 M21E006-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	11	iAdvance P	hilippines I	ncorporat	ed				
Physical Parameters by APHA/AWW	Methods								
pH on-site	7.40		pH Units	1	21E0161	30-Apr-21	30-Agr-21	APHA 4500-H	T-04
Saltinity	ND	0.212 5	Salinity units		21E0110	07-May-21	07-May-21	APHA 2520	
Total Dissolved Solids	60.0	7.41	mg/L		21E0104	06-May-21	07-May-21	APSIA 2540C	
Temperature on-site	24.3		"C		216,0160	30-Apr-21	11-May-21	APHA 2550 B	
Inorganic Non-Metallic Constituents b	ov APHA/AWWA N	fethods							
Dissolved Oxygen on-site	5.86	0.200	mg/L	10	23E0168		30-Apr-21	APHA 4500-O G	
Aggregate Organic Constituents by Al	PHA/AWWA Metho	ods							
Chemical Oxygen Demand	12.0	4.61	mg/L	1.6	210,0093	07-May-21	07-May-21	APHA 53300	
Oil & Grease	ND	2.00	4		21E0131	10-May-21	10-May-21	APHA 5520B	8-004
Conventional Chemistry Parameters b	v EPA Methods								
Cyanide (free)	ND	0.0635	mg/L	1.5	21E0014	03-May-21	03-May-21	EPA 9217	
Miscellaneous Physical/Conventional (Chemistry Paramet	ters							
Residual Chlorine	ND	0.200	mg/L		ILEU117	30-Арт-23	03-May-21	DPD Chlorine Test Kit	
Metals by APHA/AWWA Standard M	ethods								
Hexavalent Chromium	ND	0.00500	mg/L	10	21E0033	04-May-21	04-May-21	APHA 3500-Cr B	

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of custody obscuries. This mail tivel report men be reproduced to inventerly.

Report Prepared By :

Reviewed By:

Certified Correct By:

Anashelle Bungoy, Project Manager

Marizen D Hendana, Department Supervisor Chem. Tech. PRC# 0001128

Printess & Galvez/Laboratory Manager

Chemist PRC# 9207

Page 9 of 17



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Toonel Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 18-May-21 08:23

WQ7 M21E006-02 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	1	liAdvance P	hilippines I	ncorporat	ed				
Physical Parameters by APHA/A	WWA Methods								
pH on-site	7.38		pH Units		2100361	29-Apr-21	29-Agr-21	APICA 4500-H	7-04
Salinity	ND	0.212.5	Salinity units		21E0110	07-May-21	07-May-21	APHA 2520	
Total Dissolved Solids	85.0	7.41	mg/L	+	21E0104	06-May-21	97-May-21	APHA 2540C	
Temperature on-site	32.4		°C	41	31E0160	29-Ape-21	11-May-21	APHA 2550 B	
Inorganic Non-Metallic Constitu	ents by APHA/AWWA	Methods							
Dissolved Oxygen on-site	6.14	0.200	mg/L	1	21E0168	- 5	29-Apr-21	APHA 4500-0 G	
Aggregate Organic Constituents	by APHA/AWWA Meth	ods							
Chemical Oxygen Demand	23,0	4.61	mg/L	1	21E0095	07-May-21	07-May-21	APHA 5220D	
Oil & Grease	ND	2.00	*	-	2160121	10-May-21	16-5by-21	AFHA 5520B	
Conventional Chemistry Parame	ters by EPA Methods								
Cyanide (free)	ND	0.0635	mg/L	.1	21E0014	03-May-21	03-May-21	EPA 9213	
Miscellaneous Physical/Conventi	onal Chemistry Parame	ters							
Residual Chlorine	ND	0,200	mg/L	- (21E0117	29-Apr-21	03-May-21	DPD Chlorine Test Kit	
Metals by APHA/AWWA Standa	ard Methods								
Hexavalent Chromium	ND	0.00500	mg/L	1.0	218 003 7	04-May-21	04-May-21	APVIA 35RI-Cr B	

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed to accombance with the chase of costoly document. This analytical report must be reproduced in its

Report Prepared By:

Reviewed By

Certified Correct By :

Annabelle Bangoy, Project Manager

Marizon D. Bendana, Department Supervisor

Princess S Ciafvez, Laboratory Manager PRC# 9207

Chem. Tech PRC# 0001128

Page 10 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone! Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 18-May-21 08:23

WQ8 M21E006-03 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Butch	Prepared	Analyzed	Method	Notes
		liAdvance P	hilippines I	ncorporat	ed				
Physical Parameters by APHA/AWWA Met	thods								
pH on-site	7.22		pH Units	1	2150161	29-Apr-21	29-Apr-21	APHA 4500-R	T-04
Salimity	ND	0.212	Salinity units		21E0110	07-May-21	07-May-21	APHA 2520	
Total Dissolved Solids	80.0	7.41	mg/L		21E0104	06-May-21	07-May-21	APHA 2540C	
Temperature on-site	24.6		°C		21E0160	29-Apr-21	11-May-21	APHA 2550 B	
Inorganic Non-Metallic Constituents by AP	HA/AWWA M	Methods							
Dissolved Oxygen on-nite	7,70	0.200	mg/L	7.	2150168		29-Apr-21	АРНА 4500-О G	
Aggregate Organic Constituents by APHA/	AWWA Meth	ods							
Chemical Oxygen Demand	20.0	4.61	mg/L		21E9095	07-May-21	07-May-21	APHA 5220D	
Oil & Grease	ND	2.00	-		2(E913)	10-3fay-21	10-May-21	APITA 55200	
Conventional Chemistry Parameters by EP	A Methods								
Cyunide (free)	ND	0.0635	mg/L	1	2180014	03-May-21	03-May-21	EPA 9713	
Miscellaneous Physical/Conventional Chem	istry Parame	ters							
Residual Chlorine	ND	0.200	mg/L	1	21E0117	29-Apr-21	02-May-21	DPD Chlorine Test Kit	
Metals by APHA/AWWA Standard Methoc	ts								
Hexavalent Chromium	ND	0.00500	mg/L	(1	21E0033	04-May-21	04-May-21	APBA 3500-Cr B	6

HiAdvance Philippines Incorporated

The results in this report apply so the samples smulyzed in accombance with the chain of custody document. This analysical report most be reproduced in its

Report Prepared By

Reviewed By

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Princess, Chivez, Laboratory Munager

Chem. Tech PRC# 0001128

Chemist PRC# 9207

Page 11 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.
Unit 303, One Corporate Center, Julia Vargna Ave. Cor. Metalco Ave.
Project Number: I none!
Project Manager: Ms. Pamella Andrea L. Pomida 18-May-21 08:23

Physical Parameters by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyse	Result	Reporting Limit	Udm	Spike Level	Source Result	WREC	NREC Limits	RPD	RPD Limit	Notes
Batch 21E0104 - TDS APHA 2540-C										
Blank (21E0104-BLK1)				Prepared:	06-May-21	Analyzed: I	7-May-21			
Total Dissolved Solids	ND	7.41	mp%.							
LCS (21E0104-BS1)				Prepared:	06-May-21	Analyzed: 1	77-May-21			
Iotal Dissolved Solids	47,0	7.41	mg/L	50.0		94.0	10-120			
LCS Dup (21E0104-BSD1)				Prepared:	06-May-21	Analyzed: (77-May-21			
Total Dissolved Solids	44.0	7.41	mg/L	50.0		88.0	80-120	6.59	10	
Duplicate (21E0104-DUP1)	Sor	arce: M21E00	3-01	Prepared:	06-May-21	Analyzed: (77-May-21			
Total Dissolved Solids	R5.D	7,41	mg/1.		85.0			0.00	(1)	
Batch 21Eff116 - Residual Chlorine										
Blank (21E0110-BLK1)				Prepared &	. Analyzed	07-May-2				
Salinity	ND	0.212	Salinity units							
LCS (21E0110-BS1)				Prepared 8	Analyzed.	07-May-2	3			
Salinity	35.8	0.212	Salinity units	35.0		102	80-120			
LCS Dup (21E0110-BSD1)				Prepared &	Analyzed:	07-May-2				
Salinity	35,4	0.212	Salinity units	35.0	engoure Esta Marchitecture	101	80-120	1.12	20	
Duplicate (21E0110-DCP1)	Son	orce: M21841	7-01	Prepared 8	k Analyzed	07-May-2	i .			
Salinity	ND	0,212	Salinity units		ND				10	

HiAdvance Philippines Incorporated

The results in this report apply to the unsplice analyzed in recordance with the chart of causaly document. This unsulytical report sum for reproduced in the

Report Prepared By Reviewed By :

Annabelle Hangoy, Project Manager

/

Marizen Jf. Bendana, Department Supervisor Chem. Tech. PRC# 0001128

Princess S. CialVez, Laboratory Ma Chemist #RC# 9207

Certified Correct By:

Page 12 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asiz, Inc.

Unit 303, One Corporate Center, Juliu Vargas Ave. Cor. Meralco Ave.
Project Number: Inone! Reported:
Pasig PHILLIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 18-May-21 08:23

Aggregate Organic Constituents by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting Limit	Unite	Spike Level	Source Result	WREC	%REC Limits	RPD	RPD Limit	Notes
Batch 21E0095 - COD - Closed Reflux Al	PHA 5220D									
Blank (21E0095-BLK1)				Prepared 8	k Analyzed	07-May-21				
Chemical Oxygen Demand	ND	4.63	mg/L							
LCS (21E0095-RS1)				Prepared 8	k Analyzed	07-May-21				
Chemical Oxygen Demand	49.0	4.61	mg/L	50.0		98.0	80-120			
LCS Dup (21E0095-BSD1)				Prepared 8	Analyzed	07-May-21				
Chemical Oxygen Demand	50.0	4.61	mg/L	50.0		100	80-120	2.02	20	
Duplicate (21E0095-DUP1)	Soil	ree: M21E00	B-01	Prepared 8	k Analyzod	07-May-21				
Chemical Oxygen Demand	51.0	4.61	mg/L		51.0			0.00	20	
Matrix Spike (21E0095-MS1)	Sor	arce: M21E00	1-01	Prepared 8	& Analyzed	07-Min-21				
Chemical Oxygen Demand	96,0	4.61	mg/L	50,0	51.0	90.0	80-120			
Batch 21E0131 - O&G APHA 5520B										
Blank (21E0131-BLK1)				Prepared 8	& Analyzed	10-May-21				
Oil & Grease	ND	2.00	mg/L							
LCS (21E0131-BS1)				Prepared 8	Analyzed	10-Mny-21				
Oil & Grease	104	2.00	mg/L	117		93.3	80-120			
LCS Dup (21E0131-BSD1)				Prepared 8	Analyzed	10-May-21				
Oil & Grease	105	2.00	mg/L	112		93.8	80-120	0.957	10	
Duplicate (21E0131-DUP1)	Soc	rce; M21E033	1-01	Prepared 8	k Analyzed	10-May-21				
Oil & Grease	ND	2.00	mg/L		ND				10	

HiAdvance Philippines Incorporated 7th results in the

The results in this report apply to the samples analyzed in accordance with the chain of cannely observery. This analysis of report must be reproduced to its entirety.

Report Prepared By:

Reviewed By :

Certified Correct By

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech. PRC# 0001128

Parioess S. Galvez, Laboratory Manager

Page 13 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HIAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magalanes, 1232 Maketi City, Philippines Office: +632,7728,4327 Fax No: +632,8854,8365 Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Amet Asia, Inc. Project Water Analysis

Unit 303, One Corporate Center, Julia Vergas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number, Inone! Project Manager: Ms. Pamella Andrea L. Pomida

18-May-21 08:23

Aggregate Organic Constituents by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

		Hepurting		Spile	Swerce		SCREET	Tonor.	RED	Marie .
Analyte	Readt	Limit	Units	Level	Result	*AREC	Linds	HPD	Limit	Notes

Batch 21E0131 - O&G APHA 5520B

 Matrix Spike (21E0131-MS1)
 Source: M21E033-01
 Prepared & Analyzed: (10-May-21

 Od & Gresse
 125
 2.00 mg/L
 131 ND
 95.3
 80-120

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Report Prepared-By:

Reviewed By:

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Pyrincesy S. Galvey, Laboratory Manager Chemist PRC# 9202

Page 14 of 17



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magellanes, 1232 Makati City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365

Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Project Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Reported: Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 18-May-21 08:23

Conventional Chemistry Parameters by EPA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Readt	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 21E0014 - General Preparation										
Blank (21 E0014-BLK1)				Prepared 2	Analyzed:	03-May-2	6			
Cyanide (free)	ND	0.0635	mg/l.							
LCS (21E0014-BS1)				Prepared à	k Analyzed.	03-May-2	t .			
Cyanide (free)	1.99	0.0635	mg/L	2.00		99.5	80-120			
LCS Dup (21E0014-BSD1)				Prepared &	& Analyzed	03-May-2	1			
Cyanide (free)	1.96	0.0635	mg/L	2.00		98.0	80-120	1.52	200	
Duplicate (21E00(4-DUP1)	Sou	orer: M21D413	7-01	Prepared &	k Analyzod	03-May-2	(
Cyanide (free)	0.0565	0.0635	mg/L		0.0565	personal diction		0.00	20	1.0
Matrix Spike (21E0014-MS1)	See	orce: M21D417	7-01	Prepared 8	Analyzod:	03-May-2				
Cyanide (free)	2.06	0.0635	mg/L	2.00	0.0565	100	75-125			

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analysical report mea he reproduced in its

Report Prepared By

Certified Correct By :

Annabelle Bungor, Project Manager

Marizen D. Bendana, Department Supervisor

Princes S Balvez, Eaboratory Manage PRC# 9207

Chem. Tech PRC# 0001128

Page 15 of 17

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Project. Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Metalco Ave. Project Number: Inone! Pasig PHILIPPINES.

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 18-May-21 08:23

Metals by APHA/AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting	Units	Level	Hesult	%REC	%REC Limits	RPD	Limit	Notes
Batch 21E0033 - Cr+6 APHA 3500-CrB										
Blank (21E0033-BLK1)				Prepared 8	Analyzed:	04-May-2	ř.			
Hexavalent Chromium	ND	0.00500	mg/L							
LCS (21E0033-BS1)				Prepared &	Analyzot	04-May-2	ii			
Hexavalent Chromium	0.152	0.00500	mg/L	0.150		101	80-121			
LCS Dup (21E0033-BSD1)				Prepared 8	: Analyzed	04-May-2				
Hevavalent Chromium	0.153	0.00500	mg/L	0.150		102	80-121	0.656	20	
Duplicate (21E0033-DUP1)	Soc	rree: M21E003	1-01	Prepared &	Analyzod	04-May-2	ř.			
Hexavalent Chromium	ND	0.00500	mg/L		ND				20	
Matrix Spike (21E0033-MS1)	Sot	ree: M21E003	101	Prepared 8	Analyzed	94-May-2				
Hexavalent Chromium	0.140	0.00500	mg/L	0.150	ND	93.3	68.6-117			

HiAdvance Philippines Incorporated

The results in this report apply is the samples analyzed in accordance with the chain of custody discussion. This analytical report must be reproduced in its

Report Prepared By

Reviewed By :

Certified Correct By

Annabelie Bampoy, Project Manager

Marizen D. Bendana, Department Supervisor Chem. Tech PRC# 0001128

S. Cinlygz, Laboratory May

PRC# 9207

Page 16 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Project Number: | foone|

Reported: 18-May-21 08:23

Pasig PHILIPPINES, Project Manager: Ms. Pamella Andres L. Pomida

Notes and Definitions

Report Specific Notes

T-04b 32.4°C is the temperature taken in the field at the time of sampling.

T-04a 24.6°C is the temperature taken in the field at the time of sampling.

T-84 24.3°C is the temperature taken in the field at the time of sampling.

J-01a 1.29 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for the

nalysis.

J-01 0.0565 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for

the analysis.

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR Not Reported

dry

Sample results reported on a dry weight basis. Reporting Limits have been corrected for % Solid,

RPD Relative Percent Difference (RPDs calculated using Results, not Percent Recoveries).

MRL METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table

DRI. Dilutions are calculated based on deviations from the standard dilution performed for an analysis
and may not recover the Dilution found on the analysis are date.

and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

Limit analytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date

Note 1 Estimates of measurement of uncertainty available upon request

HiAdvance Philippines Incorporated

The munits in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Report Prepared By

Reviewed By :

Certified Correct By:

Annabolie Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Princ

Princes S. Galyez, Laboratory Manage

Chem. Tech PRC# 0001128

Page 17 of 17



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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18 May 2021

WO# M21E006

Ms. Pamella Andrea L. Pornida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21 08:00.

If you have any questions concerning this report, please feel free to contact the undersigned or our

Laboratory Manager- Ms. Princess Galvez or our Quality Assurance Manager.

Sincerely,

Annabelle Bangoy Project Manager



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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7232 Market City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8385 Email: Info@hiadvance.com.ph

Website: www.hiadvance.com.ph

SUMMARY OF RESULTS REPORT NO. M21E006

Project

Water Analysis

Customer Sampling Date Amet Asia, Inc. April 29 & 30, 2021

Sample ID	Analysis	Unit	Results of Analysis	Remarks
	Arsenic	mg/L	< 0.00416	A-02a
M21E006-01	Cadmium	mg/L	<0.000727	A-02
WQ5	Lead	mg/L	< 0.00517	A-02b
	Mercury	ug/L	<0.070	
	Arsenic	mg/L	< 0.00416	A-02a
M21E006-01	Cadmium	mg/L	< 0.000727	A-02
WQ7	Lead	mg/L	<0.00517	A-02b
711.71.21	Mercury	ug/L	<0.070	-
	Arsenic	mg/L	<0.00416	A-02a
M21E006-01	Cadmium	mg/L	<0.000727	A-02
WQ8	Lead	mg/L	< 0.00517	A-02b
	Mercury	ug/L	< 0.070	*

U.S. EPA. 1994. "Method 200.7: Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission

Definition of Terms:

Arsenic is a natural component of the earth's crust and is widely distributed throughout the environment in the air, water and land. It is highly toxic in its inorganic form.

Cadmium exerts toxic effects on the kidney, the skeletal and the respiratory systems, and is classified as a human carcinogen. It is generally present in the environment at low levels. However, human activity has greatly increased those levels.

Lead is a toxic metal whose widespread use his caused extensive environmental contamination and health problems in many parts of the world.

A-02 <0.000727 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.
<0.00416 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.
<0.00517 The analyte was detected at a level which is below the method detection and reporting limit for the analysis. A-02a A-02b

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The results in this report apply to the samples analyzed in accordance with the chast of custody document. This summary is only a part of the complete analytical report and must be reproduced in its entirety.

Annabelle Bangoy Project Manager





WQ8

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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35 Maga Center, San Antonio St., Peace de Magallanes,
1232 Makati Chy, Philippines
Ciflos: +632,7728,4327 Fax No: +632,8854,8365
Emalt: info@shiadvance.com.ph
Website: www.hladvance.com.ph

29-Apr-21 10:15

03-May-21 08:00

Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone! Reported: 18-May-21 08:19 Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

M21ED06-03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matris	Date Sampled	Date Received
wQs	M21E006-01	Water	30-Apr-21 09:30	03-May-21 08:00
WQ7	M21E006-02	Water	29-Apr-21 11:55	03-May-21 08:00

HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

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Princess B. Galver, Laboratory Manager Chemist PRC# \$387 Page I of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Avo. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inonel Project Manager: Ms. Pamella Andrea L. Pomida Reported: 18-May-21 08:19

CHAIN-OF-CUSTODY | Analytical Request Document

We 321905

Analytical Request Document

Analytical

HiAdvance Philippines Incorporated

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Report Prepared By :

Annabelie Borgoy, Project Manager

Princes S. Galvez, Laboratory Manager
Spinnist PROS 9207 Page 2 of 14

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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(ABL)

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Virgas Ave. Cor. Meralco Ave.
Pasig PHILIPPINES,

Project Manager.
Project Manager.
Ms. Pamella Andrea L. Pomida

18-May-21 08:19

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HiAdvance Philippines Incorporated

Report Prepaged By:

Annabelle Bangoy, Project Manager

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Princess S. Solvez, Laboratory Manuer Country Preca 2017 Page 3 of 14





Amet Asia, Inc.

HiAdvance Philippines Incorporated

Annabelle Bangoy, Project Manager

Report Prepaged By

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Annexes



Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

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Reported:

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Princess S. Dallez, Laboratory Manage Chemist PROS 9207

Page 4 of 14





Amet Asia, foc.

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Number: Inonel

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Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

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HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Hengoy, Project Manager

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....

Princess S. Galvez Laboratory Managor
Chemes PRCS 3207 Page 5 of 14





Amet Asia, Inc.

HiAdvance Philippines Incorporated

Annabelle Bangoy, Project Manager

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Pasec de Magallanes, 1232 Makati City, Philippines Office: +632,7729.4327 Fax No: +632,8854,8365 Email: info@hiladvance.com.ph Website: www.hiadvance.com.ph

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analysical report must be reproduced in its

Certified Correct By:

Princess S. Chipez, Laboratory Manager Chemist NRC# 9207

Page 6 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magaltanes, 1232 Makati City, Philippines Office: +632,7729.4327 Fax No: +632,8854.8365 Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Amet Asia, Inc.

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inonel

Reported: 18-May-21 08:19

Project Manager: Ms. Pamella Andrea L. Pomida

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HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Bangoy, Project Manager

The results in this report apply to the samples analyzed in accordance with the when of custody document. This analysical report must be reproduced in its entirety.

Certified Correct By

Princess S. Gulyez, Laboratory Manager Chiemist PRC# 9207

Page 7 of 14



jica

Amet Asia, Inc.

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Number: Inonel

Annexes



Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Metalco Ave.

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365 Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Reported:

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HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

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Certified Correct By

Princess S. Aighvez, Laboratory Mandger
Chemist PRCS 9207 Page 8 of 14

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Mensico Ave. Pasig PHILIPPINES,

Project Number: Inonel Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 18-May-21 08:19

WQ5 M21E006-01 (Water)

La Company of the Com			1000			P. Physica		100000	200
	R	iAdvance P		ncorpora					
Metals by APHA/AWWA	Standard Methods								
Amenic	< 0.00416	0.0100	mg/L	1	21E0079	06-May-21	06-May-21	APHA 3120 B	A-02a
Cadmium	< 0.000727	0.00200			2180002	06-May-21	06-May-21		A-02
Lead	< 0.00517	0.0200			21E0003	06-May-21	06-May-21		A-02b

HiAdvance Philippines Incorporated

Report Prepared By:

Annabelle Bangoy, Project Manager

The results in this report apply to the samples analysed in accombance with the chain of custody document. This analysical report must be reproduced in its entirety.

Certified Correct By:

Princes S. Galvez, Laboratory Manage





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inonel

Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 18-May-21 08:19

WQ7 M21E006-02 (Water)

Analyte	Result	Reporting Limit	Unin	txinsion	Batch	Prepared.	Analyzed	Method	Notes

HiAdvance Philippines Incorporated

Metals by APHA/ AWWA St	tandard Methods								
Arsenic	< 0.00416	0.0100	mg/L	1	21E0079	06-May-21	06-May-21	APHA 3120 B	A-02a
Cadmium	< 0.000727	0.00200		*	21E0082	06-May-21	06-May-21		A-02
Lead	< 0.00517	0,0200			21E0083	06-May-21	06-May-Z1	-	A-026

HiAdvance Philippines Incorporated

Annabelle Bangoy, Project Manager

450

Report Prepared By

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its antirecy.

Certified Correct By:

Common Control by

Princess S. Gullez, Laboratory Manager
Chemist PRCS 9207 Page 10 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inonel Pasig PHILIPPINES, Project Manager: Ms. Par

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 18-May-21 08:19

WQ7 M21E006-02 (Water)

Analyte	Result	Reporting Limit	Unin	Exhibition	Batch	Prepared.	Analyzed	Method	Notes
	Digarrons	DALMING III	William	Mark Committee	A STREET, STRE	21775		- William	113.00

HiAdvance Philippines Incorporated

Metals by APHA/AWWA Star	ndard Methods								
Arsenic	< 0.00416	0.0100	mg/L	1	21E0079	06-May-21	06-May-21	APRA 3120 B	A-02a
Cadmium	< 0.000727	0.00200		*	21E0082	06-May-21	06-May-21		A-02
Lead	< 0.00517	0,0200			21E0083	06-May-21	06-May-Z1		A-025

HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

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Certified Correct By:

Princess S. Gullez, Laboratory Manager
Chemist PRCS 9207 Page 10 of 14



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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18-May-21 08:19

Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meratco Ave.

Project Number: Inone!

Project Manager: Ms. Pamella Andrea L. Pomida

WQ8 M21E006-03 (Water)

Analyte	Result	Reporting Limit	Units	Dilut-m	Betch	Prepared	Analyzed	Method	Notes
	H	liAdvance Pi	ilippines		d				

Metals by APHA/AWWA Standard Methods APHA 3120 B A-02s 06-May-21 06-May-21 < 0.00416 0.0100 21F0079 Arsenic A-02 06-May-21 06-May-21 21 F0082 Cadmium < 0.000727 0.00200 06-May-21 06-May-21 A-02b 21F0083 < 0.00517 0.0200 Lead

HiAdvance Philippines Incorporated

Report Prepared By

Annabelle Bangoy, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of castedy document. This analytical report must be reproduced in its entirety.

Certified Correct By:

Princess S. Galvez, Laboratory Manager Chimist PROS 2207 Page 11 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Juc.

Unit 303, One Corporate Center, Juliu Vargas Ave. Cor. Metalco Ave.
Project Number: Inone1 Inone1 Reportes:
Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 18-May-21 08:19

Metals by APHA/AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting	Units	Spike Level	Source	WREC	%REC Limits	RPD	RPD Limit	Notes
Batch 21E0079 - As Total ICP APHA 3	1120 B									
Blank (21E0079-BLK1)				Prepared &	. Analyzed	06-May-2	1			
Arsenic	ND	0.0100	mg/L							
LCS (21E0079-BST)		- 9		Prepared &	k Analyzed	06-May-2				
Arsenic	0.503	0.0100	mg/L	0.500		101	80-120			
LCS Dup (21E0079-BSD1)				Prepared &	k Analyzed	00-May-2				
Arsenic	0.484	0.0100	mg/L	0.500		96.8	80-120	3.85	20	
Duplicate (21E0079-DUP1)	Sor	orce: M21D41	7-01	Prepared &	E Analyzed	06-May-2	E.			
Azsenic	< 0.00415	0.0100	mg/L		ND				20	A-02a
Matrix Spike (21E0079-MS1)	Sur	arce: M21D41	7-01	Prepared 8	Analyzed	06-May-2	0			
Arsenic	0.481	0.0100	mg/L	0.500	ND	96.2	80-120			
Matrix Spike Dup (21E0079-MSD1)	Sor	arce: M21D41	7-01	Prepared 6	k Analyzed	06-May-2	É			
Arsenic	0.484	0.0100	mg/L	0.500	ND	96.8	80-120	0.622	20	
Batch 21E0082 - Cd Total ICP APHA	3120 B									
Blank (21E0082-BLK1)				Prepared &	k Analyzed	06-May-2	1			
Cadmium	ND	0,00200	mg/L							
LCS (21E0082-BS1)				Prepared 8	k Analyzed	06-May-2	ı			
Cadmium	0.295	0.00200	mg/L	0.300		98.3	80-120			
LCS Dup (21E0062-BSD1)				Prepared 8	k Analyzed	06-May-2	ŀ			
Cadmium	0.312	0.00200	mg/L	0,300		104	80-120	5.60	20	

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed to accordance with the chain of custody document. This analytical report must be reproduced in its entirely.

Report Prepared By :

Annabelle Bungoy, Project Manager

Certified Correct By :

Princess S. Golvez, Luboratory Managhr Chombs Price 9207 Page 12 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Amet Asia, Inc.
Project: Water Analysis
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inone! Reported:
Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomidu 18-May-21 08.19

Metals by APHA/AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting	Units	Spike Level	Source Reselt	WREC	Series Limits	RPD	Limit	Notes
Batch 21E0082 - Cd Total ICP APHA	3120 B									
Duplicate (21E0082-DUP1)	Sec	arce: M21D41	7-01	Prepared 8	Analyzed	:06-May-2	iš.			
Cadmium	< 0.000727	0,00200	mg/L		ND	100 M V 200			20	A-02
Matrix Spike (21E0082-MS1)	Sec	orce: M21D41	7-01	Prepared 8	. Analyzed	06-May-2				
Cadmium	0.292	0.00200	mg/L	0.300	ND	97.3	80-120			
Matrix Spike Dup (21E0082-MSD1)	Sec	urce: M21D41	7-01	Prepared 8	k Analyzed	: 06-May-2	1			
Cadmium	0.268	0.00200	mg/L	0.300	ND	89.3	80-120	8.57	20	
Batch 21E0083 - Pb Total ICP APHA	3120 B									
Blank (21E0083-BLK1)				Prepared &	k Analyzed	: 06-May-2	1			
Lead	ND	0.0200	mg/L							
LCS (21E0083-BS1)				Prepared &	k Analyzed	. 06-May-2	1			
Lead	2.93	0.0200	mg/L	3.00		97.7	80-120			
LCS Dup (21E0083-BSD1)				Prepared 8	t Analyzed	. 06-May-2	1			
Lead	3.32	0.0200	mg/L	3.00		111	80-120	12.5	20	
Duplicate (21E0083-DUP1)	So	orce: M21D41	7-01	Prepared &	k Analyzed	: 06-May-2	1			
Lead	< 0.00517	0.0200	mg/L		ND				20	A-028
Matrix Spike (21E0083-MS1)	So	orce: M21D41	7-01	Prepared &	& Analyzed	: 06-May-2	1			
Lead	3.19	0.0200	mg/L	3.90	ND	106	80-120			
Matrix Spike Dup (21E0083-MSD1)	So	urce: M21D41	7-01	Prepared &	& Analyzed	1: 06-May-2	1			
Lead	3.23	0,0200	mg/L	3.00	ND	108	80-120	1.25	20	

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Report Prepared By :

Annabelle Bangoy, Project Manager

Certified Correct By :

Princess & Galver, Laboratory Manager
Chapture PRCs 2207 Page 13 of 1-



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Amet Asia, Inc.

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Paste PHILIPPINES.

Project Number: Inone! Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 18-May-21 08:19

Notes and Definitions

Report Specific Notes

A-02b <0.00517 The analyte was detected at a level which is below the method detection and reporting limit for the analysis

A-02a <0.00416 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

A-02 <0.000727 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

<_b < 0.00517

< 0.00416 < 2

< 0.000727

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR Not Reported

Sample results reported on a dry weight basis. Reporting Limits have been corrected for % Solid, dry

RPD Relative Percent Difference. (RPDs calculated using Results, not Percent Recoveries).

MRI. METHOD REPORTING LIMIT, Reporting level at, or above, the lowest level standard of the Calibration Table

Dilutions are calculated based on deviations from the standard dilution performed for an analysis DIL and may not represent the Dilution found on the analytical raw data

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

analytical dilutions and percent solid, where applicable Limit

Prepared Date indicated is the same as Extraction Date

HiAdvance Philippines Incorporated

The results in this report apply to the complex analyzed in accordance with the chain of custody document. This analytical report must be reproduced in the Certified Correct By

Report Prepared By:

Annabelle Bangoy, Project Manager

Princess S. Galyer, Laboratory Manager at PRC# 920 CIN 14 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HAdvence Philipphies

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14 May 2021

WO# M21E006

Ms. Pamella Andrea L. Pomida

Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21 08:00.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Annabelle Bangoy Project Manager

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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philippines@hiadvance.com

Amet Asia, Inc. Project: Water Analysis Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inonel Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 14-May-21 09:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory 1D	Matrix	Date Sampled	Date Received
wqs	M21E006-01	Water	30-Apr-21 09:30	03-May-21 08:00
WQ7	M21E006-02	Water	29-Apr-21 11:55	03-May-21 08:00
wQ8	M21E006-03	Water	29-Apr-21 10:15	03-May-21 08:00

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Annabelle Bangoy, Project Manager

Page 1 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines

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Fax No : +632.854.8365 philippines@histvence.com

Amet Asia, Inc. Project Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inooe'l
Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

Reported: nella Andrea L. Pomida 14-May-21 09:30

CHAPM-OF-CUSTODY | Analytical Request Document

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Annabelle Bangoy, Project Manager

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Pasco de Magaflanos, 1232 Makati Cty, PHELIPPINES Odice: +632.729.4327 Fax No: +632.854.8365 shilippines@hiadvance.com

Amet Asia, Inc.
Unit 303, One Corporate Center, Julia Vargas Ave. Cor Meraleo Ave.
Project Number: Innel: Reported:
Pasig PHILIPPINES, Project Manager: Ms. Pameilia Andrea L. Pomida 14-May-21 09:30

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FIELD DATA SHEET

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Annabelie Bangoy, Project Manager

Page 3 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Project: Water Analysis Amet Axia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inonel

Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 14-May-21 09:30

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Annabelle Bangoy, Project Manager

Page 4 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Amet Asia, Inc.
Project: Water Analysis
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inonel

Pasig PHILIPPINES, Project Manager: Ma. Pamella Andrea L. Pom

Project Number: [none] Reported:
Project Manager: Ms. Pamella Andrea I., Pomida 14-May-21 09:30

FIELD DATA SHEET

| Comparison | Comparison

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The results in this report apply to the samples analyzed in accordance with the chain of currently document. This analysical report must be reproduced in its entirety.

Annabelle Bangoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Project Water Analysis
Unit 303, One Corporate Center, Julia Vorgas Ave. Cor. Meralco Ave.

Project Number: Inone!

Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 14-May-21 09:30

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Annabelic Bangoy, Project Manager

Page 6 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amer Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inone! Reported:
Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 14-May-21 09:30



MANAGET Niggino

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Annabelle-Bangoy, Project Manager

Page 7 of 13





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: fnonel Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 14-May-21 09:30

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Client Cunfirmation

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirely.

Annabelle Bengoy, Project Manager

Page 8 of 13

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Project: Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone) Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 14-May-21 09:30

WQ5 M21E006-01 (Water)

Analyte	Result	Reporting Limit	Linite	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pace Analytical Services, LLC - Minneapolis Lab								
EPA 7470A									_
Mercury	<0.070	0.20	ug/L	1	740844	09-May-21	16-May-21	7470AW	

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Bungoy, Project Manager

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ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inonel

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 14-May-21 09:30

WQ7 M21E006-02 (Water)

Analyte	Result	Reporting Limit	Linits	Dilution	Hatch	Prepared	Analyzed	Method	Naige
	Pace Ana	lytical Serv	ices, LLC	- Minneap	olis Lab				
EPA 7470A									
Mercury	<0.070	0.20	ug/L	t	740844	09-May-21	10-May-21	7470AW	

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Annabelle Bangoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Pasig PHILIPPINES,

Project: Water Analysis

Project Number: Inone)

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 14-May-21 09:30

WQ8 M21E006-03 (Water)

Analyte	Result	Reporting Limit	Unite	Dilution	Batch	Prepared	Analyzed	Method	Notes
FD4 74704	Pace Ar	nalytical Serv	ices, LLC	C - Minneap	olis Lab				
EPA 7470A Mercury	≪0.070	0.20	ug/L	1	740844	09-May-21	10-May-21	7470AW	

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analyzical report must be represented in its entirety.

Annabelle Bangoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargus Ave. Cor. Meralco Ave.
Project Number: Inonel Reperted:
Project Manager: Ms. Pamella Andrea L. Pomida 14-May-21 09:30

EPA 7470A - Quality Control

Pace Analytical Services, LLC - Minneapolis Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Stesuit	MILEC	SARKE Limits	RPD	HPD Limit	Notes
Batch 740844 - EPA 7470A										
BLANK (3948287)				Prepared:	09-May-21	Analyzed:	10-May-21			
Mercury	0.070	0.20	ug/L							υ
LCS (3948288)				Prepared:	09-May-21	Analyzed:	10-Mey-21			
Mercury	5.3	0.20	ug/L	5		105	80-120			
MS (3948289)	Sour	rce: M21E006	-01	Prepared:	09-May-21	Analyzed.	10-May-21			
Mercury	5,2	0.20	ug/L	5	<0.070	105	80-120			
MSD (3948290)	Sour	rce: M21E006	-01	Prepared: 0	09-May-21	Analyzed:	10-May-21			
Mercury	5.3	0.20	ug/L	5	<0.070	106	80-120	1	20	

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Annabelle Bangoy, Project Manager

Page 12 of 13







CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Metalloo Ave. Project Number: Inone1

Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 14-May-21 09:30

Notes and Definitions

Report Specific Notes

U Indicates the compound was analyzed for, but not detected.

< 0.070 < 0.070

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate)

NR Not Reported

DIL

dry Sample results reported on a dry weight hasis. Reporting Limits have been corrected for % Solid.

RPD Relative Percent Difference: (RPDs calculated using Results, not Percent Recoveries).

MRL METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table

Dilutions are calculated based on deviations from the standard dilution performed for an analysis

and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

Limit analytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date

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Annubelle Bangoy, Project Manager

Page 13 of 13



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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17 May 2021

WO# M21E008

Ms. Pamella Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21 08:00.

If you have any questions concerning this report, please feel free to contact our Laboratory Manager-Ms. Princess Galvez or our Quality Manager.

Our Laboratory is a DENR Recognized laboratory with CR No. 046/2019 valid until 25th of July 2022.

While our DOH recognition with accreditation number 13-0006-2020-LW-2, is valid until 31st of December 2022.

Sincerely

Project Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Website: www.hiadvance.com.ph

SUMMARY OF RESULTS

REPORT NO. M21E008Rev01

Project Customer Sampling Date : Water Analysis Amet Asia, Inc. April 29 & 30, 2021

Sample ID Analysis Unit Results of Analysis Remarks 7.63 pH on-site pH Units Dissolved Oxygen on-site mg/L 7.86 COD 21.0 mg/L Oil and Grease ND M21E008-01 mg/L WQ9 Cyanide (free) mg/L ND Residual Chlorine ND mg/L Hexavalent Chromium ND ma/L Temperature on-site 26.6 pH on-site pH Units 7.64 5.16 Dissolved Oxygen on-site mg/L COD mg/L 20.0 Oil and Grease ND M21E008-02 mg/L WQ10 ND Cyanide (free) ma/L Residual Chlorine mg/l. ND Hexavalent Chromium ND mg/L 23.0 Temperature on-site °C pH on-site pH Units 7.88 Dissolved Oxygen on-site 5.63 mg/L COD 21.0 ma/L M21E008-03 Oil and Grease mg/L ND. W06 Cyanide (free) ND mg/L ND Residual Chlorine mg/L Hexavalent Chromium mg/L ND Temperature on-site 26.9

Survised Methods for the Examination of Water and Wasterwater 23rd Edition, APIA/AWWA.

EPA 9213 "Potentiometric Determination of Cyanide in Aqueous Samples and Distillates with fon-Selective Electrode" Aev. 0, 1996

Chemical Oxygen Demand (COD) is the amount of oxygen required to degrade the oxygen compounts of water.

Cyanide can be measured either as free or total cyanide. Free cyanide consists of hydrogen cyanide (HCN) and the cyanide ion (CP+), which represent the more took forms of

Cyanide Dissolved oxygen analysis measures the amount of generus congen (Oc) classified in an aqueous solution the reference of the contained oxygen analysis measures the amount of generus congen (Oc) classified in an aqueous solution the reference oxygen (Oc) classified in an aqueous solution in the +6 coldation state. Chrismian +6 is generally associated with inclusival processes, though it does occur naturally in very small amounts.

Oil and Greates is defined as any material recovered as a suchairance solution in the solvent. It includes other material extracted by the solvent from an actified sample and not volationed curing the test, get a measurement of the hydrogen on concentration reflecting alkalinity or actify of the water, residual is Chlorine a low level of chlorine remaining is water after its initial application.

Saliality - is the setimes or classified at content of a body of water.

Total Dissolved Solids (TDS) is the postor of solids that peases through a filter of 2.0µm (or smaller) nominal pore size under specified conditions.

Temperature - The degree of horizes or colclains of a body or environment.

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This summary is only a part of the complete analytical report and must be reproduced in the entirety.

Annabelle Bangoy Project Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HIAdvance Philippines Incorporated

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Website: www.hiadvance.com.ph

SUMMARY OF RESULTS

REPORT NO. M21E008Rev01

Project Customer

Water Analysis Amet Asia, Inc. April 29 & 30, 2021

Sampling Date :

Sample ID	Analysis	Unit	Results of Analysis	Remarks
M21E008-01	Salinity	Salinity Units	ND ND	-
WQ9	Total Dissolved Solids	mg/L	90.0	
M21E008-02	Salinity	Salinity Units	ND ND	
WQ10	Total Dissolved Solids	mg/L	99.0	-
M21E008-03	Salinity	Salinity Units	ND	
WQ6	Total Dissolved Solids	mg/L	105	F .

Standard Methods for the Exemination of Water and Wastewater 23" Edition, APHA/AWWIA.

EPA 9213 "Potentiometric Determination of Cyanide in Aqueous Samples and Disablates with Ion-Selective Electrode", Rev. 0, 1996.

Salimity - is the saltiness or dissolved salt content of a body of water.

Total Dissolved Solids (TDS) is the portion of solids that passes through a filter of 2.0µm (or smaller) nominal pore size under specified conditions.

Note: M21E008 Water Analysis Rev01: This report was revised to separate the Total Dissolved Solids and Salinity results as per customer's request. This final report replaces the one generated on 17 May 2021 at 07:48H. All other data results are not affected; data results remain unchanged.

HiAdvance Philippines Incorporated

Annabelle Bangoy Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Email: info@hiadvance.com.ph Websile: www.hiadvance.com.ph

Amet Asia, Inc. Project: Water Analysis

Unit 363, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: [none] Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 17-May-21 07:48

ANALYTICAL REPORT FOR SAMPLES Sample 1D Laboratory ID Date Sampled Date Received WQ9 M21E008-01 29-Apr-21 09:10 Water 03-May-21 08:00 WOID M21E008-02 Water 30-Apr-21 07:45 03-May-21 08:00 WQ6 M21E008-03 Water 30-Apr-21 10:10 03-May-21 08:00

HiAdvance Philippines Incorporated

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Report Prepared By

Reviewed By

Certified Correct By :

Annabelle Baproy, Project Manager

Marizen W. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Pringess S. Marvez, Laboratory Man PRC# 9207

Page 1 of 17





Amet Asia, Inc.

Pasig PHILIPPINES,

HiAdvance Philippines Incorporated

e Hangoy, Project Manager

Report Prepared By

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Manager: Ms. Pamella Andrea L. Pomida

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Princess S Malvez, Caboratory Menager Chemist PRC# 9207

Project Number: Inonal

Annexes



Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Memileo Ave.

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365 Email: info@readvance.com.ph Websits: www.hiadvance.com.ph

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Marizen B. Bendana, Department Supervisor

Chem. Tech PRCs 0001128

Page 2 of 17





Amet Asia, Inc.

Pasig PHILIPPINES,

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Report Prepared By :

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Manager: Ms. Pamella Andrea L. Pomida

Annexes



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The results in this report apply in the samples analyzed in accordance with the





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Reviewed By

Marizen D. Bendana, Department Supervisor Chem. Tech. PRC# 0001128

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Chemist PRC# 9207

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Website: www.hiadvance.com.ph

Asnet Asia, Inc.

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Reviewed By:

Certified Correct By:

Marizen D. Bendana, Department Supervisor

Chem. Tech. PRC# 0001128

Princess. Galveg. Laboratory Manager

Chem. Tech. PRC# 0001128

Prage 5 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Chem. Tech PRC# 0001128

Page 6 of 17

Chemist PRC# 9207





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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met Asia. Inc.	Project	Water Analysis
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Unit 303, One Corporate Center, Juliu Vargus Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inonei Project Manager: Ms. Pamella Andrea L. Pomida Reported: 17-May-21 07:48

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Reviewed By

Certified Correct By:

Annabelle Bangoy, Project Manager

Mariaen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Princes S Galvez, Laboratory Manager Chemist PRCS 9202

Page 7 of 17





Amet Asia, Inc.

Pasig PHILIPPINES,

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Annabelle Bangoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project. Water Analysis

Project Manager: Ms. Pamella Andreu L. Pomida

Project Number: Inonel

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Website: www.hiadvance.com.ph

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17-May-21 07:48

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Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Chemiet PRC# 9297 Page 8 of 17

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cot. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone1 Project Manager: Ms. Pamella Andrea L. Pomida Reported: 17-May-21 07:48

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Report, repared By :

Reviewed By :

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Pringers S Galvez, Laboratory Manage Chemist PRCs 9207

Page 9 of 17





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PROPONENT: Department of Public Works and Highways in cooperation with JICA

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 Ameri Asia, Tec.
 Project
 Water Analysis

 Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meraleo Ave.
 Project Number.
 Isonel
 Reported:

 Pasig PHILLIPPINES,
 Project Manager.
 Ms. Pamella Andrea 1. Pornida
 17-May-21 07:48

WQ10 M21E008-02 (Water)

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Temperature on-site		23.0		"C		21E0164	30-Apr-21	93-May-21	APH A 2350 B	
Inorganic Non-Metallic (Constituents by API	IA/AWWA.	fethods							
Dissolved Oxygen on-site		5.16	0.200	mg/L	1	2120108		30-Apr-21	APHA 4300-O G	
Aggregate Organic Cons	tituents by APHA/A	WWA Meth	ads							
Chemical Oxygen Demand		20,0	4.61	mg/L	1	215:0095	07-8tay-21	67-Aby-21	APHA 52300	
Oil & Grease		ND	2.00		4.	2180131	10-May-21	10-May-21	APHA 5528B	
Conventional Chemistry	Parameters by EPA	Methods								
Cyunide (free)		ND	0.0635	mg/L	1	31E0014	03-68ay-21	(G-May-21	EPA 9213	
Miscellaneous Physical/C	onventional Chemi	stry Parame	ters							
Residual Chlorine		ND	0.200	mg/L	, ct	21E0117	30-Apr-21	03-5fay-21	DPD Chlories Test Kit	
Metals by APHA/AWW/	Standard Methods	į.								
Hexavalent Chromium		ND	0.00500	mg/L	1	2180033	04-May-21	04-May-21	APHA 3500-Cr B	

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed to accombine with the whom of controlly discussion. This analytical report must be reproduced in its autitors.

Report Prepared By:

Reviewed By

Certified Correct By:

Animbelic Bangoy, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

Princes S, Galvez, Luberatory Manager

Page 10 of 17



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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 Ameri Asia, Inc.
 Project
 Water Analysis

 Unit 303, One Corporate Center, Juliu Vurgas Ave. Cor. Meralco Ave.
 Project Number
 Inonel
 Reported:

 Pasig PHILIPPINES,
 Project Manager
 Ms. Pamella Andrea L. Pomida
 17-Mar-21 07-48

WQ6 M21E008-03 (Water)

Analyte	Result	Reporting	Unin	Dilution	Batch	Prepared	Analyzed	Method	Notes
	ж	Advance P	hilippines I	ncorporat	ed				
Physical Parameters by APHA/AWW	A Methods								
pH on-site	7,88		pH Units	100	21E0161	38-Apr-21	36-Apr-21	APHA 4500-H	T-049
Salinity	ND	0.212 5	Salinity units	-	21E0110	67-May-21	07-May-21	APHA 2520	
Total Dissolved Solids	105	7,41	mg/L	*	2160104	06-May-21	07-May-21	APHA 2540C	
Temperature on-site	26.9		°C		21E0164	30-Apr-21	03-May-21	APHA 2550 B	
Inorganic Non-Metallic Constituents	by APHA/AWWA M	lethods							
Dissolved Oxygen on-site	5.63	0.200	mg/L	t	218/0168		30-Apr-21	APHA-4500-D G	
Aggregate Organic Constituents by A	PHA/AWWA Metho	ds							
Chemical Oxygen Demand	21.0	4.61	mg/L	1	2110005	07-May-23	07-May-21	APHA 5220D	
Oil & Grease	ND	2.00			2160131	10-May-21	10-May-21	APHA 5520B	
Conventional Chemistry Parameters	by EPA Methods								
Cyanide (free)	ND	0.0635	mg/L		28E0014	63-May-31	63-May-21	EPA 9213	
Miscellaneous Physical/Conventional	Chemistry Paramet	ers							
Residual Chlorine	ND	0.200	mg/L	1	2160117	30-Apr-21	03-May-21	DPD Chlorine Test Kit	
Metals by APHA/AWWA Standard M	dethods								
Hesavalent Chromium	ND	0.00500	mg/L	1	21E0033	04-May-21	04-May-21	APBA 3500-Ct B	

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The results in this report apply to the samples analyzed in accombines with the claim of custody discussion. This analysical report must be reproduced in its entirety.

Report Prepared By:

Reviewed By :

Certified Correct By

Annabelle Bangoy, Project Manager

Marizen 6. Bendana, Department Supervisor

em. Tech PRC# 0001128

Pringess S. Malvez, Laboratory Manager

hemist PRC# 9207 Page 11 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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1232 Makati City, Philippines
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Website: www.hiadvance.com.ph

Amet Asia, Inc. Project: Water Analysis Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone!

Pasig PHILIPPINES.

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 17-May-21 07:48

Physical Parameters by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyse	Result	Reporting Limit	Under	Spike Level	Source Result	WREC ¹	%REC Limin	RPD	RPD Limit	Notes		
Batch 21E0104 - TDS APHA 2540-C												
Blank (21E0104-BLK1)				Prepared:	06-May-21	Analyzed: (7-May-21					
Total Dissulved Solids	ND	2.41	mg/L									
LCS (21E0104-BS1)				Propored: 06-May-21 Analyzed: 07-May-21								
Total Dissolved Solids	47.0	7.41	mg/L	50.0		94,0	80-120					
LCS Dup (21E0104-BSD1)				Prepared:	06-May-21	Analyzed: (97-May-21					
Total Dissolved Solids	44.0	7.41	mg/L	50.0		88.0	80-120	6.59	10			
Duplicate (21E0104-DUP1)	So	arce: M21E00	3-01	Prepared:	06-May-21	Analyzed:	77-May-21					
Total Dissolved Solids	85.0	7.41	mg/L		85.0			0.00	10			
Batch 21E0110 - Residual Chlorine												
Blank (21E0110-BLK1)				Prepared &	& Analyzed	07-May-2	i					
Salinity	ND	0.212	Salinity units									
LCS (21E0110-BS1)				Prepared &	t: Analyzod	07-May-2	1					
Salinity	35.8	0.212	Salinity units	35.0		102	80-120					
LCS Dup (21E0110-BSD1)				Prepared &	s. Analyzed	07-May-2	i .					
Salinity	35.4	0.212	Salinity units	35.0		101	80-120	1.12	20			
Duplicate (21E0110-DUP1)	So	arce: M21D41	7-01	Prepared &	& Analyzed	1						
Salinity	ND	0.212	Salinity units		ND				10			

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Report Prepared By :

Reviewed By:

Certified Correct By

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Mariem D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

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Page 12 of 17





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia. Inc. Project: Water Analysis Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Reported: Project Number: Inone! Pasig PHILIPPINES, 17-May-21 07:48 Project Manager: Ms. Pamella Andrea L. Pomida

Aggregate Organic Constituents by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting Limit	Unin	Spike Level	Source Result	WREC	WREC Limits	RPD	RPD Limit	Notes
Batch 21E0095 - COD - Closed Reflux Al	PHA 5220D									
Blank (21E0095-BLK1)				Prepared 8	k Analyzed	07-May-21				
Chemical Oxygen Demand	ND	4.61	mg/L							
LCS (21E0095-BS1)				Prepared &	Analyzed	:07-May-21				
Chemical Oxygen Demand	49.0	4.61	mg/L	50.0		98.0	80-120			
LCS Dup (21E0095-BSD1)				Prepared &	k Analyzed	07-May-21				
Chemical Oxygen Demand	50.0	4.61	mg/L	50.0		100	80-120	2.02	20	
Duplicate (21E0095-DUP1)	Soc	rce: M21E603	i-01	Propored &	k Analyzed	07-May-21				
Chemical Oxygen Demand	51.0	4.61	mg/L		51.0			0.00	20	
Matrix Spike (21E0095-MS1)	Sor	rce: M21E00	10-	Prepared &	k Analyzed	07-May-21				
Citemical Oxygen Demand	96.0	4.61	mg/L	50.0	51.0	90.0	80-120			
Batch 21E0131 - O&G APHA 5520B										
Blank (21E0131-BLK1)				Prepared 8	k Analyzed	10-May-21				
Oil & Grease	ND	2.00	mg/L							
LCS (21E0131-BS1)				Prepared 8	k Analyzed	10-May-21				
Oil & Grease	104	2.00	mg/L	111		93.3	80-120			
LCS Dup (21E0131-BSD1)				Prepared &	k Analyzed	10-May-21				
Oil & Grease	105	2.00	mg/L	112		93.8	80-120	0.957	10	
Duplicate (21E0131-DUP1)	Soc	ree: M21E033	1-01	Prepared &	E Analyzod	10-May-21				
Oil & Grease	ND	2.00	mg/L	100	ND				10	

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Report Prepared By:

Reviewed By.

Certified Correct By:

Annabelle Bengoy, Project Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone!

Project Manager: Ms. Pamella Andrea L. Pomida

Reported:

17-May-21 07:48

Aggregate Organic Constituents by APHA/AWWA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting	Unin	Spike Level	Result	%REC	Linin	RPD	Limit	Notes
Batch 21E0131 - O&G APHA 5520B										
Matrix Spike (21E0(31-MS1)	Sou	ree: M21E033	1-01	Prepared 8	Analyzed	10-May-21				
Oil & Grease	125	2.00	mg/L	131	ND	95.3	80-120			

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Report Prepared By:

Reviewed By:

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Annabelle Bangby, Project Manager

Marizen D. Bendana, Department Supervisor

Chem. Tech PRC# 0001128

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asio, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone1

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 17-May-21 07:48

Conventional Chemistry Parameters by EPA Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting Limit	Unio	Spike Level	Source Result	WREC	%REC Links	RPD	RPD Limit	Notes
Batch 21E0014 - General Preparation										
Blank (21E0014-BLK1)				Prepared &	. Analyzed	03-May-2				
Cyanide (free)	ND	0.0635	mg/L							
LCS (21E0014-BS1)				Prepared à	k Analyzed:	03-May-2	1			
Cyanide (firee)	1.99	0.0635	mg/t.	2.00		99.5	80-120			
LCS Dup (21E0014-BSD1)				Prepared &	k Analyzed	03-May-2	t.			
Cyanide (free)	1,96	0.0635	mg/L	2.00		98.0	80-120	1.52	200	
Duplicate (21E0014-DUP1)	Soc	rce: M21D41	7-01	Prepared à	k Analyzed	03-May-2	10			
Cyanide (free)	0.0565	0.0635	mg/L		0:0565			0.00	20	1-01
Matrix Spike (21E0014-MS1)	Sor	rrce: M21D417	7-01	Prepared A	k Analyzed	03-May-2	i .			
Cyanide (free)	2.06	0.0635	mg/L	2.00	0.0565	100	75-125			

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The results so this report apply to the samples analyzed in accordance with the classe of custody document. This analytical report must be reproduced in its

Reviewed By

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizon D. Bendana, Department Supervisor

Princess, S. Galvez, Laboratory Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Project. Water Analysis Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number Inone!

Reported:

Project Manager: Ms. Pamella Andrez L. Pomida

17-May-21 07:48

Metals by APHA/ AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting Limit	Unin	tipilur Level	Saurce Recalr	WREC	%REC Limits	RPD	10.00	RPD Limit	Netes
Batch 21E0033 - Cr+6 APHA 3500-CrB											
Blank (21E0033-BLK1)				Prepared &	Analyzed	04-May-2	1				
Hexavalent Chromium	ND	0.00500	mg/L								
LCS (21E0033-BS1)				Prepared &	Analyzed:	04-May-2	1				
Hexavalent Chromium	0.152	0.00500	mg/L	0.150		101	80-121				
LCS Dup (21E0633-BSD1)				Prepared &	Analyzed:	04-May-2	1				
Hexavalent Chromium	0.153	0.00500	mg/L	0.150		102	80-121	0.656		20	
Duplicate (21E0033-DUP1)	Soc	ree: M21E003	1-01	Prepared &	1						
Hexavalent Chromium	ND	0.00500	mg/L		ND					20	
Matrix Spike (21E0033-MS1)	Sor	aree: M21E003	10-8	Prepared &	Analyzed:	04-May-2	E				
Hexavalent Chromium	0.140	0.00500	mg/L	0.150	ND	93.3	68.6-117				

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The results in this region again the samples analyzed in accordance with the chain of custody document. This analytical region must be reproduced in its

Report Prepared By:

Certified Correct By:

Annabelle Bangoy, Project Manager

Marizen B. Bendana, Department Supervisor

Princess S. Garvez, Laboratory Mana NST PROPERTY

Chem. Tech PRC# 0001128

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone! Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 17-May-21 07:48

Notes and Definitions

Report Specific Notes

T-04b 26.9°C is the temperature taken in the field at the time of sampling.

26.6°C is the temperature taken in the field at the time of sampling.

T-04 23.0°C is the temperature taken in the field at the time of sampling.

J-01 0.0565 The reported result is an estimated value. The analyte was detected at a level which is below the reporting limit for the analysis.

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

Not Reported NR

dry

Limit

Sample results reported on a dry weight basis. Reporting Limits have been corrected for % Solid,

RPD Relative Percent Difference (RPDs calculated using Results, not Percent Recoveries).

METHOD REPORTING LIMIT, Reporting level at, or above, the lowest level standard of the Calibration Table

DIL Dilutions are calculated based on deviations from the standard dilution performed for an analysis and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

analytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date Note 1 Estimates of measurement of uncertainty available upon request

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of extrady document. This analytical report must be reproduced in its

Report Prepared By

Reviewed By

Certified Correct By

Annabelle Bangoy, Project Manager

Mariaten D. Bendana, Department Supervisor

Princess S Galvez, Laboratory Manager

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Email: rifo@hiadvance.com.gh
Website: www.hiadvance.com.ph

17 May 2021

WO# M21E008

Ms. Pameila Andrea L. Pomida Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21 08:00.

If you have any questions concerning this report, please feel free to contact the undersigned or our

Laboratory Manager- Ms. Princess Galvez or our Quality Assurance Manager.

Sincerely,

Annabelle Bangoy Project Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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1232 Maketi City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365

Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

SUMMARY OF RESULTS

REPORT NO. M21E008

Project Customer Sampling Date Water Analysis Amet Asia, Inc. April 29 & 30, 2021

Sample ID	Analysis	Unit	Results of Analysis	Remarks
	Arsenic	mg/L	<0.00416	A-02a
M21E008-01	Cadmium	mg/L	<0.000727	A-02
WQ9	Lead	mg/L	<0.00517	A-02b
	Mercury	ug/L	<0.070	+-
	Arsenic	mg/L	<0.00416	A-02a
M21E008-01	Cadmium	mg/L	<0.000727	A-02
WQ10	Lead	mg/L	<0.00517	A-02b
	Mercury	ug/L	<0.070	-
	Arsenic	mg/L	<0.00416	A-02a
M21E008-01	Cadmium	mg/L	<0.000727	A-02
WQ6	Lead	mg/L	<0.00517	A-02b
	Mercury	ug/L	< 0.070	#1

References

U.S. EPA. 1994. "Method 200.7: Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry," Revision 4.4. Circinnati, OH

Definition of Terms:

Arsenic is a natural component of the earth's crust and is widely distributed throughout the environment in the air, water and land. It is highly toxic in its inorganic form.

Cadmium exerts toxic effects on the kidney, the skeletal and the respiratory systems, and is classified as a human carcinogen. It is generally present in the environment at low levels. However, human activity has greatly increased those levels.

Lead is a toxic metal whose widespread use has caused extensive environmental contamination and health problems in many parts of the world.

Notes

A-02 <0.000727 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

4-02a <0.00416 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

4-02b <0.00517 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

HiAdvance Philippines Incorporated

Annabelle Bangoy Project Manager The results in this report apply to the samples analyzed in accordance with the chain of custody document. This summary is only a part of the complete analytical report and must be reproduced in its entirety.





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Posig PHILIPPINES,
Project Number: Inone!
Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 17-May-21 07:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WQ9	M21E008-01	Water	29-Apr-21 09:10	03-May-21 08:00
WQIO	M21E008-02	Water	30-Apr-21 07:45	03-May-21 08:00
WQ6	M21E008-03	Water	30-Apr-21 10:10	03-May-21 08:00

HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

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Sy'S. Galvez, Laboratory Manager Chemist PRC# 9207 Page

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amel Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Mendoo Ave.
Project Number: Inone1 Reported:
Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea I., Pomida 17-May-21 07-43

CHAIN-OF-CUSTORY / Analytical Request Document

No. 121967

Anal Asia, Inc.

Part Sca. Company Are Allege

Print part of Company Are Allege

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HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

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Certified Correct By

riprocess S. Cralvez, Laboratory Manager Chemist PRC# 9207 Page 2 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated
3F Maga Center, San Antonio St., Paseo de Magatanes,
1232 Makati City, Philippines
Office: +832,7729 4327 Fax No: +632,8854,8365
Email: info@hiadvance.com.ph
Website: www.hiadvance.com.ph

Amet Asia, Inc.
Project: Water Analysis
Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inonel Reported:
Project Manager: Ms. Pamella Andrea L. Pomida 17-May-21 07:43

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HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirery.

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Princess-S. Solvez, Laboratory Manager Chemist PRCs 3207 Phys 3 of 3





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Office: +632,7729,4327 Fax No: +632,8854,8365
Email: Info∰hiadvance.com.ph
Website: www.hiadvance.com.ph

Amet Asia, Inc.	Project: Water Analysis	
Unit 303, One Corporate Center, Julia Vargas Ave. Cur. Meralco Ave.	Project Number: Inonel	Reported:
Pasig PHILIPPINES.	Project Manager: Ms. Pamella Andrea L. Pomida	17-May-21 07:43

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Certified Correct By :

Report Prepared By

Annabelle Dangoy, Project Manager

Princess S. Galvez, Laboratory Man. Chemist PRCs 9207

Page 4 of 14





Amet Asia, Inc.

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

Project Number: Inone!

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Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632,7729.4327 Fax No. +632,8854,8365 Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

Reported:

Pasig PHILIPPINES, Project Manager: Ms. Paretta Andrea L. Pomido 17-Min-21 07-43

FIELD DATA SHEET

From: Set of the set

HiAdvance Philippines Incorporated

Report Prepared By

Annabelle Bangoy, Project Manager

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Princess S Curvez Laboratory Manager Chemist PRC# 9207 Page





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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project: Water Analysis

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Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Metalco Ave. Project Number: Inone!

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632,7729.4327 Fax No: +632,8654,8365 Email: inte@hiadvance.com.ph Website: www.hiadvance.com.ph

Reported:

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HiAdvance Philippines Incorporated

Report Prepared By

Annabelle Bangoy, Project Manager

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Certified Correct By:

NAT

S. Galvez, Laboratory Manager Chemist PRC# 9207 Page 6 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone!

Reported: 17-May-21-07:43

Project Manager: Ms. Pamella Andrea L. Pomida

Notes and Property

A Supplication of Supplication

LOGIN SAMPLE RECEIPT CHECKLIST

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Work Order: 812 (FTB) 8

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MANUALIST TO THE REAL PROPERTY.

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analyzed report must be reproduced in its estima-

Report Prepared By :

Annabelle Bangoy, Project Manager

Certified Correct By:

Pringess Chalvez, Laboratory Manager Chemist PRCs 9207

220 | Page





Amet Asia, Inc.

Pasig PHILIPPINES,

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project Water Analysis

Project Manager: Ms. Pamella Andrea L. Pomida

Project Number: Inone!

Annexes



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Reported:

17-May-21 07:43

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16	Containers are not broken or naving.	T		
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16	Sjerply collection date/Limit is provided.	T		
17	Samples are received at least five (5) days after sampling.	T		
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HiAdvance Philippines Incorporated

Report Prepared By :

Annabelie Bangoy, Project Manager

The results in this report apply to the samples analyzed in occurrince with the chain of custody document. This analytical report must be reproduced in its entirely.

Certified Correct By

Princes S. Galvez, Jahoratory Manager Chemiet PRCR 9207 Page 8 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysia

Unit 303, One Corporate Center, Julia Vargus Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone! Project Manager: Ms. Pamella Andrea L. Pornida Reported: 17-May-21 07:43

WQ9 M21E008-01 (Water)

Analyte	Result	Reporting Limit	Onin	Dilution	Natch	Prepared	Analyzed	Method	Nates
---------	--------	--------------------	------	----------	-------	----------	----------	--------	-------

HiAdvance Philippines Incorporated

Metals by APHA/AWWA Stand	ard Methods			 				
Arsenic	< 0.00416	0.0100	mg/L	21E0079	06-May-21	06-May-21	APHA 3120 B	A-02s
Cadmium	< 0.000727	0.00200		21150062	06-May-21	06-May-21		A-02
Lead	< 0.00517	0.0200	100	21E0093	06-May-21	06-May-21		A-02b

HiAdvance Philippines Incorporated

Report Prepared By :

Annabelle Bangoy, Project Manager

The results in this report apply to the samples analysed in accordance with the chain of custody document. This analysical report must be reproduced in its entirely.

Certified Correct By:

Princess A Galvez, Laboratory Manager
Chemist PRC# 9207 Page 9 of 1





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone!
Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 17-May-21 07:43

WQ10 M21E008-02 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Bairfi	Prepared	Analyzed	Method	Sotes
	- 1	liAdvance Pl	ilippines	Incorporate	rd				

Metals by APHA/AWWA Standard Methods Amenic < 0.00416 0.0100 21E0079 06-May-21 06-May-21 APHA 3120 B A-62a Cadmium < 0.000727 0.00200 2150087 06-May-21 96-May-21 A-02 < 0.00517 06-May-21 A-02h Lead 0.0200 21F0083 06-May-21

HiAdvance Philippines Incorporated

Report Prepared By :

Armsbelle Rapeoy, Project Manager

The results in this report apply to the samples analysed in accordance with the chair of custody document. This analytical report must be reproduced in its entirety.

Certified Correct By

rincesy 8. Galvez, Laboratory Manager Chamiat PRC# 9207 Page 1





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Metalco Ave. Pasig PHILIPPINES,

Project Number: Inonel
Project Manager: Ms. Pamella Andrea L. Pomida

Reported:

17-May-21 07:43

WQ6 M21E008-03 (Water)

Analyte	Result	Reporting	* thin	Doutien	Batch	Prepared	Analyzed	Method ⁴	Notes
	- 1	liAdvance Pl	hilippines	Incorporate	rd				

Metals by APHA/AWWA Standard Methods Arsenic < 0.00116 0.0100 mg/L 21E0079 06-May-21 06-May-21 APHA 3120 B A-02a 06-May-21 Cadmium < 0.000777 0.00200 2160087 06-May-21 A-07 < 0.00517 0.0200 21F0083 06-May-21 06-May-21 A-02b Lend

HiAdvance Philippines Incorporated

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Report Prepared By

Annabelle Bangoy, Project Manager

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Certified Correct By

Princes S Galvez, Laboratory Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inone! Repurted:
Project Manager: Ms. Pamella Andrea L. Pomida 17-Mmy-21 07:43

Metals by APHA/AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyte	Result	Reporting Limit	Cain :	Spike Level	Source Result	%REC	WREC Limits	RPO	RPD Limit	Netro
Batch 21E0079 - As Total ICPAPHA	1120 B									
Blank (2199079-BLK1)				Prepared &	. Analyzed	06-May-2				
Arsenic	ND	0.0100	mg/L							
LCS (21E0079-BS1)				Prepared &	k Analyzed	06-May-2	1			
Arsenic	0.501	0.0100	mg/L	0.500		101	80-120			
LCS Dup (21E0079-BSD1)				Propared 8	& Analyzed	:06-May-2	E			
Arsenic	0.484	0.0100	mg/L	0.500		96.8	80-120	3.85	20	
Duplicate (21E0079-DUP1)	Sor	orce: M21D41	7-01	Prepared 8	t Analyzed	06-May-2	E.			
Arsenic	< 0.00416	0.0100	mg/L		ND				20	A-02a
Matrix Spike (21E0079-MS1)	Ser	orce: M21D41	7-01	Prepared &	t Analyzed	06-May-2	É			
Arsenic	0.481	0.0100	mg/L	0.500	ND	96.2	80-120			
Matrix Spike Dup (21 £0079-MSD1)	Sor	arce: M21D41	7-01	Prepared & Analyzod: 06-May-21			t .			
Arsenic	0.484	0.0100	mg/L	0.500	ND	96.8	80-120	0.622	20	
Batch 21E0082 - Cd Total ICPAPHA	3120 B									
Blank (21 E0082-BLK1)				Prepared 8	k Analyzed	06-May-2				
Cadmium	ND	0,00200	mg/L							
LCS (21E0082-BS1)				Prepared &	k Analyzed	: 06-May-2	ľ.			
Cadmium	0.295	0.00200	mg/L	0,300		98.3	80-120			
LCS Dup (21E0082-BSD1)				Prepared 8	k Analyzed	: 06-May-2	ť			
Cadmium	0.312	0.00200	mg/L	0.300		104	80-120	5.60	20	

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Report Prepared By :

Annabelie Bangoy, Project Manager

The results in this report apply to the samples analyzed to accombine with the chain of costsoly discussed. This analytical report was the reproduced in its entirety.

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nu

Princes S Galvez, Laboratory Manager Chemist PRC# 9207 Page 12 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Moralco Ave.
Pasig PHILIPPINES.

Project Number: Inone! Reported:
Project Manager: Ms. Parnella Andreu L. Pomida 17-May-21 07.43

Metals by APHA/AWWA Standard Methods - Quality Control

HiAdvance Philippines Incorporated

Analyze	Result	Reporting	Units	Level	Result	WREC	SAREC Limin	RPD	Limit	Notes
Batch 21E0082 - Cd Total ICP APHA	3120 B									
Duplicate (21E0082-DUP1)	Sou	rce: M21D41	7-01	Prepured 8	Analyzed	06-May-2				
Cadmium	< 0.000727	0.00200	mp/L		ND				20	A-02
Matrix Spike (21E0082-MS1)	Sor	rrce: M21D41	7-01	Prepared 8	Analyzed	06-May-2				
Cadmium	0.292	9.00200	mg/L	0.300	ND	97.3	80-120			
Matrix Spike Dup (21E0082-MSD1)	Son	irce: M21D41	7-61	Prepared &	. Analyzed	06-May-2	6			
Cadmium	0.268	0.00200	mg/L	0.300	ND	89.3	80-120	8.57	20	
Batch 21E0083 - Pb Total ICP APHA	3120 B									
Blank (21E0083-BLK1)				Prepared 8	Analyzed	06-May-2				
Lead	ND:	0.0200	mg/L							
LCS (21E0083-BS1)				Prepared &	Analyzed	06-May-2				
Lead	2.93	0.0200	mg/L	3.00		97.7	80-120			
LCS Dup (21E0083-BSD1)				Prepared 8	Analyzed	06-May-2	i .			
Lead	3.32	0.0200	mg/L	3.00		111	80-120	12.5	20	
Duplicate (21E0083-DUP1)	Soc	roe: M21D41	7-01	Prepared 8	Analyzed	06-May-2	E			
Lead	< 0.00517	0.0200	mg/L		ND				20	A-02b
Matrix Spike (21E0083-MS1)	Sec	ree: M21D41	7-01	Prepared 8	Analyzed	06-May-2	Ī.			
Lead	3.19	0.0200	mg/L	3.00	ND	106	80-120			
Matrix Spike Dup (21E0083-MSD1)	Soc	rce: M21D41	7-01	Prepared 8	c Analyzed	06-May-2	1			
Lead	3.23	0.0200	mg/L	3.00	ND	108	80-120	1.25	20	

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Report Prepared-By:

Annabelle Bangoy, Project Manager

Certified Correct By :

Princes S Galvez, Laboratory Manager Chemiat RRC# 9207 Page 13 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Amet Asia, Inc. Project: Water Analysis Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Reported; Project Number: Inone! 17-May-21 07:43 Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

Notes and Definitions

Report Specific Notes

A-02b <0.00517 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

A-02a <0.00416 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

A-02 <0.000727 The analyte was detected at a level which is below the method detection and reporting limit for the analysis.

< 0.00517 < b

< 0.00416 < 11

< 0.000727

Laboratory Reporting Conventions:

Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate) ND

Not Reported

DIL

dry Sample results reported on a dry weight basis. Reporting Limits have been corrected for % Solid,

Relative Percent Difference (RPDs calculated using Results, not Percent Recoveries)

MRI. METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table Dilutions are calculated based on deviations from the standard dilution performed for an analysis

and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

Limit analytical dilutions and percent solid, where applicable

Prepared Date indicated is the same as Extraction Date

HiAdvance Philippines Incorporated

Report Prepared By

Annabelle Bangoy, Project Manager

The results in this report apply to the samples analyzed in accombance with the

Certified Correct By:

Pringess J. Galvez, Laboratory Manager WC# 9207



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines

HIAdvance Philippines Incorporated 3F Maga Center, San Anton St. Paseo de Magallanes, 1232 Makati City, PHILIPPINES Office: +632.729.4327 Fax No: -632.854.8365

WO# M21E008

philippines@hiadvance.com

21 May 2021

Ms. Pamella Andrea L. Pomida

Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.

Pasig, PHILIPPINES

RE: Water Analysis

Enclosed are the results of analyses for samples received by the laboratory on 03-May-21

08:00. If you have any questions concerning this report, please feel free to contact me.

Note: HIAdvance Philippines Incorporated is former NCALABS Phils. Inc.

Sincerely,

Annabelle Bangoy

Project Manager





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Fax No : +632.854.8365 philippines@hiadvance.com

 Amet Asla, Inc.
 Project
 Water Analysis

 Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILLIPPINES.
 Project Number: Inone! Inone! Andrea L. Pomida 21-May-21 09-36

ANALYTICAL REPORT FOR SAMPLES Laboratory ID Date Sampled Date Received Sample ID Matrix M21E008-01 29-Apr-21 09:10 03-May-21 08:00 WO9 Water 30-Apr-21 07:45 WQ10 M21E008-02 Water 03-May-21 08:00 M21E008-03 30-Apr-21 10:10 03-May-21 08:00 WQ6 Water

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Amet Asia, Inc.

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inonel Project Manager: Ms. Pamella Andrea L. Pomida Reported:

21-May-21 09:56

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Annabelle Bangoy, Project Manager

Page 2 of 14



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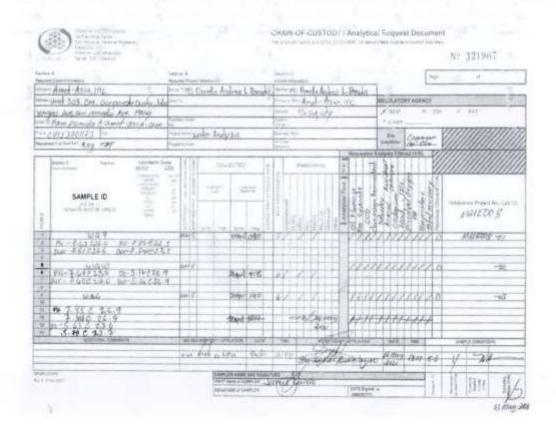
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Project Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone1 Reported: Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 21-May-21 09:56



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philippines@hiadvance.com

Project: Water Analysis

Unit 303, One Corporate Centur, Julia Vargas Ave. Cor. Meralco Ave.

Project Number: Inone!
Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 21-May-21 09:56

FIELD DATA SHEET

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Annabelle Bangoy, Project Manager	Page 4 of 1



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philippines@hiadvance.com

Project Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: Inone) Reported: Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 21-May-21 09:56

Other Field Notes pH Meter Celibration M- HAR-OW Europrovent etc F TENH 7.27 25 10 lishilly Control 1009 teaminet (2) have Workster 0

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2 of 2			No. of Section Section

HiAdvance Philippines Incorporated The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its

Annabelle Bangoy, Project Manager Page 5 of 14





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philippines@hisdvance.com

Charles Property I Street Street

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES. Project Number: Inonel
Project Manager: Ms. Pamella Andrea L. Pomida

Reported: 21-May-21 09:56

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HAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magallanes, 1232 Makati City, PHILIPPINES Office : +632,729,4327 Fax No: +632.854.8365

Reported:

philippines@hiadvance.com

Project Water Analysis Amet Asia, Inc. Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida 21-May-21 09:56

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Annabelle Bangoy, Project Manager

Page 7 of 14





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Fax No : +632.854.8365 ph@ppines@triadvance.com

Amet Asia, Inc

Project: Water Analysis

set Number: Inonel

oida

Reported: 21-May-21 09:56

Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

Unit 303, One Corporate Center, Julia Vergas Ave. Cor. Meralco Ave.

reporte saddon.

Proping

LOGIN SAMPLE RECEIPT CHECKUST

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Creator: URS

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1	COC & present COC + \$ 2/9/09	7	
	COC is filled out in ink and is legible.	T	
9.	COC's lifed out with all performs oriumable.	T	
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31	Number of containers received match with COC	T	
12	Sample continent have regible labels.	T	
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Annabelle Bangoy, Project Manager

Page 8 of 14



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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philippines@hiadvance.com

Amet Asia, Inc

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone! Project Manager: Ms. Pamella Andrea L. Pomida Reported: 21-May-21 09:56

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave.
Project Number: Inonel Reported:
Pasig PHILIPPINES, Project Manager: Ms. Pumella Andrea L. Pomóda 21-Mav-21 09:56

WQ9 M21E008-01 (Water)

Analyte	Result	Reporting Limit	Units	Dianes	Butch	Prepared	Analysed	Method	Notes
	Pace At	nalytical Serv	rices, LLO	C - Minneap					
EPA 7470A									
Mercury	<0.070	0.20	ug/L	1	342753	17-May-21	18-May-21	7470AW	1

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ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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philippines@hiadvance.com

Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Menalco Ave.
Project Number: Inone I Reported:
Pasig PHILLIPPINES, Project Manager Ms. Parmella Andrea I. Pomida 21-Mary-21 09:56

WQ10 M21E008-02 (Water)

Analyte	Result	Reporting Limit	Units	Otherion	Batch	Prepared	Analyzed	Method	Netics
	Pace Anal	lytical Serv	ices, LLC	- Minneap	olis Lab				
EPA 7470A									
Mercury	<0.070	0.20	ug/L	1	742753	17-May-21	18-May-21	7470AW	

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Amet Asia, Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meraico Ave.
Pasig PHILIPPINES,

Project Manager: Ms. Pamella Andrea L. Pomida

Project Manager: Ms. Pamella Andrea L. Pomida

WQ6 M21E008-03 (Water)

Analyte	Reinst	Reporting Limit	Units	Dilurion	Hatch	Prepared	Ambyred	Method	Notes
	Pace A	nalytical Serv	ices, LLG	- Mioneap	olis Lab				
EPA 7470A									
Mercury	<0.070	0.20	ug/L	1	742753	17-May-21	18-May-21	7470AW	U

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Fax No : +632.854.8365 philippines@hiadvance.com

Amet Asia, Inc. Project. Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Project Number: fnone!
Pasig PHILIPPINES, Project Manager: Ms. Pamella Andrea L. Pomida

21-May-21 09:56

EPA 7470A - Quality Control

Pace Analytical Services, LLC - Minneapolis Lab

Analyte	Heruit	Reporting Limit	Units	Spike Level	Source Result	SAREC	SHEC Limin	ICPD	RPD Limit	Nates
Batch 742753 - EPA 7470A										
BLANK (3959423)				Prepared:	7-May-21	Analyzed:	18-May-21			
Mercury	0.070	0.20	ug/L							- 1
LCS (3959424)				Prepared:	17-May-21	Analyzed:	18-May-21			
Mercury	5.0	0.20	ug/L	5		99	80-120			
MS (3959425)	Soc	rce: 10558914		Prepared	17-May-21	Analyzed:	18-May-21			
Mercury	4.9	0.20	ug/L	5	0.070	97	80-120			
MSD (3959426)	Soc	arce: 10558914	001	Prepared:	17-May-21	Analyzed:	18-May-21			
Mercury	4.8	0.20	ug/L	5	0.070	96	80-120	1	20	

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Amet Asia, Inc.

Project: Water Analysis

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Meralco Ave. Pasig PHILIPPINES,

Project Number: Inone1

Reported: 21-May-21 09:56

Project Manager: Ms. Pamella Andrea L. Pomida

Notes and Definitions

Report Specific Notes

H Indicates the compound was analyzed for, but not detected.

Laboratory Reporting Conventions:

ND Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

Not Reported NR

Sample results reported on a dry weight basis. Reporting Limits have been corrected for % Solid, dry

Relative Procent Difference: (RPDs calculated using Results, not Percent Recoveries). RPD

METHOD REPORTING LIMIT. Reporting level at, or above, the lowest level standard of the Calibration Table MRL

DIL Dilutions are calculated based on deviations from the standard dilution performed for an analysis and may not represent the Dilution found on the analytical raw data.

Reporting Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts,

analytical dilutions and percent solid, where applicable Limit

Prepared Date indicated is the same as Extraction Date

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High Rainfall



HiAdvance Philippines Incorporated 3F Maga Certar, San Antonio St., Passo de Magallanea, 1232 Metall CRy, Philippines 056cs + 632.7729, 4327 Fax Nov. +632.8854,8365 Emait: Info@Nedvance.com.ph Website: www.Nedvance.com.ph

SUMMARY OF RESULTS REPORT NO. M21G429

Project : Customer : Sampling Date : Water Analysis Amet Asia, Inc. July 26 & 27, 2021

Sample ID	Analysis	Unit	Results of Analysis
	pH on-site	pH Units	8.36
	Dissolved Oxygen on-site	mg/L	6.90
	COD	mg/L	ND
	Oli and Grease	mg/L	ND ND
	Cyanide (free)	mg/L	ND
M21G429-01	Residual Chlorine	mg/L	ND
WQ-1	Hexavalent Chromium	mg/L	ND
	Temperature on-site	oC.	27.9
	Arsenic	mg/L	<0.0035
	Cadmium	mg/L	<0.00028
	Lead	mg/L	<0.0026
	Mercury	mg/L	<0.000070
	pH on-site	pH Linits	7.23
	Dissolved Oxygen on-site	mg/L	4.97
	COD	mg/L	ND
	Oil and Grease	mg/L	ND
	Cyanide (free)	J/pm	ND
M21G429-02	Residual Chiorine	mg/L	ND
WQ-2	Hexavalent Chromium	mg/L	NO
1	Temperature on-site	oC.	26.1
- 3	Arsenic	mg/L	< 0.0035
1	Cadmium	mg/L	<0.00028
	Lead	mg/L	<0.0026
	Mercury	mg/L	<0.000070
	pH on-site	pH Units	7.81
	Dissolved Oxygen on-sttr	mg/L	5.25
	COD	mg/L	4.00
	Oil and Grease	mg/L	ND
	Cyanide (free)	mg/L	ND
M21G429-03 WQ-10	Residual Chlorine	mg/L	ND
	Hesavalent Chromium	mg/L	ND
	Temperature on-site	oC .	24.7
	Arsenic	mg/L	<0.0035
	Cedevium	mg/L	<0.00028
	Lead	mg/L	<0.0026
	Mercury	mg/L	<0.00070

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Project Manager



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HIAdvance Philippines Incorporated 3F Maga Centor, Sen Antonio St., Pasco de Magallanes, 1232 Makell City, Philippines Office: +632.7729.4327 Fax No: +632.8654.6365 Email: Info@hiadvance.com.ph Website: www.hiadvance.com.ph

SUMMARY OF RESULTS REPORT NO. M21H005

Project Customer Water Analysis Amet Asia, Inc. July 29, 2021

Customer Sampling Date

> Sample ID Analysis Results of Analysis Unit pH on-site pH Units 7.50 Temperature on-site 90 24.3 Dissolved Oxygen on-site mg/L 6.14 000 mg/L 5.00 Oil and Grease mg/L ND Cyanide (free) M21H005-01 mg/L ND WQ-4 Residual Chlorine mg/L ND Hexavalent Chromium mg/L ND Arsenic mg/L < 0.0035 Cadmium mg/L < 0.00028 Lead mg/L < 0.0026 Mercury mg/L < 0.000070 pH on-site pH Units 7.10 Temperature on-site 24.8 Dissolved Oxygen on-site 5.03 mg/L COD 3.00 mg/L Of and Grease mg/L ND M21H005-02 WQ-5 Cyanide (free) mg/L ND Residual Chlorine mg/L ND Hexavalent Chromium ND mg/L < 0.0035 mg/L mg/L < 0.00028 mg/L < 0.0026 mg/L <0.000070 pH on-sth pH Units 8.08 Temperature on-site 23.0 Dissolved Oxygen on-site 6.48 mg/L COD 4.00 mg/L Oil and Greas ND mg/L M21H005-03 Cyanide (free) ND mg/L WQ-6 Residual Chlorine ND mg/L Hexavalent Chromium ND mg/L < 0.0035 Cadmium mg/L < 0.00028 Lead < 0.0026 Mercury mg/L <0.000070

HiAdvance Philippines Incorporated

The resists in this report apply to the samples analysed in accordance with the civals of canooly document. This anomary is only a part of the complate analytical report and most be reproduced in its entires.

Annabelle Bangoy Project Manager



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Sample ID	ample ID Analysis		Results of Analysis
	pH on-site	pH Units	7.09
	Dissolved Oxygen on-site	mg/L	5.46
	C00	mg/L	4.00
	Of and Gresse	mg/L	ND
	Cyanide (free)	mg/L	ND
M21G429-04	Residual Chlorine	mg/L	ND
WQ-9	Hexavalent Chromium	mg/L	ND
	Temperature on-site	°C	23.7
	Arsenic	mg/L	<0.0035
	Cadmium	mg/L	<0.00028
	Lead	mg/L	< 0.0026
	Mercury	mg/L	<0.000070
	pH on-site	pH Units	8.00
	Dissolved Oxygen on-site	mg/L	5.27
	C00	mg/L	3.00
	Oil and Grease	mg/L	MD
	Cyanide (free)	mg/L	ND
M21G429-05	Residual Chlorine	mg/L	ND
WQ-8	Hexavalent Chromium	mg/L	MD
	Temperature on-site	eC.	26.8
	Arsenic	mg/L	< 0.0035
	Cadmium	mg/L	<0.00028
	Lead	mg/L	<0.0026
	Mercury	mg/L	< 0.000070

Standard Methods for the Examination of Water and Wastewater 23° Edition, APHA/AWMA

EPA 9213 "Potentiometric Determination of Cyanide in Aqueous Samples and Distillates with Ion-Selective Electrode", Rev. 0, 1996

Definition of Yerms:

Chemical Oxygen Domand (COD) is the amount of oxygen required to degrade the organic compounds of water.

Cyanide can be measured either as free or total cyanide. Free cyanide consists of hydrogen cyanide (HCN) and the cyanide fon (CN-), which represent the more toxic forms of cyanide.

Dissolved oxygen analysis measures the amount of gaseous exygen (O₂) dissolved in an expecus solution.

Historivation chromium (chromium VII) refers to chemical compounds that contain the element chromium in the +6 oxidation state. One number of gaseous experiments amounts.

Oil and Grasse is defined as any material recovered as a substance soluble in the solvent. It includes other material extracted by the solvent from an acciding sample and not volatified during the test.

PM is a measurement of the hydrogen (on concentration reflecting alkalinity or acidity of the water, residual is Chlorine a low level of chlorine remaining in water after its initial application.

Temperature - The degree of horness or coldness of a body or environment.

Please see the "Report Specific Notes" on the last part of the Analytical Report for applicable qualifiers.

HiAdvance Philippines Incorporated

Annabelic Bangoy Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of costnels document. This summary is only a part of the complete analysical report and must be reproduced to its entirely.

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



OSTREA MINERAL LABORATORIES, INC.

ssaving and Environmental Testing Specialist

205 Tres Montañas Business Complex, JR Borja Ext., Gusa, Cagayan de Oro City Relefax : (1983) 880-9070 Bresil : cmil, micdanac@email.com/achasco@estresishs.com.ab DENR Recognized Laboratory with CR No. 086/2018 DOH Accredited for Drinking Water Accreditation No. 10-024-1820-LW-2

CERTIFICATE OF ANALYSIS

Original Issue
Duplicate Issue by Request
Revision Copy

Customer

: HiAdvance Philippines, Inc.

Address

: 3rd Floor Maga Center Bldg. San Antonio St. Paseo de

Magallanes Makati City

Attention

: Ms. Annabelle Bangoy

Contact Information: 729-4327

CAN : C21-08-039M-1

Date of Issue :8/18/2021

RAN : R21-07-054M INVOICE # :-

Date Received: 7/29/2021

Date Sampled :-

Date Analyzed: 7/29-8/1/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Method
WQ-4	Fecal Coliform	40	MPN/100 mL	Multiple Tube Fermentation Technique
7/29/2021				
11:47 am				
WQ-5	Fecal Coliform	350	MPN/100 mL	Multiple Tube Fermentation Technique
7/29/2021				
11:10 am				
WQ-6	Fecal Coliform	55	MPN/100 mL	Multiple Tube Fermentation Technique
7/29/2021				
09:27 am				
WQ-7	Fecal Coliform	55	MPN/100 mL	Multiple Tube Fermentation Technique
7/29/2021				
07:55 am				

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Page 1 of 2

C21-08-039M

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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	Sample Descriptions	Parameters	Results	Units	Method		
	GW-9 7/27/2021	Fecal Coliform	17	MPN/100 mL	Multiple Tube Fermentation Technique		
	09:25 am			12			
	GW-10	Fecal Coliform	2.0	MPN/100 mL	Multiple Tube Fermentation Technique	**	
	7/27/2021 08:45 am				40		
-							_

Total Analysis: 6

Total No. of Sample : 6

Remarks

Sample Submission: Submitted by the Customer

Reference : Standard Meth

: Standard Methods for the Examination of Water and Wastewater, 23rd ed. : Results relate only to the item tested and received by the laboratory.

The customer is given 7 days upon receipt to raise questions or clarifications on any part or content of the certificate,

otherwise the result(s) is/are deemed accepted.

Certified Correct by:

KISHA Marke T. HALLAZGO, RMT Medical Technologist

JANE KAHLA MARVASA, RCh Laboratory Head PRC No. 0012581 Approved by:

Head of Operations PRC No. 0011786

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DENR Recognized Laboratory with CR No. 086/2018

DOH Accredited for Drinking Water Accreditation No. 10-024-1820-LW-2

CERTIFICATE OF ANALYSIS

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Address

: 3rd Floor Maga Center Bldg. San Antonio St. Paseo de

Magallanes Makati City

Attention

: Ms. Annabelle Bangoy

Contact Information: 729-4327

CAN

: C21-08-036M-1

Date of Issue :8/17/2021

RAN :R21-07-052M

INVOICE #

:-

Date Received: 7/27/2021 Date Sampled :-

Date Analyzed: 7/27-30/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Method
WQ-8 7/27/2021 11:35 am	Fecal Coliform	21	MPN/100 mL	Multiple Tube Fermentation Technique
WQ-9 7/27/2021 09:55 am	Fecal Coliform	11	MPN/100 mL	Multiple Tube Fermentation Technique
WQ-10 7/27/2021 08:30 am	Fecal Coliform	8.2	MPN/100 mL	Multiple Tube Fermentation Technique
GW-8 7/27/2021 10:55 am	Fecal Coliform	<1.8	MPN/100 mL	Multiple Tube Fermentation Technique

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Annexes

Sample

Parameters

*Surfactants (MBAS)

Descriptions

< 0.10

mg/L

Anionic Surfactants as MBAS

Total Analysis: 42

Total No. of Sample :6

Sample Submission ; Submitted by the Customer

Reference

: "US EPA 352.1, Standard Methods for the Examination of Water and Wastewater, 23rd ed.

Remarks

: Results relate only to the item tested and received by the laboratory.

The customer is given 7 days upon receipt to raise questions or clarifications on any part or content of the certificate,

otherwise the result(s) is/are deemed accepted.

Certified Correct by:

JANE KARLA MARVASA, RCH PRC No. 0012581

MASCO, RCh at of Coerations

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C21-08-035M

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DENR Recognized Laboratory with CR No. 086/2018

DOH Accredited for Drinking Water Accreditation No. 10-024-1820-LW-2

CERTIFICATE OF ANALYSIS

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Customer

: HiAdvance Philippines, Inc.

Address

: 3rd Floor Maga Center Bldg. San Antonio St. Paseo de

Magallanes Makati City

Attention

: Ms. Annabelle Bangoy

Contact Information: 729-4327

CAN

:C21-08-036M

Date of Issue :8/17/2021

RAN

:R21-07-052M

INVOICE #

Date Received: 7/27/2021

Date Sampled :-

Date Analyzed: 7/27-8/16/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Method
8-DW	Color (True)	10	cu	Visual Comparison
7/27/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
11:35 am	Total Suspended Solids (TSS)	4	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO _A sP)	0.12	mg/L	Stannous Chloride
	*Sulfate (5O ₆ 2-)	<1	mg/L	Turbidimetric
	Nitrate (NO ₂ "-N)	0.03	mg/L	Colorimetric/Brucine
	*Surfactants (MBA5)	<0.10	mg/L	Anionic Surfactants as MBAS
WQ-9	Color (True)	5	cu	Visual Comparison
7/27/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
09:55 am	Total Suspended Solids (TSS)	<3	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ *P)	<0.01	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	20	mg/L	Turbidimetric
	Nitrate (NO ₂ -N)	<0.01	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS

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Annexes

Sample

Parameters

*Surfactants (MBAS)

Descriptions

< 0.10

mg/L

Anionic Surfactants as MBAS

Total Analysis: 42

Total No. of Sample :6

Sample Submission: Submitted by the Customer

Reference

; "US EPA 352.1, Standard Methods for the Examination of Water and Wastewater, 23rd ed.

Remarks

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Cartified Correct by:

Laboratory Head PRIC No. 0012581

SCO, RCh No. 0011786

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Sample Descriptions	Parameters	Results	Units	Method
WQ-6	Color (True)	5	cu	Visual Comparison
7/29/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
09:27 am	Total Suspended Solids (TSS)	3	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ 3P)	0.04	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 3-)	<1	mg/L	Turbidimetric
	Nitrate (NO _a N)	0.12	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
WQ-7	Color (True)	10	cu	Visual Comparison
7/29/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
07:55 am	Total Suspended Solids (TSS)	10	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ *P)	<0.01	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 3-)	11	mg/L	Turbidimetric
	Nitrate (NO ₃ -N)	0.05	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
GW-5	Color (True)	<5	cu	Visual Comparison
7/29/2021	Blochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
10:11 am	Total Suspended Solids (TSS)	<3	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₊ 3P)	0.01	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 3-)	<1	mg/L	Turbidimetric
	Nitrate (NO _a N)	1.03	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
GW-6	Color (True)	<5	cu	Visual Comparison
7/29/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
09:00 am	Total Suspended Solids (TSS)	<3	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ 5P)	0.10	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	<1	mg/L	Turbidimetric
	Nitrate (NO ₉ -N)	0.42	mg/L	Colorimetric/Brucine

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OSTREA MINERAL LABORATORIES, INC.

Asserting and Environmental Testing Specialist

205 Tres Montañes Business Complex, JR Borja Ext., Gusa, Cagayan de Oro City Telefax : (088) 880-9070

Email : omli.mindanou@gmeil.com/apbasco@ostrealebs.com.ph

DENR Recognized Laboratory with CR No. 086/2018 DOH Accredited for Drinking Water Accreditation No. 10-024-1820-LW-2

CERTIFICATE OF ANALYSIS

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Magallanes Makati City

Attention

: Ms. Annabelle Bangoy

Contact Information: 729-4327

CAN

: C21-08-039M

Date of Issue

:8/18/2021

RAN

:R21-07-054M

INVOICE #

Date Received: 7/29/2021

Date Sampled :-

Date Analyzed: 7/29-8/16/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Method
WQ-4	Color (True)	5	CU	Visual Comparison
7/29/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day 800 Test
11:47 am	Total Suspended Solids (TSS)	4	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ *-P)	0.03	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	4	mg/L	Turbidimetric
	Nitrate (NO ₂ "-N)	0.26	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
WQ-5	Color (True)	<	cu	Visual Comparison
7/29/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
11:10 am	Total Suspended Solids (TSS)	-3	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ *P)	<0.01	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 3-)	<1	mg/L	Turbidimetric
	"Nitrate (NO ₃ "-N)"	0.44	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS

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OSTREA MINERAL LABORATORIES, INC.

Assering and Emproportal Testing Specialist

205 Tres Montañas Business Complex, IR Berja Ext., Gusa, Cagayon de Oro City Telefan : (DSS) 880-9070

neide : (000) 800-2070

DENR Recognized Laboratory with CR No. 086/2018

DOH Accredited for Drinking Water Accreditation No. 10-024-1820-LW-2

CERTIFICATE OF ANALYSIS

Original Issue & Duplicate Issue by Request Revision Copy

Customer

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Magallanes Makati City

Attention

: Ms. Annabelle Bangoy

Contact Information: 729-4327

CAN

: C21-08-035M-1

Date of Issue

:8/17/2021

RAN

:R21-07-051M

INVOICE #

Date Received: 7/26/2021

Date Sampled :-

Date Analyzed: 7/26-8/1/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Method
WQ-1 7/26/2021 10:50 am	Fecal Coliform	350	MPN/100mL	Multiple Tube Fermentation Technique
WQ-2 7/26/2021 02:00 pm	Fecal Coliform	92x10 ²	MPN/100mL	Multiple Tube Fermentation Technique
GW-1 7/26/2021 09:45 am	Fecal Collform	<1.8	MPN/100mL	Multiple Tube Fermentation Technique

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C21-08-035M-1

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nples, IR Borja Ext., Gusa, Cagayan de Ovo City Telefax 1 (088) 839-9070

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Contact Information: 729-4327

CAN

:C21-08-035M

8

Date of Issue :8/17/2021

:R21-07-051M

INVOICE #

Date Received: 7/26/2021

Date Sampled :-

Date Analyzed : 7/26-8/16/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Method
WQ-1	Color (True)	5	cu	Visual Comparison
7/26/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
10:50 am	Total Suspended Solids (TSS)	47	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ 3P)	0.08	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	<1	mg/L	Turbidimetric
	Nitrate (NO ₂ "-N)	0.03	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
WQ-2	Color (True)	10	cu	Visual Comparison
7/26/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
02:00 pm	Total Suspended Solids (TSS)	50	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ 5P)	0.11	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	8	mg/L	Turbidimetric
	Nitrate (NO ₅ -N)	0.41	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS

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C21-08-035M

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanos, 1232 Makati City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8385 Email: Info@hiadvance.com.ph Website: www.hiadvance.com.ph

Sample ID	Analysis	Unit	Results of Analysis
	pH on-site	pH Units	7.69
	Temperature on-site	oC.	20.7
	Dissolved Oxygen on-site	mg/L	5.43
	COD	mg/L	ND ND
	Oil and Greese	mg/L	ND
M21H005-04	Cyanide (free)	mg/L	ND
WQ-7	Resklual Ohlorine	mg/L	ND
	Hexavalent Chromium	mg/L	ND
	Arsenic	mg/L	0.0035
	Cadmlum	mg/L	<0.00028
	Lead	mg/L	< 0.0026
	Mercury	mg/L	<0.000070

Standard Methods for the Examination of Water and Wasteweiter 23* Edition, APHA/AWWA
EPA 9233 *Potentionsetric Determination of Cyanide in Aqueous Samples and Distributes with Ion-Selective Electrode*, Rav. 0, 1995

Chemical Oxygen Demand (CDD) is the amount of oxygen required to degrade the organic compounds of water.

Cynalde can be measured either as fine or total cynalde. Free cyanide consists of hydrogen cyanide (HCN) and the cyanide ian (CN-), which represent the more toxic forms of cyanide. Dissolved on an aqueous solution tested oxygen analysis measures the amount of generals engineered that contain the element chromium in the +6 oxidation state. Chromium+37 refers to chemical congruends that contain the element chromium in the +6 oxidation state. Chromium+6 is generally associated with industrial processes, though it does occur naturally in very small amounts.

Oil and Granase is defined as any material recovered as a substance soluble in the envent, it includes other material estructed by the solvent from an acidited sample and not volatilized during the tast.

PM is a measurement of the hydrogen on concentration reflecting elitability or acidity of the water.

Residual is Chlorine a low level of chlorine remaining in water after its initial application.

Temperature - The degree of hotness or coldness of a body or environment.

Please see the "Report Specific Notes" on the last part of the Analytical Report for applicable qualifiers.

HiAdvance Philippines Incorporated

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Annabelle Bangoy Project Manager





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SUMMARY OF RESULTS REPORT NO. M21H006

Project

Water Analysis Amet Asia, Inc. July 30, 2021

Customer Sampling Date :

Sample ID	Analysis	Unit	Results of Analysis
	pH on-site	pH Units	7.42
	Temperature on-site	°C	26.7
	Dissolved Oxygen on-site	mg/L	7.79
M21H006-01 WQ-3	COD	mg/L	14.0
	Off and Grease	mg/L	ND
	Cyanide (free)	mg/L	ND
	Residual Chloring	mg/L	ND
	Hexavalent Chromium	mg/L	ND
	Arsenic	mg/L	< 0.0035
	Cadmium	mg/L	<0.00028
	Load	mg/L	< 0.0026
	Mercury	mg/L	<0.000070

Standard Methods for the Exemination of Weber and Wastewater 23° Edition, APHVAWAWA EPA 9213 "Potentiometric Determination of Cyanide in Aqueous Samples and Distillates with Ion-Scientive Electrode", Rev. 0, 1996

Chemical Oxygen Demand (COD) is the amount of oxygen required to degrade the organic compounds of water.

Cyanide can be measured either as free or total cyanide. Free cyanide consists of hydrogen cyanide (BICN) and the cyanide ion (CN-), which represent the more toxic forms of cyanide.

Dissolved congren analysis measures the amount of generous oxygen (Ou) dissolved in an equeous solution. Heckevalent chromium (chromium VI) refers to chemical compounds that contain the element chromium in the +6 coldation state. Chromium+6 is generally associated with industrial processes, though it does occur naturally in very small amounts.

Oil and Granas is defined as any material recovered as a substance soluble in the solvent. It includes other material extracted by the solvent from an oxidited sample and not volatilized during the test.

PM is a measurement of the hydrogen ion concentration reflecting allulability or acidity of the water.

Residual is Chlorine a law level of chisprine menalizing in water often is initial application.

Temperature – The degree of hotness or coldness of a body or environment.

Please see the "Report Specific Notes" on the last part of the Analytical Report for applicable qualifiers.

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13/4 1874s Annabelle Bango Project Manager

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Annex 5. Laboratory report of groundwater water quality analysis



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SUMMARY OF RESULTS REPORT NO. M21G428

Project Customer Sampling Date Water Analysis Amet Asla, Inc. July 26 & 27, 2021

Sample ID	Analysis	Unit	Results of Analysis
	pH on-site	pH Units	7.40
	Dissolved Oxygen on-site	mg/L	3.50
	COD	mg/L	4.00
	Oil and Gresse	mg/L	<0.939
	Cyanide (free)	mg/L	0.0205
M21G428-01	Residual Chlorine	mg/L	<0.200
GW-1	Arsenic	mg/L	< 0.00697
	Cidmium	mg/L	< 0.000723
	Lead	mg/L	<0.00365
	Hexavalent Chromlum	mg/L	< 0.00114
	Temperature on-site	9C	26.2
	Mercury	mg/L	<0.000070
	pH on-site	pH Units	6.57
	Dissolved Oxygen on-site	mg/L	3.62
	COD	mg/L	6.00
	Oil and Grease	mg/L	<0.939
	Cyanide (free)	mg/L	<0.0159
M21G428-02	Residual Chlorine	mg/L	<0.200
GW-2	Arsenic	mg/L	< 0.00697
	Cadmium	mg/L	< 0.000723
	Lead	mg/L	<0.00365
	Hexavalent Chromium	mg/L	< 0.00114
- 3	Temperature on-site	eC.	26.7
	Mercury	mg/L	<0.000070

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SUMMARY OF RESULTS REPORT NO. M21H002

Project Customer Sampling Date: Water Analysis Amet Asia, Inc.

July 30, 2021

Sample ID	Analysis	Unit	Results of Analysis
	pH on-site	pH Units	6.71
	Temperature on-site	■C	26.3
	Dissolved Oxygen on-site	mg/L	4.09
	CDO	mg/L	4.00
	Oil and Grease	mg/L	ND
M21H002-01	Cyanide (free)	mg/L	ND
GW-3	Residual Olforine	mg/L	ND
	Arsenic	mg/L	< 0.00697
	Cadmium	mg/L	<0.000723
	Lead	mg/L	<0.00365
	Hexavalent Chromium	mg/L	ND
	Mercury	mg/L	<0.000070
	pH on-site	pH Units	6.57
	Temperature on-site	9C	25.1
	Dissolved Oxygen on-site	mg/L	3.93
	COD	mg/L	7.00
	Oil and Grease	mg/L	ND
M21H002-02	Cyanide (free)	mg/L	ND
GW-4	Residual Chlorine	mg/L	ND
	Arsenic	mg/L	<0.00697
	Cadmium	mg/L	< 0.000723
	Lead	mg/L	< 0.00365
	Hexavalent Chromium	mg/L	ND
	Mercury	mg/L	<0.000070
	pH on-site	pH Units	7.83
	Temperature on-site	eC .	23.1
	Dissolved Oxygen on-site	mg/L	5.54
	COD	mg/L	3.00
	Oll and Grease	mg/L	ND
H21H002-03	Cyanide (free)	mg/L	ND
GW-7	Residual Chlorine	mg/L	ND
	Arsenic	mg/L	<0.00697
	Cadmium	mg/L	<0.000723
	Load	mg/L	< 0.00365
	Hexavalent Chromium	mg/L	ND
	Mercury	mg/L	<0.000070

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Annabel e Hangoy Project Manager





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REPORT NO. M21H001

Project

Water Analysis

Customer : Sampling Date : Amet Asia, Inc. July 29, 2021

Sample ID	Analysis	Unit	Results of Analysis
	pH on-site	pH Units	6.48
	Temperature on-site	eC.	26.2
	Dissolved Chygen on-site	mg/L	4.28
	000	mg/L	13.0
	Oil and Grease	mg/L	ND
M21H001-01	Cyanide (free)	mg/L	ND
GW-5	Residual Chlorine	mg/L	ND
	Arsenic	mg/L	< 0.00697
	Cadmium	mg/L	<0.000723
	Lead	mg/L	< 0.00365
	Hexavalent Chromium	mg/L	ND
	Mercury	mg/L	<0.000070
	pH on-site	pH Units	6.10
	Temperature on-site	oC.	24.9
	Dissolved Oxygen on-site	mg/L	4.43
	COD	mg/L	14.0
2424.000-0	Oil and Grease	mg/L	ND
M21H001-02	Cyanide (free)	mg/L	ND
GW-6	Residual Chlorine	mg/L	ND
	Arsenic	mg/L	< 0.00697
	Cadmium	mg/L	<0.000723
- 3	Lead	mg/L	<0.00365
	Hesavalent Chromium	mg/L	ND
	Mercury	mg/L	<0.000070

References

Standard Methods for the Examination of Water and Westewater 23° Edition, APHA/AWWA
EPA 5213 "Potentiametric Determination of Cyanida in Aquesias Samples and Distillates with Ion-Selective Electrode", New, Q, 1995

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OSTREA MINERAL LABORATORIES, INC.

205 Trea Montañas Bualoess Complex, JR Borje Ext., Guse, Cagayan de Oro City Yelefax : (088) 880-9070 DENR Recognized Laboratory with CR No. 086/2018

DOH Accredited for Drinking Water Accreditation No. 10-024-1820-LW-2

CERTIFICATE OF ANALYSIS

Original Issue Duplicate Issue by Request Revision Copy

Customer

: HiAdvance Philippines, Inc.

Address

: 3rd Floor Maga Center Bidg. San Antonio St. Paseo de

Magallanes Makati City

Attention

: Ms. Annabelle Bangoy

Contact Information: 729-4327

CAN : C21-08-040M

Date of Issue :8/18/2021

RAN

H :-

:R21-07-056M

INVOICE # :-

Date Received: 7/30/2021

Date Sampled :-

Date Analyzed: 7/30-8/16/2021

RESULTS OF ANALYSIS

Sample Descriptions	Parameters	Results	Units	Method
WQ-3	Color (True)	10	cu	Visual Comparison
7/30/2021	Blochemical Oxygen Demand (BOD)	<1	rog/L	S - Day BOD Test
11:54 am	Total Suspended Solids (TSS)	13	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ *P)	0.03	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	2	mg/L	Turbidimetric
	"Nitrate (NO _* "-N)"	0.13	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
GW-3	Color (True)	<5	cu	Visual Comparison
7/30/2021	Blochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
10:42 am	Total Suspended Solids (TSS)	4	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ *P)	<0.01	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	<1	mg/L	Turbidimetric
	"Nitrate (NO ₃ "-N)"	1.09	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS

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Sample Descriptions	Parameters	Results	Units	Method
GW-1	Color (True)	5	cu	Visual Comparison
7/26/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	S - Day BOD Test
09:45 am	Total Suspended Solids (TSS)	<3	- mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ 5P)	0.31	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	46	mg/L	Turbidimetric
	Nitrate (NO ₉ -N)	0.91	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
GW-2	Color (True)	<5	cu	Visual Comparison
7/26/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day 800 Test
01:20 pm	Total Suspended Solids (TSS)	43	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ 2P)	0.06	mg/L	Stannous Chloride
	*Sulfate (5O ₄ 2-)	<1	mg/L	Turbidimetric
	Nitrate (NO ₃ "-N)	83.0	mg/L	Colorimetric/Brucine
	*Surfectants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS

Total Analysis: 28

Total No. of Sample :4

Sample Submission: Submitted by the Customer with signed waiver of liability.

Reference Remarks

: "US EPA 352.1, Standard Methods for the Examination of Water and Wastewater, 23rd ed.

: Results relate only to the Item tested and received by the laboratory.

The customer is given 7 days upon receipt to raise questions or clarifications on any part or content of the certificate, otherwise the result(s) is/are deemed accepted.

PRC No. 0011786

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Sample Descriptions	Parameters	Results	Units	Method	
GW-4	Color (True)	<5	ċ	Visual Comparison	
7/30/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test	
09:44 am	Total Suspended Solids (TSS)	<3	- mg/L	Gravimetric (dried @ 103-105°C)	
	*Phosphate (PO _e 3P)	0.14	mg/L	Stannous Chloride	
	*Sulfate (SO ₄ 3-)	<1	mg/L	Turbidimetric	20
	Nitrate (NO ₂ -N)	1.74	mg/t.	Colorimetric/Brucine	
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS	
GW-7	Color (True)	4	cu	Visual Comparison	
7/30/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test	
08:00 am	Total Suspended Solids (TSS)	<3	mg/L	Gravimetric (dried @ 103-105°C)	
	*Phosphate (PO ₄ 3P)	0.12	mg/L	Stannous Chloride	
	"Sulfate (SO ₄ 3-)	10	mg/L	Turbidimetric	
	"Nitrate (NO ₃ "-N)"	0.69	mg/L	Colorimetric/Brucine	
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS	

Total Analysis: 28

Total No. of Sample :4

Sample Submission: Submitted by the Customer

Reference Remarks

*US EPA 352.1, Standard Methods for the Examination of Water and Wastewater, 23rd ed.

Results relate only to the item tested and received by the laboratory.

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Certified Correct by:

MARVASA, RCh RC No. 0012581

CO, RCh

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PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Sample Descriptions	Parameters	Results	Units	Method
WQ-10	Color (True)	15	CU	Visual Comparison
7/27/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Yest
08:30 am	Total Suspended Solids (TSS)	5	mg/L	Gravlmetric (dried @ 103-105°C)
	*Phosphate (PO ₄ 3P)	0.04	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	<1	mg/L	Turbidimetric
	Nitrate (NO _s -N)	0.03	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
GW-8	Color (True)	<5	cu	Visual Comparison
7/27/2021	Blochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
10:55 am	Total Suspended Solids (TSS)	<3	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO _x *-P)	0.04	mg/L	Stannous Chloride
	*Sulfate (SO _a 3-)	2	mg/L	Turbidimetric
	*Nitrate (NO ₃ *-N)*	1.19	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
GW-9	Color (True)	<5	cu	Visual Comparison
7/27/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
09:25 am	Total Suspended Solids (TSS)	3	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ *-P)	<0.01	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 2-)	4	mg/L	Turbidimetric
	Nitrate (NO ₂ "-N)	0.81	mg/L	Colorimetric/Brucine
	*Surfactants (MBAS)	<0.10	mg/L	Anionic Surfactants as MBAS
GW-10	Color (True)	ø	cu	Visual Comparison
7/27/2021	Biochemical Oxygen Demand (BOD)	<1	mg/L	5 - Day BOD Test
08:45 am	Total Suspended Solids (TSS)	<3	mg/L	Gravimetric (dried @ 103-105°C)
	*Phosphate (PO ₄ *-P)	0.10	mg/L	Stannous Chloride
	*Sulfate (SO ₄ 3-)	3	mg/L	Turbidimetric
	"Nitrate (NO ₅ "-N)"	0.48	mg/L	Colorimetric/Brucine

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Sample Units

Descriptions

Fecal Coliform 27 MPN/100mL Multiple Tube Fermentation Technique

7/26/2021 01:20 pm

GW-2

Total Analysis: 4

Total No. of Sample :4

Sample Submission ; Submitted by the Customer with signed waiver of liability.

Reference

Standard Methods for the Examination of Water and Wastewater, 23rd ed.

Remarks

: Results relate only to the item tested and received by the laboratory.

The customer is given 7 days upon receipt to raise questions or clarifications on any part or content of the certificate,

otherwise the result(s) is/are deemed accepted.

Certified Correct by:

KISHADAARIE T. HALLAZGO, RIMT Medical Technologis PRC No. 0063765

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Sample Descriptions	Parameters	Results	Units	Method	
GW-5 7/29/2021	Fecal Coliform	<1.8	MPN/100 mL	Multiple Tube Fermentation Technique	
10:11 am			2.		
GW-6	Fecal Coliform	4.5	MPN/100 mL	Multiple Tube Fermentation Technique	
7/29/2021 09:00 am					

Total Analysis: 6

Total No. of Sample :6

Sample Submission: Submitted by the Customer

Reference

: Standard Methods for the Examination of Water and Wastewater, 23rd ed.

Remarks : 88

: Results relate only to the item tested and received by the laboratory.

The customer is given 7 days upon receipt to raise questions or clarifications on any part or content of the certificate,

otherwise the result(s) is/are deemed accepted.

Certified Correct by:

KISHA MARIE T. HALLAZGCI, RIMT Medical Technologist PRC No. 0063765

JANE KANA M NARVASA, RCh Laboratory Head PRC No. 0017581 Approved by

Head of Operations PRC No. 0011786

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Annexes

	Sample Descriptions	Parameters	Results	Units	Method	
	GW-7 7/30/2023	Fecal Coliform	<1.8	MPN/100 mL	Multiple Tube Fermentation Technique	
	98:00 am			10		
Total No. of So	- 2002		Total Analy	shc 4		_
Sample Submi Reference Remarks	Standard Met Standard Met Results relate The customer	fields for the Examp only to the lises ser	ited and recu a receipt to a	ford by the labor	tor, 13rd ed. retory. claimCorons on any part or content of the certificate,	
Constitut Co	KISHA MARE Mark	PLT HALLAZGO, RIVIT 21 Technologist No. 0063165	fat	Manual Andreas	Approved by: p Across of Subcci, Ach Height Operation PRE No. COLLITSE	

Not uplid without OMLI dry seal

Page 2 of 2

(III-88-04/M)

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Annex 6. Local Water District Information

Tagoloan water district

a. Service area (barangay, municipality or city)

Barangay	Municipality
Brgy. Mohon	Tagoloan
Santa Cruz of Sihayon left and right	
Poblacion	
Baluarte	
Sogbongcogon	
Gracia	
Promise Land	
Natumolan	

b. Water source (river, well, spring, rain, etc.) and location

Water Source Name	Location	Service Area
Jasaan Spring	Jasaan, Mis. Or.	Dumaguing and Corales
Sobongcogon deep well	Sogbongcogon, Tagoloan	Mohon, Santa Cruz left,
Gracia deep well	Gracia, Tagoloan	Sihayon, Poblacion,
Promise land deep well	Promise Land, Tagoloan	Baluarte, Portion of
Santa Cruz deep well	Santa Cruz, Tagoloan	Natumolan
Sihayon Right deep well	Sihayon, Tagoloan	

c.Water Treatment

Chlorination - collection through intake box then apply chlorine, and Hypochloride before distribution

d. Method of distribution

water Metering - level 3 water system

e. Monthly volume of water distributed (2018 – 2020) no data

f. Projected water usage (2020 onwards), if available no data

g. Capita of Household water demand factor

33 L



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Annexes

Cagayan de Oro city water district

CAGAYAN DE ORO CITY WATER DISTRICT

Management Services Department

Corporate Planning Division

July 22, 2021

Date

REQUEST FOR COWD DATA

Date of Request : July 21, 2021
Requested by : Ms. Nina Arra DJ. Rivera

Agency : Amet-Asia Inc.

Address : Unit 303 One Corporate Center, Julia Vargas Avenue, corner Meralco Ave.,

Ortigas Center, Psaig City 1605

DATA REQUESTED

A. Service Area of the Water Concessionaire

Name of Barangay	Name of Barangay
West Service Area	East Service Area
Balulang	Agusan
Bayabas	Bugo
Bonbon	Camaman-an
Bulua	Consolacion
Canitoan	Cugman
Carmen	Gusa
lponan	Lapasan
Kauswagan	Macabalan
Lumbia	Macasandig
Pagatpat	Nazareth
Patag	Poblacion
Opol	Puerto
(Opol includes only the following barangays:Barra, Bonbon,	Puntod
Igpit, Luyong Bonbon, Malanang, Poblacion, and Taboc)	Tablon
	Casinglot, Tagoloan

B. Water Source and Location

	Location	Coord	inates	Status
Water Source	Location	Longitude	Latitude	Otatus
Deepwell				"
PW No. 1	Pilot de Lara St., Macasandig	124" 38' 10.00"	8" 28" 7.00"	Operational
PW No. 2	Bontula, Macasandig	124" 38' 53,1"	8" 27" 56.50"	Operational
PW No. 3A	Tomas Saco St., Macasandig	124" 28' 43.90"	8' 27' 51.30"	Under Rehabilitation
PW No. 4	Biasong, Macasandig	124" 38" 37.50"	8" 28" 3.40"	Operational
PW No. 5	Reyes Subdivision, Bugo	124" 46" 28.00"	8" 30" 52.00"	Operational
PW No. 6	Bantiles, Bugo	124° 45' 45.00°	8" 30" 17.00"	
PW No. 7	Blasong, Macasandig	124' 38' 17 90"	8" 27" 51.10"	Operational
PW No. 8	Ramonal Village, Nazareth	124" 39' 5.50"	8" 28" 9.60"	Operational
PW No. 9	Biasong, Macasandig	124" 38" 4.90"	8° 27" 34.80"	Operational
PW No. 10	PN Roa Subdivision, Calaanan	124° 36' 22.70"	8" 27" 49.00"	
PW No. 10A	PN Roa Subdivision, Calaanan	124" 36' 22,70"	8" 27" 49.00"	Operational
PW No. 11	Bantiles, Bugo	124" 45" 29.30"	8" 30" 10.80"	Operational

u.



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

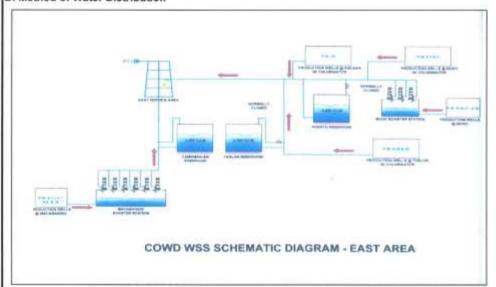
Annexes

Water Source	Location	Coord	inates	Status
water source	Location	Longitude	Latitude	Status
Deepwell				
PW No. 12	PN Roa Subdivision, Calsanan	124" 36" 21.30"	8" 28" 6.30"	Not Operational
PW No. 14	Balongis, Balulang	124" 37" 58.10"	8" 27" 23.00"	Operational
PW No. 15	CDO Resettlement , Calaanan	124" 38' 22,70"	8" 27" 49.00"	Under Rehabilitatio
PW No. 16	Tomas Saco St., Macasandig	124" 38' 45.30"	8" 28" 9.40"	Operational
PW No. 17	Balongis, Balulang	124* 37* 59.00*	8" 27" 48.00"	Operational
PW No. 18	San Agustin Valley, Calaanan	124" 36' 40.00"	8* 27* 38.00*	Not Operational
PW No. 19	Balulang	124° 38' 24.00"	8" 26" 41.00"	Operational
PW No. 20	Villa Trinitas Subdivision, Bugo	124" 46' 16.00"	8" 30" 31.00"	Operational
PW No. 21	Villa Trinitas Subdivision, Bugo	124" 46' 38.00"	8" 30" 41.00"	Operational
PW No. 22	Villa Trinitas Subdivision, Bugo	124" 46' 20.00"	8" 30" 55.00"	Operational
PW No. 23	Agusan	124" 45' 14.00"	8" 30" 1.00"	Operational
PW No. 24	Caballero Compound, Balulang	124" 38' 16.00"	8" 26" 43.00"	Operational
PW No. 25	Villa Angela Subdivision, Balulang	124" 38' 22.00"	8" 27" 33.00"	Operational
PW No. 26	Balulang	124" 38' 3.00"	8° 27" 46.00"	Operational
PW No. 27	Macanhan, Carmen	124" 38' 24.00"	8" 28" 42.00"	Operational
PW No. 28	Phasco Village, Tablon	124" 44' 30.00"	8" 29" 17.00"	Operational
PW No. 29	Phasco Village, Tablon	124° 44' 44.00"	8" 28" 23.00"	Operational
PW No. 30	Biasong, Macasandig	124" 38" 9.60"	8" 27" 40,30"	Operational
PW No. 31	Ayesa Subdivision, Camaman-an	124" 39' 38.70"	8° 27" 51.05"	Operational
PW No. 32	Macapaya, Camaman-an	124" 40' 19.33"	8" 26" 43.89"	Operational
Spring				
Malasag Spring	Cugman	124* 41' 50.20"	8" 26" 34.00"	Operational
Surface Water				
Bulk Water Supply (COBI)	Pualas, Baungon, Bukidnon			Operational

C. Type of Water Treatment

COWD applies Chlorination, using Gas Chlorine or Chlorine Dioxide, for the disinfection of water

D. Method of Water Distribution

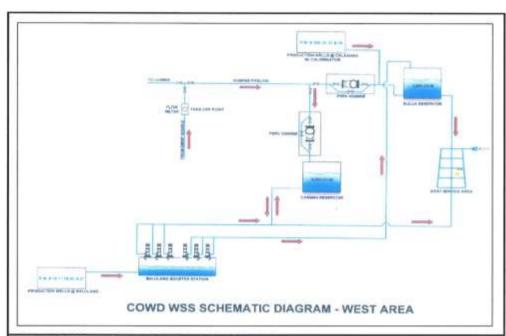


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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Annexes



E. Monthly Volume of Water Distributed (2018 - 2020)

	ACTUAL WATER PRODUCED AND DISTRIBUTED				
YEAR	Bulk Water Supply (in cubic meters)	Production Wells (in cubic meters)	Total		
2018	18,276,165	42,940,425	61,216,590		
2019	28,584,053	44,485,806	73,069,859		
2020	29,331,198	45,560,522	74,891,720		

F. Projected Water Usage (2020 onwards)

No available data as of the moment. COWD Business Plan is still in progress.

G. Capita of Household Water Demand Factor

Water Consumption per day per person (in lpd) for CY 2020:

164 liters per capita per day for a household size of 5

Prepared by:

ANNALTH F. MACALOLOT Sr. Research Analyst A

Noted by:

SULDED LANANIO A VALVA Monager, Management Services Dept. Checked by:

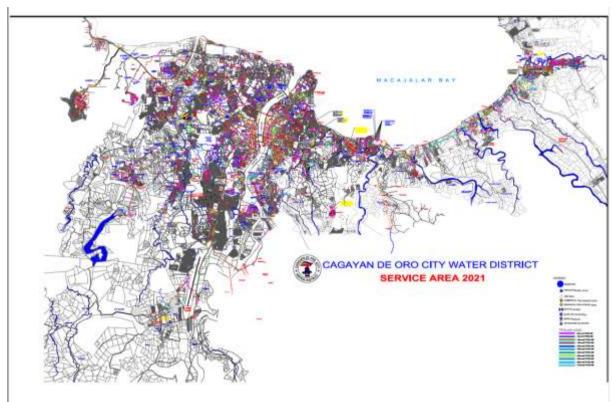
JOSE JISELO P. ABRAGAN OfC. Corporate Planning Division

Approved by:

General Manager

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes





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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Manolo Fortich Water District



MANOLO FORTICH WATER DISTRICT

Manolo Fortich 8703, Bukidnon

website: www.mfwd.gav.ph; e-mail: mfwd_buk@yahoo.com

Mobile Hotline: 09177181311

SERVICE AREA AS OF JULY 2021

MONTHLY VOLUME OF WATER DISTRIBUTED

MANOLO FORTICH, BUKIDNON

- 1 TANKULAN
- 2 LINGION
- 3 DICKLUM
- 4 STO. NIÑO
- 5 SAN MIGUEL
- 6 DAMILAG
- 7 AGUSAN CANYON
- 8 LUNOCAN
- 9 MANTIBUGAO
- 10 ALAE
- 11 MAMBATANGAN

CAGAYAN DE ORO CITY

Barangays

- 12 P7 PUERTO
- 13 BALUBAL

		Year	
Month	2018	2019	2020
	(UBIC METER	1
January	201,426	224,174	254,803
February	185,649	216,973	246,892
March	193,244	212,410	237,422
April	221,117	241,758	274,220
May	222,411	238,893	251,831
June	234,873	252,701	246,558
July	205,949	224,263	244,956
August	205,313	240,254	260,844
September	221,275	244,452	245,156
October	212,380	235,785	233,505
November	234,275	244,621	256,527
December	218,971	228,111	249,221
TOTAL	2,556,883	2,804,395	3,001,935

PREPARED BY:

EVELYN C. NARA

CSA-A



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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Annexes

3

MANOLO FORTICH WATER DISTRICT

Manolo Fortich Bukidnon

. LIST OF WATER SOURCES

No.	Source Type	Name of Barangay	Longitude	Latitude
1	Artajo Pumping Station (deepwell)	Alae, Manolo Fortich Bukidnon	124"48'42"	08"25'18"
2	Balamban 1 Spring Source	Agusan Canyon, MF, Bukidnon	124'48'59"	08*17'40"
3	Balamban 2 Spring Source	Agusan Canyon, MF, Bukidnon	124*49'02*	08*17'46"
4	Bayabason 1 Spring Source	Damilag, MF, Bukidnon	124"48'35"	08"20"55"
5	Bayabason 2 Spring Source	Damilag, MF, Bukidnon	124*40'00"	08"20"80"
6	Belen Homes (deepwell)	Damilag, MF, Bukidnon	124"48'38.80"	08*22'11.20"
7	Cristan Villa 2	Diclum, MF, Bukidnon	124°50′50"	08"22"38"
8	Diclum 3 spring source	Diclum, MF, Bukidnon	124"50'20"	08*21'15"
9	Diclum 2 spring source	Diclum, MF, Bukidnon	124"50'20"	08*20'43"
10	Diclum 1 spring source	Diclum, MF, Bukidnon	124°50'19"	08*20'08*
11	Kihare pumping station (deepwell)	Tankulan, MF Bukidnon	124"51'48.06"	08*21'38.28"
12	Lingi-on spring source	Lingi-on, MF, Bukidnon	124°52'50.1"	08"24"34.1"
13	Lunocan spring source	Lunocan, MF, Buk	124*49'50"	08"24"08.4"
14	Miranda pumping station (deepwell)	Damilag, MF, Bukidnon	124*49'16"	08*20'53.20"
15	Mulberry Pumping Sta. (deepwell)	Tankulan, MF Bukidnon	124"51'42.84"	08"21"41.10"
16	PCH-1 (deepwell)	Damilag, MF, Bukidnon	124"48'44"	08*21'47.60"
17	PCH-2 (deepwell)	San Miguel, MF, Buk	124"40'46"	08"23'19"
18	Tagbalula 1 spring source	Alae, Manolo Fortich Bukidnon	124"49'28"	08"24'00"
19	Kisabong spring source	Agusan Canyon, MF, Bukidnon	124*48'45"	08"19"15"
20	Mangima Spring source	Tankulan, MF Bukidnon	124"52'30"	08"22"20"

TYPE OF WATER TREATMENT
Disinfection- Chlorination process

METHOD OF WATER DISTRIBUTION Direct Pumping

c. Water Treatment

Disinfection-chlorination

d. Method of distribution

direct pumping

E. Capita of Household water demand factor

678.66L/cap/day/HH as of 2020



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Annexes

KISOLON -SAN VICENTE WATER SUPPLY SYSTEM (SUMILAO)

a. Service area (barangay, municipality or city)

Barangay	Municipality
Kisolon	Sumilao
San Vicente	Sullillao

b. Water source (river, well, spring, rain, etc.) and location

Water Source Name	Location
Larok spring	
Kisolon Spring	Kisolon, Sumilao

c.Water Treatment

Filtration and chlorination

d. Method of distribution

gravity

e. Monthly volume of water distributed (2018 - 2020)

			1 (2018 – 2020)
tems sold Year	Month	Cubic Used	Amount
2018	**********	FO 700	990 356 07
2018	January	59,789	889,256.07
	February	33,982	501,777.61
	March	36,351	528,438.20
	April	29,595	441,059.22
	May	43,869	639,198.65
	June	34,749	514,073.49
	July	34.367	530,455.14
	August	35,362	523,001.15
	September	34,501	496,776.70
	October	18,121	706,858.60
	November	45,175	664,293.50
	December	56,770	834,852.10
	Total	492,634	7,270,040.43
2019	January	46,870	690,238.60
	February	42,166	619,543.80
	March	49,571	731,505.30
	April	47,770	699,431.10
	May	35,927	510,884.00
	June	54,662	810,422.70
	July	46,137	682,200.60
	August	52,821	720,247.60
	September	52,961	721,164.20
	October	57,018	766,392 00
	November	49,082	658,492.00
	December	44,300	567,742.40
	Total	579,285	8,178,264.30
2020	January	51,868	682,468.00
2020	February	42,872	565,685.00
	March	54,188	707,108.80
	April	54,172	707,660.72
	May	43,884	567,934.00
	June	51,792	678,662.00
	July	49.923	653,061.12
	August	47,772	617,807.00
	September	49,387	631,276.00
	October	43,929	558,272.00
	November	44,122	565,044.00
	December	50,505	641,258.00
	Total	584,414	7,576,236.64

g. Capita of Household water demand factor

33 L/HH/day



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

MUNICIPAL ECONOMIC ENTERPRISE DEVELOPMENT OFFICE

a. Service area (barangay, municipality or city)

Barangay	Municipality
Sitio Kabangan, Poblacion	
Sitio San Juan, La Fortuna	Impasug-ong
Sitio Kiasin, Capt. Bayong	

b. Water source (river, well, spring, rain, etc.) and location

Water Source Name	Location
Iglerop spring	Intavas, La Fortuba, Impasug-ong
Deep Well	Poblacion, Impasug-ong

c. Water Treatment

Manual chlorination

d. Method of distribution

gravity

e. Monthly volume of water distributed (2018 - 2020)

36.9 LPs



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Annexes

Malaybalay city water district

a. Service area (barangay, municipality or city)

P	NA i alia alita
Barangay	Municipality
Bry. 1	
Brgy. 2	
Brgy. 3	
Bry. 4	
Brgy. 5	
Brgy. 6	
Brgy. 7	
Brgy. 8	
Brgy. 9	
Brgy. 10	
Brgy. 11	Malaybalay
Brgy. Dalwangan	
Brgy. Kalasungay	
Brgy. Sumpong	
Brgy. Can-ayan	
Brgy. Casisang	
Brgy. San Jose	
Brgy. Laguitas	
Bry. Aglayan	
Brgy. Cabangahan	
Brgy. Bangcud	

b. Water source (river, well, spring, rain, etc.) and location

B.1 Rivers/Creeks

Name:	Location of Sump/Dam:
-------	-----------------------

	=======================================
1. Sawaga	Brgy. Sumpong, M.C.
2. Kibalabag	Brgy. Kibalabag, M.C.
3. Lalawan	Sitio Damitan, Brgy. Dalwangan, M.C.
4. Bag-as	Brgy. Kalasungay, M.C.
5. Lumayagan	Brgy. Kalasungay, M.C.

B.2 Wells:

Name: Location of Well:

1. Bureau of Soils Pump Station	Purok 3, Brgy. Dalwangan, M.C.	
2. Depot Bliss Pump Station	Purok 7, Brgy. Casisang, M.C.	
3. VCDU Greenfields Pump	Purok 6, Brgy. Casisang, M.C.	
Station		
4. Azura Pump Station	Purok 11, Brgy. Casisang, M.C.	
5. San Jose Pump Station	Purok 6, Brgy. San Jose, M.C.	
6. Cabangahan Pump Station	Purok 1, Brgy. Cabangahan, M.C.	

WATER SOURCES	DESCRIPTION	COORDINATES
A. SURFACE:		
1. Sawaga River	Mountain source (absence of	LATITUDE: 8° 9'40.35"N
	forest cover/vegetation)	LONGITUDE: 125° 7'6.22"E
2. Kibalabag Creek	Mountain source (absence of	LATITUDE: 8°13'57.36"N
	forest cover/vegetation)	LONGITUDE: 125°10'8.72"E
3. Bag-as Creek	Mountain source (present forest	LATITUDE: 8°12'10.76"N
	cover/vegetation)	LONGITUDE: 125° 5'40.31"E



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WATER SOURCES	DESCRIPTION	COORDINATES
4. Lumayagan Creek	Mountain source (present forest	LATITUDE: 8°12'9.61"N
	cover/vegetation)	LONGITUDE: 125° 6'3.35"E
5. Lalawan Creek	Mountain source (present forest	LATITUDE: 8° 9'40.39"N
	cover/vegetation)	LONGITUDE: 125° 0'10.40"E
B. UNDERGROUND:		
1. Dalwangan Deep well (Bureau of	Underground source (absence of	LATITUDE: 8°12'36.24"N
Soils)	forest cover/vegetation)	LONGITUDE: 125° 1'59.54"E
2. BLISS/ Depot, Casisang Pump Station	Underground source (absence of	LATITUDE: 8° 8'32.10"N
	forest cover/vegetation)	LONGITUDE: 125° 6'58.59"E
3. Azura, Casisang Pump Station	Underground source (absence of	LATITUDE: 8° 7'37.26"N
	forest cover/vegetation)	LONGITUDE: 125° 7'40.04"E
4. Mabuhay, San Jose Pump Station	Underground source (absence of	LATITUDE: 8° 6'15.08"N
	forest cover/vegetation)	LONGITUDE: 125° 8'12.70"E
5. Cabangahan Pump Station	Underground source (absence of	LATITUDE: 8° 0'41.67"N
	forest cover/vegetation)	LONGITUDE: 125° 8'4.84"E
6. Greenfields, Casisang Pump Station	Underground source (absence of	LATITUDE: 8° 8'7.11"N
	forest cover/vegetation)	LONGITUDE: 125° 7'17.18"E
7. Brgy. 1 Pump Station	Underground source (absence of	LATITUDE: 8° 9'38.55"N
	forest cover/vegetation)	LONGITUDE: 125° 7'54.01"E

C. Water treatment

Treatment Plant/Facility Location	Treatment Drasses
Treatment Plant/Facility Location	Treatment Process
A. Sumpong Treatment Plant	<u>Primary Treatment</u>
	a. Collection at the sump thru a submersible pump
	a. Screening to remove solid wastes
	<u>Secondary Treatment</u>
	b. Flocculation (addition of Alum. Sulfate)
	c. Settling at up flow tanks
	d. Filtration at rapid sand filters
	<u>Tertiary Treatment</u>
	a. Disinfection using gas chlorine
	Storage at Ground Reservoirs
	Release to Distribution
B. Kalasungay Filtration Faciltiy	Collection at intake dams
	Screening to remove solid wastes
	Filtration using rapid sand filters
	Disinfection with gas chlorine
	Storage at Ground Reservoirs
	Release to Distribution
C. All pump stations	Disinfection with gas chlorine
	Storage at Ground Reservoirs (except for San Jose &
	Cabangahan Pump Station)
	Release to Distribution
D. Dalwangan Hilltribe	Collection at intake dams
]	Screening to remove solid wastes
	Disinfection with gas chlorine
	Storage at Ground Reservoir
	Release to distribution

d. Method of distribution



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

d.1 Direct Pumping

Service Area:

1. Part of Purok 2, Purok 5, VCDU Pinewoods Phase 1 at Brgy. San Jose, M.C.

- 2. Purok 6 at Brgy. San Jose, M.C.
- 3. Part of Purok 7, NHA Phase 3 at Brgy. Casisang, M.C.
- 4. Purok 1 and Purok 6 at Brgy. Cabangahan, M.C.
- 5. New Life, Baptist Seminary and part of Purok 5 at Brgy. Bangcud, M.C.

1. The Rest of Service Area excluding C.1 Direct Pumping Areas above.

d.2 Gravity

Service Area:

Service Area:
1. The Rest of Service Area excluding <i>C.1 Direct Pumping Areas above.</i>
d. Method of distribution
d.1 Direct Pumping
Service Area:
1. Part of Purok 2, Purok 5, VCDU Pinewoods Phase 1 at Brgy. San Jose, M.C.
2. Purok 6 at Brgy. San Jose, M.C.
3. Part of Purok 7, NHA Phase 3 at Brgy. Casisang, M.C.
4. Purok 1 and Purok 6 at Brgy. Cabangahan, M.C.
5. New Life, Baptist Seminary and part of Purok 5 at Brgy. Bangcud, M.C.
d.2 Gravity
Service Area:



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

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E. Monthly volume of water distributed

Total water produces in 2018 (in cu.m.)

Month	Sawaga	Kalasungay	Azura	Depot	Dalwangan (Bureau of Soils)	Dalwangan (Hill Tribe)	San Jose PS	Kibalabag	Cabangahan	Greenfields Pump Station	Production Per Month
	Α	В	С	D	E	F	G	Н	I	J	K
Feb	106,465.40	114,847.80	4,086.00	10,288.00	2,972.00	2,204.20	2,279.00	373,680.00	8,746.00	2,118.00	627,686.40
Mar	118,262.10	129,729.10	4,494.00	10,148.00	3,928.00	2,913.20	3,109.00	410,862.00	7,192.00	2,399.00	693,036.40
Apr	106,606.10	123,827.50	5,854.00	10,142.00	3,643.00	2,701.90	2,666.00	403,005.00	9,656.00	2,049.00	670,150.50
May	111,505.20	129,110.50	9,213.00	10,177.00	3,952.00	2,931.00	1,872.00	421,010.00	10,183.00	2,286.00	702,239.70
Jun	102,419.80	121,754.70	9,809.00	8,638.00	4,201.00	3,115.70	1,571.00	409,880.00	9,779.00	2,254.20	673,422.40
Jul	108,144.80	124,801.20	9,513.00	8,631.00	4,084.00	3,028.90	441	424,255.00	11,012.00	2,015.00	695,925.90
Aug	106,497.70	126,155.40	9,770.00	7,965.00	3,613.00	2,679.60	0	427,789.00	10,770.00	2,105.00	697,344.70
Sep	107,346.00	118,270.70	9,456.00	7,267.00	3,568.00	2,645.80	1,177.00	434,273.00	9,717.00	1,993.00	695,713.50
Oct	106,757.20	117,750.60	8,500.00	7,615.00	3,729.00	2,771.40	1,479.00	466,745.00	10,307.00	2,229.00	727,883.20
Nov	108,497.30	129,691.10	7,752.00	7,491.00	3,295.00	2,626.00	1,607.00	411,645.00	10,219.00	2,515.00	685,338.40
Dec	111,452.90	128,816.90	8,967.00	6,464.00	3,902.00	3,727.00	298	415,571.00	10,846.00	2,608.00	692,652.80
Total	1,307,454.50	1,456,857.80	92,955.00	106,437.00	44,598.00	34,096.80	18,030.00	5,017,977.00	118,497.00	26,990.20	8,223,893.30

Total water produces in 2019 (in cu.m.)

Month	Sawaga Source	Kalasungay Water System	Azura Deep Well	Depot Deep Well	Dalwangan Deep Well	Dalwangan Lalawan Source	Cabangahan Pump Station	San Jose Pump Station	Greenfields Pump Station	Kaamulan Spring	Bulk Water Supplier/ Kibalabag	Production Per Month
Jan	92,250.00	112,564.60	100	4,682.00	4,667.00	12,268.00	11,039.00	120	0	0	484,350.00	722,040.60
Feb	99,147.00	91,350.50	0	3,959.00	5,289.00	10,744.00	10,011.00	1,343.00	0	0	451,238.00	673,081.50
Mar	108,417.00	71,827.19	1,582.00	4,394.00	4,955.00	11,787.00	9,544.00	2,340.00	295	0	505,325.00	720,466.19
Apr	105,322.00	64,731.80	3,782.00	5,908.00	4,121.00	10,849.00	11,126.00	2,656.00	738	0	501,870.00	711,103.80
May	107,164.60	56,357.00	4,124.00	9,004.00	4,165.00	8,460.00	12,903.90	2,521.00	861	201.7	529,896.10	735,658.30
Jun	104,574.80	146,638.70	4,129.00	8,201.00	2,895.00	9,006.10	15,325.00	2,537.00	413	0	488,404.00	782,123.60
Jul	109,058.50	154,097.90	3,841.00	8,506.00	4,052.00	8,246.00	15,689.00	3,173.00	305	0	503,180.00	810,148.40



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Month	Sawaga Source	Kalasungay Water System	Azura Deep Well	Depot Deep Well	Dalwangan Deep Well	Dalwangan Lalawan Source	Cabangahan Pump Station	San Jose Pump Station	Greenfields Pump Station	Kaamulan Spring	Bulk Water Supplier/ Kibalabag	Production Per Month
Aug	98,931.00	153,962.00	4,149.00	8,516.80	4,383.00	7,080.10	12,259.00	2,391.00	287	0	504,564.00	796,522.90
Sep	93,739.60	152,581.70	4,372.00	7,763.20	4,938.00	8,279.30	11,922.00	2,295.00	113	0	481,137.00	767,140.80
Oct	93,534.80	123,452.90	4,363.00	8,553.00	5,257.00	9,170.00	13,617.00	2,649.00	365	0	496,227.87	757,189.57
Nov	97,678.00	92,392.16	3,972.00	7,653.00	5,324.00	8,324.80	13,302.00	2,444.00	400	0	496,293.67	727,783.63
Dec	105,363.10	97,113.00	3,595.00	7982	4778	10338.6	13,680.00	2,670.00	307	0	496,293.67	742,120.37
Total	1,215,180.40	1,317,069.45	38,009.00	85,122.00	54,824.00	114,552.90	150,417.90	27,139.00	4,084.00	201.7	5,938,779.31	8,945,379.66

Total water produces in 2020 (in cu.m.)

Month	Sawaga Source	Kalasungay Water System	Azura Deepwell	Depot Deepwell	Dalwangan Deepwell	Dalwangan/ Lalawan Source	Cabangahan Pump Station	San Jose Pump Station	Greenfields Pump Station	Kaamulan Spring	Kibalabag	Production Per Month
Jan	103,434	75,768	2,677	7,770	4,957	9,642	13,382	2,885	1,055	-	496,294	717,864.00
Feb	98,037	63,162	2,656	6,265	4,425	5,847	12,646	2,613	659	-	495,509	691,819.00
March	100,636	72,771	5,502	5,836	4,948	4,783	14,313	3,436	798	-	491,083	704,106.00
April	98,737	26,845	6,235	5,208	4,894	632	12,183	4,854	1,746	473	491,083	652,890.00
May	103,658	37,557	5,676	6,438	4,358	4,471	12,697	4,799	1,354	186	491,083	672,277.00
Jun	89,181	82,476	4,621	6,493	4,487	8,422	12,619	4,598	1,372	-	491,083	705,352.00
Jul	94,306	111,080	4,020	7,428	4,524	10,227	13,120	4,755	1,159	-	491,083	741,702.00
August	88,539	121,280	5,164	7,458	6,099	6,879	13,293	5,008	1,450	-	491,083	746,253.00
Sept	91,877	120,032	4,568	7,536	7,206	5,576	12,975	4,888	2,116		491,083	747,857.00
Oct	94,747	112,141	4,256	6,543	8,992	5,157	13,836	5,179	3,050	-	525,128	779,029.00
Nov	85,570	116,327	3,680	5,117	7,996	7,310	14,090	4,818	3,747	-	545,287	793,942.00
Dec	48,483	109,483	3,531	4,341	6,303	7,556	14,604	5,061	4,262	-	496,294	699,918.00
Total	1,097,205	1,048,922	52,586	76,433	69,189	76,502	159,758	52,894	22,768	659	5,996,093	8,653,009.00



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f. Projected water usage (2020 onwards), if available

Year:	Projected No. of	Projected Water
rear:	Connections:	Usage (CMD):
2020	19,604.00	14,703.00
2021	20,585.00	15,644.60
2022	21,614.00	16,642.78
2023	22,695.00	17,702.10
2024	23,829.00	18,824.91
2025	25,021.00	20,016.80
2026	26,272.00	21,017.60
2027	27,585.00	22,068.00
2028	28,965.00	23,172.00
2029	30,413.00	24,330.40
2030	31,933.00	25,546.40

g. Capita of Household water demand factor 75li/HH-day





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Annex 7. Laboratory report of air quality analysis

Low rainfall



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AMET-Asia Inc.

Unit 303, One Corporate Center, Julia Vargas Ave. cor. Meralco Ave, Pasig Contact No.: 09153701175

01-June-2021

Attention:

Ms. Pamella Andrea L. Pomida

Subject:

Ambient Air Sampling and Testing Report

Ms. Pomida:

We hereby submit the attached report on ambient air sampling conducted for 24 hours on ten (10) sampling stations located at Cagayan De Oro to Bukidnon.

Please feel free to contact us if you have any questions regarding this report.

Thank you for choosing HiAdvance in serving your air quality requirement. We look forward to a continued partnership and new opportunities.

Sincerely,

Annabelle Bangoy Project Manager

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AMET-Asia Inc./ Ambient Air Sampling and Testing Report



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AMBIENT AIR SAMPLING REPORT

Company Name	AMET-Asia Inc.
Address	Unit 303, One Corporate Center, Julia Vargas Ave.,cor. Meralco Ave. Pasig
Project Name	Ambient Air Monitoring
Project Site(s)	Cagayan De Oro - Bukidnon
Sampling Date	23 rd of April to 6 th of May, 2021
Contact Person	Ms. Pamella Andrea L. Pomida

1.0 INTRODUCTION

HiAdvance Philippines, Incorporated (HiAdvance) was contracted by AMET-Asia Inc. to conduct a 1-hour and 24-hours ambient air sampling at their ten (10) sampling points located at Cagayan De Oro and Bukidnon project sites. The sampling activity was conducted last April 23 to May 6, 2021. Sampling was done to determine the concentrations of Nitrogen Dioxide, Sulfur Dioxide, Total Suspended Particulates (TSP), Particulate Matter as PM10, Carbon Monoxide (CO), Ozone (O₃), Pb (Lead), Wind Direction and Wind Speed.

Noise Level was also measured at the sampling locations. The values determined are presented in a separate report.

2.0 METHODOLOGY

Ambient air sampling equipment and analytical procedures used were based on DENR Standards. All supporting field data sheets and calibration record of equipments are provided as attachments. The equipment and procedures are as follows:

Total Suspended Particulates (TSP)

Reference Procedure:

USEPA 40 CFR, Part 50, Appendix B

Sampling Equipment:

High Volume Sampler

Method of Analysis:

Hi Volume Gravimetric Method

Particulate Matter as PM10

Reference Procedure:

USEPA 40 CFR, Part 50, Appendix J

Sampling Equipment:

High Volume with 10-micron particle-size inlet

Method of Analysis: Hi Volume Gravimetric Method

Nitrogen Dioxide (NO₂)

Reference Procedure: Sampling Equipment: Methods of Air Sampling and Analysis - 3rd ed. / James P. Lodge, Jr.

RAC3 Gas Analyzer\SKC Pump

Method of Analysis:

Impinger Griess-Saltzman Reaction Method

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AMET-Asia Inc./ Ambient Air Sampling and Testing Report



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Sulfur Dioxide (SO2)

Reference Procedure: USEPA 40 CFR, Part 50, Appendix A Sampling Equipment: RAC3 Gas Analyzer/SKC Pump

Method of Analysis: Tetra-chloromercurate (TCM) Absorber -Pararosaniline Colorimetric

Carbon Monoxide (CO)

Reference Procedure: USEPA 40 CFR, Part 50, Appendix C

Sampling Equipment: Air Quality Meter

Method of Analysis: Direct Readout (Datalogged)

Lead (Pb)

Reference Procedure: USEPA 40 CFR, Part 50, Appendix G

Sampling Equipment: High Volume Sampler/Filter
Method of Analysis: Atomic Absorption Spectroscopy

Ozone (O₃)

Reference Procedure: Method 411, of Air Sampling and Analysis - 3rd ed. /James P. Lodge, Jr.

Sampling Equipment: SKC Pump

Method of Analysis: Colorimetric Method

Wind Direction

Sampling Equipment: KESTREL 5500L

Method of Analysis: Direct Readout (Datalogged)

Wind Speed

Sampling Equipment: KESTREL 5500L

Method of Analysis: Direct Readout (Datalogged)

The NO₂ and SO₂ samples were stored in amber bottles and were preserved on a cooler with ice. The samples were submitted and analyzed in the laboratory using a Spectrophotometer. The TSP and PM10 filters were conditioned before undergoing gravimetric analysis. Filter papers for Lead analysis were desiccated before submission to a DENR recognized subcontractor laboratory together with the sample for Ozone analysis. Carbon Monoxide (CO), Wind Direction and Wind Speed were measured using a calibrated air quality meter and weather meter through direct reading.

Stock solutions, standard reagents and other reagents are prepared using chemicals recommended by the reference methods mentioned above.

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3.0 SAMPLING LOCATION

3.1 The estimated location of the sampling stations is briefly described as follows:

Station AQN1- Brgy. Casinglot Purok Zone 2B

Latitude: 8.515825 N Longitude: 124.757942 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a grassy ground; beside highway approximately 1-2m away from the main road
- Frequent passing of light to heavy vehicles were observed
- Sunny weather condition
- Rain occurred at around 1630H,

Station AQN2- Brgy. Purok 7 Mambatangan

Latitude: 8.463833 N Longitude: 124.800872 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a rocky and grassy ground surface
- Approximately 50m away from the residential area
- 5-10m away from the access road, open field surrounded by trees
- Sunny to cloudy weather condition

Station AQN3- Zone 4 Alae

Latitude: 8.412193 N Longitude: 124.804962 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a rocky and grassy ground
- 10-15m away from the residential houses, surrounded by trees
- Cloudy weather condition

Station AQN4- Zone 1 Diclum

Latitude: 8.371687 N Longitude: 124.852996 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a rocky with some grass ground surface
- Approximately 3-5m away from the main road and 2-3m away from the cliff
- Sunny weather condition

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Station AQN5- Brgy. San Roque Purok 4

Latitude: 8.329792 N Longitude: 124.933255 E

Remarks/Sampling Environment Conditions:

- Equipment set up in a grassy ground inside San Roque Elementary School
- 8m away from the access road and 20m away from residential area
- Minimal passing of motorcycles and other light vehicles along the access road
- Fair weather condition

Station AQN6- Brgy. Poblacion

Latitude: 8.312317 N Longitude: 124.983626 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a grassy and soft soil ground
- Approximately 5m away from the road
- 5m away from the nearby home
- Sunny weather condition

Station AQN7- Brgy. Lafortuna Zone 7

Latitude: 8.266137 N Longitude: 124.996892 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a grassy/soil ground (elevated area)
- 5m away from the access road and 8m to 10m from the residential area
- Fair weather condition

Station AQN8- Brgy. Impalutao Zone 3

Latitude: 8.23260 N Longitude: 125.028944 E

Remarks/Sampling Environment Conditions:

- Equipment were set up beside the main road, in a grassy/soil ground
- Approximately 3-5m away from the highway
- Sunny weather condition

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Station AQN9- Brgy. Patpat Zone 5

Latitude: 8.195157 N Longitude: 125.053188 E

Remarks/Sampling Environment Conditions:

Equipment were set up in a soft soil ground

Approximately 1-2m away from the highway road

3-5m away from the poultry area

Sunny to cloudy weather condition

Station AQN10- Brgy, Kalasungay Zone 1

Latitude: 8.165801 N Longitude: 125.113448 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a rocky and grassy ground beside the road
- Approximately 2m away from the highway and 8m to 10m away from the Birhen sa Lourdes Chapel
- Around 1728H burning of dry leaves approximately 10-15m away were observed
- Sunny to cloudy weather condition

3.2 Sampling Period

- > Twenty-four (24) Hours for Nitrogen (NO2), Sulfur Dioxide (SO2), Total Suspended Particulates (TSP), Particulate Matter 10 micron (PM10) and Lead (Pb)
- Eight (8) Hours for Carbon Monoxide (CO) & Ozone (O₃)
- > Twenty-four (24) Hours for Wind Direction and Wind Speed by Direct read-out (data logged)





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4.0 AMBIENT AIR SAMPLING RESULTS

Below is the ambient air sampling result. All supporting field data, analytical reports and calibration records are provided as attachments.

Table 4.1.1. 24-hours Ambient Air Sampling (NO₂, SO₂, TSP & PM10)

STATION NO.	LOCATION	NO ₂ (μg / Nm ³)	SO ₁ (μg/Nm³)	TSP (µg/Nm³)	PM10 (µg/Nm ³
AQN1	Brgy, Casinglot Purok Zone 2B	8.56	<11.8*	155	62.1
AQN2	Brgy, Purok 7 Mambatangan	6.41	<12.1*	34.3	21.0
AQN3	Zone 4 Alae	4.88	<12.3*	36.7	27.0
AQN4	Zone 1 Diclum	6.57	<12.4*	91.0	55.1
AQN5	Brgy, San Roque Purok 4	3.88	<12.5*	102	41.4
AQN6	Brgy. Poblacion	6.61	<12.5*	107	55.8
AQN7	Brgy. Lafortuna Zone 7	3.94	<12.7*	23.3	16.5
AQN8	Brgy. Impalutao Zone 3	6.76	<12.8*	67.9	31.7
AQN9	Brgy. Patpat Zone 5	5.69	<12.9*	67.3	29.5
AQN10	Brgy. Kalasungay Zone 1	3.37	<12.7*	71.2	35.4
I	DENR NAAQSSAP	150	180	230	150
A	veraging Time (min)	1440	1440	1440	1440

^{*}Values detected are below the laboratory's Method desection limit

4 Table 4.1.2. 24-hours Ambient Air Sampling (Lead)

STATION NO.	LOCATION	Lead (µg/Ncm)
AQN1	Brgy. Casinglot Purok Zone 2B	0.0282
AQN2	Brgy. Purok 7 Mambatangan	0.0269
AQN3	Zone 4 Alae	0.00974
AQN4	Zone I Diclum	0.00756

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AQN5	Brgy. San Roque Purok 4	0.0151
AQN6	Brgy. Poblacion	0.0202
AQN7	Brgy. Lafortuna Zone 7	0.00751
AQN8	Brgy. Impalutao Zone 3	0.00383
AQN9	Brgy. Patpat Zone 5	0.00335
AQN10	Brgy. Kalasungay Zone 1	0.00987
ST	ANDARDS (DAO2000-81)	-
	Averaging Time (min)	1440

◆ Table 4.1.3. 24-hour Sampling (Ozone)

STATION NO.	LOCATION	O ₃ (µg/Nem)
AQNI	Brgy. Casinglot Purok Zone 2B	1.02
AQN2	Brgy. Purok 7 Mambatangan	2.09
AQN3	Zone 4 Alae	1.22
AQN4	Zone 1 Diclum	1.48
AQN5	Brgy. San Roque Purok 4	1.87
AQN6	Brgy. Poblacion	1.01
AQN7	Brgy, Lafortuna Zone 7	2.52
AQN8	Brgy. Impalutao Zone 3	6.58
AQN9	Brgy. Patpat Zone 5	2.53
AQN10	Brgy. Kalasungay Zone 1	4.59
	DENR NAAQGV	60
	Averaging Time (min)	480

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +832,7729.4327 Fax No: +632,8854.8365 Email: info@Pisadvence.com.ph Website: www.hiadvance.com.ph

 Table 4.1.4 Data logged (Wind Direction & Wind Speed)

STATION NO.	Time	Wind Speed (mph)	Average (Direction- True)	Average (Direction- Mag)	Cardinal Direction
AQN1	1020H-1020H	0.2	145	145	SE
AQN2	1420H-1420H	0.7	259	259	W
AQN3	1500H-1500H	0.3	216	216	SE
AQN4	1300H-1300H	0.1	114	113	ESE
AQN5	1020H-1020H	0.5	*ND	*ND	*ND
AQN6	1730H-1730H	0.3	*ND	*ND	*ND
AQN7	1345H-1345H	1.1	*ND	*ND	*ND
AQN8	0915H-0915H	0.6	200	201	SSW
AQN9	1030H-1030H	1.5	133	133	SE
AQN10	1330H-1330H	0.4	166	166	SSE

^{*}None: ND- No Desectable

◆ Table 4.1.5 - Carbon Monoxide (Data logged)

Station No.	Time	CO Value (ppm)
AQNI	10:20:04-18:20:04	14
AQN2	14:30:03-22:30:03	*ND
AQN3	15:39:18-23:39:18	*ND
AQN4	13:01:21-21:01:21	3.0
AQN5	10:21:17-18:21:17	1.0
AQN6	17:30:37-01:30:38	8.0
AQN7	13:50:06-21:50:06	*ND
AQN8	09:20:36-17:20:36	7.0
AQN9	10:31:17-18:31:17	7.0
AQN10	13:30:39-21:30:39	10
DENR	NAAQGV	9
Averagin	g Time (min)	480

*Note: ND- No Detectable

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5.0 DISCUSSION OF RESULTS

Ambient air quality standards (AAQS) define clean air, and are established to protect even the most sensitive individuals in our communities. An air quality standard defines the maximum amount of a pollutant that can be present in outdoor air without harm to the public's health.

The sampling activity was conducted on a sunny, cloudy to windy with light rain shower weather conditions. Results of NO₂, SO₂, TSP, PM10, Lead and Ozone (8 hrs.) for the samples collected for 24 hours were compared to the National Ambient Air Quality Guideline Value (NAAQGV). See Table 4.1.1 to Table 4.1.3. All values for the pollutants identified are below its maximum permissible limits.

Currently, there are no existing limits from DENR for Lead measured for 24 hrs. There are only guidance values available at present for samples taken for 24 hours. See Table 4.1.2.

The values from direct reading for Carbon Monoxide (CO) using Air Quality Meter was tabulated in Table 4.3. At the time of measurement, Carbon Monoxide concentration measured in the sampling station 1 and station 10 exceeds 9 ppm (NAAQSSAP Standard) while the remaining stations (station 2 to station 9) did not exceed the standard limit. Light to heavy automobile emissions passing along the main road (4 lanes) near the monitoring points may have influenced the high CO (Carbon Monoxide) concentration. It must be emphasized, however, that the results are individual measurement during a certain point in time. They should not be considered as a universal condition of the area or process involved.

The KESTREL 5500L was used to determine air movement via direct reading with a data logger. Wind movement detected is as follows: Station AQN1 is from the southeast, Station AQN2 is from the west, Station AQN3 is from the southeast, and Station AQN4 is from the east-southeast. Moreover, wind movement at Station AQN8 is from the south-southwest, Station AQN9 is in the southeast, and Station AQN10 is from the south-southeast, as indicated in *Table 4.1.4*. There are no wind movement recorded during the whole 24-hour period at Stations AQN5, AQN6, and AQN7.

6.0 CONCLUSION

The results of sampling and analysis for the sampling locations demonstrated that the ambient concentrations of NO₂, SO₂, TSP, PM10, Ozone and CO (Station 2 to Station 9) are within the acceptable limits of the standards stipulated in the IRR of the Philippine Clean Air Act. On the other hand, the CO concentrations for stations 1 and 10 exceeded the standard limit. The Lead (24-hr) are still for further evaluation as there are no existing limits for the specific sampling duration done on the sampling points.

Prepared by:

Reviewed by:

Noted by:

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Princess Galvez, RCI Laboratory Manager

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ATTACHMENT 1

> Computation of Ambient Air Parameters

- Nitrogen Dioxide
- Sulfur Dioxide
- Total Suspended Particulates (TSP)
- Particulate Matter as PM10
- Lead
- o Ozone

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Ambient Air Monitoring STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT NOZ SAMPLING COMPANY NAME: AMET-ASIA, INC. PROJECT NAME:

Pation	Temper	Ambient emperature (T)	Barometri (Pb	c Pressure	Campillar Data	Samoline Time	Sampling	Flow Rate	Standard	Mass
	ş	¥	in. Hg	in. Hg mmHg			(t,minutes)	Ll/min	Vmstd, Nm ⁸	2
NONI	28.8	301.8	29.73	755.1	23-24 Apr 2021	1020H-1020H	1440	0.2	0.2825	2.418

A. Nomendature (Terms are fisted by the order of their appearance in the table above)

Paar - barometric pressure, mm Hg t = total sampling time, minute I = ambient temperature, K

Vm(std) = sampled volume corrected to standard conditions, Nm3 Qa = actual flowrate through the orifice, fixed at 0.2 ipm

NO2 conc. - nitrogen dioxide concentrations, µg/Nm3 Philippine Standard Pressure and Temperature

1,000 = conversion from liters to m3

NO2 mass = mass of nitrogen dioxide, µg

298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg

NO.

B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) 298 - (Justin)

NO,mass NO,conc. b. NO2 concentration, µg/Nm3



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STANDARDIZED SAMPLE VOLUMES
FOR 24-HOUR AMBIENT SOZ SAMPLING
PROJECT NAME: Ambient Air Monitoring
COMPANY NAME: AMET-ASIA, INC.

Station	Ami	Ambient sperature (T)	Barometri (Pb	c Pressure ar)	Sampling Date	mpling Date Sampling Time	Sampling Duration	Flow Rate	Standard Volume	Mass 50,	Contren
	ç	×	in. Ng mmHg	mmHg			(t,minutes)	U/min	Vmstd, Nm²	¥	
MONI	28.8	301.8		29.73 755.1	23-24 Apr 2021 1020H-1020H	1020H-1020H	1440	0.2	0.2825	1.74	H

Momenciature (Terms are listed by the order of their appearance in the table above)
 ambient termoeature.

B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3)

 $V_{m(s)(d)} = \frac{1}{1,000}$

b. SO2 concentration, µg/Nm3
SO2 conc. =

SO₂ mass

T = amblent temperature, K
Pbar = barometric pressure, mm Hg
t = total sampling time, minute

Qa = actual flowrate through the orifice, fixed at 0.2 fpm Vm(std) = sampled volume corrected to standard conditions, Nm3 SQ2 mass = mass of sulfur dioxide, µg SQ2 conc, = sulfur dioxide concentrations, µg/Nm3

1,000 = conversion from liters to m3 Philippine Standard Pressure and Temperature

noard Pressure and remperature 298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg





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Ambient Air Manitarin FOR 24-HOUR AMBIENT TSP SAMPLING COMPANY NAME: AMET-ASIA, INC. STANDARDIZED SAMPLE VOLUMES PROJECT NAME:

tation	Temper	ature (T)	Barometric (Pb)	Pressure arl	Sampling Date Sar	Sampling Time	Sampling Duration	Flow Rate St.	Standard Volume	
	ç	×	Inchig	mmHg			(camment)	mill/min	Vinista, New?	
ACM1	28.8	301.8	29.73	29.73 755.1	23-24 Apr 2021	1020H-1020H	1440	1.237	1747,4	

A. Nomendature [Terms are listed by the order of their appearance in the table above]

Vm(std) = sampled volume corrected to standard conditions, Nm3 15P mass = mass of total suspended particulates, µg TSPconc. = Total Suspended Particulates concentrati

Phar = barometric pressure, mm Hg

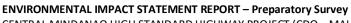
I - ambient temperature, K

t = total sampling time, minutes

a. Total volume of air sampled, corrected to standard cor b, TSP concentration, µg/Nm3 B. Formulas used in Calculation

TSPmass TSPconc. =

Qa = actual flowrate, m3/min





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STANDARDZED SAMPLE VOLUMES
FOR 24-HOUR AMBIENT PHATD SAMPLING
PROJECT NAME: Ambient Air Monitoring
COMPANY NAME: AMET-ASIA, INC.

Station	Temper	rature (T)	Barometri (Pt	c Pressure var)	Sampling Date	Sampling Time	Sampling Duration (Lminutes)	on Flow Rate S
	ş	×	In. Hg	mmHg				m3/min
AGN1	28.8	301.8	29.73	755.1	23-24 Apr 2021 1029H-1020F	1020H-1020H	1440	1.184

A. Nomendature (Terms are listed by the order of their appearance in the table above)

indard Volume

7672.5 1672.5 B. Formulas used in Calculations:
a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m \in not}, = \frac{Q_{st}}{T} \times \frac{298}{760} \times \frac{P_{total}}{7} \times t$ b. PM10 concentration, jug/Nm3

PMI 0mass

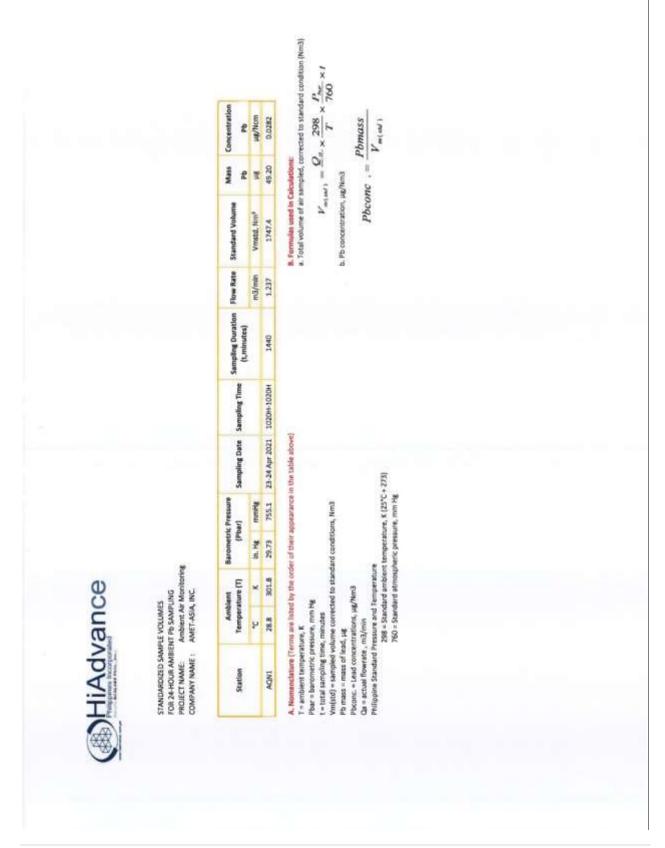
PMI Oconc=

owrate, ma/min indard Pressure and Temperature, K (25°C+273) 298 = Standard ambient temperature, K (25°C+273) 760 = Standard attmospheric pressure, mm Hg



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Ambient Air Monitorin FOR 24-HOUR AMBIENT O, SAMPLING AMET-ASIA, INC. STANDARDIZED SAMPLE VOLUMES COMPANY NAME: PROJECT NAME:

ation	Ami	blent ature (T)	Barometri (Pb	c Pressure ar)	Sampling Date	Sampling Time	Sampling Duration (t,minutes)
	ų	×	In. Hg	mmHg			
INDN	28.8	301.8	29.73	755.1	23-24 Apr 2021	1020H-1020H	480

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Vm(std) = sampled volume corrected to standard conditions, Nm3

Plbar + barometric pressure, mm Hg

T + ambient temperature, K.

t = total sampling time, minutes

O_s conc. = Ozone concentrations, µg/Nm

Qu = actual flowrate, m3/min O, mass = mass of Ozone, µg.

a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m(sul)} = \frac{Q_a}{T} \times \frac{298}{T} \times \frac{P_{be}}{760} \times t$

ő

Standard Volume Vmstd. Nm^a 0.4709

O3conc.=("O3" mas b. Os concentration, µg/Nrri

 $s)/V_{-}(m(std))$

298 - Standard ambient temperature, K (25°C + 273) 760 - Standard atmospheric pressure, mm Hg Philippine Standard Pressure and Temperature



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FOR 24-HOUR AMBIENT NO2 SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc. STANDARDIZED SAMPLE VOLUMES

Ration	Ami	blent ature (T)	Barometr (Pt	ic Pressure par)	Sampling Date	Sampling Time	Sampling
	ņ	¥	In. Hg	BHWW			(t,minute:
AQN2	27.4	300.4	28.80	731.6	24-25 Apr 2021	1420H-1420H	1440

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Phar = barometric pressure, mm Hg

t = total sampling time, minute I = ambient temperature, K

 a. Total volume of air sampled, corrected to standard condition (Nm3) B. Formulas used in Calculations: b. NO2 concentration, ug/Nm3

Concentration NO.

> Vmstd, Nm3 0.2751

Now Rate U/mln 0.2 $NO_2conc. = \frac{NO_1mass}{}$

298 . Standar ambient temperature, K (25°C + 273) 750 » Standard atmospheric pressure, mm Hg Philippine Standard Pressure and Temperature 1,000 = conversion from liters to m3

Vm(std) = sampled volume corrected to standard conditions, Nm3 Qa = actual flowrate through the orifice, fixed at 0.2 fpm

NO2 conc. = nitrogen dioxide concentrations, µg/Nm3

NO2 mass = mass of nitrogen dioxide, µg



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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT SO2 SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc.

blent rature (T)	ш	(Pb	c Pressure ar)	Sampling Date	Sampling Time	Sampling Duration	Flow Rate	Volume
×		in. Hg	mmHg.			(t,minutes)	LI/min	
300.4		28.80	731.6	24-25 Apr 2021	1420H-1420H	1440	0.2	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Phar = barometric pressure, mm Hg t » total sampling time, minute

Vm(std) = sampled volume corrected to standard conditions, Nm3 Qa = actual flowrate through the orifice, fixed at 0.2 lpm

502 conc. a suifur diaxide concentrations, µg/Nm3 Philippine Standard Pressure and Temperature

SO2 mass = mass of sulfur dioxide, µg 1,000 = conversion from liters to m3 298 = Standar ambient temperature, K (25°C+273) 760 = Standard atmospheric pressure, mm Hg

Concentration

205

Mg/Nom <12.1

a. Total volume of air sampled, corrected to standard condition (Nm3) B. Formulas used in Calculations:

SO mass b. 502 concentration, µg/Nm3 SO₂conc. =





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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT TSP SAMPLING PROJECT NAME: Ambient Air Monitoring

COMPANY NAME:

Standard Volume Virtistid, Nem* 1694.5 Flow Rate m3/min 1,232 Sampling Duration (t,minutes) 1440 Sampling Time 24-25 Apr 2021 1420H-1420H Sampling Date Barometric Pressure 731.6 (Pbar) (T) autheradme, Amblent ACM2 Station

A. Nomenclature (Terms are listed by the order of their appearance in the table above

a. Total volume of air sampled, corrected to standard condition (Nm3) TSPmass 298 TSPconc. b. TSP concentration, ug/Nm3

B. Formulas used in Calculations:

TSPconc. - Total Suspended Particulates concentration Qa = actual flowrate, m3/min

Vm(std) = sampled volume corrected to standard conditions, Nm3

Plac - barometric pressure, mm Hg t = total sampling time, minutes

ambient temperature, K

TSP mass = mass of total suspended particulates, µg

Philippine Standard Pressure and Temperature 298 = Standar ambient temperature, K (25°C+273) 750 = Standard atmospheric pressure, mm Hg

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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT TSP SAMPUNG PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc.

Station	Temper	nblent srature (T)	Barometri (Pt	ic Pressure sar)	Sampling Date	Sampling Time	Sampling Duration (L,minutes)	Flow Rate	Standard Volume	Mass	Concer
	Ų	×	in. Hg	The market				m3/min	Vinista, Nem	Ľ	HR/NC
ACM2	27.4	300,4	28.80	28.80 731.6	24-25 Apr 2021 1420H-1420H	1420H-1420H	1440	1.232	1694.5	58200	9

A. Namendature (Terms are listed by the order of their appearance in the table above)

Vin(std) = sampled volume corrected to standard conditions, Nm3 TSPconc. a Total Suspended Particulates concentrations, ug/Nm3 TSP mass = mass of total suspended particulates, µg

Phar - barometric pressure, mm Hg t = total sampling time, minutes

T - ambient temperature, K

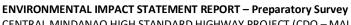
Philippine Standard Pressure and Temperature. 258 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg

Oa = actual flowrate, m3/min

a. Total volume of air sampled, corrected to standard condition (Nim3) B. Formulas used in Calculations:

TSPmass TSPconc. = Variants =

b. TSP concentration, µg/Nm3





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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PM3D SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc.

Station	Amil	Ambient Temperature (T)	Barometri (Pb	Barometric Pressure (Pbar) 5	Sampling Date	Sampling Time	Sampling Duration Flow Rate (t,minutes)	Flow Rate	25	Mass PM10
	ų	×	In. Hg	mmHg				m3/min	Vmstd, Nm*	811
A/DN2	27.4	300.4	28.80	731.6	24-25 Apr 2021	1420H-1420H	1440	1.179	1623.6	34000

 Total volume of air sampled, corrected to standard condition (Nm3) B. Formulas used in Calculations: centration, µg/Nm3 h. PM10 cond A. Namenclature (Terms are listed by the order of their appearance in the table above)

PM10mass

PM10conc=

298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg Philippine Standard Pressure and Temperature Qa = actual flowrate, m3/min

Vm(std) = sampled volume corrected to standard conditions, Nm3 PM10 conc. = Particulate Matter 10 concentrations, µg/Nm PM10 mass = mass of particulate matter 10, µg

Pbar = barometric pressure, mm Hg t + total sampling time, minutes

- ambient temperature, K.



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a. Total volume of air sampled, corrected to standard condition (Nm3)

B. Formulas used in Calculations:

Phmass

b. Pb concentration, µg/Nm3

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FOR 24-HOUR AMBIENT PS SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc. STANDARDIZED SAMPLE VOLUMES

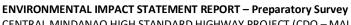
Station	Temper	Ambient superature (1)	Barometri (Pt	ic Pressure sar)	Sampling Date	Sampling Time	Sampling Duration (Lminutes)	Flow Rate Stu	
	9	×	In. Hg	In. Hg mmHg			0.65	m3/min	Vmstd, Nm²
AGN2	27.4	27.4 300.4	28.80	731.6	24-25 Apr 2021 1	1420H-1420H	1440	1232	1694.5

Nemenclature (Terms are listed by the order of their appearance in the table above)

Vm(std) = sampled volume corrected to standard conditions, Nm3 : - total sampling time, minutes mass = mass of lead, µg

Philippine Standard Pressure and Temperature Ca = actual flowrate, m3/min

298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg





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PROJECT NAME: Ambient Air Monitoring FOR 24-HOUR AMBIENT O, SAMPLING CONFDANY NAME: AMET-Asia Inc. STANDARDIZED SAMPLE VOLUMES

Station	Temper	bient ature (1)	Barometri (Pt	ic Pressure sar)	Sampling Date	Sampling Time	Sampling Duration (L,minutes)	Flow Rate	Standard Vo
	ņ	×	in. Hg	mmite				m3/min	Vmstd, Nr
AGN2	27.4	300.4	28.80	731.6	24-25 Apr 2021	1420H-1420H	480	07	0.458

Namenclature (Terms are listed by the order of their appearance in the table above)

Vm(std) = sampled volume corrected to standard conditions, Nm3

t = total sampling time, minutes

corrected to standard condition (Nm3) 8. Formulas used in Calculations: $V_{m(int)} = \frac{Q_u}{\Delta} \times$ a. Total volume of air sampled,

6 H 9

O3conc.=("O3" mas $s)/V_{-}(m(std))$

298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg

Philippine Standard Pressure and Temperature

O, conc. = Ozone concentrations, µg/Nm

Oa = actual flowrate, m3/min O₃ mass = mass of Ozone, µg

b. Os concentration, µg/Nm



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FOR 24-HOUR AMBIENT NO2 SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc. STANDARDIZED SAMPLE VOLUMES

tation	Temper	Ambient imperature (T)	Barometr (Pt	ic Pressure	Sampling Date	Sampling Time	Sampling	Flow Rate	Standard Volume
2000	ų	×	in. Hg	in. Hg mmHg				U/min	Vinsta, Nm
NON3	27.6	300.6	28.44	28.44 722.4	27-28 Apr 2021	1530H-1530H	1440	0.2	0.2714

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Phar = barometric pressure, mm Hg

t = total sampling time, minute T = ambient temperature, K

a. Total volume of air sampled, corrected to standard condition (Nm3) B. Formulas used in Calculati

NO.

b. NO2 concentration, µg/Nm3

NO,mass NOsconc. =

Philippine Standard Pressure and Temperature 298 = Standar ambient temperature, K (35°C + 273) 760 = Standard atmospheric pressure, mm Hg

Vm(std) = sampled volume corrected to standard conditions, Nm3 Qa = actual flowrate through the orifice, fixed at 0.2 ipm

NOZ mass = mass of nitrogen dioxide, µg

1,000 = conversion from liters to m3



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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STANDARDIZED SAMPLE VOLUMES
FOR 24-HOUR AMBIENT SOZ SAMPLING
PROJECT NAME: Ambient Air Monitoring
COMPANY NAME: AMET-Asia inc.

Station	Aml	nbient erature (T)	Barometri (Pb	c Pressure ar)	Sampling Date	Sampling Time	Sampling Duration	Flow Rate	Standard	Mass 50 ₂	Concentr SO ₂
	þ	¥	In. Hg	Hg mmHg			(t,minutes)	Ll/min	Vmstd, Nm³	22	JW/Wc
AGN3	27.6	3000	28.44	722.4	27-28 Apr 2021	1530H-1530H	1440	0.3	0.2714	0.87	c12.

8. Formulas used in Calculations: a. Total volume of air simpled, corrected to standard condition (Nm3) $V_{m(setd)} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{min}}{760} \times t$ b. 502 concentration, $\mu g/\text{Nm3}$

SO2conc.

A. Nomenclature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, K

Pbar » barometric pressure, mm Hg

roar » canomistro pressure, min mg
t » total sampling time, minute
Ga » actual flowrate through the orifice, fixed at 0.2 ipm

Vm(std) = sampled volume corrected to standard conditions, Nm3 502 mass = mass of sulfur dioxide, Jug. 502 conc. = sulfur dioxide concentrations, Jug/Nm3 3,000 = conversion from liters to m3 Philippine Standard Pressure and Temperature 298 × Standar amblent temperature, K (25°C + 273) 760 × Standard atmospheric pressure, mm Hg





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PROJECT NAME: Ambient Air Monitoring FOR 24-HOUR AMBIENT TSP SAMPLING STANDARDIZED SAMPLE VOLUMES

Station	Ami	Ambient imperature (T)	Barometri (Pb	ic Pressure par)	Sampling Date Sampling Time	Sampling Time	Sampling Duration Flow Rate St (t,minutes)	Flow Rate	.5	Mass
	ų	×	In. Hg mmHg	SHoward				m1/min	Vmstd, Nm*	3
AGN3	27.5	300.6	28.44	7224	27-28 Apr 2021 1530H-1530H	1530H-1530H	1440	1.225	1663.7	61000

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

vm(std) = sampled volume corrected to standard conditions, Nm3 TSP mass = mass of total suspended particulates, pg

t = total sampling time, minutes

a. Total volume of air sampled, corrected to standard condition (Nm3) TSPmass B. Formulas used in Calculations: b. TSP con

TSPconc. =

298 = Standar ambient temperature, K (25°C + 273) 760 = Standard stmospheric pressure, mm Hg

Philippine Standard Pressure and Temperature

Qa = actual flowrate, m3/min





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	Concentration	ug/Ncm	27.0	wherens V_{minol} corrected to standard condition (Nm3) V_{minol} or $\frac{Q_{u}}{T} \times \frac{298}{T} \times \frac{P_{ho}}{760} \times 1$ ig/Nm3 V_{minol} V_{minol}	
	Mass Cono	H	43200	= $\frac{Q_{u} \times 29}{T}$ $\frac{M10m ass}{V_{misside}}$	
	Standard Volume	Vmstd, Nm*	1597.2	B. Formulae used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m(sat)} = \frac{Q_u}{T} \times \frac{298}{T} \times \frac{P_{NM}}{T}$ b. PM30 concentration, $\mu\mu Nm3$ $PM10 con c = \frac{PM10 m ass}{V_{m(sith)}}$	
	Flow Rate	m3/min	1.177	a. Total volume a. Total volume b. PM10 concer	
	Sampling Duration	(Automotor)	1440		
	Sampling Time	000000000000000000000000000000000000000	1530H-1530H		
	Sampling Date		27-28 Apr 2021	The table above	
	Barometric Pressure (Pbar)	In. Hg mmHg	28.44 722.4 2	A. Nomendature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, X Plan = betometric pressure, min Hg t = total sampling time, inhusing t = total sampling time, inhusing t = total sampled volume corrected to standard conditions, Nm3 PM30 mass = mass of particulate matter 10, ug PM30 mass = mass of particulate matter 10, ug PM30 mass = mass of particulate matter 10, ug PM30 mass = mass of particulate matter 10, ug PM10 pms = actual flowrate, m3/min PMIIppine Standard pressure and Tamperature 298 = Standard atmospheric pressure, mm Hg 750 = Standard atmospheric pressure, mm Hg	
LE VOLUMES IT PM10 SAMPLING ent Air Monitoring MET-Asia Inc.	Ambient Temperature (T)	'n	27.6 300.6	A. Nomendature (Terms are listed by the order of their appear T = ambient temperature, K Pon = betunettic pressure, mm Hg t = total sampled young, inmare, Mrijstd] = sampled volume corrected to standard conditions, PMIO mass = mass of particulate matter 10, up PMIO conc. = Particulate Matter 10 concentrations, up/Nm3 Qn = actual flowrate, m3/min PMIIppine Standard Fressure and Temperature PMIIppine Standard standard atmospheric pressure, mn	
STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PANJO SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMÉT-Asia Inc.	Station		AQN3	A. Nomenchature [Terms are listed to T = ambient tamperature, K. Pbar = barumetric pressure, mm Hig to total sampling tone, minutes Phylorians = sampled volume correcter Phylorians = sams of particulate mm Phylorians = amas of particulate mm Phylorians = amas of particulate mm Phylorians = amas of particulate mm Philippine Standard Pressure and Tallippine Pressure Administration Pressure and Tallippine Pressure and Tallippine Pressure and Tallippine Press	



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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PS SAMPLING PROJECT NAME: Ambient Air Monitorin

	5/1		
	Sampling Time		1300H-1300H
	Sampling Date Sa		722.4 27-28 Apr 2021 1300H-1300H
	c Pressure ar)	mmHg	722.4
	Barometric Pr (Phar)	in Hg	28.44
lnc.	blent ature (T)	×	3006
AMET-Asia Inc	Amil	ų	27.6
COMPANY NAME:	Station		AGN3

Standard Volume Vmstd, Nm^a 1663.7

Rate

Station	Temper	ature (T)	(PB	ar)	Sampling Date	ampling Date Sampling Time	(t,minutes)
	ų	×	in. Hg	mmHg			
AGN3	27.6	300.6	28.44	722.4	28.44 722.4 27-28 Apr 2021 1300H-1300H	1300H-1300H	1440

corrected to standard condition (Nm3)

298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg Philippine Standard Pressure and Temperature

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NDARDIZED SAMPLE VOLUMES	24-HOUR AMBIENT O, SAMPLING	JECT NAME: Ambient Air Monitoring	MPANY NAME: AMET-Asia Inc.
STANDA	FOR 24-	PROJEC	COMPA

Station	Temper	blent uture (T)	Barometri (Pt	ric Pressure Pbar)	Sampling Date	Sampling Time	Sempling Duration (t,minutes)	Flow Rate	Standard Vo
	٥	×	in. Hg	mmHg			200	m3/min	Vms
AQN3	27.6	300.6	28.44	722.4	722.4 27-28 Apr 2021	1530H-1530H	480	1.0	Ď

Nomenclature (Terms are listed by the order of their appearance in the table above

Os conc. - Ozone concentrations, µg/Nm Qa = actual flowrate, m3/min 298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg



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FOR 24-HOUR AMBIENT NO2 SAMPLING PROJECT MAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc. STANDARDIZED SAMPLE VOLUMES

ration	Temper	Ambient mperature (T)	Barometr	ic Pressure oar)	Sampline Date	Samoline Time	Sampling	How Rate
	2	×	in. Hg	in. Hg mmHg			(t,minutes)	Ll/min
ACIN4	27.4	300.4	28.10	13.7 26	26-27 Apr 2021	1300H-1300H	1440	0.2

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Phar = barometric pressure, mm Hg

t = total sampling time, minute T = ambient temperature, K

Concentration NO.

> Vmstd, Nm³ 0.2683

a, Total volume of air sampled, corrected to standard condition (Nm3) B. Formulas used in Calculat

NO,mass NOsconc. = b. NO2 concentration, ug/Nm3

NO2 conc. = nitrogen dioxide concentrations, µg/Nm3 Philippine Standard Pressure and Temperature 1,000 = conversion from liters to m3

Vm(std) = sampled volume corrected to standard conditions, Nm3 Qa = actual flowrate through the orifice, fixed at 0.2 lpm

NO2 mass = mass of nitrogen dioxide, µg

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FOR 24-HOUR AMBIENT 502 SAMPLING PROJECT NAME: Ambient Air Monitoring STANDARDIZED SAMPLE VOLUMES COMPANY NAME: AMET-Asia Inc.

Station	Ami	blent ature (T)	Barometri (Pb	c Pressure har)	Sampling Date	Sampling Time	Sampling	Flow Rate	Standard Volume	Mass 50,	Concentr SO,
Anthony of the Control of the Contro	ņ	×	in. Hg	mmHg			(t,minutes)	Ll/min	Vmstd, Nm³	ĸ	M/Srt
AGN4	27.4	300.4	28.10	0 713.7	26-27 Apr 2021	1300H-1300H	1440	0.2	0.2683	0.87	-d2,

a. Total volume of air sampled, corrected to standard condition (Nm3) B. Formules used in Calculations: V (1010) = -

SO₂ mass

SO conc.

b. SO2 concentration, µg/Nm3

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Phar = barometric pressure, mm Hg

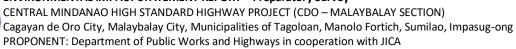
Qa = actual flowrate through the orifloe, fixed at 0.2 ipm t = total sampling time, minute

Vm(std) = sampled volume corrected to standard conditions, Nm3 502 mass = mass of suffur dioxide, µg ,000 = conversion from liters to m3

298 » Standar ambient temperature, K (25°C+273) 760 » Standard atmospheric pressure, mm Hg Philippine Standard Pressure and Temporature







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FOR 24-HOUR AMBIENT TSP SAMPLING PROJECT NAME: Ambient Air Monitorin STANDARDIZED SAMPLE VOLUMES

Station	Temper	Ambient Barometric Pressure Temperature (T) (Pbar) Sar	Barometri (Pt	ic Pressure sar)	Sampling Date Sampling Time	Sampling Time	Sampling Duration Flow Rate Standard Volum: (t,minutes)	Flow Rate	Standard Volume	Mass
	þ		In. Hg	mmHir				m3/min	Vmstd, Nm²	至
AQN4	27.4	300.4	28.10	713.7	26-27 Apr 2021 1300H-1300H	1300H-1300H	1440	1.223	1640.9	14940

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Vm(std) = sampled volume corrected to standard conditions, Nm3 TSPconc. " Total Suspended Particulates concentrations, TSP mass = mass of total suspended particulates, µg

Pbar = barometric pressure, mm Hg

T = ambient temperature, K

t = total sampling time, minutes

a. Total volume of air sampled, corrected to standard condition (Nm3) B. Formulas used in Calculations: tion, ug/Nm3 b. TSP concen

TSP mass

TSPconc.

Philippina Standard Pressure and Temperature 298 = Standar ambient temperature, K (25°C+273) 760 = Standard atmospheric pressure, mm Hg

Qa = actual flowrate, m3/min



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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PM10 SAMPLING PROJECT NAME: Ambient Air Monitoring

COMPANY NAME: AMET-Asia Inc.

	Temperature (T)		Barometri (Pt	Barometric Pressure (Pbar)	Sampling Date	Sampling Time	Sampling Duration (t,minutes)	Flow Rate	Sampling Date Sampling Time Sampling Duration Flow Rate Standard Volume (Liminutes)	Mass Conce PM10 PI
	ņ	×	Fr. Hg	in. Hg mmHg			(Althouseday)	m3/min	Vmstd, Nm ⁸	¥
ACM	27.4	27.4 300.4	28.10	713.7	28.10 713.7 26-27 Apr 2021 1300H-1300H	1300H-1300H	1440	1,171	1571.1	00998

a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{metakl} = \frac{Q_{sit} \times 298}{T} \times \frac{P_{hw}}{760} \times t$ b. PM10 concentration, $\mu g/\text{Nm3}$ $PM10conc = \frac{PM10m ass}{V_{metakl}}$

Philippine Standard Pressure and Temperature. (K (25°C+273) 298 × Standar ambient temperature, K (25°C+273) 760 × Standard atmospheric pressure, mm Hg

Os = actual flowrate, m3/min

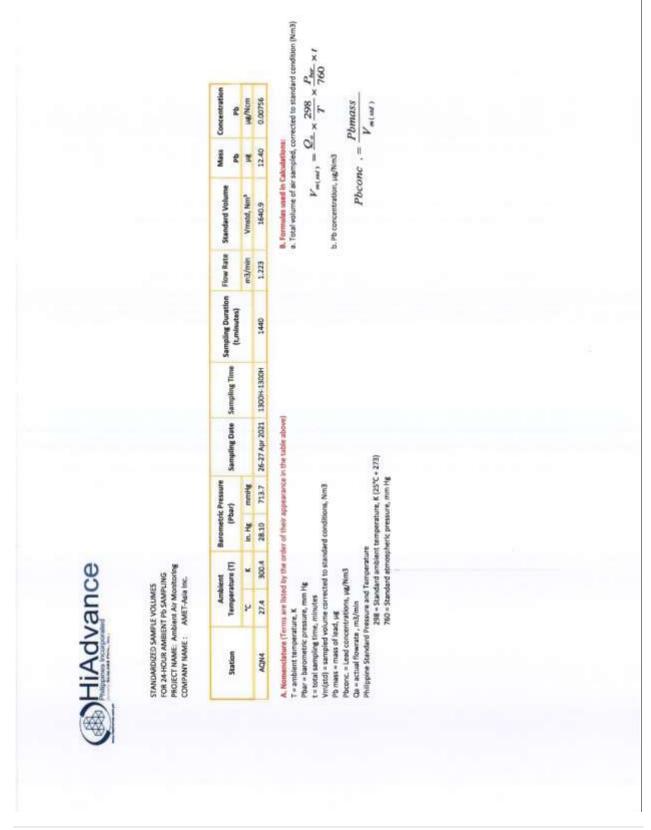
Vmistā) = samplied valume corrected to standard conditions, Nm3 PM10 mass = mass of particulate matter 10, µg PM10 conc. = Particulate Matter 10 concentrations, µg/Nm3

t = total sampling time, minutes



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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT O₅ SAMPLING PROJECT NAME: Ambient Am Monthoning COMPANY NAME: AMET-ASIS INC.

Station	Temper	bient ature (T)	Barometo (Pt	c Pressure	Sampling Date	pling Date Sampling Time	Sampling Duration (t,minutes)
	9	×	In. Hg	Mmm	In Hg mmHg		
ADN4	27.4	300.4	28.10	713.7	26-27 Apr 2021	21 1300H-1300H	480

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Vm(std) = sampled volume corrected to standard conditions, Nm3

Phar + barometric pressure, mm Hg t = total sampling time, minutes

T = amblent temperature, K

O_s conc. = Ozone concentrations, µg/Nm

Os mass = mass of Ozone, µg

Standard Volume Vinstd, Nm* 0.447 B. Formulas used in Calculations:

a. Total volume of air sampled, currected to standard condition (Nin3) $V_{int,ad,1} = \frac{Q_{ii}}{T} \times \frac{298}{T} \times \frac{P_{intir}}{760} \times t$ b. G_t concentration, $\mu g N m^3$ $O_3 conc. = ("O_3" mas$

s)/V_(m(std))

ressure and Temperature 298 = Standard umbient temperature, K (25°C+273) 760 = Standard atmospheric pressure, mm Hg

Qa = actual flowrate, m3/min Philippine Standard Pressure and Temperature 298 = Standard ambient temperature



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NO,muss

NO2conc. =

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FOR 24-HOUR AMBIENT NO2 SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc. STANDARDIZED SAMPLE VOLUMES

Station	Temper	Ambient mperature (T)	Barometric Pressure (Pbar)	netric e (Pbar)	Sampling Date	Sampling Time	Sampling	Flow Rate	Standard
	ų	×	in. Hg	Mmm			(t,minutes)	Ll/min	Vmstd, Nm
ONS	26.4	299.4	27.81	706.4	30 Apr-01 May 2021	1020H-1020H	1440	0.2	0.2664

A. Nomendature (Terms are listed by the order of their appearance in the table above)

Pbar » barometric pressure, mm Hg

t = total sampling time, minute T = ambient temperature, K

Vm(std) = sampled volume corrected to standard conditions, Nm3 Qa - actual flowrate through the orifice, fixed at 0.2 tpm

NO2 conc. a nitrogen diaxide concentrations, µg/Nm3

1,000 = conversion from liters to m3

NO2 mass = mass of nitrogen dioxide, µg

Concentration

a. Total volume of air sampled, corrected to standard condition (Nm3) b. NO2 concentration, µg/Nm3 B. Formulas used in Calculation

> 298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg Philippine Standard Pressure and Temperature



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PROJECT NAME: Ambient Air Monitoring STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT 502 SAMPLING COMPANY NAME: AMET-Asia Inc.

Station	Am	blent ature (T)	Barometr (Pt	ic Pressure par)	Sampling Date	Sampling Time	Sampling Duration	Flow Rate	Standard Volume	
	'n	×	in. Hg	Shimm			(t,minutes)	Li/min	Vmstd, Nm*	
AQNS	26.4	299.4	27.81	705.4	30 Apr-01. May 202	1020H-1020H	1440	0.2	0.2664	

Concentration

503

Hg/Nom <12.5

a. Total volume of air sampled, corrected to standard condition (Nm3) B. Formulas used in Calculations: V mens)

SO₂mass b. SOZ concentration, µg/Nm3 SO₂conc. =

Vm(std) = sampled volume corrected to standard conditions, Nm3 Qa = actual flowrate through the orifice, fixed at 0.2 lpm 902 conc. = sulfur dioxide concentrations, µg/Nm3 Philippine Standard Pressure and Temperature SO2 mass = mass of suffur dioxide, µg 1,000 = conversion from liters to m3 Pbar = barometric pressure, mm Hg t = total sampling time, minute

298 = Standar ambient temperature, K (25°C + 273) 750 = Standard atmospheric pressure, mm Hg

A. Nomenclature (Terms are fisted by the order of their appearance in the table above)

= ambient temperature, K

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ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MAL



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				Condition (Nm3)
	Concentration	HW/Ncm	102	$\frac{Q_a}{Q_a} \times \frac{298}{T} \times \frac{P_{hw}}{760} \times t$ $C_c = \frac{TSPmass}{V_{m(child)}}$
	Mass	ž H	166100	of air Calculations: of air sampled, correct we and in East and
	Standard Volume	Vinstd, Nm²	1623.7	b. Total volume of all samples, corrected to standard condition (Nm3) $V_{vol.int}; = \frac{Q_u}{T} \times \frac{298}{T} \times \frac{P_{vor.}}{T} \times t$ b. TSP concentration, $\mu g Nm3$ $TSP conce. = \frac{TSP mass}{V_{withhill}}$
	Flow Rate	m3/min	1.219	
	Sampling Duration		1440	
			H020H-1020H	
	Sempling Date Sampling Time		0 Apr-01 May 203 1020H-1020H	A. Nomenclature (Terms are fated by the order of their appearance in the table above) T = imblent temperature, K Pbar = barometric pressure, mm Hg t = total sampling time, minutes Virightal) = sampling time, minutes Virightal) = sampling time, minutes Virightal) = sampling time, minutes TSP conc. = Total Suspended Particulates concentrations, pg/Nim3 Qs = scrial flowrate, m3/min Philippine Standard Pressure and Temperature (K (25°C + 273)) 750 = Standard atmospheric pressure, mm Hg 750 = Standard atmospheric pressure, mm Hg
	Barometric Pressure (Pbar)	Hig mmHill	706.4	ms are listed by the order of their appearance in the seure, mm Hg. 4, minutes 4, minutes 4, minutes 4, minutes 5, minutes 6, minutes 7, minute
	-	in. Hg	Н	e order of the standard or concentration that the concentration that the standard or c
LIMES SAMPLING F Monitorin Asia Inc.	Ambient Temperature (T)		4 299.4	mm Hg. tts orrected to orrected to orrected to and Temps and Temps Standard at
AMPLE VOI HIBENT TSP Ambient Au	Ten	ų	26.4	Tems are elature, K gressure, control time, mind of volume mind of volume control time of the control of the co
STANDARDED SAMPLE VOLUMES FOR 24-HOUR AMBIENT TSP SAMPLING PROJECT NAME: Ambient Air Monttoring COMPANY NAME: AMET-Asis Inc.	Station		AGNS	A. Nomenclature Terms are fated by the order of their appearance T = ambient lengerature, K Pbur = barometric pressure, mm Hg t = total sampling time, minutes t = total sampling time, corrected to standard conditions, Nm3 NW Std = sampling time, corrected to standard conditions, Nm3 NW Std = strial flowrate m3/min Da = schial flowrate m3/min Philippine Standard Pressure and Temperature 298 = Standard atmospheric pressure, mm H NB = Standard atmospheric pressur



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STANDARDIZED SAMPLE VOLUMIZS FOR 24-HOUR AMBIENT PM/10 SAMPLING PROJECT NAME: Ambient Ale Monitoring COMPANY NAME: AMET-Asia Inc.

Station	Temper	bient rature (T)	Barometri (Pb	c Pressure ar)	Sampling Date	Sampling Time	Sampling Duration (Cminutes)	Flow Rat
	ç	×	in. Hg	mmHg			(12) P. (15) P. (15)	m3/min
AGNS	26.4	299.4	17.81	706.4	O Apr-01 May 202	1020H-1020H	1440	1.162

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Vingstd] = sampled volume corrected to standard conditions, Nm3 PM10 mass = mass of particulate matter 10, µg PM10 conc. = Particulate Matter 10 concentrations, µg/Nm3

Phar = banometric pressure, mm Hg

t = total sampling time, minutes

Vmstd, Nm²

B. Formulas used in Catculations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m \in {\rm AM}, T} = \frac{Q_u}{T} \times \frac{298}{T} \times \frac{P_{\rm dec}}{760} \times t$ b. PM3D concentration, jug/Nm3 PM10m as s

PM10conc=

Qa = actual flowrate, m3/min Philippine Standard Pressure and Temperature, K (25°C + 273) 760 = Standard ambient temperature, R (25°C + 273) 760 = Standard atmospheric pressure, mm Hg



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STANDARDIZED SAMPLE VICLUMES
FOR 24-HOUR AMBIENT PE SAMPLING
PROJECT NAME: Antibient Air Monitorin
COMPANY MAME: AMET-Asia Inc.

tation	Amil	blent ature (T)	Barometr (Pt	ic Pressure Sar)	Sampling Date	Sampling Time	Sampling Duration (L,minutes)	Flow Rate	Standard Volume	Mass	Concentrat
	P	*	In. Hg	mmHg				m3/min	Vmetd, Nm*	ž	mg/Ncm
ACINS	25.4	299.4	27.81	706.4	D Apr-01 May 207	1020H-1020H	1440	1.219	1623.7	24.50	0.0151

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

/m(std) = sampled volume corrected to standard conditions, Nm3

t + total sampling time, minutes

a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{in(sat)} = \frac{Q_d}{T} \times \frac{298}{T} \times \frac{P_{be}}{760} \times t$ 8. Formulas used in Calculations:

Phmass

b. Pb con

258 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg

Philippine Standard Pressure and Temperature Pbconc. = Lead concentrations, ug/Nm3

Qa = actual flowrate, m3/min Pb mass = mass of lead, ug



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FOR 24-HOUR AMBIENT O₄ SAMPLING PROJECT NAME: Ambient Air Monitor COMPANY NAME: AMET-Asia Inc. STANDARDIZED SAMPLE VOLUMES

Station	Temper	ature (T)	(Pt	Sar)	Sampling Date	pling Date Sampling Time	Sampling Duration (1,minutes)	on Flow Rate Sta
	ų	×	In. Hg	Mmm				m3/min
AGNS	26.4	26.4 299.4		706.4	27.81 706.4 D Apr-01 May 20; 1020H-1020H	1020H-1020H	480	10

dard Volume nstd, Nm* 0.444 condition (Nm3) b. O_s concentration, µg/Nm³

03conc,=("03" mas $s)/V_{-}(m(std))$

298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg

Philippine Standard Pressure and Temperature

O₂ conc. = Ozone concentrations, µg/Nm

Qa = actual flowrate, m3/min O₃ mass = mass of Ozone, µg

Vm(std) = sampled volume corrected to standard conditions, Nm3

Phar = barometric pressure, mm Hg t = total sampling time, minutes

= ambient temperature, K



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT NO2 SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia

8	Am.	bient ature (T)	Barometri (Pt	ic Pressure aar)	Sampling Date	Sampling Time	Samp
	y.	×	in. Hg	BHWW			(t,minu
NE	26.7	299.7	27.86	707.6	28-29 Apr 2021	1730H-1730H	1440

A. Nomendature (Terms are listed by the order of their appearance in the lable above) T = ambient temperature, K

Qa = actual flowrate through the orifice, fixed at 0.2 lpm Phar + barometric pressure, mm Hg t = total sampling time, minute

Vm(std) = sampled volume corrected to standard conditions, Nm3 VO2 conc. = nitrogen diaxide concentrations, µg/Nm3 NO2 mass = mass of nitrogen dioxide, µg 1,000 = conversion from liters to m3

298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg Philippine Standard Pressure and Temperature

NO,mass NO,conc. = b. NO2 concentration, µg/Nm3

a. Total volume of air sampled, corrected to standard condition (Nm3)

Formulas used in Calculation

NO

Vmstd, Nm^a

Flow Rate Ll/min 0.2 298



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PROJECT NAME: Ambient Air Monitoring FOR 24-HOUR AMBIENT SO2 SAMPLING STANDARDIZED SAMPLE VOLUMES COMPANY NAME: AMET-ASIB

Station	Am. Temper	Amblent mperature (T)	Barometri (Pb	c Pressure lar)	Sampling Date	Sampling Time	Sampling Duration	Flow Rate	Standard	Mass 50,	Concentration 50,
	ų	¥	in. Hg	mmHg			(t,minutes)	Ll/min	Vmstd, Nm²	Ħ	µ8/Ncm
AGNE	76.7	299.7	27.86	207.6	28-29 Apr 2021	1730H-1730H	1440	0.2	0.2666	1.92	<12.5

Nomenclature (Terms are listed by the order of their appearance in the table above)

B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) Vaccin) = _

SO₂ mass b. 502 concentration, µg/Nm3 SO, conc. =

Vm(std) = sampled volume corrected to standard conditions, Nm3

502 conc. = sulfur dioxide concentrations, µg/Nm3

502 mass = mass of suffur dloxide, µg 1,000 = conversion from liters to m3

Qa = actual flowrate through the orifice, fixed at 0.2 lpm

Pbar = barometric pressure, mm Hg

t = total sampling time, minute T = ambient temperature, K

298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

				ondition (Vm3)
	Concentration	TSP ua/Nom	101	of in Calculations: of air sampled, corrected to standard condition $V_{metart} = \frac{Q_a}{T} \times \frac{298}{T} \times \frac{P_{NB}}{760} \times t$ TSPconc. = $\frac{TSPmass}{V_{metart}}$
	Mass	TSP IN	174200	in calculations: air sampled, correct menor) = Q_B, menor), ing/hre3 TSP-CORC. =
	Standard Volume	Vmstd. Nm³	1630.3	B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{metant}, = \frac{Q_a}{T} \times \frac{298}{T} \times \frac{P_{NE}}{760} \times t$ b. TSP concentration, sig/Nm3 $TSPconc. = \frac{TSPmass}{V_{metant}}$
	Flow Rate		1,273	0 4 2
	Sampling Duration		1440	
			130H-1730H	
		sempang Date	28-29 Apr 2021 1730H-1730H	the table above)
	Barometric Pressure	nmHe	207.6	ms are listed by the order of their appearance in the seure, mm Hg. 1, minutes 2, minut
Ancountry States of States	and section	i emperature (1)		are listed by the orde X N Interes
THIRD ADVANCE STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT TSP SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: Ambient Air Monitoring		Station	AQN6	A. Nomenclature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, K Plusr = barometric pressure, min Hg t = 10cal sampled time, minutes Vin(std) = sampled volume corrected to standard conditions, Mm3 Yin(std) = sampled volume corrected to standard conditions, µg/Nm3 Yin(std) = sampled volume corrected barticulates concentrations, µg/Nm3 Qu = ectual flowinste, m3/min Philippine Standard Pressure and Temperature Philippine Standard Pressure and Temperature ZGD = Standard atmospheric pressure, mm Hg ZGD = Standard atmospheric pressure, mm Hg



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FOR 24-HOUR AMBIENT PM10 SAMPLING PROJECT NAME: Ambient Air Monttoring STANDARDIZED SAMPLE VOLUMES COMPANY NAME: AMET-Asia

tation	Aml	nbient erature (T)	Barometri (Pb	c Pressure ar)	Sampling Date	Sampling Time	Sampling Duration (L,minutes)	Flow Rate
	ų	×	In. Hg	mmHg				m3
ON6	26.7	299.7	27.86	207.6	707.6 28-29 Apr 2021	1730H-1730H	1440	1.169

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

Vm(std) = sampled volume corrected to standard conditions, Nm3 PM10 conc. = Particulate Matter 10 concentrations, µg/Nm3 PM10 mass = mass of particulate matter 10, µg

Phar = barometric pressure, mm Hg. t = total sampling time, minutes

f = ambient temperature, K

Standard Volume

Vinstd, Nm*

15583

a. Total volume of air sampled, corrected to standard condition (Nm3) PM10mass PMI Oconc= b. PM10 concentration, µg/Nm3 8. Formulas used in Calculatio

Philippine Standard Pressure and Temperature, K (25°C + 273)
780 = Standard atmospheric pressure, rnm Hg Op = actual flowrate, m3/min



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Phmass V_{m(sid)}

Pbconc . =

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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PE SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia

Sampling Time Sampling Dural (Laninutes)		1 1730H-1730H 1440
Sampling Date		28-29 Apr 2021
c Pressure ar)	mmHg	707.6
Barometri (Pb	In. Hg	27.86
olent ature (T)	×	299.7
Amb	ů	26.7
Station		ACINE

Standard Volume
Vmstd, Nm*
1630.3

How Rate m3/min 1.223 8. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{sut,rat}) = \frac{Q_u}{T} \times \frac{298}{T} \times \frac{P_{ner}}{760} \times t$

A. Momenclature (Terins are issted by the order of their appearance in the table above)

1 - ambient temperature, K.
Phar - baroneitic pressure, mm Mg.
1 - total sampling time, minutes
1 - total sampling time, minutes
10 - sampled volume corrected to standard conditions, Nm3
Phononc, = Lead concentrations, pg/Nm3
Phononc, = Lead concentrations, pg/Nm3
Da actual flowrate, m3/min
Philippine Standard Pressure and Temperature, K (25°C + 273)
750 - Standard ambient temperature, K (25°C + 273)
750 - Standard among among among pressure, mm Mg.



Total volume of air sampled, corrected to standard condition (Nm3)

B. Formulas used in Calculations:

0.444

Standard Volume

 $V_{m(inl)} = \underline{Q_u} \times \frac{298}{}$

O3conc.=("O3" mas

b. O₃ concentration, µg/Nm³

 $s)/V_{-}(m(std))$

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NO,mass

NO,conc.

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STANDARDIZED SAMPLE VOLUMES
POR 24-HOUR AMBIENT NOZ SAMPLING
PROJECT NAME: Ambient Air Monitoring
COMPANY NAME: AMET-Asia Inc.

tation	Temper	nblent erature (T)	Barometri (Pt	c Pressure ar)	Samoline Date	Sampling Time	Sampling
2000	ņ	×	In. Hg	Hg mmHg			(t,minutes)
VON7	25.7	298.7	27.30 693.5	693.5	01-02 May 2021	1345H-1345H	1440

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K
Pbar = barometric pressure, mm Hg
t = total sampling time, minute

Qa = actual flowrate through the orifice, fixed at 0.2 fpm Vm(std) = sampled volume corrected to standard conditions, Nm3

NO2 conc. = nitrogen dioxide concentrations, µg/Nm3

1,000 = conversion from liters to m3

NO2 mass = mass of nitrogen dioxide, µg

Vmstd, Nm³ 0.2622 8. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m(ssM)} = \frac{Q_{ij}}{1,000} \times \frac{298}{T} \times \frac{P_{nir.}}{760} \times t$ b. NO2 concentration, μ_0 Nm3

Philippine Standard Pressure and Temperature 298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg



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STANDARDIZED SAMPLE VOLLIMES FOR 24-HOUR AMBIENT SOZ SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-ASIa Inc.

tation	Am	blent rature (T)	Barometri (Pt	ic Pressure sar)	Sampling Date	Sampling Time	Sampling Duration
	'n	×	in. Hg	mmHg			(t,minutes)
ZND)	25.7	298.7	27.30	693.5	01-02 May 2021	1345H-1345H	1440

Concentration

WE/Norm

50,

B. Formulas used in Calculations: a. Total volume of air sumpled, corrected to standard condition (Nm3) $V_{m(std)} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{mir.}}{760} \times I$ b. 502 concentration, µg/Nm3

SO₂ mass

SO, conc. =

T = ambient temperature, K
there = barometric pressure, mm Hg
t = votal sampling time, minute
t = votal sampling time, minute
t = votal sampling time, minute
tall flowrate through the orifica, fixed at 0.2 fpm
the volume corrected to standard conditions, Nm3

A. Nomentlature (Terms are isted by the order of their appearance in the table above)

1,000 = conversion from liters to m3 Philippine Standard Pressure and Temperature 298 = Standar ambient tempers

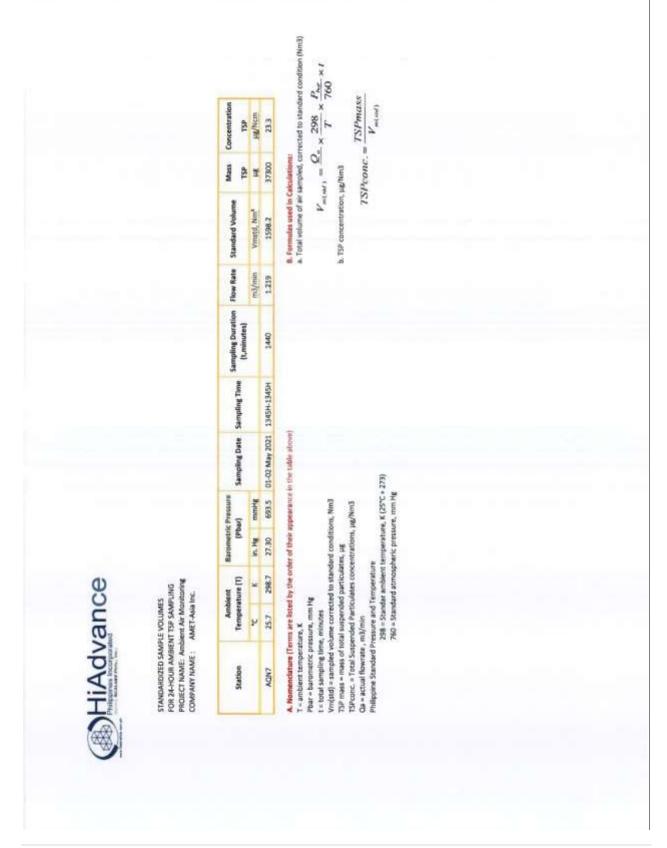
SO2 conc. = sulfur dioxide concentrations, µg/Nm3

SO2 mass = mass of suffur dioxide, jug

andard Pressure and Temperature 298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg



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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PM10 SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc.

Station	Temper	Ambient mperature (T)	Barometri (Pb	(Pbar)		Sampling Date Sampling Time	Sampling Duration (Lminutes)	in Flow Rate	Standard Volume	Mass
	ð	, ç		In. Hg mmHg			2010/00/00/00	m3/min	Vmstd, Nm³	Ħ
AGN7	25.7	298.7		693.5	01-02 May 2021 1345H-1345H	1345H-1345H	1440	1.176	1541.8	2540

A. Momendature (Terms are listed by the order of their appearance in the table above)

/m(std) = sampled volume corrected to standard conditions, Nm3 PM10 conc. * Particulate Matter 10 concentrations, ug/Nm3 PM10 mass = mass of particulate matter 10, µg

Phar = barometric pressure, mm Hg

t = total sampling time, minutes

PMILO

B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3)

PM10mass b. PM10 concentration, µg/Nm3

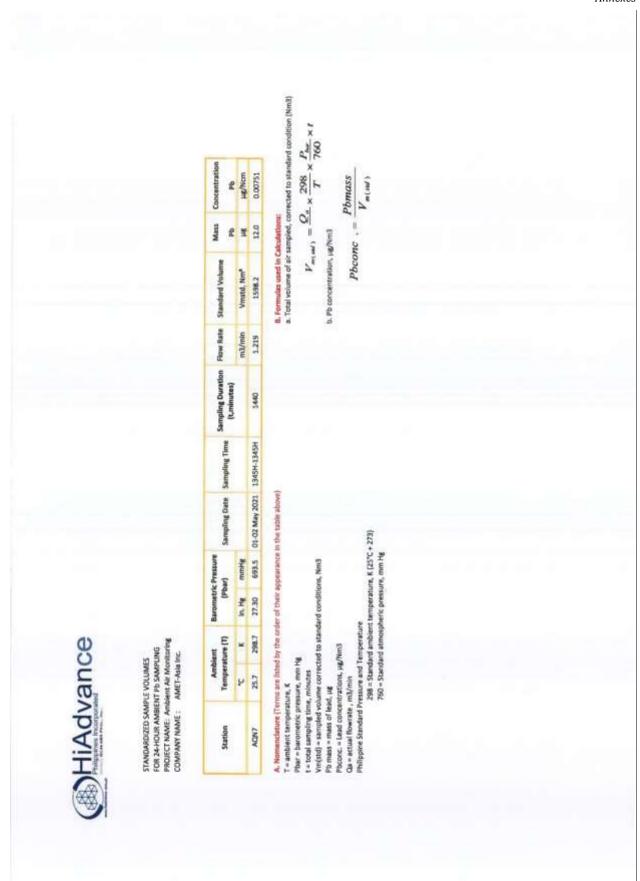
PM10conc=

298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg

Philippine Standard Pressure and Temperature

Qa = actual flowrate, m3/min

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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT O_s SAMPLING PROJECT NAME. Ambient Air Monitorii

Station	Amt	Ambient risperature (T)	Barometr (Pt	(Pbar)	Sampling Date	oling Date Sampling Time	Sampling Duration (t,minutes)	Flow Rate 5		Mass O,	Concentrati O,
	y		In. Hg	Mmm				m3/min	Vmstd, Nm ⁵	×	mg/Ncm
AQN7	25.7	25.7 298.7	27.30 693.5	693.5	01-02 May 2021 1	1345H-1345H	480	10		1.10	

A. Nemenclature (Terms are listed by the order of their appearance in the table above)

Vm(std) = sampled volume corrected to standard conditions, Nm3

a total sampling time, minutes

O_t conc. » Ozone concentrations, µg/Nm

Oa = actual flowrate, m3/min O, mass - mass of Ozone, µg

a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m(ml)} = \frac{Q_u}{N} \times \frac{298}{100}$ B. Formulas used in Calculations: b. Os concentration, µg/Nm

O3conc.=("O3" mas $s)/V_{-}(m(std))$

298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg Philippine Standard Pressure and Temperature





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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT NOZ SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc.

tation	Temper	Ambient imperature (T)	Barometri (Pt	c Pressure aar)	Sampling Date	Sampling Time	Sampling	Flow Rate	Standard
	þ	×	in. Hg	mmHg			(t,minutes)	Li/min	Vmstd, Nr
SNOV	24.6	297.6	27.07	687.7	03-04 May 2021	0915H-0915H	1440	0.2	0.2609

A. Nomendature (Terms are listed by the order of their appearance in the table above)

Phar * barometric pressure, mm Hg

t = total sampling time, minute T = ambient temperature, K

Vm(std) = sampled volume corrected to standard conditions, Nm3 Ga = actual flowrate through the orifice, fixed at 0.2 lpm

NO2 conc. = nitrogen dioxide concentrations, µg/Nm3 Philippine Standard Pressure and Temperature

1,000 = conversion from liters to m3

NO2 mass = mass of nitrogen dioxide, ug

Total volume of air sampled, corrected to standard condition (Nm3)

NO.conc.

b. NO2 con

298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm H8



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STANDARDIZED SAMPLE VOLUMES
FOR 24-HOUR AMBIERT SOZ SAMPLING
FROJECT NAAME: Ambient Air Monitoring
CDMPANY NAAME: AMET-Asia Inc.

Sampling	(,minutes)	1440
Sampling Time		D915H-0915H
Sampling Date		03-04 May 2021
Pressure ar)	mmHg	687.7
Barometric (Pb:	in. Hg	27.07
oture (1)	×	297.6
Amb	'n	24.5
Station		MONB

Concentration

Flow Rate

50,

<12.8

0.2609

Ll/min 0.2 8. Formulas used in Calculations: a. Total volume of air samples, corrected to standard condition (Nm3) $V_{\rm int, vult} = \frac{Q_{\rm in}}{1,000} \times \frac{298}{T} \times \frac{R_{\rm int.}}{760} \times t$ b. SO2 concentration, $\mu_{\rm s}/M$

SO, mass

SO₂conc. =

760 = Standard atmospheric pressure, mm Hg

A, Nomendature [Terms are listed by the order of their appearance in the table above)



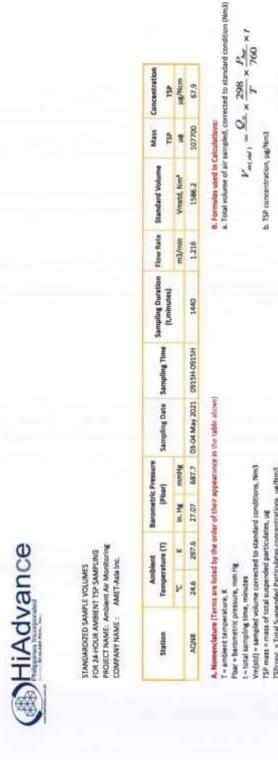
CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

TSPmass

TSPconc.

Philippine Standard Pressure and Temperature 298 - Standar ambient temperature, K (25°C+273) 760 - Standard atmospheric pressure, mm Hg

Ca = actual flowrate, m3/min









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STANDARDIZED SAMPLE VOLUMES
FOR 24-HOUR AMBIENT PMID SAMPLING
PROJECT NAME: Arribient Air Monitoring

COMPANY NAME: AMET-Asia Inc.

Station	Temper	Ambient femperature (T)	Barometh (Pb	ic Pressure sar)	Barometric Pressure (Phar) Sampling Date Samp	Sampling Time	Sampling Duration (L,minutes)	Flow Rate	Standard Volume	Mass PM10	Concentrati
	¥	M	in. Hg	mmHg	in. Hg mmHg			m3/min	Vmstd, Nm*	H	
ACMB	24.6	24.6 297.6	10,03	687.7	03-04 May 2021	0915H-0915H	1440	1.167	1522.3	48200	

to, PM30 concentration, µg/Nm3 PM10mass $PM10cong = \frac{PM10mass}{V_{mino}}$

a. Total volume of air sampled, corrected to standard condition (Nm3)

B. Formulas used in Calculations:

A. Nemendature (Terms are listed by the order of their appearance in the table above)

Pbar = barometric pressure, mm Hg.

= total sampling time,

298 = Standar ambient temperature, K (25°C+ 273) 760 = Standard atmospheric pressure, mm Hg.

PM10 mass = mass of particulate matter 10, µg PM10 conc. = Particulate Matter 10 concentrations, µg/Nm3

Philippine Standard Pressure and Temperature.

Qs = actual flowrate, m3/min

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STANDARDIZED SAMPLE VOCUMES
FOR 24-HOUR AMBIENT PB SAMPLING
PROJECT NAME: Ambient Air Monitori
COMPANY NAME: AMET-Asia Inc.

Am. Temper	Ambient hperature (T)	Barometri (Pb	c Pressure lar)	Sampling Date Sa	Sampling Time	Sampling Duration (t,minutes)	Flow Rate	Duration Flow Rate Standard Volume utes)	
ç	×	Im. Hg	In. Hg mmHg				m3/min	Vmstd, Nm²	
24.6	297.6	27.07	687.7	687.7 G3-04 May 2021 0915H-0915H	0915H-0915H	1440	1.216	1586.2	

Nomenclature (Terms are listed by the order of their appearance in the table)

/mistd) = sampled volume corrected to standard conditions, Nm3

t = total sampling time, minutes

- ambient temperature, K

Pbconc. = Lead concentrations, µg/Nm3

Pb mass = mass of lead, µg

a. Total volume of air sampled, corrected to standard condition (Nm3) Phmass B. Formulas used in Calculations: Pheone b. Phoon

Ca = actual flowrate, m3/min

298 = Standard ambient temperature, K (25°C + 273) Philippine Standard Pressure and Temperature

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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT OF SAMPLING PROJECT NAME: Ambient Air Monitorie

Station	Temper	Ambient Temperature (T)	Barometri (Pt	ic Pressure bar)	Sampling Date Sampling Tim	Sampling Time	Sampiling Duration F (t,minutes)	Flow Rate	Flow Rate Standard Volume	Mess O	Mass Concentrati
	y	×	in Hg	in. Hg mmHg				m3/min	Vmstd, Nm*	Ħ	pag/Nem
ACINB	24.6	24.6 297.6	27,07	687.7	03-04 May 2021	0915H-0915H	480	1.0	0.435	2.86	

A. Namenclature (Terms are listed by the order of their appearance in the table above)

Vm(std) = sampled volume corrected to standard conditions, Nm3

Phar - barometric pressure, mm Hg t = total sampling time, minutes

a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m(sd)} = \underline{Q_u} \times \underline{298}$ B. Formulas used in Calculations: D. Os concentration, µg/Nm²

03conc,=("01" mas

 $s)/V_{-}(m(std))$

O_x conc. = Ozone concentrations, µg/Nm

O₂ mass = mass of Ozone, µg

298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg



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STANDARDIZED SAMPLE VOLUMES
FOR 24 HOUR AMBIENT NOZ SAMPLING
PROJECT NAME: Ambient Air Monitoring
COMPANY NAME: AMET-Asia Inc.

Station	Temper	Ambient perature (T)	Barometr (Pt	ic Pressure bar)	Sampline Date	Samoline Time	Sampling
V2000	ņ	ж	in. Hg mmHg	Mmm			(t,minutes)
6ND	25.5	298.5	298.5 26.91 683.5	683.5	04-05 May 2021	1030H-1030H	1440

A. Nomendature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K
Pbar = barometric pressure, mm Hg
t = total sampling time, minute

Qa = actual flowrate through the orifice, fixed at 0.2 lpm Vm(std) = sampled volume corrected to standard conditions, Nm3

NO2 conc. = nitrogen dioxide concentrations, µg/Nm3

1,000 = conversion from iters to m3

NO2 mass = mass of nitrogen dloxide, µg

Formulas used in Calculations:
 Actal volume of air sampled, corrected to standard condition (Nm3)

Concentration

Vmstd, Nm* 0.2586 a. Total volume of air sampled, corrected to standard condition $V_{vol.vid.}) = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{mir.}}{760}$ b. NO2 concentration, Jug/Nm3

NO₂conc. = NO₂mass

Philippine Standard Pressure and Temperature 298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT SOZ SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-483 Inc.

	n Vmstd, Nm²	0.2586
Flow Rate	U/min	0.2
Sampling	(t,minutes)	1440
Sampling Time		1030H-1030H
Sampling Date		04-05 May 2021
c Pressure ar)	Mmm	683.5
Barometri (Pb	in. Hg	26.91
ature (T)	×	298.5
Amit	ų	25.5
Station		AQN9

Me/Nom

8. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{\rm HC,MM} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{\rm Not}}{760} \times I$ b. 502 concentration, µg/Nm3

SO, mass

SO, conc. =

Phar = barometric pressure, mm Hg
= total sampling time, minute
Qa = actual flowrate through the orifice, fixed at 0.2 lpm
Vm[std] = sampled volume corrected to standard conditions, Nm3
SQ2 mass = mass of suffur dioxide, µg
SQ2 conc, = suffur dioxide concentrations, µg/Nm3
1,000 = conversion from liters to m3
Philippine Standard Pressure and Temperature, K (25°C + 273)
760 = Standar ambient temperature, M mm Hg

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

= ambient temperature, K





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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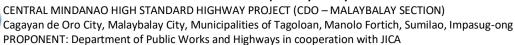


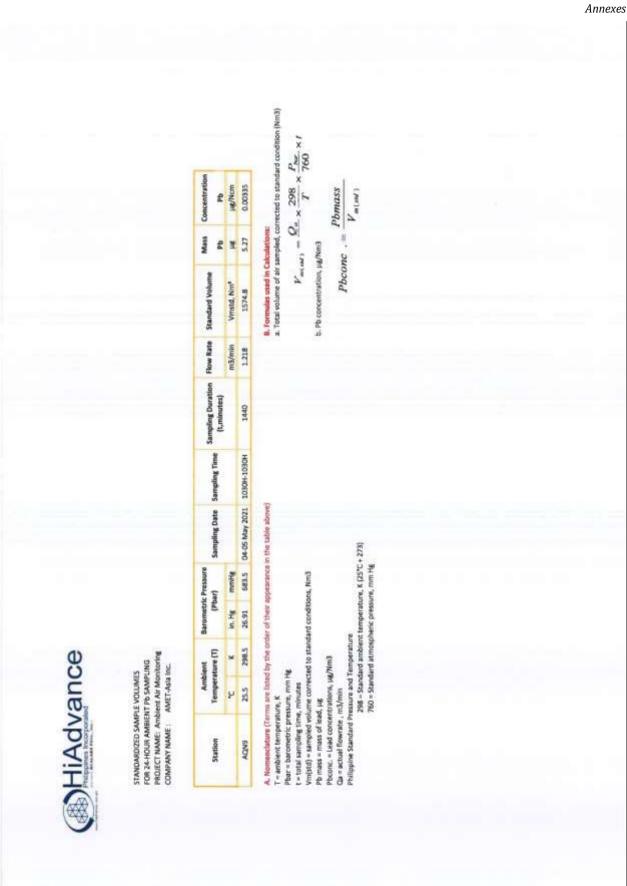
Station	Ami	Ambient Temperature (T)	Barometri (Pb	Barometric Pressure (Pbar)	Sampling Date	Sampling Time	Sampling Date Sampling Time Sampling Duration Flow Rate Standard Volume	Flow Rate	Standard Volume	Mass	Mass Concentration
	þ	×	in: He	mmHg				m3/min	Vmetd, Nm²	3	moN/dit
ACM9	25.5	298.5	16.91	683.5	683.5 04-05 May 2021 1030H-1030H	1030H-1030H	1440	1.218	1574.8	106000	67.3
A. Nomenclature (Terms an	rms are Sste ture, K	d by the ord	Ser of their	abbearance	A. Nomenclature (Terms are Sited by the order of their appearance in the table above) I = ambient temperature, K				B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condi-	skulations sampled, co	mected to stan
Phar = barometric pressure, mm Hg t = total sampling time, minutes Vim(std) = sampled volume corrected to standard conditions, Nm3	essure, mm l e, minutes olume correct	fig. ted to stand	Sard condition	ons, Nm3					7	0	$V_{meant} = \frac{Q_c \times 298}{T} \times \frac{P_{he}}{760} \times$
15P mass – mass of total suspended particulates, µg 15Pconc. – Total Suspended Particulates contentrations, µg/Nm3	otal suspend pended Partit	ed particula culates cons	ites, µg	MW/Wm3					b. TSP concentration, µg/Nm3	HE/N/H3	
Oa = actual flowrate, m3/min	m3/min								7.5	Pconc.	TSPconc. = TSPmass
Philippine Standard Pressure and Temperature 298 = Standar ambient to	Yessure and 298 = Stand	Temperatur far ambient	temperatur	essure and Temperature 298 = Standar ambient temperature, K (25°C = 273)	273)						Z Z

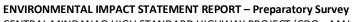


CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Concentration	PM10	29.5	whether the standard condition (Nm3) $V_{\rm intent}$, $= \frac{Q_{\rm int}}{T} \times \frac{298}{T} \times \frac{P_{\rm int}}{760} \times t$ when $= \frac{PM10 mass}{V_{\rm intent}}$	
limited a	PM10		with the standard of $\frac{Q_u}{M} \times \frac{25}{3}$ $M10mass$ $V_{meterds}$	
Standard Volume	Vmstd, Nm*	1503.7	B. Formulas used in Cakulations: a. Total Volume of air sampled, corrected to standard condition (Nm3) $V_{mic,nil} = \frac{Q_{mic} \times 298}{T} \times \frac{P_{hic}}{760}$ b. PM10 concentration, ug/Nm3 $PM1 \text{ Occ on } z = \frac{PM1 \text{ Om } ass}{V_{mic,nil}}$	
Flow Rate	m3/min	1.163	A. Formulas use	
Sampling Duration	(t,minutes)	1440		
Commenter of	aum Dundupe	1030H-1030H		
Committee of the commit		D4-05 May 2021	appearance in the table above) long, Am3 Nm3 , K (25°C + 273) re, mm Hg	
Baconetric Pressure	in. Hg mmHg	26.91 683.5	Sard conditions, Nm3 Hg atlons, Hg/Nm3 re emperature, K (25°C + 2 ant: pressure, mm Hg	
STANDARDICED SAMPLE VOLLIANES FOR 24-HOUR AMBIENT PAILO SAMPLING PROJECT NAME: Ambient Air Monkoring COMPANY NAME: AMET-Asia inc. Ambient Tannament IT	temperature (1)	25.5 298.5	A. Nomenclature (Terms are listed by the order of their appearance in the samplent temperature, K. Phar - barometric pressure, mm Hg. 1- total sampling time, milindes Vin(std) = sampled volume corrected to standard conditions, Nm3 Vin(std) = sampled volume corrected to standard conditions, Nm3 Vin(std) = sampled volume to the sample of	
STANDARDIZED SAMPLE VOLLIANES FOR 24-HOUR AMBIENT PHILD SAMI PROJECT NAME: AMBT-Asia Inc. CONPANY NAME: AMBT-Asia Inc. Ambient	Station	ADNS	A. Nomenclature [Terms are listed by T = ambient temperature, K Phar = barometric pressure, mm Hg t = total sampling time, minutes Vin(std) = sampling time, minutes PM10 mass = mass of particulate ms PM10 conc. = Particulate Na PM10 per Standard Pressure and Ter PMilippine Standard Pressure and Ter PMilippine Standard Pressure and Ter	









CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

			d condition (Nm:
Concentration	CONCENTRATION O ₃	2.53	mulas used in Calculations: al volume of air sampled, corrected to standard of $V_{m(sat)} = \frac{Q_w}{Q_w} \times \frac{298}{T} \times \frac{P_{hw}}{T60} \times t$ concentration, parNm³ $O_3 conc$, = (" O_3 " mas : $S)/V(m(std))$
Mess	o,	1.09	includion: $\frac{Q_{-x} \times 2}{\sqrt{2}}$ $\frac{Q_{-x} \times 2}{\sqrt{2}}$ $\frac{Q_{-x} \times 2}{\sqrt{2}}$ $\frac{Q_{-x} \times 2}{\sqrt{2}}$
	Standard Volume	Vinstd, Nm² 0.431	B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m(sas)} = \frac{Q_u}{Q_u} \times \frac{298}{T} \times \frac{P_{ba}}{T} \times T60$ b. O. concentration, pg/Nm* O_3CORC,=("O_3" mas) S)/V_(m(std))
	Flow Rate	m3/min 1.0	
	Sampling Duration Flow Rate (t,minutes)	480	
		1030H-1030H	
	Sampling Date Sampling Time	CA-05 May 2021 1030H-1030H	1 the table above
Baronnetic Pressure		in. Hg mmHg 26.91 683.5	ms are listed by the order of their appearance in the saure, mm Hg a, minutes furne corrected to standard conditions, Nm3 one, ya m3/min resours and Temperature 298 = Standard ambient temperature, K (25°C = 273) 760 = Standard atmospheric pressure, mm Hg
455.5	E	298.5	in the order min Highers fies orrected to standar in and Temperature Standard ambient 1 Standard ambient 1 Standard atmosphu
STANCHRIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT OF SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: Ambient Ambient	Station Ter	AGN9 25.5	A. Normanctature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, K Par = barometric pressure, mm Hg t = total sampling time, minutes Vmistal = sampled volume corrected to standard conditions, Nm3 O, mass = mass of Ozone, yg O, corn = Ozone concentrations, jug/Nm³ O, corn = Ozone concentrations, jug/Nm³ Philippine Standard Pressure and Temperature 298 = Standard ambient temperature, K (25°C = 273) 760 = Standard ambient temperature, mm Hg



a. Total volume of air sampled, corrected to standard condition (Nm3)

B. Formulas used in Calculation

Concentration NO, 298

 $V_{m(mi)} = \frac{1,000}{1,000}$

b. ND2 concentration, ug/Nm3

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NO,mass

NO,conc.

Annexes



STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT NO2 SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc.

Station	Temper	Ambient emperature (T)	Barometri (Pt	c Pressure ar)	Sampling Date	Sampling Time	Sampling	Flow Rate	Standard
	9	×	in. Hg	. Hg mmHg			(t,minutes)	Li/min	Vmstd, Nm
QN10	26.5	299.5	27.55	6'669	05-06 May 2021	1330H-1330H	1440	0.2	0.2639

A. Nomendature (Terms are listed by the order of their appearance in the table above) = ambient temperature, K

Vm(std) = sampled volume corrected to standard conditions, Nm3 Qa = actual flowrate through the orifice, fixed at 0.2 lpm Phar = barometric pressure, mm Hg t = total sampling time, minute

Philippine Standard Pressure and Temperature

VO2 conc. = nitrogen diaxide concentrations, µg/Nm3

1,000 = conversion from liters to m3

NO2 mass = mass of nitrogen dioxide, µg

298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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PROJECT NAME: Ambient Air Monitoring STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT SOZ SAMPLING COMPANY NAME: AMET-Asia Inc.

Station	Am	Ambient nperature (T)	Sarometr (Pt	ic Pressure aar)	Sampling Date	Sampling Time	Sampling Duration	Flow Rate	Standard Volume	Na So
	y	×	in. Hg mmHg	mmHg			(t,minutes)	LI/min	Vmstd, Nm²	
AQN10	26.5	299.5	27.55	8.669	699.9 05-06 May 2021 1330H-1330H	1330H-1330H	1440	0.2	0.2639	0

A. Nomendature (Terms are listed by the order of their appearance in the table above)

Phar = barometric pressure, mm Hg

t = total sampling time, minute I = ambient temperature, K

Vm(std) = sampled volume corrected to standard conditions, Nm3 Qa = actual flowrate through the orifice, fixed at 0.2 lpm

SO2 conc. = sulfur diaxide concentrations, µg/Nm3 Philippine Standard Pressure and Temperature

502 mass = mass of sulfur dioxide, µg 1,000 = conversion from liters to m3 298 = Standar ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg

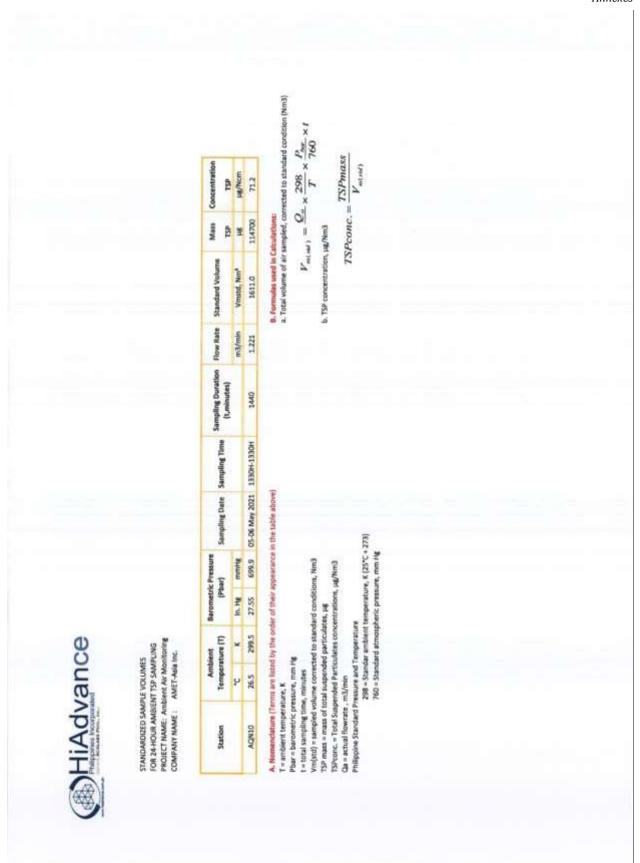
a. Total volume of air sampled, corrected to standard condition (Nm3) B. Formulas used in Calculations:

b. SO2 concentration, µg/Nm3 SO, conc. =

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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STANDARDGED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PM10 SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY MAME: Amet Asia Inc.

station	Am	Ambient Temperature (T)	Barometri (Pt	k Pressure bart	Sampling Date	Sampling Time	Sampling Duration (Cminutes)	r Flow Rate	Standard Volume	Mas
	ş	×	in. Hg	Mmm				mil/min	Vmstd, Nm*	148
ACM10	26.5	299.5	27.55		05-06 May 2021	1330H-1330H	1440	1.170	1543.8	5460

A. Nomenclature (Terms are listed by this order of their appearance in the table above)

/m(std) = sampled volume corrected to standard conditi PM10 conc. = Particulate Matter 10 concentrations, PM10 mass = mass of particulate matter 10, µg

Phar = barometric pressure, mm Hg t = total sampling time, minutes

T = ambient temperature, K

a, Total volume of air sampled, corrected to standard condition [Nm3] B. Formulas used in Calculations: b. PM10 concentration, µg/Nm3

PM10mass

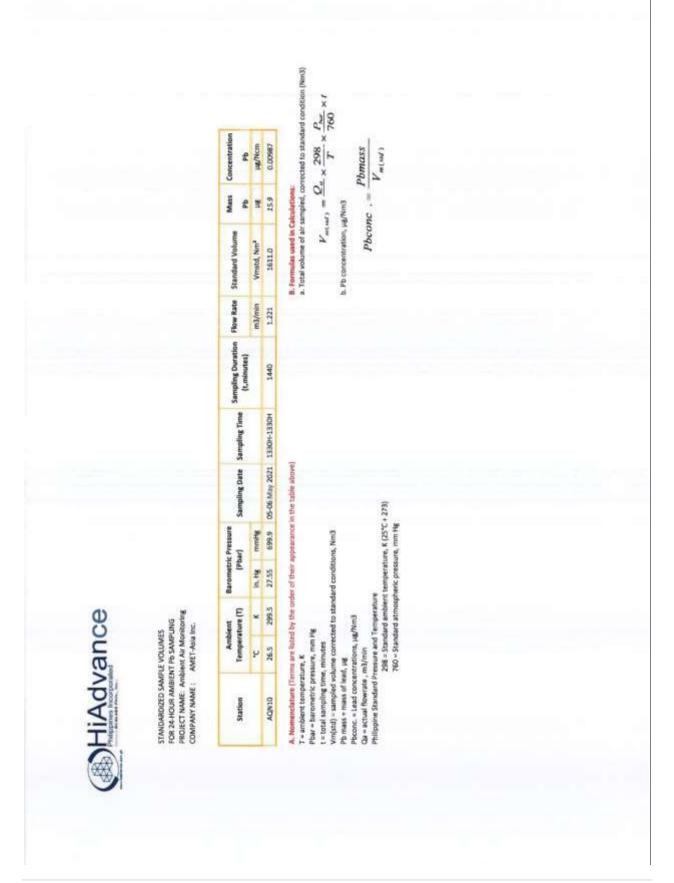
PMI Ocong=

Philippine Standard Pressure and Temperature, K (25°C + 273) 298 – Standar ambient temperature, K (25°C + 273) 760 – Standard atmospheric pressure, mm Hg

Qa = actual flowrate, m3/min



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBRENT O₅ SAMPUNG PROJECT NAME: Ambient Air Monitorin COMPANY NAME: AMET-Asia inc.

Station	Temper	Ambient Temperature (T)	Barometri (Pt	c Pressure sar)	Sampling Date	Sampling Date Sampling Time	Sampling Duration (Lminutes)	III.	ow flate Standard Volume	Mass O,
	ú	×	In.Hg	In. Hg mmHg				m3/min	Vinstd, Nm*	ant
ACN10	26.5	299.5	27.55	90 6:669	05-06 May 2021	1330H-1330H	480	1.0	0.440	2.02

A. Nomendature (Terms are listed by the order of their appearance in the tuble above)

Vm(std) = sampled volume corrected to standard conditions, Nm3

Phar = barometric pressure, mm Mg : = total sampling time, minutes O₃ conc. = Ozone concentrations, µg/Nm

Qa = actual flowrate, m3/min O, mass = mass of Ozone, µg

a. Total volume of air sampled, corrected to standard condition (Nm3) O3conc.=("O3" mas $V_{mint} = \frac{Q_u}{N} \times \frac{298}{N}$ B. Formulas used in Calculations: $s)/V_{-}(m(std))$ b. O₃ concentration, µg/Nm³

> 298 = Standard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, mm Hg Philippine Standard Pressure and Temperature





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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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ATTACHMENT 2

Certificate of Laboratory Analysis

M21E113

AMET-Asia Inc./ Ambient Air Sampling and Testing Report





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magallanes, 1232 Makati City, PHILIPPINES

Office: +632.729.4327
Fax No: +632.854.8365
phllippines@hiadvance.com

SUMMARY REPORT

Amet Asia, Inc. Project: Ambient Air Monitoring

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Project Number: [none]

Meraico Ave., Pasig, PHILIPPINES Project Manager: Ms. Pamella Andrea L. Pomida

SAMPLED: 23-Apr-21 to 06-May-21 ANALYZED: 10-May-21 to 17-May-21

RECEIVED: 10-May-21 REPORTED: 26-May-21 09:38

LAR # M21E113-02 M21E113-03 M21E113-04 M21E113-01 M21E113-05 MATRIX Ambient Air Ambient Air Ambient Air Ambient Air Ambient Air SAMPLE ID 5TN1 STN2 STN3 STN4 STN5 AQN1 AQN2 AQN3 AQN4 AQN5

Parameters

· unumeters							
Total Suspended Particulates, TSP	155	34.3	36.7	91.0	102	μg/Ncm	High Volume – Gravimetric Metho
Nitrogen Dioxide	8.56	6.41	4.88	6.57	3.88	µg/Ncm	Griess- Saltzman Method
Sulfur Dioxide	<11.8*	<12.1*	<12.3*	<12.4*	<12.5*	µg/Ncm	Pararosaniline Method
Particulate Matter 10 Micron, PM10	62.1	21.0	27.0	55.1	41.4	µg/Ncm	High Volume – Gravimetric Metho

Special Notes

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Report Prepared by

Annabelle Bangoy Project Manager Certified Correct by

Princess Galvez, RCh Laboratory Manager

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^{*} Values detected are below the laboratory's Method Detection Limit





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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PROPONENT: Department of Public Works and Highways in cooperation with JICA

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philippines@hiadvance.com

SUMMARY REPORT

Amet Asia, Inc. Project: Ambient Air Monitoring

Unit 303, One Corporate Center, Julia Vargas Ave. Cor. Project Number: [none]

Meralco Ave., Pasig, PHILIPPINES Project Manager: Ms. Pamella Andrea L. Pomida

SAMPLED: 23-Apr-21 to 06-May-21 ANALYZED: 10-May-21 to 17-May-21

RECEIVED: 10-May-21 REPORTED: 26-May-21 09:38

LAB #	M21E113-06	M21E113-07	M21E113-08	M21E113-09	MZ1E113-10
MATRIX	Ambient Air				
SAMPLE ID	STN6	STN7	STN8	STN9	STN10
	AQN6	AQN7	AQN8	AQN9	AQN10

Parameters

Total Suspended Particulates, TSP	107	23.3	67.9	67.3	71.2	μg/Ncm	High Volume – Gravimetric Metho
Nitrogen Dioxide	6.61	3.94	6.76	5.69	3.37	μg/Ncm	Griess- Saltzman Method
Sulfur Dioxide	<12.5*	<12.7*	<12.8*	<12.9*	<12.7*	µg/Ncm	Pararosaniline Method
Particulate Matter 10 Micron, PM10	5	16.5	31.7	29.5	35.4	µg/Ncm	High Volume – Gravimetric Metho

Special Notes

HiAdvance Philippines Incorporated

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Report Prepared by

Annabelle Bangoy Project Manager Certified Correct by

Princess Galvez, RCh Laboratory Manager

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^{*} Values detected are below the laboratory's Method Detection Limit



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Data Summary for Ambient Air Analysis

TSP	M21E113-01	M21E113-02	M21E113-03	M21E113-04	M21E113-05
Pressure, inHg	29.73	28.80	28.44	28.10	27,81
Temperature, °C	28.8	27.4	27.6	27.4	26.4
Flowrate, m ³ /min	1.237	1.232	1.226	1.223	1.219
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Nm ³	1747.4	1694.5	1663.7	1640.9	1623.7
µg TSP (MDL = 1665)	271400	58200	61000	149400	166100
Concentration, µg/Ncm	155	34.3	36.7	91.0	102

NO ₂	M21E113-01	M21E113-02	M21E113-03	M21E113-04	M21E113-05
Pressure, inHg	29.73	28.80	28.44	28.10	27.81
Temperature, °C	28.8	27.4	27.6	27.4	26.4
Flowrate, L/min	0.2	0.2	0.2	0.2	0.2
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Vm	0.2825	0.2751	0.2714	0.2683	0.2664
μg NO ₂ (MDL 24hrs=0.871)	2.42	1.76	1.33	1.76	1.03
Concentration, µg/Ncm	8.56	6.41	4.88	6.57	3.88

SO ₂	M21E113-01	M21E113-02	M21E113-03	M21E113-04	M21E113-05
Pressure, inHg	29.73	28.80	28.44	28.10	27.81
Temperature, °C	28.8	27.4	27.6	27.4	26.4
Flowrate, L/min	0.2	0.2	0.2	0.2	0.2
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Vm	0.2825	0.2751	0.2714	0.2683	0.2664
μg SO ₂ (MDL 24hrs=3.34)	1.74	0.871	0.871	0.871	0.523
Concentration, µg/Ncm	6.17	3.17	3.21	3.25	1.96
Reported as less than, ug/Ncm	11.8	12.1	12.3	12.4	12.5

Note: Values in Italics are less than the laboratory's Method Detection Limit







CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Data Summary for Ambient Air Analysis

PM10	M21E113-01	M21E113-02	M21E113-03	M21E113-04	M21E113-05
Pressure, inHg	29.73	28.80	28.44	28.10	27.81
Temperature, °C	28.8	27.4	27.6	27.4	26.4
Flowrate, m³/min	1.184	1.179	1.177	1.171	1.162
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Nm ³	1672.5	1621.6	1597.2	1571.1	1547.8
μg PM10 (MDL= 1972)	103900	34000	43200	86600	64100
Concentration, µg/Ncm	62.1	21.0	27.0	55.1	41.4





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



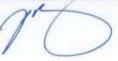
Data Summary for Ambient Air Analysis

TSP	M21E113-06	M21E113-07	M21E113-08	M21E113-09	M21E113-10
Pressure, inHg	27.86	27.30	27.07	26.91	27.55
Temperature, °C	26.7	25.7	24.6	25.5	26.5
Flowrate, m³/min	1.223	1.219	1.216	1.218	1.221
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Nm³	1630.3	1598.2	1586.2	1574.8	1611.0
μg TSP (MDL = 1665)	174200	37300	107700	106000	114700
Concentration, µg/Ncm	107	23.3	67.9	67.3	71.2

NO ₂	M21E113-06	M21E113-07	M21E113-08	M21E113-09	M21E113-10
Pressure, inHg	27.86	27.30	27.07	26.91	27.55
Temperature, "C	26.7	25.7	24.6	25.5	26.5
Flowrate, L/min	0.2	0.2	0.2	0.2	0.2
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Vm	0.2666	0.2622	0.2609	0.2586	0.2639
μg NO ₂ (MDL 24hrs=0.871)	1.76	1.03	1.76	1.47	0.889
Concentration, µg/Ncm	6.61	3.94	6.76	5.69	3.37

SO ₂	M21E113-06	M21E113-07	M21E113-08	M21E113-09	M21E113-10
Pressure, inHg	27.86	27.30	27.07	26.91	27.55
Temperature, "C	26.7	25.7	24.6	25.5	26.5
Flowrate, L/min	0.2	0.2	0.2	0.2	0.2
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Vm	0.2666	0.2622	0.2609	0.2586	0.2639
μg SO ₂ (MDL 24hrs=3.34)	1.92	1.05	0.871	1.22	0.697
Concentration, µg/Ncm	7.19	3.99	3.34	4.72	2.64
Reported as less than, ug/Ncm	12.5	12.7	12.8	12.9	12.7

Note: Values in Italics are less than the laboratory's Method Detection Limit







CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Data Summary for Ambient Air Analysis

PM10	M21E113-06	M21E113-07	M21E113-08	M21E113-09	M21E113-10
Pressure, inHg	27.86	27.30	27.07	26.91	27.55
Temperature, °C	26.7	25.7	24.6	25.5	26.5
Flowrate, m³/min	1.169	1.176	1.167	1.163	1.170
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Nm ³	1558.3	1541.8	1522.3	1503.7	1543.8
ug PM10 (MDL= 1972)	87000	25400	48200	44300	54600
Concentration, µg/Ncm	55.8	16.5	31.7	29.5	35.4





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Unit 201-203 & 406 Rizalina Annex Bldg, 1677 Quezon Avenue, Quezon City Tel. No. 8927-77-15 Fax No. 8929-4824 Email: info@elarsi.com

CLIENT

HI ADVANCE PHIL. INC

Lab Report No.

211313-AA

ADDRESS

3rd Floor, Maga Center Bldg . Paseo de Magallanes, Makati

Date Sampled Date Received 04-28-21 to 05-06-21 05-11-21

Contact Number

8854-8365 Ambient Air Sample Date Analyzed

05-12-21 to 05-16-21

Nature of Sample/s No. of Sample/s Submitted

Eleven (11)

05-17-21 Date Reported

[REPORT OF ANALYSES]

Sample No.	Sample ID	Ozone (O ₃), µg	
ES-2106564	M21E113-01 F	0.48	
S-2106565	M21E113-02 F	0.96	
S-2106566	M21E113-03 F	0.55	
ES-2106567	M21E113-04 F	0.66	
ES-2106568	M21E113-05 F	0.83	
ES-2106569	M21E113-06 F	0.45	
ES-2106570	M21E113-07 F	1 10	
ES-2106571	M21E113-08 F	2.86	
ES-2106572	M21E113-09 F	1.09	
ES-2106573	M21E113-10 F	2.02	
ES-2106573A	Field Blank	0.37	

Method 411 / Colorimetric Method **Detection Limit** 0.30

es P. Lodge, Methods for Ambient Air Sampling & Analysis, 3rd edition

Analyzed By

Checked By:

MIKO ALYSSA P. MAMANGON, RCh. JULIE CHRISTILLE HAPPY G. MORTE, RCh.

OFREDO, JR., RCh REN aboratory Manager PRC Lie. No. 0009824

Laboratory Analyst 1 PRC Lie. No. 0014933

Laboratory Supervisor PRC Lic. No. 0012578

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Result of Analysis

Job Number:

Laboratory Number MU21017105-001

05/20/2021 Date:

Customer:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Address:

3rd Fir. Unit 586 Mega Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

04/24/2021 *

Analyzed Date: 05/11/2021

Date Sampled:

Date Received: Sample Description:

05/11/2021

Air Ambient Sample in Filter Paper

Analysis are based on sample (a) of: NGRMKT-000089 HIADVANCE PHILIPPINES, INC.

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Sample ID

Parameters.

Units

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PRC# 0013681

swammer . Marisa T. Manaor, RCh Supervising Chemist

PRC# 0005465

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Result of Analysis

Job Number:

MU21017108

Laboratory Number MU21017106-001 05/20/2021

Customer:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Address:

3rd Fir. Unit 586 Mega Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

04/25/2021 *

Analyzed Date: 05/11/2021

05/11/2021 Date Received:

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-000089 HADVANCE PHILIPPINES, INC.

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Sample ID

Parameters

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Result of Analysis

Job Number:

MU21017107

Laboratory Number MU21017107-001

Date: 05/20/2021

Customer Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

3rd Fir. Unit 5&6 Mega Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

04/28/2021

Analyzed Date: 05/11/2021

Date Received:

05/11/2021

Lead

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-00089 HIADVANCE PHILIPPINES, INC.

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Certified by:

Noted by:

PRC# 0013661

MYMMMM Marisa F. Manager, MC Supervising Ch PRC#: 0005465

Technical Manager

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Result of Analysis

Job Number:

MU21017108

Laboratory Number MU21017108-001

Date:

05/20/2021

Customer: Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

3rd Fir. Unit 5&6 Mega Center Bldg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

04/27/2021

Analyzed Date: 05/11/2021

Date Received:

05/11/2021

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of NCRMICT-000089 HIADVANCE PHILIPPINES, INC. Mach Union Water Laboratory, Inc. does not guarantee that sample(s) sub-was (were) taken. Reproduction of this report is not authorized accept in full, without a

Sample ID M21E113 -04 C

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Mularan isa T. Manaor, Ri Supervising Chemist PRC# 0005465





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Result of Analysis

Job Number:

MU21017109

Laboratory Number MU21017109-001

05/20/2021

Customer:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Address:

3rd Fir. Unit 5&6 Mega Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

05/01/2021 *

Analyzed Date: 05/11/2021

Date Received:

05/11/2021

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

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Sample ID M21E113 - 05 C

Parameters

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Result of Analysis

Job Number:

MU21017110

Laboratory Number MU21017110-001 05/20/2021

Customer

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Address:

3rd Fir. Unit 6&6 Mega Center Bidg., San Antonio St., Paseo De Magailanes, Makati City

Date Sampled:

04/29/2021

Analyzed Date: 05/11/2021

Date Received:

05/11/2021

Sample Description: Air Ambient Sample in Fitter Paper

Analysis are based on sample (s) of: NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

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Sample iD M21E113 - 06 C **Parameters**

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Result of Analysis

Job Number:

Laboratory Number

MU21017111-001

Date:

05/20/2021

Customer Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

3rd Flr. Unit 586 Mega Center Bldg., San Antonio St., Paseo De Magallanes, Makati City

05/02/2021 *

Analyzed Date: 05/11/2021

Date Sampled: 05/11/2021 Date Received:

Sample Description:

Air Ambient Sample in Filter Paper

Analysis are based on sample (x) of: NCRMKT-000088 HIADVANCE PHILIPPINES, INC.

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Sample ID M21E113 - 07 C **Parameters**

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Mulauan Marisa T. Mansor, RCh Supervising Chemist

PRC# 0005465





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Result of Analysis

Job Number:

MU21017112

Laboratory Number MU21017112-001

Date:

05/20/2021

Customer Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

3rd Flr. Unit 6&6 Mega Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

05/04/2021

Analyzed Date: 05/11/2021

Date Received:

05/11/2021

Sample Description: Air Ambient Sample in Filter Paper

Lead

Analysis are based on sample (s) of: NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

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Sample ID M21F113 +08 C **Parameters**

Flame AAS

Units

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PRC#: 0013881

MU21017112_FINAL_210530 0806H

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Result of Analysis

Job Number:

MU21017113

Laboratory Number MU21017113-001 Date:

Customer:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

05/20/2021

Address:

3rd Fir. Unit 5&6 Mega Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

05/05/2021

Analyzed Date: 05/11/2021

Date Received:

05/11/2021

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

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Sample ID

Parameters

Units

Result

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PRC# 0013681

MU21017113 FINAL 210520 0806H

Williamer Marisa T. Manapr, RCh **Supervising Chamist**

PRC# 0005465





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Result of Analysis

Job Number:

MU21017114

Laboratory Number MU21017114-001

Customer

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Address

3rd Fir. Unit 556 Mega Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

05/06/2021

Analyzed Date: 05/11/2021

05/20/2021

Date Received:

Sample Description:

05/11/2021

Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

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Sample ID

Parameters

Units

Result

M21E113 - 10 C

Flame AAS

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PRCA: 0013681

Williaman Marisa T. Mansor, RCI Supervising Che PRC#: 0005465

MU21017114_FINAL_210520 0806H





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magailanes 1232 Makat City, Philippines Office: +632,7729,4327 Fax No: +632,8654,8365 Emell: info@hiadvance.com.ph Website: www.hiadvance.com.ph

ATTACHMENT 3

- > Field Data Sheet
- Sampling Pictures

MZ1E113

AMET-Asia Inc./ Ambient Air Sampling and Testing Report



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



THACUTED PHILIP Tot Boor Maga Centre Son Anthonio St. Pincero de Mag Melaler Chy. 223 Phone No. (ERE) 654-485 fee No.: (622) 729-627			
	AMBIENT AIR SAM	PLING FIELD DATA SHEET	
Company: Awet - Mila	Inc -	Da	ite: j3 Apr 21
Address: Unit 364 one	corporate center, Julia		
Station No: 1	Location: Scay Casio	raini . Zone 18 (AGN1)	
Start Time: \000H	End Time: 15.90 H	GPS Reading: Latitud	
Ambient Temperature: 1/1 Barometric Pressure: 2/4	(g Weather Condit	Longita	ude 114.757942
Filter ID No: 11-113 / 31-69			Initial Weight: J. 1871 / + hsc
Sampled Parameters: TGP, P	Milo, soa, Noa, Phi Co, Da, Mi	and speed & miertupe . Norse	2 2307 / 27
the 150d comp who they the 150d comp who they thinkles were absenced	in et of in a point of		passing of light to heavy
main rand - Facing an	(48)		
- I would be a			
TSP Sampler:	210	State (and the Same and the Same	
Model: <u>1€ - 5070 X</u>	Serial No:7169	Calibration Date:	BHANGE FEB
PM2.5/PM10 Sampler:			
Model: 15-5030X	Serial No: 2240	Calibration Date:	DHANG STED
Three (3) Gas Sampler: Model: M-166-01	Serial No: \$ 90 90001	Fl B	
M-155-01	Serial No:	Flow Rate:	0 Li/min
Barometer/Thermometer:	12		
Model: PHB-3/8	Serial No:	Calibration Date: 29	June 2020
Multi RAE / Air Quality Meter E	ou vinmant:		
Model:	Serial No:	Calibration Date:	-
DAD TO NAME OF PROPERTY OF THE PARTY OF THE	41 , 140		
INITIAL FILTER PRESSURE:	21.1 17.9	Carbon Monoxide:	in imagor
FINAL FILTER PRESSURE:	24.0 18.0	Total VOC:	
9993	52563 F 636 HI 6H HAY 2 LA	150999333333 15	98398498
C	(二) 图:因		Por deation
Team Leader:	M	QA/QC/Date: 4/1	1960
	1		MP-AIR-001-F05 Rev. 0; 8 May 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

Bril floor Maga Centre San Antonio St. Paseo de Magallones Makati City, 1232 Phone No. (632) 854-8365 Fax No. (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	1		Date: do Mm 401			
Parameter:		PM 2.5	PM 10	TSP		
Filter Paper I	No.	n - /	21-090	31 112		
Hourly Flow	Rate (m³/m)					
Average Flov	v Rate (m³/m)					
Total Operat	ion Time (min)		MHO	1440		
Initial Weigh	t of Filter Paper (g)		4-78519	2.68719		
Final Weight	of Filter Paper (g)					
Dust Conten	ts (g)	1/				
Total Volume	e of Air Sampled (m ³)	/ A				

Remarks:					

Name & Signature of Official on Duty:
—

Team Leader:

QA/QC/Date: yh)

MP-AIR-012-F03b Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HIAdvance Philippines, Inc. Bril Pour Mage Centre San Antonno II. Propri de Mi Makeir City, 1282 Phone No. (682) 854-8963

Feb. 961 (630) 729-4927

NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambien	it Temp., T	Berometric Pr	essure, Phar	manifemile.	Sampling	Flow Rate	Standard Volume	
Reading	*C	*	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm ²	
0	hh 1	34.2	29-69	754.	2h My 23	102all	20,00	5	
1	1/h.0	26.0	29.69	74.1		1120 H	1		
2	nh 0	311.0	19.69	74.7		122e #			
3	27-1	314.1	29 69	754.1		(3.20 H			
4	m. 2	3/102	29 69	754.7		W20 P			
5	21-1	315.1	24.65	750.1		1520 P			
6	not	305.6	2966	73.4		1120 H			
7	30.5	205	89 66	753.4		13.20 A			
8	29.1	3022	A 68	253.9		, e 20 H			
9	28-4	301.4	29 69	7541		19.20 A			
10	14.9	297.9	29.77	754.9		2020 a			
11	25.0	2900	29.77	754.2		d) to H			
12	24.8	2978	29.79	756-7		27,20 A	100		
13	25.0	7-8-0	2978			Man H	16		
14	25.1	200.1	29.44	74.4	24 Mr 21	80 Jo A	1.7.7.4		
15	252	W 2982	2973	78.1		or do y	14		
16	255	7-11-5	297	755.1		CZ ZO H	1		
17	253	2785	29.44	75.0		3A,20 H			
18	254	298.4	2974	753.6		MARR			
19	268	259 8	29.75	755-7		05 JD P			
20	14.5	2975	19.79	756.7		06 20 p			
21	29-0	2025	29.86	7169		07:40 H		1	
22	92.1	3651	19.80	28.9		07 30 H			
23	81.5	304,5	11.00	7565	()	0170 H		2	
24	9-1c	3049	29.75	257		10201	J		

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T - ambient temperature, K

Phy = barometric pressure, mm Hg

t = total sampling time, minutes

V_{reject} = sampled volume corrected to standard conditions, Nim⁴

 $\Omega_{\rm a}$ = actual flowrate through the orifice, fixed at 0.2 ipm

1,000 = conversion from liters to m⁸

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 - Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm*)

 $\frac{Q_{\sigma}}{1,000} \times \frac{298}{T} \times \frac{P_{b\sigma r}}{760} \times t$

Sev. 0; 8 May 2018



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HIAdvance Philippines, Inc.

Sel Paur Mago Centre 184 Antonio St. Passa de Magafismas Makell City, 1232 Pagos No. (682) 614 6361 Fae No. (683) 729-4327

SULFUR DIOXIDE (50,) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambie	ent Temp., T	Barometric F	ressure, Pbar	Sampling Date	Sampling	Flow Rate	Standard Volume
Keading	°C	K	in Hg mm Hg		Date	Time	lpm	Vstd, Nm ³
0	12.2	304.2	29.69	754.1	Jh Mr 21	to zak	25/4	T
1	77.0	BULD	19 69	759.1	1	11,20 3	1	
2	מי לול	900.D	39 63	754-1		H alb Gr		
3	M-1	mel	29.69	754.7		Binh		
4	19/1 Z	74.2	29.69	754.1		NLO H		
5	321	305-1	29.45	753.1		HOEN		
5	30-6	305.6	39.66	753.4		16.20 H		
7	30.5	30.5	2466	753.0		17 20 0		
В	A3	3/2-2	29.68	757.7		Igalo #		
9	18.4	34.4	29.69	754.1		1920 4		
10	24-9	29.9	89.77	754.7		Hotels		
11	15-0	298.0	29.33	75-1		HOSEL	0.9	
12	24 8	2978	29.37	754.7		21 do 14	71/2	
1.3	25.0	2780	29.38	706.4		JAJO P		
14	45.I	298.1	21:74	755-4	A MY	90% H		
15	45.4	2787	19.73	7501		Dido#		
16	25.5	2985	10.13	751-1		tolde 9		
17	25-3	2983	29.74	755.4		67060		
18	25.4	2980	29 74	784		evido 4		
19	24 8	239.8	19.11	755.7		DC_200 P		
20	11.5	299.5	24.77	7547		06 ADA		
21	29.5	3025	19-86	7/6.5		03.90 H		
22	32.1	305-1	19.80	7565		10 Sept		
23	31-6	304.5	29.60	758,5		0920.0		
24	31.4	2049	29.75	7557	1	H abou	7	-

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{m(vtd)} = sampled volume corrected to standard conditions, Nm³

Q_a = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K {25°C + 273}

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

$$V_{m(x/d)} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{hor}}{760} \times I$$

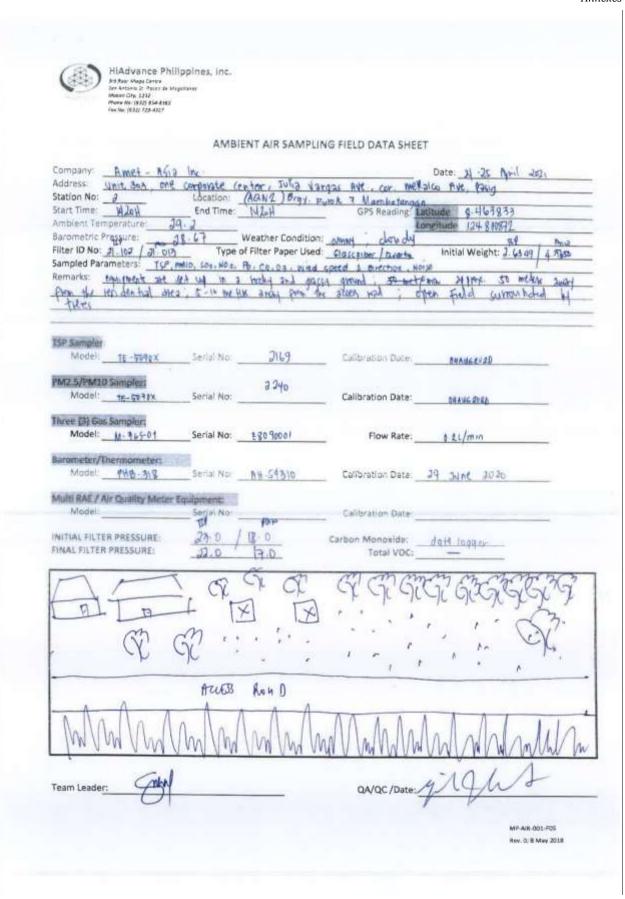
Team Leader:

QA/QC/Dater 4/

MP-A/R-018-F02: Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre Son Antonio St. Paseo de Magallanes Mokati City, 1232 Phone No. (632) 854-8365 Fax No. (632) 729-8327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station: J	on: J		
Parameter:	PM 2.5	PM 10	TSP
Filter Paper No.	L 1	21.017	21-112
Hourly Flow Rate (m ³ /m)			
Average Flow Rate (m³/m)			
Total Operation Time (min)		1440	1440
Initial Weight of Filter Paper (g)	1	4- 8383 /4 4380	2.6349
Final Weight of Filter Paper (g)			
Dust Contents (g)			
Total Volume of Air Sampled (m³)	1		

Remarks:	*		
Name & Signa	sture of Official on Duty:	_	

Team Leader: 4

QA / QC / Date:

MP-AIR-012-F03b

Rev. 0; 8 May 2018



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc. 34 flow Maps Course Jan Antono II. Paren de Mapsilones Antono Corp. (232) Marie No. (202) 454 4343 Fan No. (642) 724-4077

NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambler	nt Temp., T	Barometric Pr	ressure, Pbar	marrison ill.	Sampling	Flow Rate	Standard Volume
s paging	*E		in Hg	mm Hg	Date	Time	lpm	Vstd, Nm
0	29.7	312.5	28-67	728.1	NMT AN	14204		T
1	29.6	30.6	28.67	728.2	,	1520H		
2	29 4	302.4	28.67	728.1		16 20 H		
3	29.3	302.5	28.67	1-252-6		17.20 H		
4	J7.0	307-0	28.30	7.54.4		18 20 H		
5	25.7	298.7	28:71	729.1		10 JO H		
6	25.7	1907	-28-77	7295		40204		
7	JE N	298.3	- 28.7h	729.7		2120 H		
9.	24.8	707.8	18.78	7010		22.20 B		
9	245	277.5	2877	730.8		274.20 H		
10	24.1	297-1	12870	750.5	Js m 201	00,20 A	2	
11	23.7	7967	2875	730.3	1	0120 #	0-3	
12	235	796.5	20.75	7503		62.26 H	Lin	
13	23.2	290.2	2874	7300		03.20H	>	
14	220	2015.0	28375	730.5		ON ZO H		
15	223	725.3	2573	729-7		ordou		
16	12.5	7.25	28-74	7300		04.10 1		
17	716	3046	28.35	230.8		07 204		
18	71.5	304.5	28.75	730 4		08 10 H		
19	nn	2015	28.75	730.1		159 ato 14		
20	41.1	314/	-28-35	770.5		10,20 14		
21	715	3045	28.70	729 0		11-20 1		
22	71.6	3046	29.70	727.0		17 to 11		
23	mr	3005	18.70	74.0		152011		
24	MI	704,5	18 70	719.0		1420 H	1	-

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{tar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{rejool} = sampled volume corrected to standard conditions, Nm⁹

 $\mathbf{Q}_{\mathbf{o}}$ = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m^8

Philippine Standard Pressure and Temperature

298 - Standar ambient temperature, K (25°C + 273)

760 - Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $V_{m(stat)} = \frac{Q_{\sigma}}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

Team Leader:

QA/QC/Date: My 5

MP A/R-017-702s Rev. 0, 8 May 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Assamo St. Paseo de Maquillanes Maketi City, 1230 Phone No. (532) 854-8365 Fan No. (632) 729-4327

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambie	nt Temp., T	Sarometric Pr	ressure, Pbar		Sampling	Flow Rate	Standard Volume
Keading	'τ	×	in Hg	mm Hg	Date	Time	ipm	Vstd, Nm
0	29.7	カロンフ	28.67	728.2	24 m/ 21	Não N		-
1	19.6	202-6	28 67	728-2		1C20 H		
Z	29.4	362.4	28 67	718:2	1 4	16 Jo H		
3	29.3	312.3	28-67	7536		17-20 H		
4	27.0	210.0	20.90	754.4		18 Jo A		
5	75.75	296.7	28.71	727.2		19 do H		
6	25.7	298.7	28 72	70.5		H abot		
7	25.4	298.5	28.77	7197		2120 H		
8	24.8	2928	28.78	9001.0		2220,4		
9	24/5	297.5	dx.33	7308		2320 H		
10	24-1	2017-1	28.76	7305	JE MYT JI	003o H		
11	24-3	2967	28. 35	730.3	1	Hatio	0.2	
12	245	2965	28.35	7203		0370 H	l Ne	
13	242	294.2	21.39	7700		03.20 H	de	
14	22.0	295.0	22.75	7503		Hasha		
15	22.3	295.5	28.74	794.7		0520 H		
16	225	225.5	28:34	7300		06.20 4		
17	716	204.5	28.35	730.3		07.2011		
18	31.2	7145	18.35	730.5		68 ZOH		
19	71.5	343	28.35	730.3		09 20 H		
50	211-1	304.1	18-35	730.5		102.4		
23	NI-C	304.5	28 70	7276		11 20 11		
22	71-6	304.C	28.70	7270		12 20 H		
23	カル	3045	28-70	719.0		17,20 H		
24	71.5	3045	28 70	729.0	1	N ac Fi	V	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{ber} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{mostall} = sampled volume corrected to standard conditions, Nm³

 $Q_{\rm w}$ = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m3

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

$$V_{m(sid)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$$

Team Leader:

QA/QC/Date: MS

NP AIR 018 F02s Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Modest City, 1232 Prome No. (612) 854-8365 Fin No. (612) 729-4527			
	AMBIENT AIR SAMPL	ING FIELD DATA SHE	ET
Company: Rimet - AGID Inc.	2012	20 20	Date: 27 - 28 My 201
Station No: 1 Livet Local	don: ABNA - Ime 1	argas Aut . cor. the	
Ambient Temperature: 7 38.3	Time: 1500 H Total I		attude 8-4/2193 objetude 34-809362
Filter ID No: 31-14 / 3 - 623	Weather Condition Type of Filter Paper Use	a: clarify	Initial Weight: 4. 4631 /24
Sampled Parameters: TSF, PMID, 50%	, NO 4. Pb. CO. C3 . WIRD	speed & mirechon N	origit .
residential houses; surrouse de	t-op in a posity as	ad gasel ground	10-15 metals away than 1
ISP Sampler			
Model: 15 - 4690 X Sena	No: 249	Calibration Date:	EMANGE CES
PM2.5/PM10 Sampler: Model: 16-5033X Seria	No. 2240	Calibration Date:	
Three (3) Gas Sampler:		Caldiación Date.	DAVAR (DAD)
	No: 100 9000)	Flow Rate:	\$ 21/min
Birometer/Thermameter:			
Model: <u>FH6-318</u> Seria	No: A4 59310	Calibration Date:	29 June 2026
Multi RAE / Air Counity Meter Equipme Model: Sens		Calibration Date:	
Ts		Carbon Monoxide:	7
AND ALL PROPERTY AND ADDRESS OF THE PARTY OF	0/190	Total VOC:	data_logger
113		2-1	FAS A
1	-	-ID-E	10/10
9113	X	-11)	1 3555
History)	.) - ==		
- F	7		A
	1) 5218	SIZ SIZ	11
-	SIX	1 4 217	2 2 20
2			×1 = 1
Team Leader:		QA/QC/Date:	yes ght
			/ //



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Remarks:

HiAdvance Philippines, Inc.

Brd floor Maga Centre San Antonio St. Paseo de Magallanes Makoti Cir., 1232 Phone No. (632) 854-8365 Fax No. (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station: N			Date	: 37-28	Mar do	Zv.	
Parameter:	PN	12.5		PM 10	TS		
Filter Paper No.	In I		21-111		21 - 08	21.087	
Hourly Flow Rate (m³/m)							
Average Flow Rate (m³/m)							
Total Operation Time (min)		1		NAME OF TAXABLE PARTY.			
Initial Weight of Filter Paper (g)	N N		26	4-4641	2.6140	12.6361	
Final Weight of Filter Paper (g)			1	111041110			
Dust Contents (g)		¥					
Total Volume of Air Sampled (m3)	1	R					

CONTRACTOR OF THE PARTY OF THE	
Name & Signature of Official on Duty: -	

Team Leader: Our

QA / QC / Date: *

MP-AIR-012-F03b Rev. 0; 8 May 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

Brd floor Maga Centre San Antonio St. Passo de Maquillanes Maken City, 1232 Phone No. 1532/ 854-8365 Fan No. (622) 739-8327

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambier	nt Temp., T	Barometric P	ressure, Pbar	- annihing	Sampling	Flow Rate	Standard Volume
Reading	°C	ж	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm
0	39.7	3027	28.48	7285	to low soil	Km 4	T	T
1	70.0	3020	JR - 48	720.7	S -1.6	1600 H		
2	29.0	3020	28.40	121.4		4004		
3	2.9	2969	28.45	me-L		H OO BI		
4	A5.7	767	28.45	722-6		19 00 H		
5	成月	7457	28-45	72.6		DODO P		
-6	25.8	252-8	28-45	722.6		al on H		
7	AS.8	198.8	48.45	7226		2200 H		
8	25.4	296 4	18.95	7226		24 00 H		
.9	219	097.9	23.46	724.9	25 th 34	0000 A	1.21/100	
10	243	27.3	24. 96	722.7		0100H		
11	24.5	2973	23.45	722.6		02 00 H		
12	24.1	217.0	24 40	711-6		0300 H		
13	13.8	2768	28.46	722.9		DH OTO H		
14	29.9	296.9	29.46	712 9		DE OO A		
15	24.6	29=6	15 46	722.9		OF OO H		
16	24-1	299.7	28.46	722.9		0700 A		
17	1 1 1 5 m	210.4	18.48	7-27- ¥		09.00 H		
18	42.1	3051	28.48	72.72		0900 H		
19	11.8	3/8.8	28.46	727		10000)		
20	32.9	3000	13.47	722/		1100 11		
21	31-3	304.5	18.43	722./		12 OTO 14		
22	7114	3,040	28.47	722./		1300 B		
23	29-7	3020	2875	710.9		N 00 #		
24	30.0	2000	28 34	720.9		1000	1	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{arianth} = sampled volume corrected to standard conditions, Nm³

Q4 = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm3)

 $V_{m(stil)} = \frac{Q_{a}}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

Team Leader:

QA / QC / Date: W

MP-AUR-018-F02:: Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HIAdvance Philippines, Inc. Aut floor Mage Covice See Arrisen D. Proces de Magadis-es Maner Chy. 1232 Mone No. 1830/854-8365 tim No. (820/758-8367

NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambien	at Temp., T	Barometric Pr	essure, Pbar	Sampling	Sampling	Flow Rate	Standard Volume	
Reading	*C R		in Hg mm Hg		Date	Time	lpm	Vxtd, Nm ⁴	
0	F P6	302.7	28.48	720.9	Abr 10	א מרצו	T	T	
1	70.0	707.0	28.18	710.9		IL NO A			
2	140	MALE	28.40	721.4		ון סוד דן			
3	25.9	298.9	28.45	722.6		18 20 11			
4	25.7	198.7	12.45	722.6		10710 A			
5	15.7	799.7	29.45	722-6		2070 H			
6	12.8	1988	28.45	722.L		dinoH			
7	25.8	298.8	28-45	7226		270 1			
8	15.4	258.4	28.45	722.6	1	237 H			
9	24.9	197.9	18.46	722.7	20 m 201	80770 II			
10	44.3	297.3	28.46	712.9		017l0 H			
11	44.5	277-3	28.45	722.6		627m H	621/mm		
12	24.0	m7.0	28.45	722.6		03 7x0 H		1	
13	24 8	2968	2846	22.6		DANOT			
14	23.7	196.9	28.46 -	122.9		0(20 4			
15	146	2976	2846	122.9		Object H			
16	24-7	199.7	26.46	772.9		07-740 H			
17	192401		21.48	725.1		08240 H			
18	32.1	36	14.48	723.4		pd you			
19	42.3	50x.8	28-46	722.9		MONON			
20	119	3433	23-43	7221		11 740 11			
21	11.7	3043	214	772		ロカロロ			
22	Tri H	7444	24.41	721		B 740 H			
23	197	20-7	29.79	7203		Myo H			
24	20:0	3000	29. 19	720.5		15/10 1	125	-	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

Pag - barometric pressure, mm Hg

t = total sampling time, minutes

V_{robads} = sampled volume corrected to standard conditions, Nm³

 Q_a = actual flowrate through the orifice, fixed at 0.2 ipm

1,000 = conversion from liters to m⁸

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

a. Total volume of air sampled, corrected to standard condition (Nm^b)

 $\frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

MP-MR-017-F02c Rev. 0: 6 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Ser.	Bust Mego Centre Antonio S. Pasco de Prag Hell Cho. LISS He No. (832) 854-8365 No. (632) 724-8307	1,4141				
		AMBI	ENT AIR SAMPLII	NG FIELD DATA SHE	FT	
2000-000 V	01 to 2000			to the on the	340 S 57 (620 Mg 10	
Company:			inter, Julia va	rass Avt., cor., me	Date 11 Threll 1	101
Station No:	4	Location:	ARNY - Zone 11	Ticher		
Start Time: Ambient Tempe	rature: h2	End Time:	Thook	GPS Reading:	Latitude 8. 171487 Longitude DU LC 39	96
Barometric Pres Filter ID No:	ssure: 3	64	Weather Condition	_Qintri	1.10.1111.1.11	
	eters: Top, p	Mio, sos, Nos.	Pb. Co. Ox. wind	speed & purchas to	Initial Weight:	
Remarks: 64	mburnts a	n-ta x	HADY 6 ai	in The wome gray	ground sypes 1	- T mulkin
ghat bus	The Man	had 'shad,	enship condition	or still I'v	within and from the	COR
ISP Sampler						
Models	15-5040 X	Sevial No.	269	Calibration Date:	BHANGEVER	
PM2.5/PM10.5	mples		2240			
Model:	X0F09-3T	Serial No: _	8040	Calibration Data:	DRAME DIED	
Three (B) Gas Si						
Model:	N-365-01	Serial No: _	1000P093	Flow Rate:	0 ti/min	_
Barometer/The			CONT. AMERICAN		MATERIAL TOTAL STATES	
Model:	649-313	_ Serial No.	PH-54310	Calibration Date:	29 June 2020	
Multi RAE / Air I		quipment		-		
Wilder	Maritim and Artist	111	\$16/a	- Calibration Date:		
FINAL FILTER P		25-0	20.b	Carbon Monoxide: Total VDC:	data Inggil	
		700	20.0	1000 900.		
	- 4	1 6	4 4 4	1		
			<u> </u>	1 -	-	
H	ALTHAL ISHED					
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				14	1	(-)
		-				1 6
1 +	ahel ma	1				1
	MAZ-LAMZ FMOTO					6 80
	alery.					1
	- 4				/	1
Team Leader:	all	1		QA/QC /Date:	ying of	15
C. S. A. C.					11	



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonio St. Paseo de Magallanes Makati Cla., 1232 Phone No. (632) 654-8365 Fax No. (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station: 4		Date: 46. 47 A	r dQ1
Parameter:	PM 2.5	PM 10	TSP
Filter Paper No.			
Hourly Flow Rate (m³/m)	1 /		
Average Flow Rate (m³/m)		S	
Total Operation Time (min)	1	1440	1440
Initial Weight of Filter Paper (g)			
Final Weight of Filter Paper (g)			
Dust Contents (g)	1/1		
Total Volume of Air Sampled (m ³)	F		

Remarks:		

Name & Signature of Official on Duty:

Team Leader: all

QA / QC / Date: :

MP-AIR-012-F03b Rev. 0; 8 May 2018



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HIAdvance Philippines, Inc. Jet Nov Maga Cercie Des Arcasos Ji. Place de Megalines Mesor Des 2007 814-4348 Fee No. 8307 701-4347

NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambien	t Temp., T	Barometric Pr	arometric Pressura, Phar		Sampling	Flow Rate	Standard Volume	
Reading	*c	E	ining	mm hig	Date	Time	lpm :	Vstd, Nm ³	
0	AI.T	314.5	28.05	712.5	2 hr 10	Hoory	7	7	
1	71.5	314.5	28.05	7135	1	NOO H			
2	N.0	765.0	24.67	712.0		1500 H			
3	27.1	2765.1	24.04	712.0		16000			
4	23.3	3003	28.04	7/12		U 00 H			
5	27.7	300.7	28.04	712-7		18004			
6	27.6	3W.L	28.04	7)2.2		19004			
7	35.0	259.6	2x-11	-14.0		LOODH			
8	25.3	258.3	2413	.714.4		4001			
9	251	2981	28-62	7/4.2		2300 H	a Plant		
10	25.0	295.3	28.14	714.8		2900H	1. Zatia		
11	238	2948	28.12	714.2	Fifty 10		//		
12	233	294.5	28.11			0100 4			
13	23/	284.1	2010	74.7		62 00 H	T		
14	24.2	297.7	28.//	514.6		א מסצים			
15	25-6	295.6	28/0	7127		HOD/O			
16	223	343.3	28-10	713.2		DECOH			
17	264	277.4	28.12	714.7		06 00 4			
18	250	298. U	28.14	-14 C		OF NO H			
19	256	2986	28.15	15.0		08 00 H			
20	28.€	201.8	28.15	7144		6900 H			
21	200	3/200	1814	514.1		10001			
22	30 1	2001	28-13	7145		1100 1			
23		303.4	28-12	+3/4.2		1200 4			
24	308	200.8	28-11	5/9.0	1	1400 4	-	_	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{tw} - barometric pressure, mm Hg

t = total sampling time, minutes

V_{rejust} - sampled volume corrected to standard conditions, Nm⁸

Q = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K {25°C + 273}

760 = Standard atmospheric pressure, mm Hg.

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm^a)

 $V_{m(stal)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

Team Leader:

QA / QC / Date: _

MP-AR 017-F03c Nev. 3; 6 May 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

and Jimor Magar Centre Son Antonio St. Powers de Magaille Maken City, 1232 Phone No. 18322 654 6361 Fam No. (832) 729-4127

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambien	t Temp., T	Barometric Pr	essure, Pbar	Sampling Date	Sampling Time	Flow Rate	Standard Volume
neading	,c	K	in Hg	min Hg	Date	u rime	lpm	Vstd, Nm
0	41.C	204.5	20.86	712.3	21 My 20	g moot	T	1
1	11.5	364.5	18-05	7/2.5	1	MESH		
2	1720	925.0	28. 54	712-0		12 Co H		
3	71.1	315.1	19 ch	フルレ		16 00 H		
4	27-7	3607	29. 64	711.102		LA QOH		. 10
5	23:7	רמוני	28.14	712.2		18004		
6	27.0	2006	28.0	712-7		1900 H		
7	0.21	2950	21 11	712 0		200 H		
8	25.3	298 3	28-13	71465		9100H		
9	25.1	2981	25/2	714. 12		2200 A	Da pin/	
10	25.0	2783	28.14	714.8	1	3500 H		
11	235	294.8	28.12		St My LO	40000 N	1	
12	23.3	2743	2811	7140		01000		
13	23.1	296.1	2610	714.107		0200 H	7	
14	24.2	197 2	28.1	713.0		400 GO		
15	254	198 €	28.10			40000		
16	223	1900 J	28.10			0500 H		
17	264	29m.4	25.12	7/3.7		61 00 M		
18	250	298.0	28.14	714.6		07 00 H		
19	266	2746	28.15	71480		08 00 4		
20	26.8	20.8	28:15	716.00		09 00 14		
21	290	2000	28/4	74.08		10 20 11		
22	30.0	30.1	25.13	714.85		11 00 A		
23	704	30.4	25.12	714.2		12 00 P		
24	30.1	307.8	28.11	714.0	1	7 00 H	-	1

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{ber} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{reluid} = sampled volume corrected to standard conditions, Nim³

Q_a = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m2

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

8. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $\frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

QA / QC / Date:

MP-AIR-038-F02:

Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

And	Asar Maga Centre Antonio II. Peses se Ving sell Chi, CISI ne No. (833) 834-8365 No. (833) 728-4387				12	. ,
		AMBIE	NT AIR SAMPLI	NG FIELD DATA SHEE	1.7	£
THE RESERVE TO STATE OF THE PARTY OF THE PAR	Amet - 4512				Date: 20 Mg/1- 61 1	nay
34.0	st day one	Location:	the action as a	tgas AVK , cor MEK. To Bray , son Room Pur	ok f	
Start Time: Ambient Tempe	Has.0	End Time:	102011	GPS Reading: L	titude 8 329792	
Barometric Pres	sure: 17	. 78 V	Veather Condition.	Far weather	mentude 114-933LIT	W
Filter ID No: 2 Sampled Param			Filter Paper Used	Classesper / twothe	Initial Weight: 4 4114	20997
		WID, SOE, NOE, P	b. co.os. wad	a direct the vicin		ch
	AWAM NAME	the access	pad 1 10 m		tral - minimus powering i	4
met	ecolds.	vehicles of	mg the occur	icad_		
TSP Sampler						
24 1 2	16-9040 X	Serial No.	269	Calibration Date:	044464110	
PM2.5/PM10 Sc	empler					
1	te-go-at	Serial No:	2740	Calibration Date:	BHANG BOED	
Three B) Gas Si	moler					
Model:		Serial No:	£ 20 90001	Flow Rate:	0 21/min	
Barometer/The	rmometer:	100				
	946-318	Secial No.	NH 54310	Calibration Date.	29 JUNE 2020	
Multi RAE / Air	Chrality Meter E	quipment				
Modei:		Serial No.	Buo	Calibration Date:		
INITIAL FILTER	A CONTRACTOR OF THE PARTY OF TH	14.6	41.0	Carbon Monoxide:	Mata Jessie	
FINAL FILTER PI	RESSURE:	14.5	4.1	Total VOC:	200	
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		1 1	244	POWE SOURCE		
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		LATE				
	-			QA/QC/Date: _	11011	
Team Leader:	Johns			PLATFOR TO		



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre Son Antonio St. Paseo de Magailanes Maxari City, 1232 Phone No. (532) 856-8365 Fax No: (532) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	Date: NO Mr N Ma			
Parameter:	PM 2.5	PM 10	TSP	
Filter Paper No.	ho	4-087	21 080	
Hourly Flow Rate (m ³ /m)	1			
Average Flow Rate (m³/m)	1			
Total Operation Time (min)	1	1440	1440	
initial Weight of Filter Paper (g)		G. 4/N	2.6957	
Final Weight of Filter Paper (g)				
Dust Contents (g)	/p			
Total Volume of Air Sampled (m ³)	1			

Remarks: —			
			_
Name & Signature of Official on Duty			

Team Leader:

QA / QC / Date:

MP-AIR-012-F03b Rev. 0; 8 May 2018



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc. Address High Contro ton Ambrels II These de Megallones

Maker City, 1252 Phone Ric (632) 814-8383 Fee No. (632) 729-8327

NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambie	nt Temp., T	Barometric Pressure, Pbar in Hg mm Hg		mental brought	Sampling	Flow Rate	Standard Volume Vstd, Nm ³	
Reading	10	X			Date	Time	ipm		
0	36.1	319.1	27.28	7851.	hother 21	1020A	+	>	
1	36.2	309.2	27.78	705.5	1	120 H			
2	33.0	300.0	27.78	705.6		12,20 H			
3	32.8	303.8	27.70	75.1		1720H			
4	36.1	717.1	27.22	704.1		1120 A			
5	35.0	3080	27.72	1.434		IT DO H			
.6	2.0	47 219.0	27.77	78.4		1620 H			
7	261	1991	27 77	TOC 4		m2011			
16	37.7	296.7	27.91	ook-4		18 20 H			
9	2h 4	276.6	22.8	706 4		40691			
10	2n.7	294.8	27.21	7064		2420 H			
11	22.4	295.6	27.87	706.9		d1 20 H			
12	22.7	295.7	- 23.87	704.7		22.20F			
13	25.2	796.1	17.84	70-1	1	29.20 H			
14	44.4	1754	29.84	707	01 MON 2	40600	0.2 L MAI		
15	48	7748	27.84	7071	1	DILOH			
16	21.7	2747	1 29 H	7021		5720H			
17	4.0	294.6	73 F.	7074		H SERG			
18	21.5	1945	29.38	707.9		MOPIN			
19	21.9	2749	19.17	50 V		MODIA			
20	22.8	2958	19.13	J.A.V		Habite			
21	34.0	797.0	12 82	744		10201			
22	25.5	7915	27.97	704A		A also			
23	25.4	30-4	27.87	704.9		5920 H			
24	29.0	3020	27.84	7471	T	10204	-	-	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{relatell} = sampled volume corrected to standard conditions, Nm⁴

 Q_{α} = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m⁸

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $V_{_{m(std)}} = \frac{Q_{_{0}}}{1,000} \times \frac{298}{T} \times \frac{P_{bor}}{760} \times t$

Team Leader:

QA / QC / Date:

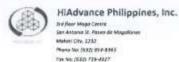
MP-AM-017-702s Nev. O; 8 May 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourty	Ambie	ent Temp., T	Barometric Pr	essure, Pbar	- and princip	Sampling	Flow Rate	Standard Volume	
Reading	'с	K	in Hg	mm Hg	Date	Time	Ipm	Vstd, Nm ⁸	
0	364	309.1	27-78	715.4	hother 2	(0,20 H	T	1	
1	36.2	319.2	27.28	-125.6		11.20 H			
2	32.8	mue D	27 76	705.6		1220 4			
3	29.9	38.8	27.24	705.1		BZOH			
4	30-1	4(4-1	27.72	7001	1 1 1	Map A			
5	35.0	308.0	22.72	741		HOLDI			
6	26.0	299.0	4.77	7.5.4		Halo A			
7	26-1	244.1	29.19	76.4		17.20 H			
8	an 2	1967	27.81	3414		18.20 A			
9	2ht	296.6	27.81	704.4		1920 H			
10	27.7	296.8	27.81	20.4		200 An H			
11	27.4	195.6	27.80	1009		2120H	0.2.1/mm		
12	22.7	295.7	27.87	74.9		2220 H	ruc symm		
13	23.2	2962	27.84	チャナ・1		4320H			
14	11.4	195.4	19.74	2011	व क्या जा	DOSOGI			
15	41.7	1949	21.85	201	1	0120 H			
16	217	Uiqi	27-93	707.4		6729 P			
17	21.9	2940	13 82	769.11		0320 H			
18	21-3	290.5	18.58	702.0		0420 p			
19	217	294,9	14-80	JON.Y		DS ROA			
20	123	2958	11-82	714.11		4000			
21	44.1	340	23.83	714.6		60-20 P			
22	25.5	298.5	17 87	7445		0820 11			
23	29.4	30T.U	27.07	744		0920 H			
24	19.0	3020	27.84	201	1	1020 F	-	-	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{har} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{mcstall} = sampled volume corrected to standard conditions, Nm⁹

Q_a = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m²

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm⁵)

$$V_{m(sid)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bor}}{760} \times t$$

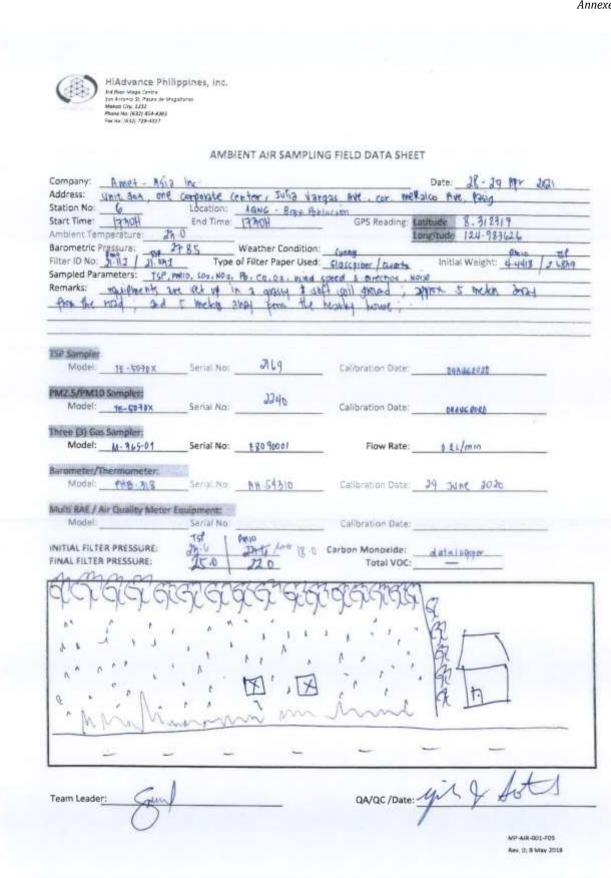
Yeam Leader: ___

QA / QC / Date:

MP-AIR-018-F00t Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes







CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonio St. Paseo de Magailanes Makati City, 1232 Phone No: (632) 854-8365 Fax No: (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station: 6	Date: 28-29 ftp: 10		
Parameter:	PM 2.5	PM 10	TSP
Filter Paper No.		21.112	2 072
Hourly Flow Rate (m³/m)	1"		
Average Flow Rate (m³/m)			16.
Total Operation Time (min)		1440	1440
Initial Weight of Filter Paper (g)		11 4418	2. 6879
Final Weight of Fliter Paper (g)		111111111111111111111111111111111111111	
Dust Contents (g)	/ h		
Total Volume of Air Sampled (m3)			

emarks: -				

Name & Signature of Official on Duty:

Team Leader:

MP-AIR-012-F03b Rev. 0; 8 May 2018



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

Jef fluor Mogel Centre San Antonio St. Passo de Mogellanes Makest City, 2332 Phone No: (632) 834-6363 Faz No: (632) 728-4327

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambie	nt Temp., T	Barometric Pr	essure, Phar	Security 111	Sampling	Flow Rate	Standard Volume
Reading	*c	K	in Hg	mm Hg	Date	Time	ipm	Vstd, Nm
0	24.0	294-0	28.66	707.4	2x hy 21	MONT	1	7
1	24.1	296-1	23.85	727.4	1	IR NO LL		
2	24.1	294-1	27.85	704.4		1970 H		
3	215	2965	285	7074		JONG H		
4	221	29K.C	17.85	707.4		A OF IC		
5	12.7	295.7	13.85	707.4		22 NO A		
6	23-1	195 1	- 27.84	507.6		2370 H		
7	20.1	295.1	27.80	707.6	29 hr 31	HOTOG		
8	217	294.7	27.84	707.1	1	Oltho H		
9	216	294.6	27.84	-3A.1		DZPOH	12	
10	221	1951	27-85	707.4		03/0 H	D.T.	
11	217	2947	12784	707-1		HOPEN	1	
12	21,4	294.4	27.84	709-1		HOPZO	/+	
13	21.5	294.0	'. £F. 91	708.9		TON NO H		
14	14.0	294.0	27.93	704.4		HONFO		
15	34.0	30.0	AP FA	78.7		DETOH		
16	35.4	3089	27.91	708.9		09 to 17		
17	35.5	308.5	27.91	7059		1020H		
18	37.0	310.6	129 70	79.6		11 70 4		
19	38.4	311.4	27.24	717		1270 A		
20	52.0	315.6	2284	757.1		B to H		
21	325	305.5	1184	202)		4 05/11		
22	32-2	368.2	27.84	787.1	U	H 0521		
23	27.4	2,00,4	17.84	307.6		1630 A		
24	27	299.7	27.86	30.6	1	1770 H		-

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{scottl} = sampled volume corrected to standard conditions, Nm³

Q_a = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m3

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

$$V_{m(sid)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$$

Team Leader: _

QA/QC/Date: M)

MP-AIR-ULE-F02c Rev. 0; 8 May 2018



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.
And New Magazinese
See Accord R. Plants de Magazinese
Mariest City. 1232
Marie Ro. (103) 614-1063
For No. (103) 779-1327

NITROGEN DIOXIDE (NO₂) AIR VOLUME CALCULATION Twenty Four (24) Hour Sampling

Hourly	Ambier	nt Temp., T	Barometric Pr	ressure, Pbar	Sampling Date	Sampling Time	Flow Rate	Standard Volume
Reading	*C	K	in Hg	mm Hg	Date	Time	Spm	Vstd, Nm ³
0	24.0	296-0	27.85	707-4	28 Pm 71	HMI	-	T
1	Jn . 1	296.)	27.85	707.4		(0 NOn		
.2	2n-1	296	27.25	7924		19700		-3
3	27.5	7955	27.85	707.4		LOHOU		
4	22.6	246	JA-45.	717.K		almou		
-5	12 x	7957	27.85	702,4		MOH		
.6	221	795	07.86	74.6		2010 H		
7	22-1	795-1	27.56	714.6	29 Bys	מ מול מם		
	217	2947	27.84	747	Jes	DITIOH		
9	216	794.6	100000000000000000000000000000000000000	PUB!		anol		
10	221	2951	27.85	767.E		DATION	13 2 min	
11	717	2947	2784	7.81		Horrya	00019	
12	214	7944	27.87	7021		HOKTO	/1	
13	215	2945	A1-31	10819		TINO A	16	
14	140	297.0	17.93	7194		OFTHOR	1-	
15	34-0	2120	47.74	2,9.>		MQ 70014		
16	35.4	3068	2791	7689		HONEPO		
17	35.5	245	2791	17069		HOKOI		
18	37.0	3106	29.70	756		11704		
19	38,4	30.9	27.80			17704		
20	320	3666	27.84			BWH		
21	32.5	Sec. 5	27-84	707.1		NAOH		
22	522	303.1	27.84	7121		H 0421		
23	27.4	31014	27.80	507.C		1670 A		1
24	247	129.7	27.86	120.6	1	日加り	1	-

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

Phar = barometric pressure, mm Hg

t = total sampling time, minutes

V_{rejust} = sampled volume corrected to standard conditions, Nm⁸

 Q_{α} = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m⁸

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nim*)

 $V_{m(sid)} = \frac{Q_a}{\mathrm{J}_{\mathrm{s}}000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

Team Leader:

QA / QC / Date:

MP-A/R-017-F02c Res. 0; 8 May 201

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Phone No.: (632) 854-8365 Fax No.: (632) 729-4327				
	AMBIENT A	IR SAMPLING FIELD	DATA SHEET	
Company: Amet - 1513				Date: 61 - 07 may 2011
Address: Unit 36A one Station No: 2	Location: AGN=	, Julia Wargas AV - Argy Latertine 3	tor mekalo	o five, toug
Start Time: Ndcu Ambient Temperature: 1	2.1 End Time: 1440		SPS Reading: Latit	ude 8:266137 Stude 124,996892
Barometric Pragrure: , 27	· AS Weath	er Condition: Fair	2000	Tet to
Filter ID No: 1794 71.00 Sampled Parameters: TCP.	Type of Filte	Paper Used: Glosce	ber / tweets	Initial Weight: 2474 4-40
Remarks: Sampling Laut	pment was arected	in a grassy/ cont	groved current	e (fluided acen)
Im anay pro-	the accept ros	id ; 8-10 m au	of July 1970	limital Charses)
TSP Sampler		11.0		
Model: 15 - 5070 X	Serial No: 6	169 Calib	scation Date:	BHAUGE 0.24
PM2 5/PM10 Sampler, Model: 16-0971X	Serial No:	1240	eration Date:	0000010144500
	Serial No.	Callo	ration Date:	ORANG BORS
Three (3) Gas Sampler: Model: U- 165-01	Serial No: 1 80	30001	Flow Rate:	0 11/mm
Barometer/Toermometer:				4 227
Model: #HB-3/8	Serial No. No.	S4310 Carrie	ration Date: 3	9 June 3030
Multi BAE / Air Quality Meter	Equipment			
Model	Serial No.		oration Date:	
INITIAL FILTER PRESSURE:	24.0 XI		Monoxide:	late league
FINAL FILTER PRESSURE:	240 1 13	-0	Total VOC:	ALCONOMIC TO SERVICE STATE OF THE SERVICE STATE STA
	=			
Eleviated area				
Clayard area			>	
	It Simpley	rt 2 11	>	100000000000000000000000000000000000000
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonio St. Paseo de Magailanes Makati City, 1232 Phone No. (632) 854-8365 Fax No. (532) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	7			Date: 01 - 02 m	2 201
Parameter:		PM 2.5		PM 10	TSP
Filter Paper No.				21-08	21-108
Hourly Flow Rat	te (m³/m)	1	1		
Average Flow R	ate (m³/m)				
Total Operation	Time (min)		1	1440	1440
Initial Weight of	Filter Paper (g)			4.4062	2.7240
Final Weight of	Filter Paper (g)		1		
Dust Contents (g)		Þ		
Total Volume of	Air Sampled (m ³)				

Remarks: ->			

Name & Signature of Official on Duty:

Team Leader:

QA / QC / Date: 4

MP-AIR-012-F03b

Rev. 0; 8 May 2018



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc. 207/av Augusters for Anterio C. Parco de Magasters Magasters, 1222 March 18, 1222 451-4303 for No. (882) 825-4303

NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambie	Ambient Temp., T		essure, Phar	Sampling	Sampling	Flow Rate	Standard Volume
neoung	, c	1	in Hg	mm Hg	Date	Time	ipm	Vstd, Nm
0	29.0	30.0	27.25	6922	BURDY I	1345H	T	7
1	23.4	714	29-20	492.4	110	1445 #		
2	28.1	701-7	27.15	V92.2		L 在 b		
.3	27.9	300.7		692.4		16 45 A		
4	24.6	\$297.6	27.29	U92 4		D4 1		
5	23.5	2965	27.31	1977		18 45 H		
fi	230	2940	27.37	694.2		19454		
7	32.7	295.7	27.75	-694.2		2041 H		
35	22.5	735.3	27.34	699,2		21 AS A		
9	23.07	29.09	27-34	649,0		22 45 H		
10	23.0	294.0	2734	.694.4	-	JA 41 0		
11	23.7	294.3	27.32	1,929	02 m24-21			
12	117	7:57	-27 90	6994	1	01 45 11	0.11/mm	
13	224	2950	43.30	CAY.V		4 74 80	e-wr/line	
14	21.9	294.9	4170	699.4		01 4TH		
15	21.6	274.6	2729	6432		64 ASH		
16	119	274.9	17.3	649.4		OT 4T A		
17	25.	2501	127 79	G44.2		OL 4C A		
18	267	109.7	.07-37	6147		424 50		
19	30-1	307.1	47311	1.94.0		OK ATH		
20	1.06	39.	27.33	0942		0945 H		
21	29.7	397	27.11	699.2		10 41 4		
22	89.3	3023	19,74	694.4		11 4F A		
23	30-2	3072	27.20	64.4		与机台		-1
24	72.2	205.2	27.22	691.9		14 W 1	-	-

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

Pag = barometric pressure, mm Hg

t = total sampling time, minutes

V_{note()} = sampled volume corrected to standard conditions, Nm⁹

 $Q_{\mathbf{a}}$ = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm*)

 $V_{m(sid)} = \frac{Q_o}{1,000} \times \frac{298}{T} \times \frac{P_{har}}{760} \times t$

Team Leader:

OA / OC / Date:

NP-AIR-017-F026 Rev. 0; 8 May 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc. 2nd floor Maga Contro San Askard St. Places of Magallanes Makkel City, 1212 Planes No. (SSE) 654-4365 Fat Mar (SSE) 757-4367

SULFUR DIOXIDE (SO₂) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambier	nt Temp., T	Barometric Pr	ressure, Pbar	Securioning	Sampling	Flow Rate	Standard Volume
Reading	٠	×	In Hg	mm Hg	Date	Time	lpm	Vstd; Nm
0	290	mo	27-25	1A27	T	18/5H	1	1
1	27.4	2004	27.20	420		14451		
2	28.07	301.9	37.25	1912		19191		
3	27.7	710-7	27,20	6924		IMEN		
4	24.6	2546	27.29	U93.2		14991		
5	23.5	294.5	27-31	como	OFMAY21	IMAI		
6	23.0	256.0	27.73	1,44.7		1495W		
7	22.7	295.7	27.75	194,2		2010		
8	22.3	295.7	27.33	454.2		21450		
9	220	2009	27-34	644.4		22459		
10	23.0	200.0	27.34	10740		2365H		
11	53.3	7960	2732	4939		444214		
12	22.7	7007	27.70	1970		pigst	0.71 ww	
13	22.4	2254	27-76	UH3.4		04428		
14	41-5	1 294.9	47 m	642.4		134CH		
15	116	2-4.5	17.19	673.2		19494		
16	21.7	234.4	27 50	044		HOUZ o		
17	251	28/	27.47	644.2		SE 4 CH		
18	14-7	251977	27 29	1942		43804		
19	30-1	203.1	2734	1444	02.MEY21	HYGH		
20	no-1	303.1	27.47	6942		99408		
21	19-7	319.7	27.77	6947		(645)		
22	29.7	34.3	27·M	194.4		11901		
23	302	3022	27.30	G124		1249		
24	\$\$ 72.2	303.7	27.22	09-9	-	19951	-	4

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{har} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{mixt0} = sampled volume corrected to standard conditions, Nm³

Q = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m3

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm3)

$$V_{m(sid)} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{bur}}{760} \times V_{bur}$$

Team Leader:_

QA/QC/Date: My

MP-AIR-018-F02s Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

HIAdvance Phill My Reer Major Conne Son Antonio St. Passas Se Ma Major Conne Son Conne	100 100			
Phone No. (632) 934-936 Fox No. (632) 729-4327				
	ASADIENT AID CA	MPLING FIELD DATA SHEET		
		MIPLING FIELD DATA SHEET		
Address: Unit San one		a Nargas Avt. cor. Welks	Date: 7-4 may 200	-
Station No: 9 Start Time: 04174	End Time: 09 KH	GPS Reading: La	melitas tine 3	
Ambient Temperature: 2 Barometric Pressure: 23	Weather Cor	to	nettude 125-021944	
Filter ID No: 11 Okk 11 To	Type of Filter Pape	Used: Glasstiper / Dunta	Initial Weight: 4 4661	2.75
Remarks: population and		mind spread & perection Non	us away from the mo	Light
exected in a ground !	cal ground compace,	41		- da
TSP Sampler Model: 12 - 509 (X	Serial No. 2169	Calibration Date:	BHANGEFEE	
PM2.5/PM1D Sampler:	2140			
Model: 15-0941X	Serial No:	Calibration Date:	DRANG SINS	
Three (3) Gas Sampler: Model: M-165-01	Serial No: <u>19090001</u>	Flow Rate:	\$ 21/min	
Barometer/Thermometer: Model: FHB-318	Serial No. NY 54510	Celibration Data:	30 Tine 103n	
Multi RAE / Air Quality Meter		WHITE BOOK DAKE	at June sone	
Model:	Serial No:	Calibration Date:		
INITIAL FILTER PRESSURE:	181 1 1mio	Carbon Monoxide:	data Lenger	
FINAL FILTER PRESSURE:	445 19.3	Total VOC:		
1 1 11 2	m			L
M -1	8 11 3			
10				
1000	A A	田 -	-2	
	2-2-			2
	HIGHWAY Z	LAN BY		
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The state of the s	T			
			1-1011	1
	1	QA/QC /Date: **	11/5 1 186	





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

Ard floor Maga Centre San Antonio St. Paseo de Magallanes Makati City, 1232 Phone No. (632) 854-8365 Fax No. (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	8			Date: 1-4 M24	2621	
Parameter:	arameter:		VI 2.5	PM 10	TSP	
Filter Paper N	No.			21 000	21-107	
Hourly Flow	Rate (m³/m)	N	1			
Average Flow	v Rate (m³/m)					
Total Operati	ion Time (min)			14/40	1440	
Initial Weigh	t of Filter Paper (g)			4-404	2.7577	
Final Weight	of Filter Paper (g)					
Dust Content	ts (g)	1	D.			
Total Volume	of Air Sampled (m³)	1	М			

Remarks:	-						

Name & Signature of Official on Duty:

Team Leader:

QA / QC / Date: 1

MP-AiR-012-F03b Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO₂) AIR VOLUME CALCULATION Twenty Four (24) Hour Sampling

Hourly	Ambien	t Temp., T	Barometric Pr	essure, Pbar	annihm P	Sampling	Flow Rate	Standard Volume
Reading	75	K	in Hg	mm Hg	Date	Time	lpm	Vstd. Nm ⁴
0	19.7	307	27.09	Cry.	hmay all	19KH	- No.	T
1	29.7	347	23.09	U88.)		HILDI		
2	28-6	30.6	27.06	UG7-13		HAIL		
3:	197	311.7	27.07	U873		12 1E A		
A.	28.8	201-8	J7 06	1873		りには		
5	14 9	30.5	27.00	686.1		日本日		
6	29.9	7019	17-01	666.1		ICICH		
7	AB	2028	10.56	6866		ILKA		
8	3.7E	2986	29-63	LIGH		17 KH		
9	F-20	298.7	27-0h	U87. V		12 KH	1)-2my	
10	22-7	295-7	27.07	4875		19KA	1	
11	22.7	7557	27.07	0866		20 K H	- //	
12	20.6	7756	2711	LEESE		21154	15	
13	209	2949		C823		22 15 1	41	
14	20.9	293.7	2+10	48.1		2315 11		
15	20.7	2907	2209		by facio	DOKH		
16	21.2	274.2	27.07		15	DIEH		
17	201	2081	27.06	428		071E P		
18	213	299.3	27.08	4884		DALLH		
19	219	294.4	27.10	CHES		MICH		
20	227	7507	27-11			PZICH		
21	20 5	2935	27.69	知得し		OL 15H		
22	20-6	299.1	27.09	Level		07 KH		
23	24.7	299,8	17.10	Cus		4 21 80		
24	27.2	3002	27.in	6W.3	-	09 IT 11	1	-

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{edital} = sampled volume corrected to standard conditions, Nm⁸

 Q_a = actual flowrate through the orifice, fixed at 0.2 ipm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm*)

 $V_{m(stal)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

Team Leader:

QA/QC/Date:

MP-ARI-017-F92c Nev. O: 8 May 2018

Rev. 0: 8 May 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd Noor Magic Centre Sox Accord St. Patrio de Magistieres Moreiro Cry. 1232 Phone Nov. (532) 854-8503 Cox Nov. (533) 729-8527

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambien	nt Temp., T	Barometric Pr	essure, Phar	- Seriobaring	Sampling	Flow Rate	Standard Volume
Reading	"с	×	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm
0	27.7	300.7	27-09	(86)	h may 21	691014	T	4
1	27.7	30.7	17.09	usel	Victor 1980	1012 H		
2	284	30.6	27.04	U873		NEH		1
3	28-7	30.7	27.62	6873		口本日		
4	18.0	30.0	27.06	403		ALE #		
5	18.9	3019	29.00	Laci		H 21 M		
6	29.9	3029	27.01	184.1		15 15 14		
7.	29.8	311.8	27.01	un		16 15 H		
8	J: (248.6	19-03	CYCL		17 15 4		
.9	-	2987	27.05	64.		H 21 91	1-2 mil/	
10	20.7	2057	17.07	GRC		4 21 91	1	
11	22.7	225.7	27-67	C18.5		42101	1	
12	20.6	1996	2711	C88.C		引出后	1	
13	205	2759	27.1	U883		20 15 H		
14	209	าชทวิ	17-10	2181	1	25 KH		
15	207	0.50.7	27.09	CR7.6	64 may 2	00154		
15	21.2	7947	2707	499		印在日		
17	20,1	2941	77.06	V7.3		02 15 P		
1.8	213	274.1	27.08	4883		03 15 F		
19	21.9	246	27.10	Copie		421 40		
20	20 7	- דומר	27-11	4086		4 2120		
2:1	14.5	295	FOFY	687.6		PZ JO		
22	26.6	2-176	13.07	GEG. 1		4 21 50		
23	118	247.3	17.10	College .		09 15 H		
24	11.2	7002	27.76 10	6883	-	09 15 1		

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{mints} = sampled volume corrected to standard conditions, Nm³

Q = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

$$V_{m(std)} = \frac{Q_a}{1.000} \times \frac{298}{T} \times \frac{P_{bur}}{760} \times t$$

Team Leader: __

QA/QC/Date:

MP-AIR-018-F02s Sev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

San Amanina St. Pasera St. Mates Cop., 1212 Phone No. (632) 854-636 For No. 18321 729-4227					
	AMBI	ENT AIR SAMPLIN	G FIELD DATA SHEE	т	
Company: Awet - No				Date: 45 may 20	L
Address: Unit 3nh or Station No: m	Locations	Agrig - Brow Fa	gas AVK . cor MEX	alco five, fasig	
Start Time: Whol	End Time:	layer	GPS Reading: II		
Ambient Temperature: Barometric Pressure:	20.2	Weather Condition:	from to cloudy	mystude 125.0 Ø188	188
Filter ID No:21- Glat 1 3140	A Type	of Filter Paper Used:	Classither I much	Initial Weight: 4 hgs	
Remarks: flink return le	PMID, 502, NO 2,	B co. on sures	peed & Burchos No	A CONTRACTOR OF THE PERSON	tura.
the highway is to t		the spirit said		r 1-3 word with	- FDe
	- 120A	1	2		
Model: 16-5991X	Serial No.	2169	Calibration Date:	-2414010000	
	John No.	2164	LINOTHDOT DATE.	DHAMEEPED	_
PM2.5/PM10.Sampler: Model: 16-5033X	Serial No:	2040	Callbrotten Date	20.000 PROVIDEN	
	Serial No.	555.15	Calibration Date:	QUANC 2010	
Three [3] Gas Sampler: Model: U-165-01	Savial No.	# 22 Sepai	Claus Pate		
	Serial NO.	£30 90001	Flow Rate:	0 2L/min	-
Model: FHB-3/8	Serial No:	RY-54510	Calibration Date: _	29 sine 1020	
Mutti RAE / Air Quality Metr					
Model:	Serial No.	4 JV (0-	Calibration Date:		
INITIAL FILTER PRESSURE: FINAL FILTER PRESSURE:	200	19 D 20 D	Carbon Monoxide: Total VOC:	dala lengter	
A COCA	1000	0 G	1 (1)	1 1 (24
137 11 11 11	du min	The -	PLT -	1 1 1	0
	2	Lh wer y	116HWAY		
		-	-		
	1	EI E			
		II DI			
	Vous	TRY THI	CKEN FARM		
	1 4 41	1.1 000	or pre-		
	-			1-1 1 1 t	1
Team Leader:	661		QA/QC /Date: <	yes Ito	ZI.





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonia St. Paseo de Magailanes Makati Cler. 1232 Phone No. (632) 854-8365 Fax No. (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:		Date: 4-5 May away			
Parameter:	PM 2.5	PM 10	TSP		
Filter Paper No.	6	21.061	21-107		
Hourly Flow Rate (m³/m)	1				
Average Flow Rate (m³/m)	/				
Total Operation Time (min)		Hick	1440		
Initial Weight of Filter Paper (g)		4. 7839	1.677		
Final Weight of Filter Paper (g)					
Dust Contents (g)	1 8				
Total Volume of Air Sampled (m ³)	1/				

Remarks: -			
SAME TRANSPORT			

Name & Signature of Official on Duty:

Team Leader:

QA / QC / Date:

MP-AIR-012-F03b Rev. 0; 8 May 2018



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HIAdvance Philippines, Inc., 3rd/or May Corre
Ser Anno 11 fears de Magazines
Manari Cre, 1221
fear No. (2017) 102-1017
fear No. (2017) 102-1017

NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambier	nt Temp., T	Barometric Pr	essure, Pbar	Control of the Contro	Sampling	Flow Rate	Standard Volume
Reading	'τ	×	In Hg	mm Hg	Date	Time	ipm	Vstd, Nm
0	29.2	3022	26.92	6826	4 mal 11	10201	7	7
1	28.2	-301-2	26.92	687.6	1	11700 #		
2	18.1	301-1	21.92	683.8		1270 ii		
3	30.1	30.1		L82-8		13/10 /		
4	nh 6	344	428-26-10	6621		N70 H		
5	77.1	316.2	26 86	6 62 1		KHOH		
ő	18.5	30-0	86.16	1827		1670 \$		
7	18.4	30.4	26.00	682 2		1370 p		
18	243	292.8	26.89	663.0		1870 A	1	
9	J. D.	24.0	26.89	6130		1970 11	Almin/	
10	The	276.8	19.0%	6835		2020 P	0/	
11	4.5	276-1	24.95	684.5		dinos		
12	20.4	2254	16.95	445		27740 1	1	
13	22.2	295.2	20,93	440	2	23700 H	11	
14	219	294.7	26.92	613.8	et mai 2	00% H		
15	217	2997	20.90	613.8		01710 H		
16	214	294.4	26 88	612-1		62710 H		
17	710	2740	26.90	6003		4 of 60		
18	209	795.9	26.92	100.7		04 No is		
1.9	224	2954	24.93	6840		NOW H		
20	22.0	295.0	26.92	643.8		DL/NO A		
21	24.5	2925	九明	6440		67mo P		
22	24.3	294.3	20.95	6045		0820 H		
23	28.7	317.7	26.94	669.3		6930 H	1	
24	28.1	301.8	26.94	6883	2	1070 1	-	1

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{equal} = sampled volume corrected to standard conditions, Nm³

 $\mathbf{Q}_{\mathbf{a}}$ - actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m²

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $V_{m(sid)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bor}}{760} \times t$

Team Leader:

OA / OC / Date: "

MP-AIR-017-7020 Rev. D. S. May 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Mago Centre Sei Antonio St. Paulo de Magolfanos Majori Cla. 1232 Paulo Mr. (832) 254 8363 Fac Vo. (832) 729-4327

SULFUR DIOXIDE (SO₃) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambien	t Temp., T	Barometric Pr	essure, Pbar	Service Co.	Sampling	Flow Rate	Standard Volume
Reading	°C	к	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm
0	19.2	702. 2	26.92	683-8	14 may 21	167mH	T	7
1	28.2	301-7	26.92	287. F		117017		
2	27.1	301-1	24-92	483.8		H ONE		
3	30./	3/11	26.88	642.8		17 ho A		
- 4	m.6	74.6	26.84	642.5		NhoH		
5	77.2	314.2	26.56	687.2		1570 H		
6	28.5	30-5	1686	683Z		1670 A		
7	28.4	30.7	26.84	487.2		17704		
8	24.8	700.0	26.89	569.0		18740 A	0.200	\
9	250	24 0	26.89	6000		197AH		
10	23.1	296.8	26.91	2125		2070 H	1/4	
11	23.1	296.1	26.95	un.s		21700 11	1.	
12	224	295.9	16.95	bees		27700 B		
13	22.2	7951	26.93	440	1	2070 H		
14	21.9	2949	26.92	687.5	5 MgH 7	0070 A		
15	217	297.7	26.90	60,2		01704		
16	24.4	7946	2688	6128		62701		
17	21.0	2740	24.90	6427		6370 H		
18	209	2957	26,92	6808		0430 to		
19	224	2954	2693	040		40820		
20	12 0	2550	14.90	60.8		of he H		
21	14.1	2775	20.03	600		4 0/10		
22	#3.4	7962	26.95	6845		0820 A		
23	28-7	301.7	26.94	6199		09 No 4		
24	28-8	7018	26 94	2143		10 70 1		1

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{ricinal} = sampled volume corrected to standard conditions, Nm³

Q_a = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

$$V_{m(std)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$$

eam Leader:

QA / QC / Date

MP-AIR-018-F02c Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Hildware Philippines, Inc. Provings 1985 AMBIENT AIR SAMPLING FIELD DATA SHEET AMBIENT AIR SAMPLING FIELD DATA SHEET Company: Emet And 1987 Address: Unit And, ore Control (refer / Sulfa Vargas RM cor Medice PM, 2aug Authoritemperature: 100 100 100 100 100 100 100 1	AMBIENT AIR SAMP Company: A wet - 1612 Inc	LING FIELD DATA SHEET
AMBIENT AIR SAMPLING FIELD DATA SHEET Company: Remet - No. 2 Inc. Company: Remet - No. 2 Inc. Company: Remet - No. 2 Inc. Company: Light Sah, one congressed (re-hor) Tulia Vargas Ntl., cor. Metalson Nr. 4 Stay Station No. 10 Station	AMBIENT AIR SAMP Company: A wet - 1612 Inc	LING FIELD DATA SHEET
AMBIENT AIR SAMPLING FIELD DATA SHEET Company: Rest Ros In. See Company (reform Julia Vargas RK (cor Net Ros Rw. Tax) Start Time: (http://doi.org/10.1001) Sampter (http://do	AMBIENT AIR SAMP	LING FIELD DATA SHEET
Ambient Temperature: No. 3 Barometric Prassure: 37.51 Filter ID No: 31.50 Filter ID No: 31	Station No: 10 Location: (Agult) - Brg.	Date: 5-6 May 201 Largas AVK cor. MEKalco AVK, Pacy
Barometric Programs: 31-SI Weather Condition: Guthi I doubt Filter ID Not 31 Mil 31-ST Type of Filter Paper Used: Glack Fiber Inext Initial Weight: 36-78 Grand Sampled Paper Used: Glack Fiber Inext Initial Weight: 36-78 Grand Sampled Paper Used: Glack Fiber Inext Initial Weight: 36-78 Grand Sampled Paper		
Table 1 19 19 19 19 19 19 19 19 19 19 19 19 1	Barometric Pressure: 27-51 Weather Condition Filter ID No: 11 M 10-07 Type of Filter Paper Use Sampled Parameters: TSP, PMID, Son, No.2, Pb. Co. Co. Co. Vision Remarks: round manh with the sign of the Sample Samp	ed: Glasspiber Javarta Initial Weight: 2679 4.19 ad speed & practice Noise A 8 Mash glownd, 1-2 hocklo away Fre
Team Leader: Model: 1E-1979 X Serial No: 2740 Calibration Date: MANK 8682 PM2-5/PM10 Sompler: Model: 1E-1971 X Serial No: 2740 Calibration Date: MANK 8682 Three 35 Gas Sampler: Model: 1E-31501 Serial No: 120 90001 Flow Rate: 11/min Barometer/Thermometers Model: 1P-312 Serial No: 120 90001 Flow Rate: 11/min Model: 1P-312 Serial No: 120 90001 Flow Rate: 121/min Model: 1P-312 Serial No: 12		ming of Loy leaves approx 10-15 meters away to be
Model: 15-509 Serial No. 2740 Calibration Date: PHAILETTE PMZ-5/PM10 Sompler: Model: 16-531 Serial No. 2740 Calibration Date: PMAILETTE Three 23 Gas Sampler: Model: 16-31 Serial No. 120 90001 Flow Rate: 121/min Barometer/Thermometer: Model: 16-31 Serial No. 120 90001 Calibration Date: 39 34 nt. 40 20 Matt RAE / Air Dunality Meter Equipment: Model: Serial No. Calibration Date: 39 34 nt. 40 20 INITIAL FILTER PRESSURE: 24 2 Carbon Monoxide: Total NOC: 101 10 34 9 cr. INITIAL FILTER PRESSURE: 31 8 19 Carbon Monoxide: Total NOC: 101 10 34 9 cr. Team Leader: 41 Lone Total Oct. 102 103 103 103 103 103 103 103 103 103 103	are supplied they for the force in the force of	AT .
Model: 15-509 Serial No. 2740 Calibration Date: 144 Serial No. 2740 Calibration Date: 15-509 Serial No. 2740 Calibration Date: 15-509 Serial No. 1509001 Flow Rate: 15-1/min Barometer/Intermometer: 15-509 Serial No. 1509001 Flow Rate: 15-1/min Barometer/Intermometer: 15-509 Serial No. 1509001 Calibration Date: 15-509 June: 150500 Model: 15-509 Serial No. 15090001 Calibration Date: 15-509 June: 150500 Model: 15-5090001 Serial No. 150900000000000000000000000000000000000	TSP Sampler	
PM2-5/PM10 Sompler: Model: 16-1918 Serial No: 120 9001 Flow Rate: 6.11/min Barometer/Thermoeter: Middel: 946-313 Serial No: 4 8 5 9 10 Calibration Date: 39 30 nt. 10 30 Malt PAS AR Charity Meter Equipment: Model: Serial No: 000 Calibration Date: 39 30 nt. 10 30 Malt PAS AR Charity Meter Equipment: Serial No: 000 Calibration Date: 100 No. 100	The state of the s	Calibration Date: ##ANCARR
Model: 18-93 PX Serial No: 2700 Calibration Date: MANS SEE Three (3) Sas Sampler: Model: M-315-01 Serial No: \$20 90001 Flow Rate: \$11/min Barometer/Thermometers Model: 19-313 Serial No: AH 543 to Calibration Date: 39 June \$030 Minit BAE / Air Chairly Meter Equipment: Model: Serial No: Calibration Date: 19-310 Carbon Monoxide: pkt. 10 Apper FINAL FILTER PRESSURE: 31 19 Carbon Monoxide: pkt. 10 Apper FINAL FILTER PRESSURE: 31 19 Total VOC: 10 Apper Total VOC: 10 Apper Team Leader: QNQC/Date: YND AIR-001-705	AND DESCRIPTIONS OF THE PARTY O	STREET
Three B) Gos Sampler: Model: M. 365-01 Serial No: \$30,9001 Flow Rate: \$11/min Barometer/Thermometers Model: 610-312 Serial No: 84 545 to Calibration Date: 39 June \$030 Made BAE / Air Challey Meter Equipment: Model: Serial No: Carbon Monoxide: Carbon Monoxi	2740	
Model: M-36-01 Serial No: \$20 9001 Flow Rate: \$1 /min Barometer/Thermometer: Model: PHO-312 Serial No: AH 54310 Calibration Date: 39 Junt 1020 Model: Serial No: Calibration Date: 39 Junt 1020 INITIAL FILTER PRESSURE: 24 2 Carbon Monoxide: Datin logger FINAL FILTER PRESSURE: JI 8 19 Total VOC: Birhen La Lourd es Chapel Team Leader: QA/QC/Date: YA-AR-001-705	Model: 16-50-19X Serial No: 9770	Calibration Date: BRANG INSE
Middle 188 Air Charley Meter Equipment. Model Serial No. Calibration Date: INITIAL FILTER PRESSURE: Al 19 Carbon Monoxide: Total VOC. Birhog Sa Lourdes Chapel Team Leader: QA/QC/Date: MP-AIR-001-705		Flow Rate: \$ 11/min
Model Serial No Calibration Date: Notation Page Final Filter Pressure: Notation Date: Notat	The state of the s	
Model: Serial No. Calibration Date: INITIAL FILTER PRESSURE: 24 2 Carbon Monoxide: Data Dagor FINAL FILTER PRESSURE: 31 4 19 Total VOC: A Lone rand Birhen Sa Leurd es Chapel Team Leader: QA/QC/Date: 44 A MP-AIR-001-705	MONTH TEND 318 SELIN NO. 98 24310	Cambration Date. 39 June 3020
INITIAL FILTER PRESSURE: A B	Multi RAE / Air Quality Meter Equipment:	
PINAL FILTER PRESSURE: A 19 Carbon Monoxide: District 10 10 10 10 10 10 10 1		Calibration Date:
FINAL FILTER PRESSURE: 19 Total VOC: 4 Long Total VOC: 8 Henry Sa Impress Chapel Team Leader: QA/QC/Date: YA ARROOL FOS	Table of the same and the same	Color Manufe
# A Lone mad) Sirken sa lourdes Chapel	Part at the same and the same a	A STATE OF THE PARTY OF THE PAR
(4 Lave rynd) Birhen La Lourd es Chapel Team Leader: QN/QC/Date: YN AS MP-AIR-001-705	-4-17	
Team Leader: QMQC/Date: MP-AIR-001-F05	A SIN / * MORE	Manual Ma
Team Leader: QA/QC/Date: YA A	(44	ne road
Team Leader: QA/QC/Date: YA A		
Team Leader: QA/QC/Date: YA A	1	
Team Leader: QA/QC/Date: YA A		350
MP-AIR-001-705	Bitten to Lourd es Old	upel The
	Team Leader: Call	avac/Date: 40 AS
	0	



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonio St. Paseo de Magailanes Makati City, 1232 Phone No. (632) 854-8365 Fax No. (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	tion: 0		Date: J-L My	n 201
Parameter:	- N	PM 2.5	PM 10	TSP
Filter Paper No.			21 037	21-104
Hourly Flow Rat	e (m³/m)	1		
Average Flow Ra	ite (m³/m)			
Total Operation	Time (min)	1	pido	1440
Initial Weight of	Filter Paper (g)		4 1766	2. W74
Final Weight of	Filter Paper (g)	1		
Dust Contents (g		6 A		
Total Volume of	Air Sampled (m³)	1		

Name & Signature of Official on Duty:	-		

Team Leader:

Remarks:

QA / QC / Date:

MP-AIR-012-F035

Rev. 0; 8 May 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

Int Four Maga Centry Son Antonia M. Pases Maket Gty, 1717 Phone No: (\$32) \$54-\$165 Fac No. (692) 729-4127

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambie	nt Temp., T	Barometric P	ressure, Pbar	Sampling Date	Sampling	Flow Rate	Standard Volume
nessuring	*C	ж	In Hg	mm Hg	Date	lime	lpm	Vstd, Nm
0	70 8	317.5	-27.51	Lynt	5 mal 21	(Paret		4
1	W. 2	7000.7	23 19	1987		1470 A		
2	30.7	3/7.3	23.49	6782		1570 H		
3	70.4	36.4	27.42	698.7		1670 n		
4	21.2	302	- 27.52	4990		1770 H		
5	1.7%	799.1	27-53	197.8		18 20 4		
6	25.1	278.1	27 45	U9.4		19 20 1		
7	24.1	297.1	27.56	7000		2010 1		
8	24.2	277-2	27 18	707.5		2170 H		
9	24-0	297.0	24.13	700.5		2770 H	0.2	
10	25-8	276.8	27.59	7045		25700 P	7.	
11	223	235 3	17-61	YOY 9	6 man 3		Un	
12	21.4	2054	17-60	301.3	11	0170 4		
13	221	295-1	27 99	70.0		07% P		
14	219	2949	2757	7028		4 of co		
15	217	294.7	2251	700-3		10/4 10		
16	215	7945	12.51	US P. 8		4 04/20		
17	ab 8	159.3	27.60	Ling- F		OL WH		
18	27.3	3123	37 to	300.0		UPAC H		
19	29.5	3445	J7 60	707.0		4 OK 80		
20	27.9	340.7	17.51	798		09700 A		
21	195	SPLS	-80	7425		10 %0 H		
22	29.8	3027	21.13	501		11 yes #		
23	330	3000	19-14	6995		1220 H		11
24	734	3024	29.04	6995		17,700 1		1

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{ber} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{robust} = sampled volume corrected to standard conditions, Nm³

Q = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m⁸

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm3)

$$V_{m(sid)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$$

Team Leader:

QA/QC/Date: 1/

MP-AIR-018-F02s

Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Amble	nt Temp., T	Barometric P	ressure, Phar	Sainburg	Sampling	Flow Rate	Standard Volume
neaumg	*E	K	in Hg	mvn Hg	Date	Time	lpm	Vstd, Nm
.0	30.8	3036	27.0	698.8	5 MAJ 21	Th Troll		7
-1	20 2	203.2	29.49	648.7		HONEH		
2	30.7	7003	17.49	698.2		15x0 1		
3	104	30.4	27 49	198.2		1670 p		
4	U25+27	2 300.7	200	1990		1720 1		
5	25.1	2961	ZPIT	1976		H ON BI		
6	22.1	298.1	77.FE	1,994		H ONE BA		
7	24.1	272.1	27.5%	1200.6		2000 4		
3	24.2	7792	110	7105		21700 4	- 2	
9	24.0	7974	17.08	704-5		11201	0.1	
10	23.3	294.8	P2-FA	700-2		27/201	L	
11	122	755.3	29.61	7013	06 May 71		1	
12	214	295-4	2960	701.0	1	01300 H		
13	22	295.1	24.59	7008		HONED		
14	219	7949	27.57	742-3		01700 H		
15	217	2947	27.51	Cars		HORPA		
16	215	2945	2751	698.5		0530F		
17	14.3	769.8	47-60	40.0		04201	10	
18	129	700.7	1760	70.0		404.40		
19	23-2	2005	27.60	>02.6		68 NO A		
20	27 9	7,419	110	7005		H of Fo		
21	29.5	3115	25.17	7005		10710 H		
22	29.8	348	23.00	67.6.5		11 240 11		
23	\$3.0	340	HI	UPPE -		12701		
24	34.4	3069	21.19	651,5	4	Drive !	~	-

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{her} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{month} = sampled volume corrected to standard conditions, Nm⁴

Q_e = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m⁸

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $V_{m(sid)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bdr}}{760} \times t$

Team Leader:

QA / QC / Date:

MP-AN-017-F00c Rev. 0; R May 2018



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes. 1232 Makati City, Philippines Office: +632,7729-4327 Fax No: +632,8854,6365 Email: info@hiadvance.com.ph Websille: www.niadvance.com.ph

COMPANY NAME: AMET-Asia Inc.

Company Address: Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig
24-Hours Ambient Air Sampling and Monitoring
SAMPLING SITE: Cagayan De Oro

Station AQN1





Station AQN2



M21E113

AMET-Asia Inc./ Ambient Air Sampling and Testing Report



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Mákall City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365 Email: info@hiadvance.com.ph Website: www.hiadvance.com.ph

COMPANY NAME: AMET-Asia Inc.

Company Address: Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig
24-Hours Ambient Air Sampling and Monitoring
SAMPLING SITE: Cagayan De Oro

Station AON3



Station AQN4



M21E113

AMET-Asia Inc./ Ambient Air Sampling and Testing Report



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365 Email: Hiolghiadvance.com.ph Website: www.hiadvance.com.ph

COMPANY NAME: AMET-Asia Inc.

Company Address: Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig
24-Hours Ambient Air Sampling and Monitoring
SAMPLING SITE: Cagayan De Oro

Station AQN5





Station AQN6





M21E113

AMET-Asia Inc./ Ambient Air Sampling and Testing Repor



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magalianes, 1232 Makat City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365 Email: +fo@niadvance.com.ph Websiler: www.hiadvance.com.ph

COMPANY NAME: AMET-Asia Inc.

Company Address: Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig
24-Hours Ambient Air Sampling and Monitoring
SAMPLING SITE: Cagayan De Oro

Station AQN7



Station AQN8



M21E113

AMET-Asia Inc./ Ambient Air Sampling and Testing Repor



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Pasec de Magallanes, 1232 Makati City, Philippines 0%ce: +532,7729-4327 Fax No: +632,6854,8365 Email: info@phiadvance.com.ph Website: www.hisdvance.com.ph

COMPANY NAME: AMET-Asia Inc.

Company Address: Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig
24-Hours Ambient Air Sampling and Monitoring
SAMPLING SITE: Cagayan De Oro

Station AQN9





Station AQN10



M21E113

AMET-Asia Inc./ Ambient Air Sampling and Testing Report





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated **
3F Mega Center, San Antonio St., Paseo de Magallane
1232 Maksti City, Philippines
Office: +632.7729.4327 Fax No: +632.8854.8365
Email: :rifo@hiadvance.com.ph
Webelle: www.hiadvance.com.ph

ATTACHMENT 4

- Calibration Certificates
- > Planned Sampling Form

M21E113

AMET-Asia Inc. / Ambient Air Sampling and Testing Report



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Switchtek Measurement Systems

A Division of Switchtak Constru Ploor Northridge Plaza, Annex A, 12 Congressional Ave. Bahay Toro, Gueson City, 1100, Philippines Tel Nos.02 4267593 / 9282869 / 9287769 Fax No.4537894 amail Acidrasic switchtels@pidbdri.net

www.switchtak.com.elt

lob:

Fin.acc:

Categories

Dane.

4000.24-4941-3-30

P1

Calibration

Test and Calibration Certificate of Calibratic

initials... CAC

CERTIFICATE OF TEST - AIR QUALITY METER

ds and its co-espail standards.

Issued To: Address:

HI ADVANCE PHILIPPINES, INC.
3F MEGA CENTER SAN ANTONIO STREET, PASEO DE MAGALLANES, MAKATI, PHILIPPINES

UNIT UNDER TEST (UUT): Air Quality meter

Instrument Brand: Model No.: Serial No.:

LUTRON AQ-9001 SD 0615895 M-AQM-01

ID code: Specificat

0 to 4000 ppm, CD2 0 to 3000 ppm, CD 0 to 30%, D2 0 to 50 Deg. C, temp.

5 to 95% RH -25.3 to 48.9 Deg. C. daws -31.6 to 50 Deg. C, Watbuilb

Calibration Date: July 15, 2020 Calibration Due: July 14, 2021 CALIBRATOR INFO

Calibration Check Gas 100 ppm. Carbon Monoside

18N, O2

Flow regulator & 500 cc/min

NIST and NPL CO2 Gas regulator

0 to 5 LPM CSL Calibration gas Chembron Science Laboratories Pvt, Ltd

Gas Com Cartion Dioxide, 5000 ppr tic 4901 ppm (V/V) +/-5%

Gas Compo Nitrogen 99.5 %/V/VI kt 4901 ppm +/-5% ± 2% CSL-260320-14130-1-1

NIST, NPL

Temperature and Humidity chamber X8-015-34 Serial No.: 20130603

DRY/BASIC/NEUTRAL ty: 55 a5%, 10110 hPa

Ambient Temp. (Deg C): 21.2 ±2

Calibration Methods

By comparative technique, the unit under test was calibrated in reference with a Standard Calibration Gas, Process meter,
Standard Platinum resistor, Temperature and humidity chamber. Procedures of test and calibration conform to the requirements of
NPL (National Physical Laboratories) NIST and ISO Guide 17025.
Standard error and uncertainty were indicated on the attached sheet.

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July 15, 2020

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Switchtek Measurement Systems

A Division of Switchtek Construction Corporation Floor Northridge Plaza, Annex A, 12 Congressional Ave., Bahay Toro, Quezon City, 1100, Philippines os.02 4267593 / 9282869 / 9287769 Fax No.4537694 email Address: switchtek@pldtdsl.net

www.switchtek.com.ph

Certificate No.:

4000.24-4041-1-20

HI ADVANCE PHILIPPINES, INC.

3F MEGA CENTER SAN ANTONIO STREET, PASEO DE MAGALLANES, MAKATI, PHILIPPINES

CERTIFICATE OF TEST - AIR QUALITY METER

This report of test shall document that the reference standards and its co-equal standards.

UNIT UNDER TEST (UUT):

Brand:

Air Quality meter

LUTRON

Model No.1

AQ-9001 SD Serial No.: Q615895 M-AQM-01

REFERENCE READING (°C)	READING ("C)	ERROR IN READING (°C)	STANDARD DEVIATION	REMARKS
10.20	10.3	-0.10	0.0707	The user should determine
20.30	20.7	-0.40	0.2828	the suitability of the
30.30	30.7	-0.40	0.2828	instrument for its intended
39.10	40.1	-1.00	0.7071	use.

0.67

Uncertainty: ±

0.80 Deg. C

REFERENCE READING (%)	UNIT UNDER TEST READING (%)	ERROR IN READING (%)	STANDARD DEVIATION	REMARKS
69.00	72.3	-3.30	2.3335	The user should determine
62.00	68.0	-6.00	4.2426	the suitability of the
55.00	57.0	-2.00	1.4142	Instrument for its intended
45.00	47.0	-2.00	1.4142	use.

3.04 2.50 96 884



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Switchtek Measurement Systems

A Division of Switchtek Construction Corporation

4th Floor Northridge Plaza, Annex A, 12 Congressional Ave.,
Bahay Toro, Quezon City, 1100, Philippines

Tel Nos.02 4267593 / 9282869 / 9287769 Fax No.4537694

email Address: switchtek@pldtdsl.net

www.switchtek.com.ph

Certificate No.:

4000.24-4041-1-20 HI ADVANCE PHILIPPINES, INC. Calibration of

r Quality meter

Identification:

3F MEGA CENTER SAN ANTONIO STREET, PASEO DE MAGALLANES, MAKATI, PHILIPPINES

CERTIFICATE OF TEST - AIR QUALITY METER

This report of test shall document that the instrument herein was examined and tasted in compliance with ISO/IEC 17025 against NIST traceable reference standards and its co-equal standards.

UNIT UNDER TEST (UUT):

Instrument:

mt: Air Quality meter

Brand:

EUTRON AQ-9001 SD Q615895

M-AQM-01

Model No.: Serial No.:

Serial No

ID code:

Job order No.

1528

Results: CO

REFERENCE READING - (ppm)	UNIT UNDER TEST READING (ppm)	ERROR IN READING (ppm)	STANDARD DEVIATION	REMARKS
100.00	98.00	(2.00)	1.4142	Passed.

Results: COZ

REFERENCE READING - (ppm)	UNIT UNDER TEST READING (ppm)	ERROR IN READING (ppm)	STANDARD DEVIATION	REMARKS	
4000.00	3990.00	[10.00]	7.0711	Passed.	

Results: 02

REFERENCE READING - (%)	UNIT UNDER TEST READING (%)	ERROR IN READING (%)	STANDARD DEVIATION	REMARKS
20.90	20.90	0.00	0.0000	Passed.

Institutions' Products' Societ Societies (Analysis "Fine "Guinne" disepto" del "Pri Conduction) "Bassishy "Conduction) "Multipe "Angeres Mohameter "Proposity Controller "Representer "Glass & School
Thermoneter "Pric" 1974 "Retail Value "Bespeloe "Thermoneter "Vision "Conductions of The Conduction of



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Switchtek Measurement Systems

A Division of Switchtals Construction Corporation
4st Floor Northridge Plaze, Armex A, 12 Congressional Are.,
Ballay Toro, Queston City, 1100, Philippines
7el Rea, 07 4247593 / 9282865 / 9287769 Fee No. 4537694
ensall Address: switchtek@pdfabloset
www.worthablek.com.gh

Certificate No.:	4000.05-4124-1.20	Calibration of	High Volum	me sampler		
Identification:	HI ADVANCE PHILIPPINES, INC.					
200s:	P3	Test and Ve	ntication			
fin acc:	32	Certificate	of Calibration			
Done	June 18, 2020	WiSals	CAC			
Categories	Test and Calibration	Men	Hours	Total cost		Type
Cal Officer		2	1.0		-	Certificate

CERTIFICATE OF CALIBRATION - HIGH VOLUME SAMPLER

This report of calibration shall document that the instrument herein was ausmined and tested in compliance with ISO/IEC 17025 against NIST traceable reference standards and its co-equal standards.

Secured Ton	HI ADVANCE PHILIPPINES, I	NC.			
Address	3P MEGA CENTER SAN ANTO	ONIO STREET, PASEO DE N	RAGALLANES, WAKATI, PI	HUPPINES	
UNIT UNDER TEST (UUT)		CALIBRATOR INFOR	MATION:		
Instrument:	High Volume sampler	Instrument:	Digital Manometer	Instruments	Rotating Vans
Brand:	TISCH	Manufacturer	DWYER		Anedometer
Model No.:	TSP	Model No.:	Secies 477	Manufecturer:	LUTRON
ID code:	No record	Serial Na.	Y13-DM29997	Model No:	AM-4206M
Instrument:	VFC Motor	Range:	G-50.0 psi	Sectol No.	Q482206
Brand:	TISCH	Traceability:	NIST	Range:	Ø to 30.0 m/s
Model No.:	TE-9070X				0 to 50.0 °C
1D code:	No record			Origin:	USA
Serial No.1	2169			Cellbrotaid Against:	UKAS, thru Lauer
Californtion Date:	June 15, 2020				Doppler
California Dece	Acres 5.6, 3023				Anemometer

onmental Condition: Ambient Temp. (Deg C): 23.7 s2

Cellbration Method

By comparative technique, unit under test was tested in reference with a calibrated returneter, manameter at planned intervals and was referenced in accordance with NRT. NRL and RD/RF Guide 17023. Data were authored and tabulated.

Ouring calibration, uncertainty of measurement is ± 0.084 m3/min with a confidence level of not less than 95%. Calculations were taken using

Result

TEST	PRESSURE (in H2O)	Qa (m3/mln)
-1	4.01	1.276
2	4.02	1.276
3	4.04	2.281
4	4.00	1.275
5	4.00	1.275

Romarka

All data pertain only to the unit described obtained at the time of test. This certificate is not salid w/out set/signature. Unauthorized reproduction according

ribited.

Date: June 15, 2020

Cereffed By:

Toront State of Teacher State Control Control



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Switchtek Measurement Systems

A Division of Switchiele Construction Corporation
4th Floor Northvidge Plass, Annes A, 12 Congressional Ave.,
Bathay Toro, Conson City, 1300, Philippines
Tel Nes, 02 4267593 / 9022669 / 328769 Fax No. 4537684
email Address: awaichteid @plattid.net
www.waitchiele.com.gh

CERTIFICATE OF CALIBRATION - HIGH VOLUME SAMPLER

This report of cellination shell document that the instrument herein was examined and tested in compliance with ISO/REC 17025 against RIST transable reference standards and his co-equal standards.

Address: SF MESIA CENTER SAN ANTONIO STREET, PASEO DE MAGALLANES, MAKATI, PHILIPPINES UNIT UNDER TEST (UIUT): CALIBRATOR INFO **Rotating Van** Digital No DWYER FM10 No record AM-4206A VFC Motor 0432206 TECH the MODerak TE-50701 TOM: w0 SISA. 2240 UKAS, thru Laue August 4, 2020 August 3, 2021 Applicate Torons, 80mm Cb: 22.2.62 DRY/BASIC/MEUTRAL 44.0 15%, 1010 No.

Celibration Method

By comparative technique, unit under test was tested in reference with a calibrated retarreter, manumeter at planned intervals and was referenced in accordance with NIST, NPL and ISO/RE Guide 17025. Data were gathered and tabulated.

During calibration, uncertainty of massagement is ± 0.087 m3/min with a confidence level of not less than 15%. Calculations were taken using Standard Deviation Formula.

Banch

TEST	PRESSURE (In MGO)	Qu (m3/min)
1	3.8	1,240
2	3.9	1.260
)	4.00	1.280
4	4.00	1.280
5	3.5	1.260

Remarks

Ust

Date: August 4, 2020

Certified By: August, 2020

Thermotives' Proposes' South Class Control Studies - Those "Make the Control South of Contr



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Switchtek **Measurement Systems**

4th Floor Northridge Plaze, Annex A, 12 Congressional Ave., Bathay Tore, Gueson City, 1100, Philippines Tel Nos.02 4267563 / 9282869 / 9287769 Fex No. 4537664

www.switshtelk.com.ph

4000.19-4124-1-20 HI ADVANCE PHILIP

> 32 Agre 11, 2020

> > HI ADVANCE PHILIPPINES, INC.

Test and Vertication

Certificate of Californ initials...

CERTIFICATE OF CALIBRATION - PRESSURE

Done....

Cat Officer

3F RIEGA CENTER SAN ANTONIO STREET, PASIO DE MA

HT UNDER TEST (UATT):

Vacuum gavgs HOSHOK He record M-363-01 0 in Hg to 30.0 in H 0.5 In Hg 1/6" MPT(M), bo Flow regulating orifica 200 ml/mln. June 11, 2020

0 to 30.0 in He ASME B40.1, UKAS

DRY/MASIC/NEUTRAL 55.5 ± 5%, 1010 hPa

June 10, 2021

Architect Temp. | Dog C): 21.4 ±2

By companium technique, test pressures were applied at the port, at planned intervals, by a Standard Pressure Calibrator. Procedures of test conducted the requirements of UKAS and MST in compliance with IEC/ISO Guide 17925. Data were gathered and tabulated.

During calibration, the unit was found to have a standard error of ± 0.57. In Hg with a confidence level of not less than 95%

0.73 in Hg. Calculations were taken using the Standard Deviation Formula.

APPLIED PRESSURE		UNIT	REMARKS			
		Increming			Decreasing	West Control
1111	Before	After	Correction	Alter	Correction	
0.00	0.0	0.0	0	0.0	0	
5,00	4.6	4.6	0.40	4.7	0.30	The user should determine the subshilly of the instrument for its
10.00	9.8	9.8	0.20	9.8	0.20	intended use.
20.00	19.5	19.5	0,50	19.5	0.50	-
30.00	29.2	29.2	0.80	29.2	0.80	





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Switchtek Measurement Systems

Northridge Flaza, Annex A, 12 Congressional Ave... Bahay Toro, Quezzo City, 1100, Philippines Tel Nos.02 4767593 / 9283869 / 9287769 Fax No.A537694 email Address: switchteballers@yehod.com

www.cwttchtek.com.ph

Certificate No.: Identification:

400.01-4923-2.21

January LB, 2021

Sound Level Mater

HI ADVANCE PHILIPPINES, INC.

Test and Ventication

Fin.acc

Certificate of Calibration initials...

Type

Done..... Categories Cal Officer

Calibration

2

CERTIFICATE OF CALIBRATION - SOUND LEVEL METER

This report of calibration shall document that the instrument lensin was examined and tested in compliance with ISO/IEC 17625 against NIST transable reference standards and its co-equal standards.

HE ADVANCE PHILIPPINES, INC.

Address

3F MEGA CENTER SAN ANTONIO STREET, PASEO DE MAGALLANES, MAKATI, PHILIPPINES

UNIT UNDER TEST (UUT):

Model No

DATECH

501,600 H-309668

Serial No: 35 to 130 dil.

ID Code: No record

Califoration Date: January 17, 2021

Californian Due: January 16, 2022

Instrument: Serial No:

CALIBRATOR INFORMATION:

1.278821

Model No: Traceability:

SC-942 IEC 60942 Type II A Standard

Sound Level Calibrator

MIST and NPs

Environmental Condition:

Condition Relative numbers: 46.2 ±5%, 1010 h/hr

DMY/BASIC/NEUTRAL

Ambient Temp. (Deg C): 22.7 ±2

Calibration Method:

By comparative technique, Standard Sound Generator was introduced at the unit under test at a constant value of 54.0 d8 to 114 d8 at a uniform frequency of 2000 Hz. Data were gathered and tabulated. Procedures of test conform to the requirements of DMLBB Guidelines, IEC 60942 of the NIST and National Physical Laboratories.

Ouring calibration, the unit was found to have a standard error of ± 0.100 dB with a confidence level of not less than 95%. Uncertainty of ent is a0.60 etb. Calculations were taken using the Standard Deviation Formula.

TRIALS	REFERENCE READING	UNIT UNDER TEST READING		ERBOR IN READING	STANDARD DEVIATION	REMARKS	
	losi	AS FOUND	AS LIFT		DEVIATION		
1	94.0	92.8	94.0	0.00	0.0000	Passed	
2	334.0	112.9	114.2	0.20	D3434		

reproduction is prohibited

Cathrated By:

January 17, 2021

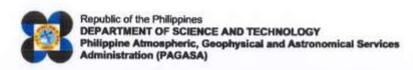
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



CALIBRATION CERTIFICATE NO. 084

Series 2020

CUSTOMER NAME AND ADDRESS

HiAdvance Philippines Inc.

Unit 5 Mega Center Bldg, San Antonio St. Paseo de Magallanes, Makati

END USER

HiAdvance Philippines Inc.

Unit 5 Mega Center Bldg, San Antonio St. Paseo de Magallanes, Makati

Type of instrument : Digital Barometer Range : 960-1060 hPa Brand : Lutron

Serial Number : AI.50424 Body Number : M-DBR-01

Method Comparative Measurement using Calibration Chamber and Standard Barometer

Date received : 05 June 2020 Date of calibration : 05-08 June 2020

This is to certify that the above instrument was calibrated at the PAGASA Calibration Laboratory of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) of the Department of Science and Technology (DOST) in accordance with the methods prescribed in "PCL-PM-01".

Calibration Results						
Reference Pressure, hPa	Observed Pressure, hPa	Correction, hPa	Uncertainty, hPa (±)			
1020.0	1019.0	+1.0	0.16			
1010.0	1009.0	+1.0	0.16			
1000.0	999.1	+0.9	0.16			
980.0	979.0	+1.0	0.16			
960.0	959.0	+1.0	0.16			

ENVIRONMENTAL CONDITIONS:

Temperature: 21.8 ± 1 °C Relative Humidity: 48% ± 5% RH Pressure: 1002.3 ± 2 hPa

Equipment used in calibration						
Туре	Model	Serial Number	Calibration Date	Certificate Number	Issuing Lab/Traceability	
Vaisala Barotransmitter	PTB 330	1023/J1440001	May 31, 2019	002 series 2019	PAGASA	

Page 1 of 2





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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UNCERTAINTY OF MEASUREMENT:

The uncertainty stated has been calculated based on a standard uncertainty multiplied by a coverage factor k=2 with confidence level of 95%.

Required achievable measurement uncertainty: 0.15 hPa (refer to WMO - No. 8)

REMARKS:

- 1. Interpolate between different observed readings and corrections if necessary.
- 2. Calibration points were as per laboratory recommendation.

Approved Signatory:

Ferdinand Y. Barcenas Senior Weather Specialist

> Control number: 0602PCL123007

Calibration performed by:

erver I

Calibration released: 7 July 2020

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"tracking the sky_helping the country"

Science Garden Compound, BIR Road, Brgy. Central, Quezon City Metro Manila, Philippines 1100 Website: http://begong.pagasa.dost.gov.ph

Tel. No. (832) 8284 0800 (loc. 117) Tel/Fax No. (832) 8929 2121

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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MP-SPL-013-F04 Rev.00; 05 Apr 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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	Resealable Bags		Container		1		
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Annexes



HiAdvance Phillippines Incorporated
3F Maga Center, San Antonio St., Paseo de Magailanes.
1232 Makati City, Philippines
Office: +632.7729.4327 Fax No: +632.8854.8365
Email: irlio@hiadvance.com.ph
Websita: www.hiadvence.com.ph

ATTACHMENT 5

- > Test Participants
- Participants Certificate

M21E113



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Maksat City, Philippines Office: +632.7728.4327 Fax No: +632.8854.8365 Email: mo@hladvance.com.ph Website: www.hladvance.com.ph

Test Participants

AMET Asia Inc.

Ms. Pamella Andrea L. Pomida

HiAdvance Philippines Incorporated

Marie Angellina P. Barcebal - Team Leader

Mary Grace T. Rivero - Project Coordinator

Bobdelon A. Fajardo - Field Sampler

Jonathan A. Sotto - Field Sampler

Patrocinio Ortega - Driver



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DEPARTMENT OF LABOR AND EMPLOYMENT Occupational Safety and Health Center awards this



105H OSHC-15-06-06

for having successfully completed the

Basic Occupational Safety and Health Training Course

for 40 hours, in pursuance with the Occupational Safety and Health Standards and DOLE Department Order 16-01, held at the Occupational Safety and Health Center North Avenue corner Agham Road, Diliman, Quezon City on April 13-17, 2015

Given this 17th day of April 2015

TERESITA S. CUCUECO, MD, CESO III Executive Director, OSHC



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Annexes



This Certificate is proudly presented to

ARY GRACE T. RIVERO

for having successfully completed the 40-hour comprehensive training on

OSH, conducted on September 09-13, 2019, under the seal of Insafety, Inc., and the authority by the BASIC OCCUPATIONAL SAFETY AND HEALTH - with 2-hour Training of Trainers on Department of Labor and Employment.

Parañaque City, in compliance with the pertinent implementing rules & regulations of the Labor Code PHILIPPINES INC., 128 Sun Valley Drive, Km. 15, West Service Road, South Superhighway, This Certificate is given on the 13th day of September 2019 at SAFETY CENTER OF THE of the Phil. (P.D. 442), as amended

090919 - INSBSCP124



Ms. Regina/B. Quiambao President & General Manager DOLE Accreditation No.1039-181217-N-1138



Servor Resident Safety Consultant DOLE Accreditation No. 1030-052917-0149 ** Certificate is NOT VALID without Insafety, Inc. seal.



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



BOBDELON A. FAJAR This Certificate is proudly presented to

conducted on July 15-19, 2019, under the seal of Insafety, Inc., and the authority by the Department of BASIC OCCUPATIONAL SAFETY AND HEALTH - with 2-hr Training of Trainers on OSH or having successfully completed the 40-hour comprehensive training on

abor and Employment.

This Certificate is given on the 19th day of July 2019 at SAFETY CENTER OF THE PHILIPPINES INC., compliance with the pertinent implementing rules & regulations of the Labor Code of the Phil. (P.D. 128 Sun Valley Drive, Km. 15, West Service Road, South Superhighway, Parañaque City, in 42), as amended.

071519 - INSBSCP117

Senior Resident Safety Consultant DOLE Accreditation No. 1030-052917-0149 Engr. Erttesto L. Valenzuel:

President & General Manager DOLE Accreditation No.1039-181217-N-1138

Certificate is NOT VALID without insafety inc. seal





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

High rainfall



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes 1232 Matati City, Philippines Office: +632,7729-4327 Fax No: +632,8854,8365 Emait: rec@hadvaros.com.ph Website: www.hiadvance.com.ph

AMBIENT AIR SAMPLING REPORT

Company Name	AMET-Asia Inc.
Address	Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig
Project Name	Ambient Air Monitoring
Project Site(s)	Cagayan De Oro - Bukidnon
Sampling Date	26th of July to 6th of August, 2021
Contact Person	Ms. Pamelle Andrea L. Pomida

1.0 INTRODUCTION

HiAdvance Philippines, Incorporated (HiAdvance) was contracted by AMET-Asia Inc. to conduct a 24-hours ambient air sampling at their ten (10) sampling points located at Cagayan De Oro and Bukidnon project sites. The sampling activity was conducted last July 26 to August 6, 2021. Sampling was done to determine the concentrations of Nitrogen Dioxide, Sulfur Dioxide, Total Suspended Particulates (TSP), Particulate Matter as PM10, Carbon Monoxide (CO), Ozone (O₃), Pb (Lead), Wind Direction and Wind Speed.

Noise Level was also measured at the sampling locations. The values determined are presented in a separate report.

2.0 METHODOLOGY

Ambient air sampling equipment and analytical procedures used were based on DENR Standards. All supporting field data sheets and calibration record of equipment are provided as attachments. The equipment and procedures are as follows:

Total Suspended Particulates (TSP)

Reference Procedure: USEPA 40 CFR, Part 50, Appendix B

Sampling Equipment: High Volume Sampler

Method of Analysis: Hi Volume Gravimetric Method

Particulate Matter as PM10

Reference Procedure: USEPA 40 CFR, Part 50, Appendix J
Sampling Equipment: High Volume with 10-micron particle-size inlet

Method of Analysis: Hi Volume Gravimetric Method

Nitrogen Dioxide (NO₂)

Reference Procedure: Methods of Air Sampling and Analysis - 3rd ed. / James P. Lodge, Jr.

Sampling Equipment: RAC3 Gas Analyzer\SKC Pump

Method of Analysis: Impinger Griess-Saltzman Reaction Method

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Sulfur Dioxide (SO2)

Reference Procedure: USEPA 40 CFR, Part 50, Appendix A Sampling Equipment: RAC3 Gas Analyzer/SKC Pump

Method of Analysis: Tetra-chloromercurate (TCM) Absorber -Pararosaniline Colorimetric

Carbon Monoxide (CO)

Reference Procedure: USEPA 40 CFR, Part 50, Appendix C Sampling Equipment: Air Quality Meter

Method of Analysis: Direct Readout (Data logged)

Lead (Pb)

Reference Procedure: USEPA 40 CFR, Part 50, Appendix G
Sampling Equipment: High Volume Sampler/Filter
Method of Analysis: Atomic Absorption Spectroscopy

Ozone (O₃)

Reference Procedure: Method 411, of Air Sampling and Analysis - 3rd ed. /James P. Lodge, Jr.

Sampling Equipment: SKC Pump

Method of Analysis: Colorimetric Method

Wind Direction

Sampling Equipment: KESTREL 5500L

Method of Analysis: Direct Readout (Data logged)

Wind Speed

Sampling Equipment: KESTREL 5500L

Method of Analysis: Direct Readout (Data logged)

The NO₂ and SO₂ samples were stored in amber bottles and were preserved on a cooler with ice. The samples were submitted and analyzed in the laboratory using a Spectrophotometer. The TSP and PM10 filters were conditioned before undergoing gravimetric analysis. Filter papers for Lead analysis were desiccated before submission to a DENR recognized subcontractor laboratory together with the sample for Ozone analysis. Carbon Monoxide (CO), Wind Direction and Wind Speed were measured using a calibrated air quality meter and weather meter through direct reading.

Stock solutions, standard reagents and other reagents are prepared using chemicals recommended by the reference methods mentioned above.

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3.0 SAMPLING LOCATION

3.1 The estimated location of the sampling stations is briefly described as follows:

Station AQN1- Brgy. Casinglot Purok Zone 2B

Latitude: 8.51573 N Longitude: 124.757969 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a grassy ground rocky ground, approximately 2-3 meters away from the 4-lanes highway
- At exactly 1322H, some people from nearby residential area burned papers and dry leaves (lasted for 20 minutes)
- Sunny with moderate wind blowing,

Station AQN2- Brgy. Purok 7 Mambatangan

Latitude: 8.463807 N Longitude: 124.800563 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a soft soil and rocky ground, 2 meters away the access road
- where light are vehicles passing by.
- Approximately 50-60 meters away from residential area
- Near where coarse grass grows
- Around 1330H light rain pour down
- Sunny to fair weather condition

Station AQN3- Zone 4 Alae

Latitude: 8.463816 N Longitude: 124.800455 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a soft soil, beside corn trees
- 3-5 meters away from houses
- Passing of motorcycles in the access road approximately 10-15 meters away from the sampling area was observed
- Around 1730H light rain occur
- Sunny to fair weather condition with light rain

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Station AQN4- Zone 1 Diclum

Latitude: 8.165051 N Longitude: 125.127925 E

Remarks/Sampling Environment Conditions:

- Equipment were erected at rocky ground with some grass, set up beside the creek approximately 8-10 meters away
- Approximately 6-7m away from the highway and approximately 5 meters away from the store
- Passing of light to heavy vehicles were observed
- Sunny weather condition

Station AQN5- Brgy. San Roque Purok 4

Latitude: 8.329728 N Longitude: 124.933511 E

Remarks/Sampling Environment Conditions:

- Equipment set up inside school premises, erected at grassy ground
- 15-20 meters away from the access road
- Passing of light vehicles such as motorcycle
- Around 1630H light to heavy rain started
- Sunny with strong wind blowing

Station AQN6- Brgy. Poblacion

Latitude: 8.164948N Longitude: 125.127882 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a grassy surface beside the house approximately 3-5 meters away
 - Approximately 5-6 meters away from the highway (four-lanes)
- Around 1700H light rain pour down
- Sunny with light rain weather condition

Station AQN7- Brgy. Lafortuna Zone 7

Latitude: 8.266074 N Longitude: 124.996892 E

Remarks/Sampling Environment Conditions:

- Equipment were set up in a soft and grassy ground, near access road approximately
 5-6m away
- Passing of light vehicles, near houses approximately 10-20 meters away
- Around 1600H light rain pour down
- Fair to sunny weather condition

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Website: www.hiadvance.com.ph

Station AQN8- Brgy. Impalutao Zone 3

Latitude: 8.233374N Longitude: 125.028934 E

Remarks/Sampling Environment Conditions:

- Sampling station is erected at soil ground
- 4-5m away from the main road
- Near residential area, approximately 3 meters away
- Passing of light to heavy vehicles were observed
- Near 2 lanes main road
- Sunny weather condition

Station AQN9- Brgy. Patpat Zone 5

Latitude: 8.195198N Longitude: 125.053261 E

Remarks/Sampling Environment Conditions:

- Equipment erected at a soft soil ground, near chicken poultry
- Sampling location approximately 3-4 meters away from a four-lanes highway
- Heavy rainfall observed at around 1630H
- Sunny to fair weather condition

Station AQN10- Brgy. Kalasungay Zone 1

Latitude: 8.165825 N Longitude: 125.113326 E

Remarks/Sampling Environment Conditions:

- Sampling point is located near the main highway erected at grassy area.
- 5 meters away from the main road
- Frequent passing of light to heavy vehicles were observed, mostly trucks
- Area is also near the corn plantation, generator set as source of electricity
- Sunny weather condition

3.2 Sampling Period

- Twenty-four (24) Hours for Nitrogen (NO₂), Sulfur Dioxide (SO₂), Total Suspended Particulates (TSP), Particulate Matter 10 micron (PM10) and Lead (Pb)
- ➤ Eight (8) Hours for Carbon Monoxide (CO) & Ozone (O₁)
- Twenty-four (24) Hours for Wind Direction and Wind Speed by Direct read-out (data logged)

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4.0 AMBIENT AIR SAMPLING RESULTS

Below is the ambient air sampling result. All supporting field data, analytical reports and calibration records are provided as attachments.

♣ Table 4.1.1. 24-hours Ambient Air Sampling (NO₂, SO₂, TSP & PM10)

STATION NO.	LOCATION	NO ₂ (μg / Nm ³)	SO ₂ (μg / Nm ³)	TSP (µg/Nm³)	PM10 (µg / Nm ³
AQN1	Brgy. Casinglot Purok Zone 2B	5.02	<11.9*	269	65.6
AQN2	Brgy. Purok 7 Mambatangan	6.20	<12.2*	54.5	19.7
AQN3	Zone 4 Alae	4.44	<12.4*	45.8	19.5
AQN4	Zone 1 Diclum	<3.27*	<12.5*	103	43.5
AQN5	Brgy. San Roque Purok 4	5.03	<12.6*	27.6	19.3
AQN6	Brgy. Poblacion	4.50	<12.6*	59.2	30.0
AQN7	Brgy, Lafortuna Zone 7	5.64	<12.7*	21.5	10.8
AQN8	Brgy. Impalutao Zone 3	4.91	<12.9*	63.5	24.5
AQN9	Brgy, Patpat Zone 5	6.25	<32.6*	184	49.7
AQN10	Brgy. Kalasungay Zone 1	7.19	18.0	73.0	37.6
I	DENR NAAQSSAP	150	180	230	150
A	veraging Time (min)	1440	1440	1440	1440

^{*}Values detected are below the laboratory's Method detection limit

4 Table 4.1.2. 24-hours Ambient Air Sampling (Lead)

STATION NO.	LOCATION	Lead (µg/Ncm)
AQN1	Brgy. Casinglot Purok Zone 2B	0.0125
AQN2	Brgy. Purok 7 Mambatangan	0.0021
AQN3	Zone 4 Alae	0.00200
AQN4	Zone 1 Diclum	0.00432
AQN5	Brgy. San Roque Purok 4	0.00141

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4.0 AMBIENT AIR SAMPLING RESULTS

Below is the ambient air sampling result. All supporting field data, analytical reports and calibration records are provided as attachments.

♣ Table 4.1.1. 24-hours Ambient Air Sampling (NO₂, SO₂, TSP & PM10)

STATION NO.	LOCATION	NO ₂ (µg/Nm ³)	SO ₂ (μg / Nm ³)	TSP (µg/Nm³)	PM10 (µg / Nm ³)
AQN1	Brgy. Casinglot Purok Zone 2B	5.02	<11.9*	269	65.6
AQN2	Brgy, Purok 7 Mambatangan	6.20	<12.2*	54.5	19.7
AQN3	Zone 4 Alae	4.44	<12.4*	45.8	19.5
AQN4	Zone 1 Diclum	<3.27*	<12.5*	103	43.5
AQN5	Brgy. San Roque Purok 4	5.03	<12.6*	27.6	19.3
AQN6	Brgy. Poblacion	4.50	<12.6*	59.2	30.0
AQN7	Brgy, Lafortuna Zone 7	5.64	<12.7*	21.5	10.8
AQN8	Brgy. Impalutao Zone 3	4.91	<12.9*	63.5	24.5
AQN9	Brgy, Patpat Zone 5	6.25	<32.8*	184	49.7
AQN10	Brgy. Kalasungay Zone 1	7.19	18.0	73.0	37.6
I	DENR NAAQSSAP	150	180	230	150
A	veraging Time (min)	1440	1440	1440	1440

^{*}Values detected are below the laboratory's Mothod detection limit

▲ Table 4.1.2. 24-hours Ambient Air Sampling (Lead)

STATION NO.	LOCATION	Lead (µg/Ncm)
AQN1	Brgy. Casinglot Purok Zone 2B	0.0125
AQN2	Brgy. Purok 7 Mambatangan	0.0021
AQN3	Zone 4 Alae	0.00200
AQN4	Zone 1 Diclum	0.00432
AQN5	Brgy. San Roque Purok 4	0.00141

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AQNI0	Brgy. Kalasungay Zone 1	0.00192
AQN9	Brgy, Patpat Zone 5	0.00468
AQN8	Brgy. Impalutao Zone 3	0.00215
AQN7	Brgy. Lafortuna Zone 7	0.00311
AQN6	Brgy. Poblacion	0.00129

Table 4.1.3. 24-hour Sampling (Ozone)

STATION NO.	LOCATION	O ₃ (ag/Nem)
AQNI	Brgy. Casinglot Purok Zone 2B	4.66
AQN2	Brgy. Purok 7 Mambatangan	0.68
AQN3	Zone 4 Alae	10.5
AQN4	Zone 1 Diclum	0.92
AQN5	Brgy. San Roque Purok 4	1.01
AQN6	Brgy, Poblacion	7.69
AQN7	Brgy. Lafortuna Zone 7	<0.69
AQN8	Brgy. Impalutao Zone 3	14.2
AQN9	Brgy, Patpat Zone 5	1.27
AQN10	Brgy. Kalasungay Zone 1	0,77
	DENR NAAQGV	60
	Averaging Time (min)	480

Table 4.1.4 Data logged (Wind Direction & Wind Speed)

STATION NO.	Time	Wind Speed (mph)	Average (Direction- True)	Average (Direction- Mag)	Cardinal Direction
AQN1	1000H-1000H	0.3	86.7	86.2	E
AQN2	1130H-1130H	0.3	223	223	SW
AQN3	1500H-1500H	0.0	214	213	SW

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AQN4	1530H-1530H	0.0	135	135	SE
AQN5	1200H-1200H	0.0	266	266	W
AQN6	1330H-1330H	0.3	124	124	SE
AQN7	1410H-1410H	0.6	203	202	SSW
AQN8	1300H-1300H	0.4	175	175	S
AQN9	1450H-1450H	0.3	123	124	SE
AQN10	1515H-1515H	0.2	287	286	WNW

◆ Table 4.1.5 - Carbon Monoxide (Data logged)

Station No.	Time	CO Value (ppm)
AQNI	1000H-1800H	7.0
AQN2	1130-1930H	ND
AQN3	1500H-2300H	ND
AQN4	1530H-2330H	3.0
AQN5	1200H-2000H	ND
AQN6	1330H-2130H	2.0
AQN7	1410H-2210H	2.0
AQN8	1300H-2100H	1.0
AQN9	1450H-2250H	ND
AQN10	1515H-2315H	4.0
DENR N	9	
Averaging	Time (min)	480

*Note: ND- No Detectable

5.0 DISCUSSION OF RESULTS

Ambient air quality standards (AAQS) define clean air, and are established to protect even the most sensitive individuals in our communities. An air quality standard defines the maximum amount of a pollutant that can be present in outdoor air without harm to the public's health.

The sampling activity was conducted on a sunny, cloudy to windy with light to heavy rain fall weather conditions. Results of NO₂, SO₂, TSP, PM10, Lead and Ozone (8 hrs.) were compared to the National Ambient Air Quality Guideline Value (NAAQGV). See Table 4.1.1 to Table 4.1.3. All values for the pollutants identified are below its maximum permissible limits except for the TSP value at station 1.

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The air monitoring of TSP readings at station 1 was influenced by the continuous passing of light to heavy vehicles during the 24-hour monitoring period, which is also a four-lane road, and at precisely 1322H burning of papers and dry leaves was observed from the nearby residential area that lasted for 20 minutes.

Currently, there are no existing limits from DENR for Lead measured for 24 hrs. There are only guidance values available at present for samples taken for 24 hours. See Table 4.1.2.

The values from direct reading for Carbon Monoxide (CO) using Air Quality Meter was tabulated in Table 4.3. At the time of measurement, Carbon Monoxide concentration measured for all sampling stations did not exceed the standard limit. It must be emphasized, however, that the results are individual measurement during a certain point in time. They should not be considered as a universal condition of the area or process involved.

The KESTREL 5500L was used to determine air movement using a data logger and direct reading. The following wind movement has been detected: coming from the east at Station AQN1, south-west for Stations AQN2 and AQN3 and from south-east for Stations AQN4, AQN6, and AQN9. Furthermore, wind movement at Station AQN5 is from the west, wind movement at Station AQN7 is from the southsouthwest, wind movement at Station AON8 is from the south, and wind movement at Station AON10 is from the west-northwest as indicated in Table 4.1.4.

CONCLUSION

Laboratory Manager

The results of sampling and analysis for the sampling locations demonstrated that the ambient concentrations of NO2, SO2 TSP (Stations 2-10), PM10, Ozone and CO are within the acceptable limits of the standards stipulated in the IRR of the Philippine Clean Air Act. On the other hand, the TSP concentration for station 1 exceeded the standard limit. The Lead (24-hr) are still for further evaluation as there are no existing limits for the specific sampling duration done on the sampling points.

Prepared by: Reviewed by: Marie Angellina P. Barcebal Team Leader (AOMD) OA/OC Manager (AQMD) Noted by: Princes Calvez, RCh

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ATTACHMENT 1

> Computation of Ambient Air Parameters

- Nitrogen Dioxide
- Sulfur Dioxide
- Total Suspended Particulates (TSP)
- Particulate Matter as PM10
- o Lead
- o Ozone

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	on. Flow Rate Standard Volume	Mental Stand	1440 1.218 1617.2 3.10	B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition [Nim3] $V_{mi,ud} := \frac{Q_a \times 298}{T} \times \frac{P_{NL}}{T60} \times I$ b. Po concentration, ug/Nm3 $Pbconc \ \ := \frac{Pbmass}{V_{mi,vd}}.$	
	office Data Venedine Ton	and Saudinec	05-06 Aug 2021 1515H-1515H	Table above	
	Barometric Pressure (Phart	1	100	A. Momentature (Terms are fisted by the order of their appearance in the table above T = ambient temperature, K Phar = baronetric pressure, mm Hg 1 = total sampling time, minutes 1 = total sampling time, minutes 2 = mapped volume corrected to standard conditions, Nm3 Phonon. = Lead concentrations, µg/Nm3 Ca = actual flowrate, m3/min Philippoine Standard Pressure and Temperature Philippoine Standard Pressure and Temperature 2 = Standard ambient temperature, K (155 C + 273) 7 = Standard ambient pressure, mm Hg	
NT PE SAMPLING MATERIALS AMET-ASIS INC.	Ambient Temperature (T)	N J.	100	A. Momentature (Terms are fated by the order of their appearance. The ambient temperature, K. Phare barometric pressure, mm Hg. The total samples throw, minutes The total samples throw, minutes The mass of lead, as Phonon a Lead concentrations, µµ/hm3 Da = actual flowrate, m3/min Philippine Standard Pressure and Temperature, K (225°C) 750 = Standard ambient temperature, K (225°C)	
STANDARGIZED SAMPLE VOLUMES TOR 24-HOUR AMBIENT PE SAMPLING PROJECT NAME: Ambent he Monitoring COMPANY NAME: AMET-Asia inc.	Ontino	300000	AGNIO	A. Moneanclature (Terms an Isted by the T = ambient temperature, K. Pbar = barometric pressure, mm Hg. t = total samples time, minutes t = total samples towner, minutes the samples obtaine corrected to the phone. = Lead concentrations, µg/hm3 Pbone. = Lead concentrations, µg/hm3 Qa = actual flowrete, m3/min Philippine Standard Areasoner and Tempe Philippine Standard Areasoner Areasoner and Tempe Philippine Standard Areasoner Areason	



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	Mass Concentration	ug µg/Ncm	0	ected to standard condition (Nm3) $= \frac{Q_{st} \times \frac{298}{T} \times \frac{P_{rec}}{760} \times t}{V_{rection}}$ $\frac{PM1 \text{Om} as s}{V_{rection}}$	
	Standard Volume	Vmstd, Nim*	1546.8	8. Formulas used in Caculations: a. Total volume of air sampled, corrected to standard condition (Vim3) $V_{minst} = \frac{Q_{ii}}{T} \times \frac{298}{T} \times \frac{P_{last}}{T}$ b. PM10 concentration, $\mu g/mi3$ $PM10conce = \frac{PM10mass}{V_{minst}}$	
	Flow Rate	mi3/min	1.165	a. Formulas us . Total volume	
	Sampling Duration	(rummara)	1440		
	Sampling Time		1515H-1515H		
	Sampling Date		05-06 Aug 2021	in the table above)	
	Barometric Pressure (Pbar)	in. Hg. mmHg.	27.62 701.6	A. Momenchature (Terms are listed by the order of their appearation in the table above) T = ambient temperature, K Phar = barometric pressure, mm Hg r = total servising thus, mitnakes Vm[std] = sampled volume corrected to standard conditions, NonZ PM10 mass = mass of particulate matter 10, µg PM10 canc. = Particulate Matter 10 concentrations, µg/Nm3 Qa = actual flowrate, m3/min Philippine Standard Pressure and Temperature, K (153°C > 273) 760 = Standard ambient temperature, mm Hg 760 = Standard ambient temperature, mm Hg	
RES AMPLING onitoring inc.		×	298.2	ed by the ord Hg cred to stand s matter 10, µ 10 concentra 1 Temperatur n ambient te and strnosphe	
MPLE VOLUM ENT PM10 S nbient Air M AMET-Asia I	Ambient Temperature (T)	p	25.2	erms are list atoms, k ressure, k ressure, mm me, mirustes mm me, mirustes colume correct of particulate Matter dispersional matter and Pressure and 750 = Stand	
STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PAGE SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asis Inc.	Station		ACINIO	A. Momenclature (Terms are listed by the order of their appearance. It is ambient temperature, it is the control of the contro	



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	Conte	TSP		a. Total volume of air sampled, corrected to standard condition (Hm3) $V_{\rm int, naf.}) = \frac{Q_{cl.} \times \frac{298}{T} \times \frac{P_{hb.}}{T \times 760} \times t}{T \times 760} \times t$ b. TS concentration, $\mu g N m 3$ $TSP conc. = \frac{TSP mass}{V_{\nu (anf.)}}$	
		E E	118100	in Calculations: air sampled, corrections: in, and; Out, ing/lm3 TSPconc.	
	Standard Volume	Vmstd, Nm*	1617,2	a. Total volume of air sampled, con $V_{\rm int, rad}$) = $\frac{Q_{\rm ol}}{Q_{\rm ol}}$ (5. TSP concentration, $\mu g N {\rm int}$) = $\frac{Q_{\rm ol}}{TSP CONC.}$	
	Flow Rate	m3/min	1,218	paración s.=40	
	6	(t,minutes)	1440		
	Sampling Date Sampling Time		1515H-1515H	_	
	Sampling Date		05-06 Aug 2021 1515H-1515H	in the Table above	
	(Pbar)	in. Hg. menting	27.62 701.6	ms are leated by the order of their appearance in the saue, if my minds in the saue, in minds it, minutes it, minutes it, minutes connected to standard coorlitions, limit as suspended particulates, ug. norder Particulates, ug. norder Particulates concentrations, ug/Nim3 minkmin and Temperature 288 = Standar ambient temperature, k [25°C + 273] 700 = Standard ambient temperature, min fig.	
	Barometric Prossure (Pbar)	in. He	ш	ure, K. Saute, mm Hg Saute, mm Hg Islandse Another at pandard coodstybus, Hmill all suspended particulates, up eached Particulates, up m3/min m3/min sessore and Temperature 728 = Standar ambient temperature, K (25°C+	
FES VPLING VARDOFING LINC.	Ambient Temperature (T)	*	298.2	Hg cled to stan fed particular control of Temperatur dar ambient dari ambient dari ambient dari atmost	
PLE VOLUMES NT TSP SAMPLIN Bient Air Monitor AMET-Asia inc.	Ami	þ	25.2	turns are less turns, are essure, mm e, minutes obune corres ortal suspend pended Parti , m3/min , ressure and 298 = Stan 760 = Stan	
STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT TSP SAMPLING PROJECT NAME: AMET-ASS INC. COMPANY NAME: AMET-ASS INC.	Station		AQN10	A. Nomenclature (Terms are listed by the order of their appearance in the table above T = ambient temperature, K = T = ambient temperature, K = T = becal sampling tense, imm kg = t = boral sampling tense, intuites = t = boral sampling tense, intuites = TSP mass = mass of total suspended particulates, µg. Yinitid = sampled volume corrected to standard concentrations, µg.Yim3 = TSP conc. = Total Suspended Particulates concentrations, µg.Yim3 = Qa = actual flowards , m3/Min = 2 = actual flowards , m3/Min = 2 = actual flowards m3/Min = 2 = actual flowards m3/Min = 2 = actual flowards = ambient temperature = 7 = 7 = 5 = actual flowards = ambient temperature, K [25°C = 273] = 7 = 5 = actual flowards = ambient temperature, mm fig.	





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mpling Date	Sampling Time	Sampling	How Rate	Standard Volume	Mass 50.	Concentration SO.
		(L,minutes)	Ll/min	Viristd, Nm³	H	Hg/Ncm
06 Aug 2021	05-06 Aug 2021 1515H-1515H	1440	0.2	0.2657	4.78	18.0
Attury, which shall be cross of their apparature in the lable and statury, it is a season, imm. High seasons, imm. High seasons, imm. High seasons, imm. High seasons of the critice, fixed at 0.2 form obtaine consolide, pag. NNm3 on iters to m3. The same and Temperature, it (15.°C + 273) 298 = Standar ambient temperature, it (15.°C + 273) 200 = Standar ambient temperature, it (15.°C + 273)	(ano			A Total volume	me of air sa m(stal) = ntraction, µ	we see in Carcellabores The condition of all samples, corrected to standard condition $V_{m(snd)} = \frac{Q_m}{1,000} \times \frac{298}{T} \times \frac{P_{harr}}{760} \times \frac{P_{harr}}{2000} \times \frac{P_{harr}}{2000$
Station Temperature [T] (Phar) ACANIO 25.2 296.2 27.62 70.16 ASempling Date Sar Animals A Momendature [Terms are listed by the order of their apparature in the table above) 1 = ambient temperature, K Phar = barometric pressure, mm Mg 1 = total sampling time, minute Ga = actual flowrate through the order of their apparature in the table above) 25.2 mass of surfur dioxide ordered to slandard conditions, Nm3 50.2 mass of surfur dioxide, ug 50.2 conc. = suffur dioxide concentrations, ug/Nm3 1,000 = conversion from liter to m3 Philippine Standard afmospheric pressure, mm Hg 260 = Standard atmospheric pressure, mm Hg	W 7	Sampling Time 1515 +1515H	151-1515H	Sampling Flow Rate Duration (Liminufes) 11/min 15H-1515H 1440 0.2	Sampling Flow Rate Duration (Liminufes) Li/min 15H-1515H 1440 0.2	Sampling Time Sampling Flow Rate Volume Volume (Liminautes) Li/min Vimitid, North 15440 0.2 0.2657 3. Total via





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Station Temperature (1) (Phar) Sampling Date San AQN10 25.2 238.2 27.62 701.6 65.05 Aug 2031 35 A. Nomenclature (Terms are fished by the order of their appearance in the table abovin) T = ambient temperature, K. A. Nomenclature (Terms are fished by the order of their appearance in the table abovin) T = ambient temperature, K. A. Nomenclature, K. Vinstel) = sampling time, minute Ga = actual flowrate through the orifice, fixed at 0.2 (pm. Vm34) = sampled volume corrected to standard conditions, Nm3
Tempera "C 25.2 25.2 struck, K es, suruck, mr es, suruck, mr es, suruck, mr common through th olume corr olume
The rate of the ra



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	Mass Cono		0.55	a. Formulas used in Calculations: a. Total volume of air samples, corrected to standard condition (Win3) $V_{int,int',1} = \frac{Q_{ill.}}{T} \times \frac{298}{T} \times \frac{P_{int.}}{T} \times t$ b. O, concentration, $\mu g N m^{+}$ $0_{3} conc. = ("0_{3}" mas)$ $s)/V_{-}(m(std))$
	Flow Rate Standard Volume	m3/min Vmstd, Nm²	1.0 0,434	8. Total volun V(b. 0, concen
	Sampling Duration Flow		480 1.	
			1450H-1450H	
	Sampling Date Sampling Time		04-05 Aug 2021 1450H-1450H	the table above
	Barometric Pressum (Pbar)	In. Hg mmHg	2,789	ms are fixted by the order of their appearance in the tine, K sours, mm Hg. 1, minutes 1, minutes 1, minutes 200, 200, 200, 200, 200, 200, 200, 200,
	Baromet	In. Hg	10:12	rder of their rdard condi- ror tempera ipheric pres
NES PLING onitioning a linc.	Ambient Temperature (T)	*	298.4	od by the o
PLE VOLUMES INT O ₃ SAMPLING bient Air Monitor AMET-Asia inc.	Am	p	25.4	ture, K essure, mm es, minutes obume corre core, 148 coentrations -m3/mm ressure acc 236 = Star 760 = Star
STANDARDZED SAMPLE VOLUMES FOR 24 HOUR AMBIENT D ₅ SAMPLING PROJECT NAME: Ambient & Mondoring COMPANY NAME: AMET-Asia Inc.	Station		AQN9	A. Momenclature (Terms are fixted by the order of their appearance in the table above) T = ambient temperature, X Phar = barometric pressure, mm Hg t = total sampling time, minutes t = total sampling time, minutes G, mass = mass of Datone, µg O, tone. A done concentrations, µg/Nm³ Qa = actual flowrere, m3/mm Philippine Standard Pressure and Temperature 236 = Standard armisent temperature, X (247C + 273) 780 = Standard atmospheric pressure, mm Hg





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	tration	PB Wg/Ncm	0.00468	we in Catouration: of air samples, corrected to standard condition $V_{mind} = \frac{Q_B}{T} \times \frac{298}{T} \times \frac{P_{np}}{760} \times I$ silon, $\mu g N m 3$. Broons: $Pbmass$	
	Concentration	3	000	corrected to start $\frac{R}{2a} \times \frac{298}{T}$ $\frac{Pbmass}{V_{w(md)}}$	
	Mass	2 %	7,40	used in Calculations: The class sampled, corrected to state of air sampled, corrected to state of the sample of	
	Standard Volume	Versita, New	1580.8	B. Formulas used in Calculation: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{mt,sab}:=\frac{Q_n}{T}\times\frac{298}{T}\times\frac{P_{np}}{760}\times I$ b. Pt concentration, $\mu g/\text{Nm3}$ $Pbconc. = \frac{Pbmass}{V_{mt,nd}}$	
	Flow Rate	m3/min	1215		
	Sampling Duration Flow Rate	(Symmotos)	3440		
	Sampling Time		1450H-1450H		
	Sampling Date Sampling Time		04-05 Aug 2021 1450H-1450H	n the tuble above	
	Pressure ar)	mmhte	6875	ns, Non3 ns, Non3 ns, K (22°C, c	
	Barometric Pressure (Pbar)	in. Hg mmHg	10'12	ure, K. saure, mm Hg. scarce of their appearance in the true, k. Limindes L	
S. LING nitoring inc.	Ambient mperature (T)	×	298.4	Hg cted to stand ug/Nm3 1 Temperatun dand ambien sdard atmosp	
VT Pb SAMP itent Air Mo AMET-Asia	Ambient Temperature (T)	þ	25.4	ure, K ssure, mm ! ssure, mm ! reinutes lume correc d, pg trations, pg	
STANDAROZED SAMPLE VOLUMES FOR 24-HOUSE AMBIENT PS SAMPLING PROJECT NAME: Ambient Ar Monitoring COMPANY NAME: AMET-Asia inc.	Station		6NDV	A. Momenclature (Terms are Based by the order of their appearance in the tuble above) T = ambient temperature, K. Plan = baroneric persons, mm Hg. t = torial sampling time, minutes t = torial sampling time, minutes t = torial sampling time, minutes Plan mass = mass of theat, lag. Placenc. = Lead concentrations, ug/Nm3 Da = actual flowrate, milyfind Tiple = stual flowrate, milyfind Tiple = stual flowrate, milyfind Tiple = standard ambient temperature, K (LSC + 273) Tiple = Standard ambient temperature, min Hg.	



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Sampling Date Sampling Time	Sampling Duration (Latinutes)	Flow Rate	Standard Volume	Mass	Concentration
		m3/min	Vmstd, Nm²	Ħ	Ing/Nom
A. Nomendature Terms are listed by the order of their appearance in the table above; T = ambient temperature, K. Pbar = barometric pressure, mm Hg. t = total samplegg time, minutes t = total samplegg time, minutes T = sampleg time, minutes PM10 mass = mass of perticulate matter 10, μg. PM10 conc. = Particulate Matter 10 concentrations, μg/Nm3 Qa = actual flowrate, m3/min PM10 philippine Standard Pressure and Temperature PM10 philippine Standard Pressure and Temperature 218 = Standard atmospheric pressure, mm Hg.		B. Formulas u a. Total volum b. PM10 conce	ed in Calculations:	= Q x	Lo standard condition (Nm3) $\frac{Q_{tt} \times 298}{T} \Rightarrow \frac{P_{tt}}{760} \times I$ (1 Om $\alpha s.s.$
9 6	04-05 Aur 2021 1450H-1450H in the table above)		1450H-1450H	1450H-1450H	1450H-1450H 1440 1.158 1506.6 7 0. Formulas used in Calculation: a. Total volume of air sampled, corrected Protected PART OCORECE PART OC



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Mass Concentration		290200 184	TSPconc. = $\frac{P_{minist}}{P_{minist}}$
Standard Volume		Ħ	a. Total volume of all sampled, corrected to standard condition [Nm3] $V_{mi,mi'l} = \frac{Q_a}{2} \times \frac{298}{T} \times \frac{P_{mi'}}{T60} \times I$ b. TSP concentration, $\mu g Nm3$ $TSP conc = \frac{TSPmass}{V_{mi',mi'l}}$
Flow Rate		1.215	
	(t,minutes)	1440	
		1450H-1450H	
1	Sampling Date Sampling Time	04-05 Aug 2021 1450H-1450H	n the table above)
-			m are listed by the order of their appearance in the soun, in m. Hg. soun, mm. Hg. , minimals , minimals in standard conditions, Mm3 als suspended garticulates, ing may min or and Temperature tessure and Temperature 2558 = Scandar ambient temperature, K (35°C + 273) 760 = Standard atmospheric pressure, mm Mg.
Barometric Pressure	(Pbar)	27.07	m are listed by the order of their appearance soun, in m. Hg. Soun, in m. Hg. Soun, in m. Hg. Sound, in Marians Amounts In suspended particulates, ing Inded Particulates concentrations, pg/Nm3 m3/min Essure and Temperature 238 = Scandard amnishmit pressure, mm Mg.
Ambient	Temperature (T)	298.4	Hg Hg cled to stan led particul culates con Temperatu dar ambient
Am	Temper	25.4	ture, K essure, mm es, minutes es, minutes odal suspend odal suspend odal viscore odal suspend odal viscore odal suspend o
300	Station	6ADV	A. Nomenclature (Terms are listed by the order of their appearance in the table above) T = ambient tamperature, K. Place = baroanchic pressure, mm Hg T = total sampling time, minorance in the table above in the table as the sample of when corrected to standard conditions, Mm3 TSP mass = mass of total suspended particulates, up TSP conc. = Total Suspended Particulates concentrations, µg/Nm3 CD = actual flowrate, ms/min Philippine Standard Pressure and Temperature Philippine Standard Pressure and Temperature is the standard atmospheric pressure, mm Mg 700 = Standard atmospheric pressure, mm Mg





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Temperature (1) (Pber) Sampling Date "C K in. Hg mmHg 25.4 238.4 27.07 687.5 04-05 Aug 2021 strate latted by the corder of their measurement in the takes at		Sampline	Flow Bate	Standard	Mass	Concentration
27.07 687.5	te Sempling Time	_		Volume	NO	NO,
.4 298.4 27.07 687.5 04-05 Aug 20 are beted by the corder of their assessment in the table	The state of the s	(t,minutes)		Vmstd, Nm³	22	mg/Ncm
ire listed by the order of their assessment in the tab	04-05-Aug 2021 1450H-1450H	1440	0.7	0.2602	1.63	6.25
T = ambient temperature, if. Phar = barometric pressure, mm Hg t = stocks ampling time, minute t = actual flowarise through the orifice, fixed at 0.2 jpm Wm[std] = sampled volume corrected to standard conditions, Mm3 ND2 mass = mass of nitrogen dioxide correntrations, µg/Nm3 1,000 = connension from lifers to m3 Philippine Scandard Pressure and Temperature 298 = Standar ambient temperature, if (25°C + 273)	e above)			L Total valume L Total valume L NO2 concent	B. Formulas used in Calculations: a. Total volume of alt sampled, on $V_{mi,sod} = \begin{cases} V_{mi,sod} \\ V_{mi} \end{cases}$ b. MO3 concentration, $V_{mi,sod} = \begin{cases} V_{mi,sod} \\ V_{mi,sod} \end{cases}$	b. NO2 concentration, $\mu e^{NO_3} = \frac{Q_{\rm ol}}{1,000} \times \frac{298}{T} \times \frac{P_{\rm out}}{760} \times t$ b. NO2 concentration, $\mu e^{Nm3} = \frac{NO_3 m \cos s}{V_{\rm out}\cos s}$



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	177	t	6.10	A. Total volume of air sempled, corrected to standard condition (Mm3) $V_{m(red)} = \frac{Q_w}{T} \times \frac{298}{T} \times \frac{P_{N_w}}{T} \times t$ to 0, consentration, y_B/Mm^3 $O_3 concentration, y_B/Mm^3$ $S)/V(m(std))$
	Flow Rate Standard Volume	swiftmen Umetel Non-		h. Fermula a. Tecni vos V., b. O, conce O ₃ C
	50	(L,minutes)	480	
			1300H-1300H	
	Sampling Date Sampling Time		01-02 Aug 2021 1300H-1300H	if the table above
	Barometric Pressure (Pbart)	mmhte	687.3	ms are listed by the order of their appearance in the secret, mm Hig secret, mm Hig secret, mm Hig Lune corrected to standard conditions, Mmis 100, 100 m3/min wssure and Temperature 238 = Standard ambient temperature, K (25°C + 273) 760 = Standard ambient personne, mm Hig
	Sarometr (PI	1	27.06	der of their dard conditi re t temperat
ES PLING pritoring rinc.	Ambient Temperature (T)	×	300.6	nd by the on Hg Leg/Nm* Temperatur Temperatur
PLE VOLUM NT O, SAMI bient Air Mc AMET-Asia	Ami	y	37.6	ure, K ure, K ure, K ure, K ure, K ure, R ure correl ur
STANDARIOZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT O ₅ SAMPLING PROJECT RAMBE. Ambient Am Monitoring COMFANY NAME: AMET-AGB Inc.	Station		AQN8	A. Momendature Trains are listed by the order of their appraisable in the trible above. T = ambient temperature, X. Plan = barometric pressure, mm High t = total sampling time, minutes Vm(stri) = sampled volume corrected to standard conditions, Nm3 O ₄ mass = mass of Danie, µg. O ₅ conc. — Stone concentrations, µg/Nm³ Qa = actual flowrate, m3/min Philippine Standard Pressure and Temperature 296 = Standard armospheric pressure, mm Hight 780 = Standard armospheric pressure, mm Hight



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Annihent (Darometric Pressule) Temperature (T) (Phart) (Phart) Sampling Time (Liminutes) Temperature (T) (Phart) (Phart) Temperature (T) (Phart) (Phart) Temperature (T) (Phart) (Phart) Temperature (T) (Phart) (Phart) (Phart) Temperature (T) (Phart) (Phart) (Phart) (Phart) (Phart) (Phart) (Phart) Temperature (T) (Phart) (Phar	E	PROJECT NAME: Anthent Air Monitoring COMPANY NAME: AMET-Asia Inc.							
300.6 27.06 687-3 01-02 Aug 2021 1300H-1300H 1440 1.223 y the order of their appearance in the Table above) to standard conditions, Num3 m3 sperature ambient temperature, K (15°C 4.273) samospheric pressure, mm fig.	an w	Barometric Pressuler (Pbar) In. Mg mmHg	ampting Date	-	Sampling Duration (Liminates)	Flow Rate m3/min	Standard Volume Versid, Nert	Mass Pb 84	Concentration Pb µg/Ncm
standard conditions, Nunii reture them temperature, X (20°C + 273) mospheric pressure, mm ½	00 1	0.6 27.06 6873 0. he order of their appearance in 1.	1-02 Aug 2021 the table above)	1300H-1300H	1440		1578.8 Formulas used in Ca	3.40 iculations:	0.00215
	T = ambient temperature, X Paar = barometric pressure, mm Hg T = votal sameding turn, emindes T = votal sameding turn, emindes Per mass = mass of lead, µg Phoone, = Lead correctestions, µg/hm3 Ca = actual flowrate and famp Philippine Samdard Pressure and Temp Philippine Samdard and Pressure and Temp TBD = Standard at	standard conditions, Nm3 senture mbient temperature, K (35°C + 2 tmospheric pressure, mm kg	(5.3)				Pb concentration, in	w) = 0.00	rected to stands L × 7 × 7 Pbmass V = (and)



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100	Mass Concentration	-	100200 63.5	a. Total volume of air campled, corrected to standard condition (Nm3) $V_{mi,sul} = \frac{Q_u}{T} \times \frac{298}{T} \times \frac{P_{mi}}{760} \times t$ b. TSP concentration, lightwid $TSP conc. = \frac{TSPmasss}{V_{mi,sul}}$	
	Standard Volume	Versitd, New	1578.8	a. Total veloces of all sampled, cor $V_{me, aut} = \frac{Q_{c}}{Q_{c}}$ b. TSP concentration, jeg/km3	
	Flow Rate	m3/mm	1.223	and def	
	Sampling Duration Flow Rate	-	1440		
	Sampling Time		1300H-1300H		
	Sampling Date Sampling Time		01-02 Aug 2021 1300H-1300H	n the table atoms	
Hatemarke Process	Barometric Pressure (Pbar)	In. Hg mmHg	27.06 687.3	rms are listed by the order of their appearance in the table above buse, K source, men Hg e, influence e, influence e, influence e, influence frail suspended particulates, jug m3/m13 m3/m13 m3/m13 m3/m14 zesur and Temperature 298 = Standard atmospheric pressure, men Hg 75G = Standard atmospheric pressure, mm Hg	
56		×	300.6	if by the certification test to standa ed particular unlates concernations temperature for ambient to and atmosphilarian authorities.	
NT TSP SAMPLIN bient Air Monitor AMET-Asia Inc.	Ambient Temperature (T)	y	27.5	ture, K essure, mm E essure, mm E essure, mm E es minutes alume correct correct correct m3/min ressure and 258 = Stand 750 = Stand	
FOR 24-HOUR AMBIENT TSP SAMPLING PROJECT NAME: Ambient All Monitoring COMPANY NAME: AMET-Asia Inc.	Station		AQNS	A. Nomenclature (Terms are listed by the order of their appearant T = ambient temperature, X. Plat = between temperature, X. Plat = between temperature, X. Plat = between temperature, X. Plat = sampled volume corrected to standard conditions, Nm. 15th mass = mass of total suspended particulates, pg. 15th conc. = Total Suspended Particulates concentrations, pg/Nm3 Qa = actual flowrate, m3/min Philippine Standard Pressure and Temperature 298 = Standard atmospheric pressure, X. (25° 176) = Standard atmospheric pressure, man	





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Concentration SO.
Hg/Ncm
c12.9
8. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{w(ztut)} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{half}}{760} \times I$ b. SO2 concentration, $\mu g/hm3$ SO ₂ cont.c. = $\frac{SO_2 mass}{V_{w(zhit)}}$





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Ambient Station Temperature (T)									
	Barometric (Pba	Barometric Pressure (Pbar)	Consilion Pate	Committee of the	Sampling	Flow Rate	Standard	Mass	Concentration NO ₃
	In. Hg	a-mm	Samping Date	Mundurer Mundurer	(t,minutes)	Li/min	Vmstd, Nm*	22	Mg/Ncm
AQN8 27.6	50'22	687.1	01-02 Aug 2021	1300H-1300H	1440	0.2	0.2582	1.258	4.91
A. Nomenclature Terms are listed by the order of their T = ambient temperature, K. Paus = barchettic pressure, mm Hg I = votal sampling time, minute orfice, fixed at 0.2 jpm Ga = actual flowrate through the orfice, fixed at 0.2 jpm Vmiktal = sampled volume corrected to standard conditis NOZ mass = mass of nitragen dioxide, ug NOZ conc. = nitrogen dioxide, ug NOZ conc. = nitrogen dioxide, ug NOZ conc. = nitrogen dioxide sancentrations, ug/Nm3 1,000 = correction from filers to m3 Philippine Standard Pressure and Temperature, 750 = Standard anthem temperature, 750 = Standard atmospheric pressure	order of the sed at 0.2 ip andard cons rs, µg/Nm3 ture t temperatu	m Boni, No Boni, No Ce, K (25)	ince in the table at its (+ 275) 44	Cana			B. Formulas use a. Total volume b. MO2 concent	d in Calculable of air sampled $V_{m(sud)} = V_{m(sud)}$	in calculations: also sampled, corrected to standard condition (bin with with $\frac{Q_0}{1,000} \times \frac{298}{T} \times \frac{P_{har}}{760} \times 1$ (ion, $\mu g / hm 3$). NO2-correct $\frac{NO_2 / m asks}{V_{matrixt}}$
		in. Hg 27.06 crder of the crder of the andard cond sture it temperatu pheric press	in. Hg mmHg 27.06 687. order of their appears ead at 0.2 lpm andard conditions, Nn andard conditions, Nn ature at temperature, K (35% opheric pressure, mm 3	Station Temperature (T) (Pbar) Sampling Date AGN8 27.5 300.6 1n. Hg mmHr A Nomenclature Terms are listed by the order of their apparame in the table ab T = ambient temperature, mm Hg T + total sampling time, minute Cp = actual flowrate through the orflice, fixed at 0.2 fpm Wolfside = sampled volume corrected to standard conditions, Nm3 NOZ mass = mass of introgen disoide, up, Nm3 1,000 = correction from Rens to m3 2,000 = correction from Rens to m3 Thillippine Standard Pressure and Temperature, K (\$500 + 275) 760 = Standar ambient temperature, K (\$500 + 275)	ampling Date 1-02 Aug 2021 e in the table abo	тие Тие 100H-1300H	mpling Time Duration (Li/min (Li/min 1300H 1300H 1300H 1300H 10.2	mpling Time Duration (Li/min (Li/min 1300H 1300H 1300H 1300H 10.2	mpling Time Simpling Food Nate Volume (I,minutes) Li/min Vmstd, Nm² (I,minutes) 0.2 0.2582 (I,minutes) 1.440 0.2 0.2 0.2582 (I,minutes) 1.5482 (I,minutes) 1.5482 (I,minutes) 1.5482 (I,minutes) 1.5482 (I,minutes) 1.5482



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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	Cemo	ing heg/hem	Н	what used in Calculations: volume of six sampled, corrected to standard cond volume of six sampled, corrected to standard cond $V_{accent_1} = \frac{Q_{u_1}}{Q_{u_1}} \times \frac{298}{T} \times \frac{P_{Bec}}{760} \times t$ incontrastion, $yg \ Nm^3$. Mas : $\frac{1}{3}CODC. = \binom{10}{3} \ mas$	
	Standard Volume	Vmstd, Ner	0.438 <	a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{avt, out}, = \frac{Q_{u_1}}{T} \times \frac{298}{T} \times \frac{P_{me}}{760} \times t$ b. O, concentration, yg/hm^3 $O_3CODC, = (^{10}O_3 \text{ " } mas$ $s)/V_{-}(m(std))$	
	Flow Rate	m3/mm	3.0		
	5	(Casantes)	480		
	ampling Time		1410H-1410H		
	Sampling Date Sampling Time		03-04 Aug 2021 1410H-1410H	the table above) 2733	
		milig		A Mental	
	Barometric Pressure (Pbar)	In. Hg		ms are fisted by the order of their appearance in the saure, mm lig. I, minutes I, minu	
S UNG Vitoring Inc.		*	138.1	ted to stand learnerston femperatum and ambient and atmostal	
PLE VOCUME NT O ₃ SAMP: pient Air Mor AMET-Asia	Ambient Temperature (T)	y	25.1	mus are listen fure. K assure, mm i assure and assure and assure and 258 s Stand 256 - Stand 256 - Stand	
STANDARDZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT O, SAMPLING PROJECT NAME: Ambient All Montroling COMPANY NAME: AMET-Asia Inc.	Station	0.2062503	AGN7	A. Nomenclature (Terms are listed by the order of their appearance in the table above) T = ambeint temperature, K Phar = barometric pressure, mm ligs t = todel sampling time, mistakes L = todel sampling time, mistakes Os. mass = mass of Ozove, lig Os. conc. = Ozove concentrations, lig/Nom* Qa = actual flowrate, m3/min Philippine Standard Pressure and Temperature 298 × Standard ambient temperature, K (25°C + 273) 760 = Standard ambient pressure, man Hg	



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	Sampling Duration Flow Rate Standard Volume	(Liminates) mil/min Vensid, Amil	1440 1,224 1607.7 5.00	a. Total volume of an sampled, corrected to standard candition (Hm3) $V_{\rm int,inf} := \frac{Q_a \times 298}{T} \times \frac{P_{\rm int}}{760} \times F$ b. Pb concentration, jag/Nm3 $Pbconc = \frac{Pbmass}{V_{\rm int,inf}}$
	Committee Date Cameline Time		03-04 Aug 2021 1410H-1410H	In the table above) + 273)
	Barometric Pressure	in He mode	27.30 691.4	me are listed by the order of their appearance is sture, mm Hg sture, mm Hg sturites unic corrected to standard conditions, Mn3 4, Hg m3/mn m4/mn m4/m
AT PS SAMPLING sent Air Monitoring AMET-Asis inc.	Ambient Temperature (T)	¥	~	A. Normandature (Terms are listed by the order of their appearance in the table above) T = antisent temperature, K. Plar = barometric pressure, mm Hg. F = total sempling time, reintering times = mass of lead, jug. Pb mass = mass of lead, jug. Qa = actual filowrate, m3/mm3 Qa = actual filowrate, m3/mm3 Da = actual filowrate, m3/mm3 TRO = Standard ambient temperature, K. [317C + 273) TRO = Standard ambient pressure, mm Hg.
TOR 24-HOUR AMBIENT PS SAMPLING PROJECT NAME: Ambient Air Monitoring CONPANY NAME: AMET-NIS INC.	Oselos	Transcon.	AQN?	A. Nomentalature (Terms are fished by the T = ambient temperature, K. Phar = baroneris; pressure, mm Hg. Le total sampling time, refuntes Versing) = sampled volume corrected to Pb. mass = mass of lead, µg. Pb.core. = Lead concentrations, µg/hm3 Qa = actual flowrate, will //min Philippine Standard Pressure and Tempe Philippine Standard Pressure and Tempe 780 = Standard an





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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Concestration	H	00 10.8	B. Formulas used in Calculations: a. Total volume of all sampled, corrected to standard condition (Nm3) $V_{mic,ml} = \frac{Q_{ii}}{T} \times \frac{298}{T} \times \frac{P_{mic}}{T^{60}} \times I$ b. PM10 concentration, $\mu g Nm3$ $PM10 concentration, \mu g Nm3$
Mass	PM10	16500	1 MA
Standard Volume		Vimstd, Nm* 1532.8	B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard co. $V_{mind} = \frac{Q_{ii}}{29} \times \frac{29}{7}$ b. PM10 concentration, jug/Nm3 a. $PM10 conc = \frac{PM10 mass}{V_{mind}}$
FiGww Rate	-	m3/min 1.167	Formulas o
Sampling Duration	(t,minutes)	1440	
	Sampting Time	1410H-1430H	
	Sampling Date	03-04 Aug 2021 1410H-1410H	in the table above
anessau		mmHg 693.4	70, Mrt. 3 7, mrt. 4g. 7, mrt.
Barometric Pressure	(Pbar)	In. Hg 27,30	ature, K resove, mm Hg resover, mm Hg
RES AMPLING onitoring inc.	tture (T)	7 K	Hg Hg Li concert Temperati ar ambient and atmosp
STAMONADGED SAMPLE VOCUMES FOR 24-HOUR AMBERT PATIO SAMPLING PROJECT NAME: Ambient Air Manitoring COMPANY NAME: Ametivasia linc. Ambient	Temperature (T)	28.1	ature, K ressure, m ressure, m ressure, mm resure, mm resure, mm resure, ma r
STANDARDZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PAJO SAMPLING PROJECT PAMEL : Amblest Air Montloring COMPANY NAME : AMET-Aga Inc.	Station	ADN7	A. Nomenclature (Terms are listed by the order of their appearance in the table above) T. * ambient temperature, K. Pibe – bardnell's pressure, mm Hg. F = total sampling time, mishale time, mishale time, mishale time, mishale ambient sampled wolume corrected to standard conditions, Mm3. PM10 mass = mass of particulate matter 10, pg. PM10 conc Particulate Matter 10 concentrations, pg/Nm3 Qa = actual flowrate , m3/mm and Temperature PM10 conc Particulate ambient temperature, K (25/C + 273) 750 = Standard atmospheric pressure, mm/Hg.





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	NO	2	
	Sampling Time		1410H-1410H
	Sampling Date		69 4 03-04 Aug 2021 1410H-1410H
	Pressure ar)	Mr. 4g	6914
	Barometric P. (Pbar)	In. Hg	27,30
MPLING fonitoring inc.	Ambient Temperature (T)	×	298.1
mbient Air N AMET-Asia	Amb	ų	25.1
FOR 24-HOUR AMBIENT SOS SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc.	Station		AQN7

A. Nomanclature (Terms are listed by the order of their appearance in the table above)	B. Formulas used in (
T = ambient temperatum, K	a. Total volume of air
Pbar = barometric pressure, mm Mg	3
t = total sampling time, minute	(partin)
Qa = actual flowrate through the orifice, fixed at 0.2 fpm	
Vm(std) = sampled volume corrected to standard conditions, Nm3	b, 502 concentration
502 mass = mass of surfur dioxide, pg	S
SO2 conc. = sulfur dioxide concentrations, µg/Nm3	20,00
1,000 = corversion from liters to m3	
Philippine Standard Pressure and Temperature	
208 = Standar ambient termoerature, NICHSTC + 2731	





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Commelline Date	Carmeline Time	Sampling	Flow Rate	Standard Volume	Mass NO,	Concentration NO ₁
Standards	Same Same	(L'minutes)	Li/min	Vmstd, Nm ³	BH.	mg/Ncm
03-04 Aug 2021	1410H-1410H	1440	0.2	0,2627	1.482	35.5
3 3 3 4 273)	(and			B. Formulas use	d in Calculation V in (cod.) = allon, jug/hrin. NOs.c.co	of air Calculations: of air sampled, corrected to standard condition (in $V_{m(x)(d)} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{hor}}{760} \times I$ alton, $\mu g/h m 3$ $NO_3 come, = \frac{NO_2 m a N N}{V_{m(x)(d)}}$
A. Nomenclature (Terms are listed by the order of their appears to ambient temperature, K. Plas = barometric pressure, mm Hg. 1 = stotal sampling three, mirrude Qa = actual flowrate through the orifice, fixed at 0.2 fpm QB = actual flowrate through the orifice, fixed at 0.2 fpm CMS mass = mass of nitrogen dioxide concentrations, µg/Nm3 1,000 = conversion from liters to ma Philippine Standard Pressure and Temperature 238 = Standard ambient temperature, ½ (23°C 760 = Standard atmospheric pressure, mm M	ature, K. ature, K. ressure, mm Me resture, mm Me ressure, mm Me ressure, mm Me ressure, mm Me ressure active cellice, fixed at 0.2 kpm resture, mm Me resture, mm Me resture, mm Me resture active cellice, yellices, wellices, wellices concentrations, yellices concentrations, yellices and democratice and Temperature Pressure and Temperature Pressure and Temperature 760 = Standard annospheric pressure, mm Me	A. Nomenclature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, K. Plear = barometric pressure, mm Mg. 1 = stolal sampling time, minute 1 = stolal sampling time, minute Qa = stoual forware through the ordice, fixed at 0.2 fpm Vmistal = sampled volume convected to standard conditions, Nm3 NOZ conc. = nitrogen dioxide conventrations, µg/Nm3 1,000 = conversion from iters to m3 Philippine Standard Pressure and Temperature Philippine Standard Pressure and Temperature 2364 = Standard ambient temperature, N (23°C + 273) 756 = Standard atmospheric pressure, mm Mg.	let of their appearance in the table above) at 0.2 kpm fard conditions, Nm3 ug/Nm3 e e mperature, k (25°C+273)			8. Formulas use a. Total volume b. MO2 concents
	GB-Ost Aug. 2021 ce in the table ab + 273)	Sempling Date Sempling Times murthig 653 4 G3-O4 Aug 3021 1410H-1410H appearance in the table above) nites, Nm3 are, mm 4 K2=C+223)	10H-1410H	10H-1410H 1440 0.2	10H-1410H 1440 0.2	10H-1410H 1440 0.2



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Annexes



STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PM10 SAMPLING PROJECT NAME: Amblent Air Monitoring

COMPANY NAME: AMET-ASIS

Station	Temper	Ambient Temperature (T)	Barometric Press (Pbar)	3	Sampling Date	Sampling Date Sampling Time	Sampling Duration Flow Rate Standard Volume (Luminutes)	Flow Rate	Standard Volum
	y		In Hg	mmile		te mmle		m3/min	Vmstd, Nm ⁴
ACM6	26.7	26.7 299.7	27,79	305	02-03 Aug 2021	1330H-1330H	1440	1167	1551.2

Station	Temper	Ambient Temperature (T)	Barometra (P)	har)	Sampling Date	Sampling Time	Ambient Burometric Pressure sampling Date Sampling Time Sampling Duration Flow Rate Standard Volume (Luminutes)	Flow Rate	Standard Volume	Mass Concer PM10 PA	Conce
	ų	*	K In Hg mmHg	mmMg				m3/min	Vmstd, Nm ⁴	811	780
ACINE	26.7	299.7	27,79	305	26.7 299.7 27.79 705.0 02.03 Aug 2021 1330H-1330H	1330H-1330H	1440	1167		46600	m
A. Nomendature T = ambient temps	(Terms are is reature, K	and by the o	erder of the	n appealment	. Nomenclature (Terms are listed by the order of their appearance in the table above = ambient temperature, X	7		E. Formulas u a. Total volum	sed in Calculations. se of air sampled, corrected to standard cond	cted to stand	Sand conc
Plan = barometric pressure, mm t = total sampling time, minutes	pressure, mm Hg time, minutes	a Hg		- 1					7	20° × 298	298

PMI Omass PMI Oconc= b. PM10 concentration, µg/Nm3

Philippine Standard Pressure and Temperature 258 = Standar ambient temperature, K (25/C + 273) 750 = Standard atmospheric pressure, mm Ng

Vm(std) = sampled volume corrected to standard conditions, PM18 conc. - Particulate Matter 10 concentrations, µg/Nm3 PM10 mass = mass of particulate matter 10, µg.





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Annexes



02-03 Auf 2021 Sampling Date Barometric Press (Pbar) 27.79 ď É PROJECT NAME: Ambient Air Monitoring 799.7 FOR 24-HOUR AMBIENT SOZ SAMPLING Temperature (T) Ambient STANDARDIZED SAMPLE VOLUMES COMPANY NAME: AMET-Asia 26.7 ¥

B. Formulas used in Calculations: arance in the table above)

A. Nomendature (Terms are listed by the order of their ap

Phar = barometric pressure, mm Hg

t = total sampling time, minute

Qa = actual flowrate through the orifice, fixed at 0.2 lpm Vm(std) = sampled volume corrected to standard conditi

SO2 conc. * sulfur dioxide concentrations, µg/Nm3

SO2 mass = mass of sulfur dioxide, µg 1,000 = conversion from iters to m3

a. Total volume of air sampled, corrected to standard condition [Nm3] SO, mass 1,000 b. SO2 concentration, µg/Nm3 V weard) = -

SO2conc. -

502

Flow Rate

L/min

1440

1330H-1330H

298 = Standar ambient temperature, il (25°C + 273) 760 = Standard atmospheric pressure, imm Hg Philippine Standard Pressure and Temperature



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	Flow Rate Standard Volume Mass Conc	milymin Vmetid, New? µg µg/Ncm	1,223 1625.6 96300	8. Formular used in Calculations: a. Total volume of air samplest, corrected to standard condition (Nm3) $V_{int,ind.}_{int.} = \frac{Q_{in.}}{Q_{in.}} \times \frac{298}{T} \times \frac{P_{inc.}}{760} \times t$ b. TSP concentration, $u_0 Nm_3$ $TSP Conc. = \frac{TSP mass}{V_{int,ind.}_{int.}}$
	18	(L,minutes)	1330H-1330H 1440	
	Sampling Date Sampling Time	X	02-03 Aug 2021 1330H-1330H	e in the table above) + 2733
	Barometric Pressure (Ptar)	in. Hg. mmHg.	•	er of their appearance and conditions, Neval entrations, pat/lini3 e temperature, K (25°C: heric pressure, mm M
PLE VOLUMES NT TSP SAMPLING biect Air Manilloring AMET-Asia	Ambient Temperature (T)	×	26.7 299.7	A. Momenclature [Terms are listed by the order of their appearance in the table above; T = ambient temperature, K. Plan = barometric pressure, mm Hg. Plan = barometric pressure, mm Hg. Plan = barometric pressure, mm Hg. TSP mass = mass of totals superied anticulater, Hg. TSP mass = mass of totals superied particulater, Hg. TSP-conc. = Total superied Particulaters, concentrations, µg/Nm3 TSP-conc. = Total Superied Particulaters concentrations, µg/Nm3 TSP-conc. = Total Superied Particulaters concentrations, µg/Nm3 TSP-concentrations pressure and Temperature Philippine Standard Pressure and Temperature TSS = Standard atmospheric pressure, mm Hg.
STANDARDIZED SAMPLE VOLUNIES FOR 24-10UR AMBIENT TSP SAMPLING PROJECT NAME: Ambient Air Manitaring COMPANY NAME: AMET-Asis	Station		AQN6	A. Nomendature (Torms are litted T = ambient temperature, K. Flax = barometric pressure, mm. Flax = barometric pressure, mm. Flax = sample volume correct TSP mass = mass of total suspend TSP conc. = Total suspende Partic Ga = actual flowrate, m3/min Philippine Standard Pressure and Philippine Standard Pressure and 760 = Stan





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50000000	
Mass NO,	Concentration NO ₂
Vinstd, Nim³	wg/Ncm
1.20	4.50
we of all sampled, correctly $V_{w(snd)} = \frac{Q_g}{1,000}$ softration, $\mu_0 Nm3$	all sampled, corrected to standard condition (N includ) = $\frac{Q_0}{1,000} \times \frac{298}{T} \times \frac{P_{ML}}{760} \times t$ (Sort, Jeg/Nm3 $\times NO_2 conc. = \frac{NO_2 mass}{V_{mickel}}$
a, Total value b. MOZ conc	a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{\rm MCM1} = \frac{Q_{\rm st}}{1,000} \times \frac{298}{T} \times \frac{P_{\rm MC}}{760} \times t$ b. MD2 concentration, $\mu_{\rm g}/M$ m3 $NO_{\rm S}conc. = \frac{NO_{\rm S}masss}{V_{\rm mc} \sin n}$
	Standard Mass O Volume Vonsti, Nim ³ B. Formulas used in Calculations: a. Total volume of air sampled, cor P. W. Can Concentration, pg/Nim 3 NO2 concentration, pg/Nim 3





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STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PE SAMPLING PROJECT NAME. Ambient An Monitoring COMPANY NAME. AMET-Maja Inc.	Ambient Station Temperature (1)		2	A. Momeoclature (Terms are listed by the order of their agreemance in the table above) T = another it temperature, K. Phar = barometric pressure, mm Mg t = total sampling thme, minutes Vinjard) = sampled volume corrected to standard conditions, Mm3 Phonos. = associated volume corrected to standard conditions, Mm3 Phonos. = Lead concentrations, Hg/Mm3 Ca = actual flowrate, m3/mm Table = school another temperature, K_125*C + 273) Fillippine Standard Pressure and Temperature Fillippine Standard Pressure and ambient temperature, K_125*C + 273)
	Barometric Pressure (Pbar)	in. He mmHe		to listed by the order of their appearance, man Hg uster corrected to standard conditions, him3 ons, ug/Nen3 on of temperature - Standard ambient temperature, K, 125°C - Standard atmospheric pressure, minn Hg
	Sampling Date Sampling Time		11 Jul-01 Aug 702: 1200H-1200H	in the table abow) + 273)
		0	200H-1200H	
	Sampling Duration	(t,minutes)	1440	
	Flow Rate	m3/min	1.222	B &
	Standard Volume	Vmstd, Nm²	1626.1	B. Formulas used in Calculations: a. Total vislame of air sampled, corrected to standard condition (MmS) $V_{ant aud}, s = \frac{Q_{w}}{V} \times \frac{298}{T} \times \frac{P_{hrr}}{760} \times t$ b. Pb concentration, μ_{0} /Nm3 $Pbconc = \frac{Pbmass}{V_{m (aud)}}$
		2 1	230	ared in Calculations: we of air sampled, corr Version 1 = Out Patrion, pg/Nm3 Pbconc , = I
	Concentration	Pa HIL/Nom	0.00141	of air calculations: of air sampled, corrected to standard condition $V_{\rm int, tod, 1} = \frac{Q_{\rm int}}{T} \times \frac{298}{T} \times \frac{P_{\rm int}}{760} \times tion, \mu_{\rm g}/{\rm Nim}3$ $P_{\rm conc}$, $= \frac{Pbmass}{V_{\rm int, tod, 1}}$



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Omestric Pressure Sampling Date Sampling Time (Chinutes) (Child Time (Chinutes)	
1460 12021 1200H-1200H 1460	Mass Concentration
17.76 776.2 31.04-01.4ug 2021 1200H-1200H 14400 of their appearance in the Table above of Conditions, Nima one, rug/Nm3 perature, K (25°C+2723)	H
of their appearance in the Table above) d conditions, Nim3 one, µg/Nm3 perature, K (25°C + 273)	
Cold and the contract of the c	8. Formulas used in Calculations: 8. Total volume of air sampled, corrected to standard condition (Mm3) $V_{minMJ} = \frac{Q_{10} \times 298}{T} \times \frac{P_{NS}}{T} \times 760$ b. PM10 concentration, $\mu\mu Nmil$ $PM1 0con \bar{\omega} = \frac{PM1 \mathrm{Um} ass}{V_{minMJ}}$
	(PRO)
	Massa 22900 2900 2900 MI Up





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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theest Barometric Pressure (T) (Pban)	Sampling Time Sampling Duration Flow Rate Standard Volume		1626.1 4	B. Formulas used in Calcutations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{sect adr} = \frac{Q_{al} \times 298 \times P_{hir}}{T \times 760} \times t$ b. TSP concentration, $\mu g/Nm3$ $TSP conc. = \frac{TSP mass}{V_{relation}}$
Ambient Temperature (T) 1	Tax			of their appearance in the table in or conditions, Nimb estations, ing/Nimb emperature, K (23°C+273) ent pressure, membrile
■ 整元 無 製 元 W 編 展	-25	H	298.2	A Nomenclature (Terms are listed by the order T = smblest, temperature, K. Plae = becometric pressure, mm Hig. 1 = total sampling time, minutes 1 = total sampling time, minutes TSP concerted to standard TSP mass = mass of total suspended particulates concern TSP concern Total Suspended Persional TSP = actual Howrite, m3/min Philippine Standard Pressure and Temperature TSS = Standard aimosphie





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Standard Mass Concentra Volume 50, 50,	Concentration SO ₂
	ug/Ncm
1.194 <12.6	c12.6
b. 502 concentration, $\frac{Q_{ii}}{1,000} \times \frac{298}{T} \times \frac{298}{1,000} \times \frac{298}{T} \times \frac{298}{1,000} \times \frac{298}{T} \times \frac{298}{1,000} \times$	$\frac{Q_{\rm in}}{\sqrt{0000}} \times \frac{298}{T} \times \frac{P_{\rm inter}}{760} \times \frac{298}{T} \times \frac{P_{\rm inter}}{760} \times \frac{298}{T} \times \frac{P_{\rm inter}}{T} \times \frac{1}{T} \times \frac{P_{\rm inter}}{T} \times \frac$
Vmsted, 199, 199, 12.56 0.256.1 1.194 c.12.6 B. Formvales used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{met,nd} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{met}}{760} \times t$ b. 502 concentration, $\mu g/Nm3$ $SO_2 conce} = \frac{SO_2 mutax}{V_{met,nd}}$	1 - 8 ·



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	g Flow Rate Standard Mass Concentration NO ₂ NO ₃ NO ₃	Li/min Vmstd, Nm* µg µ	0.2 0.2661 1.339	8. Formulas used in Cakulustons: a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m(ANG)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{mir}}{760} \times I_{DOS}$ b. ND2 concentration, μ_b Nm3 $NO_2 conce. = \frac{NO_2 means}{V_{min}}$
	-	Sampling time usinates)	1200H-12D0H 1440	
	1	anan Sunduse	311uf-01 Aug 2023	A Momenclature (Terms are listed by the order of their appleanance in the table above) T = ambient temperature, K Pbar = barometric pressure, mm Hg Fbar = barometric pressure, mm Hg Fbar = barometric pressure, mm Hg Fr = total sampling time, minute Q = actual flowaria through the orifice, fixed at Q.2 lpm Vm(std) = sampled volume corrected to standard conditions, Nm3 Vm(std) = sampled volume corrected to standard conditions, Nm3 Vm(std) = sampled volume corrected to standard conditions, Nm3 NOZ mass = miss set introgen dioxide, pg NOZ conc. = nitrogen dioxide concentrations, ug/Nm3 1,000 = correction from items to m3 Philippine Standard Persoura and Personarue Philippine Standard Temperature, K (\$5°C + 273) 780 = Standard atmospheric pressure, mm Hg
	Barometric Pressure (Pbar)	mmile	7.05.2	restart, mm Hg **A manufacture, M **Tressure, mm Hg **A minute **A minute **Chrough the orifice, fixed at 0.2 lpm olime corrected to standard conditions, Nm3 nitrogen dioxide, µg **Tressure and Temperature **Tressure
	Baro	in. He	27.75	e order of t fixed at 0.2 standard co t clons, ug/Nn rrature ant tempera
JIMES SAMPLING Monitoring to Inc.	Ambient Temperature (T)	*	299.2	inted by the num High expendition, the conflicts, the concentration may and Tempe and a modern ambiendand attractions.
STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT NOS SAMP PROJECT NAME: Ambient Air Monit CDAPANY MAME: AMET-Asia Inc.	An	y	26.2	Treams are pressure, K pressure, K time, minut the through the thr
STANDAMDIZED SAMPLE VOLUMES TOR 24-HOUR AMBIENT NOZ SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Adia inc.	:4	348000	AQNS	A Momenclature (Terms are listed by the order of their appearance T = ambient temperature, K Pbar = barometric pressure, mm Hg t = total sampling line, minute Ca = actual flowrate through the orifice, fixed at 0.2 lpm Vm(std) = sampled volume corrected to standard conditions, Nm3 NOZ mass = mass of nitrogen dioxide, ug/Nm3 NOZ conc. = nitrogen dioxide concentrations, ug/Nm3 NOZ conc. = nitrogen dioxide concentrations, ug/Nm3 Philippine Standard Pressure and Temperature, K (BSC + 288 = Standard armblent temperature, K (BSC



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	Mass Conc	HE NEWCH	0.41 0.92	B. Formulae used in Calculations: a. Total volume of alt sampled, corrected to standard condition (Nm3). $V_{mtad1} = \frac{Q_{\mu}}{T} \times \frac{298}{T} \times \frac{P_{he}}{T} \times t$ b. O ₃ concentration, lag/hm³ $O_3 conc. = ("O_3" mas$ $S)/V(m(std))$
	Standard Volume	Vmstd, Nm*	0.444	8. Formulas used in Calculations: 9. Total volume of air sampled, cqr $V_{michel} = \frac{Q_{si} \times \frac{2^{s}}{2}}{2}$ b. 0, concentration, μ_{s}/Nm^{s} $0_{3}CORC.=("0_{3}" m$ $S)/V_{-}(m(std))$
	Flow Rate	m3/min	1.0	
	Sampling Duration		480	
	Sampling Time		1530H-1530H	
	Sampling Date Sampling Time		29-30 Jul 2021 1530H-1530H	n the table above + 273)
	Barometric Pressum (Pbar)	in, Hg. mmHq.	28.10 713.7	A. Nomenclature (Terms are listed by the order of their appresents in the table above T = ambient temperature, K. T = ambient temperature, K. T = ambient temperature, K. T = barrowing time, mm Hg. Phar = barrowing time, influence corrected to standard conditions, Mm3. Os mass = mass of Gaone, Lie G. Corre, Li
MPLING Monitoring sia inc.	Ambient Temperature (T)	×	-m	A. Nomenclature (Terms are listed by the order T = ambrent temperature, K. T = ambrent temperature, K. T = text = templing time, immittes Vin(std) = sempled time, immittes Vin(std) = sempled volume corrected to standar O ₂ mass = mass of Gaone, µg Co, core, = Grane concentrations, µg/Nm² Cp = actual flowrate, µg/Nm² Cp = sandard ambrent Philippine Standard Ressure 286 = Sandard ambrent 760 = Sandard ambrent
STANDANDED SAMPLE VOLUMES STANDANDED SAMPLE VOLUMES FOR 24-HOUR AMBERT OF SAMPLING PROBECT NAME: Ambient Air Monitoria COMPANY NAME: AMET-Adia inc.	Year,	y	29.4	t [Terms are!] persture, K ic pressure, m g time, minute ed volume cor if Ozone, iug concentratio ate, m3/min trd Pressure a 298 ~ 58
PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-Asia Inc.	Station		AQNA	A. Nomenclature (Terms are listed by the T = ambient temperature, K. Phaze – barmentric present, inn Hg. Phaze – barmentric present, inn Hg. Phaze – barmentric present, inn Hg. Vin(std) = sampling time, minutes Vin(std) = sampling time, minutes Co, mass = mass of Corore, Life. O, mass = mass of Corore, Life. O, coror, = Orore concentrations, Hg/Mm ³ O, coror, = Orore concentrations, Hg/Mm ³ O, exert, = Orore concentrations, Hg/Mm ³ O, exert, = Orore concentrations, Hg/Mm ³ O, exert, = Orore concentrations O, exert, = Orore concentrat



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Sampling Date Sampling Time (Luminutes) m3/min 29-30 Jul 2021 1530H 1530H 1440 1.226 the table above)	1530H-1530H	29-30 Jul 2021 1530H-1530H
the above)	Nor appearance in the table above) and tions, Mys3	are listed by the order of their appearance in the table above) K. mm Hg In make I corrected to standard conditions, Myn3
	Nor appearance in the Lab	A 28.10 715.7 e order of their appearance transferi cunditions, Nep3



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TOR SAHIOUR AMBIEKT PARIO SAMPLING PROJECT NAME: AMET-Asia Inc. Ambient & March Pario Barometric Pressurin Sampling Duration Flow Rate
Barometric Pressurin
Baromeric Pressura
Baromeric Pressura
53
INTERT PAZO SAMPLINO mbient Air Monttoring AMET-Asia Inc. Ambient
mbient Akr b AMET-Asia



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	Com	TSP TSP	0	In Calculations: air sampled, cornected to standard condition of $\frac{Q_{ab}}{m(ad)} \times \frac{298}{T} \times \frac{P_{ab}}{760} \times t$ $7SPconc. = \frac{TSPmass}{V_{m(ad)}}$
	Standard Volume	Vmstd, Nni²		a. Total volume of air sampled, corrected to standard condition (Nmi3) $V_{m1:ml}:=\frac{Q_{nl}\times \frac{298}{T}\times \frac{P_{mc}}{760}\times t}{T\times 760}\times t$ b. TSP concentration, $\mu\mu Nm3$ $TSP concentration, =\frac{TSP mass}{T}$
	Flow Bate	m3/min	1.226	e n e
	6	(Lamoutes)	3440	
		N .	1530H-1530H	
	Sampling Date Sampling Time		29-30 Jul 2021 1530H-1530H	the table above)
	Barometric Pressure (Pbar)	In. Hg mmHg		ms are lated by the order of their approximate in the table above) study, in mit light and the standard conditions, firm3 in the standard conditions, firm3 tal subpended particularies, jug incided Particularies concentrations, jug/Him) ms/Antin and Temperature 288 = Standard articles the pressure, in fig. 278 = Standard atmospheric pressure, in High 289 = Standard atmospheric pressure, mml High 280 = Standard atmospheric pressure, m
LE VOLLUMES T TSP SAMPLING ent Air Monttoring MET-Acia inc.	Ambient Temperature (1)	3C K	25.4 302.4	A. Nomenclature (Terms are lated by the order of their appreximate — ambient temperature, K. Phir – barconeric gressure, mm Hg. Let total sampled tems, minutes. Tartal sampling time, minutes. TSP mass = mass of total suspended particulates, pg. TSP conc. – Total Suspended Perticulates, concentrations, pg. Mmil Da = actual flowrate, m3/min and Temperature. Philippire Standard Pressure and Temperature. 288 = Standard ambient temperature, K. (257)
STANDARDIZED SAMPLE VOLUMES FOR E4-HOUR AMBIENT TSP SAMPLING PROJECT NAME: Ambient All Moortkoning COMPANY NAME: AMET-AGII Inc.	Station		ADNA	A. Nomonclature (Terms are laced to T = ambient temperature, K. Pbar = bartometric gressure, mm Hg. L = totals sampling time, mitutes totals sampling time, mitutes TSP mass = mass of total suspended TSP conc. = Total Suspended Particula (Dar = actual flowrate, m3/min. Philippine Standard Pressure and Tep Philippine Standard Pressure and Tep Tring





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Barometrik	-			Sampling		Standard	Mass	Concentration
in Hg	Mumilia	Sampling Date	Sampling Time	Ourstion (t,minutes)	Li/min	Vimstd,	, E	SO, Hg/Ncm
28.10	713.7	29-30 Jul 2021	1530H-1590H	1440	0.2	0.2665	3.07	42.5
order of the	A. Nomenclature (Terms are listed by the order of their apparant, T = ambient temperature, K. Poar = barometric pressure, mm Mg. t = total sampling time, minute Ga = actual flowrate through the ordice, fixed at 0.2 lpm Whirfeld = sampled wokings confered to standard confisions. Nm3	e in the table ab	(and			In Formulas used in cartifation a. Total volume of air sampled, $V_{\text{ext. stat}} = \frac{O_{\text{st}}}{1,00}$ b. 502 concentration, $\mu g/Nm3$	used in California $r_{m(m,l)} = \frac{1}{m(m,l)} = \frac{1}{m(m,l)}$ or $r_{max}(0)$, $r_{m}(0)$	we used in Calculations: former of air sampled, corrected to standard condition of air sampled, corrected to standard conditions $\frac{Q_0}{1,000} \times \frac{298}{T} \times \frac{P_{BML}}{760} \times \frac{P_{BML}}{760}$
Station Temperature (T) "C K AGN4 29,4 302,4 **Momendature (Terms are listed by the	resture (T) (Ptu K in. Mg 302.4 28.10 listed by the order of the	K in Hg mmHg K 28.10 7137 Steed by the order of their apparant	resture (T) (Pbar) Sampling Date K in. Hg minHig 302.4 28.10 713/7 29.30 Jul 2021 Isted by the order of their appearance in the table ab	(1) (Pbar) Sampling Date K in. Hg mmHg 2,4 28.10 7337 29.30.Jul 2021 by the coder of their appearance in the table above	(1) Sampling Time Sampling Date Sampling Time Duration K in Hg mmHg C.4 28.10 713/7 29-30 Jul 2021 1530H-1530H 1440	(T) (Pbat) Sampling Date Sampling Time Duration K in: Hg mming C.4 28.10 73.37 29-30.3ul 2021 15:30H-15:90H 1440 0.2	(T) (Pbat) Sampling Date Sampling Time Duration K in: Hg mming C.4 28.10 73.37 29-30.3ul 2021 15:30H-15:90H 1440 0.2	(17) (Pbat) Sampling Date Sampling Time Duration Vimiting Vimiting Date Sampling Time Duration (Lyminutes) Li/min Vimiting Vimiti
	(Plu in Hg 28.10 28.10	in Mg mmMg 28.10 713.7 corder of their appearant	Barometric Pressure [Pbar] Sampling Date in. Hg mmHg 28.10 713.7 29-30 Jul 2021 corder of their appearance in the table ab	Barometric Pressure Sampling Date Sampling Time in Mg mmMg 28.10 71337 29-30 Jul 2021 1530H-1530H coder of their apparamete in the table above	Sampling Time Duration [Lyminutes]	Sampling Flow Rate Duration [t_minutes] U/min 300+-1590H 1440 0.2	Sampling Flow Rate Duration [t_minutes] U/min 300+-1590H 1440 0.2	Sampling Flow Rate Duration [t_minutes] U/min 300+-1590H 1440 0.2





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Standard Mass Concentration Volume NO ₁ NO ₂	Vmstd, Nm* µg µg/Ncm	0.1865 0.696 <3.27	B. Formulas used in Cakulations: a. Total volume of air sampled, corrected to standard condition (i) $V_{nit,siul} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{nir}}{760} \times 1000$ b. NO2 concentration, jag/Nm3 $NO_2 conc. = \frac{NO_2 mass}{V_{uit,siit}}$	
Flow Rate	Ll/min V	0.2		
Sampling	(t,minutes)	3440		
Complice These	aum Sundwer	1530H-1530H	(an	
Controlline Bate		29-30 Jul 2021 15:30H-15:30H	A. Nomenclature Trems are listed by the order of their apparame; in the table above 1.1 amblent temperature, K. Phar = barometric pressure, mm kg. t= total sampling time, minute. Ga = actual flowate through the orifice, fixed at 0.2 fpm. GA = actual flowate through the orifice, fixed at 0.2 fpm. NOZ enass = mass of nitrogen dioxide, ug. NOZ cone. arrugen dioxide concentrations, µg/Nm3 1,000 = conversion from illers to m3 Philippine Standard Pressure and Temperature. N (QSPC + 273) 750 = Standard atmospheric pressure, mm Hg.	
	¥	713.7	sture, K ressure, mm Hg ressure, mm Hg re, fixed by the order of their appearance in the ressure, mm Hg re, minute through the orlice, fixed at 0.2 fpm objume corrected to standard conditions, Mm3 ritrogen dioxide, µg/Nm3 rom liters to m3 Pressure and Temperature 298 = Standar ambient temperature, K (35°C = 273) 760 = Standard aimospheric pressure, mm Hg	
Barometric Pressure (Pbar)	in. Hg	28.10	order of the tandard con ons, µg/Nm: ature nt temperat spheric pres	
Ambient Temperature (T)	×	302.4	Istad by the # # # # # # # # # # # # #	
Arr	ų	29.4	ferms are frakture, K pressure, n pressure, n pressure, n pressure, n pressure, n pressure of pressure of dioxide en dioxide en dioxide en dioxide from literation literation for successure of pressure and pressure	
1	Station	AGNE	A. Nomenclature Trems are listed by the order of their apparament a mapper struct. K Pear = barometric pressure, mm kg t = total sampling time, minute (3a = actual flowrate through the orifice, fixed at 0.2 fpm VM[sx0] = sampled volume corrected to standard conditions, Nm3 VM02 mass = mass of nitrogen dioxide, up (Nm3 1,000 = conversion from Rers to m3 1,000 = conversion from Rers to m3 Philippine Standard Pressure and Temperature, K (35°C = Philippine Standard atmospheric pressure, mm kg	



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PROPONENT: Department of Public Works and Highways in cooperation with JICA

Como	O, O,	4.73 10.5	8. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard candition (Hm3) $V_{ve(val)} = \frac{Q_u}{T} \times \frac{298}{T} \times \frac{P_{ne}}{760} \times t$ b. O ₄ consumration, $\mu_0 Nm^3$ $O_3 CORC. = (^{16}O_3^{-1} mas)$ $S)/V(m(std))$	
Standard Volume	Vmstd. Nm*	0.450	8. Formulas used in Calculations. a. Total volume of air sampled, corrected $V_{mir,mir} = \frac{Q_u}{T} \times \frac{298}{T} \times 0.0, coccentration, \mug/Nm²$ b. 0, coccentration, $\mu g/Nm²$ $S)/V_{-}(m(std))$	
Flow Rate	m2/min	1.0	120	
Sampling Duration	(t,minutes)	480		
Ambient Barometric Pressure Sampling Date Sampling Time Sampling Dute (Phar)		1500H-1500H		
		28-29 Jul 3021	n the table above)	
	in. Hg mmHg	718.8	ms are listed by the order of their appearance in the ture, K assure, mm Hg source, mm Hg timintes to minutes to minutes corrected to standard conditions, Med 3 year, pg centrations, ug/Num* m3/min essure and Temperature essure and Temperature 750 = Standard ambient temperature, K (35°C = 273) 750 = Standard atmospheric pressure, mm Hg	
	In. Hg	28.28	der of their dand conditi re rit temperal pheric press	
	×	300.8	Hg the or the treatment of the treatment	
	P	27.8	ure, K assure, mm assure, mm e, minutes home corres home corres centrations, m3/min ressure and 760 = Stan 760 = Stan	
Startion		AQN3	A. Nomenclature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, K. Plear = becometing pressure, mm Hg. Plear = becometing pressure, mm Hg. t = total sampling time, minutes Vmistol = sampled volume corrected to standard conditions, Nei3 O, mass = mass of Oxorie, µg. O, conc. = Coone concentrations, µg/Nm ³ Os = actual flowrate, m3/min Philippine Standard Pressure and Temperature Philippine Standard Pressure and Temperature 750 = Standard atmospheric pressure, mm Hg.	



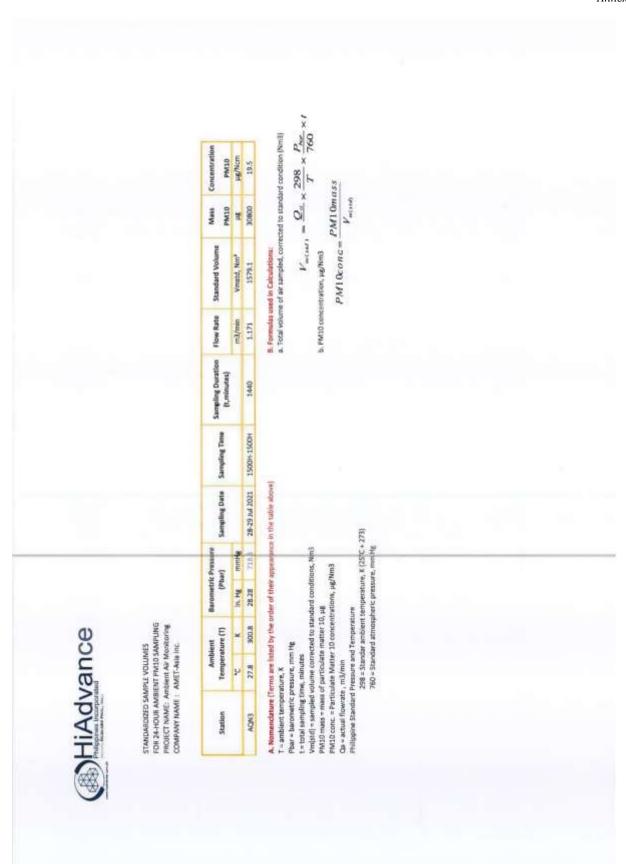
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	Ilon	V.		of in Calculations: $V_{m(sol)} = \frac{Q_a}{V} \times \frac{298}{T} \times \frac{P_{hir}}{760} \times 1$ stort, $\mu\mu Nm3$		
	Concentration	pa/Ncm	0.00200	orected to sta $\frac{2}{L} \times \frac{298}{T}$ Phmass $V_{m(std)}$		
	Mess	2 2	3.30	used in Calculations: The case ampled, co The case and ampled, co The case and amplement ampl		
	Standard Volume	Vmstd, Nm ⁹	1650.6	B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3). $V_{m(M^1)} = \frac{Q_{ab}}{T} \times \frac{298}{T} \times \frac{P_{Ma}}{760} \times t$ b. Pb concentration, $\mu \mu Nm3$ $Pbconc. = \frac{Pbmass}{V_{m(M^1)}}$		
	Flow Rate	m3/min	1.224			
	Sampling Duration Flow Bate	francountry	1440			
	Sampling Time		1300H-1300H			
	Sampling Date Sampling Time		28-29 Jul 2021 1300H-1300H	the table above)		
	Barometric Pressure (Pbar)	in. Hg marking	28.28 714.4	A. Nomendature, l'annu are listed by the order of their appealance in the table above! T = ambient temperature, K. Phar = barometric pressure, mm Hg. Phar = barometric pressure, mm Hg. Phar = sampling time, minutes Vre(\$16] = sampled volume corrected to standard conditions, Nin3 Pharies = miss of lead, jug. Phonon, = Lead concentrations, jug/Nm3 Ca = actual flowrate, m3/min Philippine Standard Pressure and Temperature Philippine Standard Pressure and Temperature 288 = Sandard ambient temperature, K (25°C + 273) 760 = Standard atmospheric pressure, min Hg.		
ES LUNG entroring inc.	Ambient Temperature (T)	¥	3008	d by the ord Hg ted to stand g/Nm3 Temperatur dard ambien		
PLE VOLUM SVT Pb SAMI blent Air Mc AMET-Asia	Ami	ů	27.8	fure, K essure, mm e, minutes objune corres ad, jug ad, jug rat/prim ressure and 298 – Stan 760 – Stan		
STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PR SAMPLING PROJECT NAME: Ambient An Monitoring COMPANY NAME: AMET-Asia inc.	Station		AQN3	A. Nomenclature (Terms are listed by the order T = ambient temperature, K. Phere - barometric pressure, mm Hg. 1 - totel samples thine, minutes. Virigid) - samples volume corrected to stander Phenese - miss of lead, jug. Phoronc. = Lead concentrations, jug/Nm3 Che - school flowerine, m3/min. Philippine Standard Pressure and Temperature 288 - Standard ambient. Philippine Standard American Philippine Standard ambient.		



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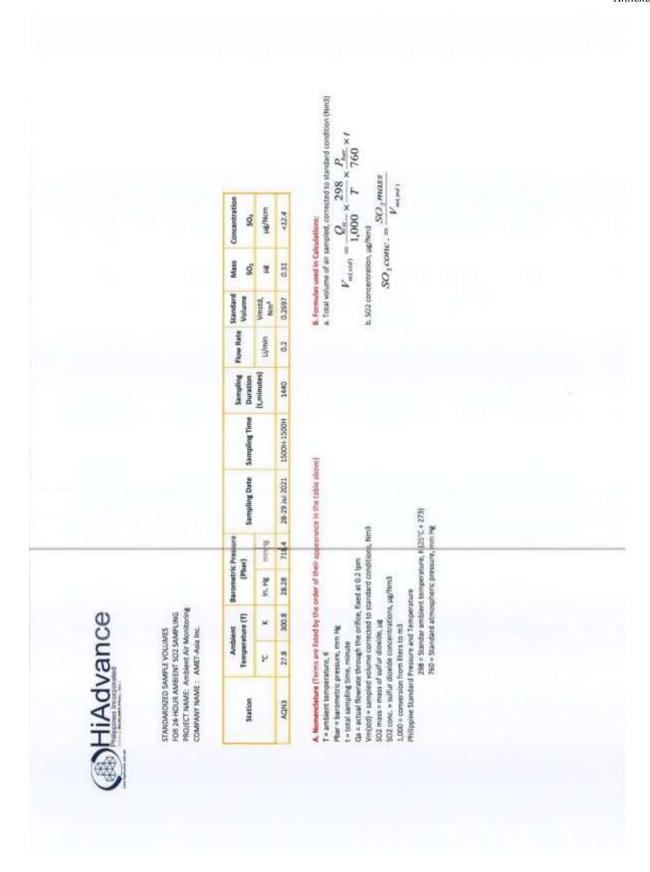
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	Sampling Duration Flow Rate Standard Volume Mass Concentration	1 224 Needd, Need 145000 12200	B. Formulas used in Calculations: a. Total volume of air samples, corrects $V_{Ait, air, air, b} = \frac{Q_{ii}}{Q_{ii}} \times b, 759 concentration, µg/Nm3 $ T.S.P.conc. = T
	Sampling Date Sampling Time Ampling Durat	26.29 h.J 3031 140084-1500PH 3440	table obove)
AMPLING AMPLING Addition's dile Inc.	Ambient Barometric Pressure Temperature (T) (Pbar)	ADDRESS OF THE STREET	by the order of their appropriate order of their appropriates, per alter concentrations, per alter above concentrations, per annearabor measurement annearabor or atmospheric pressure of atmospheric pressure.
STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBENT TSP SAMPLING PROJECT NAME: Ambient An Montioring COMPANY NAME: AMET-Asis Inc.	Station Tems	7C 2004	A Nonnecidence (Terms and Ernel of T. ambient temperature, in this Pher a between the pressure, men high terms are sometime to the support of



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	e			B. Formulae used in Calculations: a Total volume of air sampled, corrected to standard condition (Nm3) $V_{m(stal)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{mor}}{760} \times 1$ b. NO2 concentration, $\mu g/hm3$ $NO_a conc. = \frac{NO_a mass}{V_{mor}}$
	Concentration NO.	mg/Ncm	4.44	and in Calculations: of air sampled, corrected to standard corrected, $V_{m(virt)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_c}{7}$ finalize, $y_a y_b h_{m3} = \frac{NO_c mass}{V_{m(virt)}}$
	Mass NO ₂	1	1.20	B. Formulas used in Calculations: a. Total volume of air sampled, correct of the $V_{m(vat)} = \frac{2}{1,0}$ b. NO2 concentration, $\mu g/Mm3$
	Standard	Vmstd, Nm²	0.2697	a. Total volum b, NO2 conter
	Flow Rate	Ll/min	0.2	
	Sampling	(t,minutes)	1440	
	1000	sampling lime	1500H-1500H	(auc
	Sampling Date		28-29 Jul 2021	nce in the table ab
	Ambient Berometric Pressure Temperature (T) (Phar) "C K in Hg mmilk	mmile	718,4	ature, are Ested by the order of their appearance in the sture, R. ressure, mm Hg. re, mirrate re, standard conditions, Mm3 ricm liters to m3 Pressure and Temperature 238 = Standard armbient temperature, K 25°C + 273) 750 = Standard armbient pressure, mm Hg
		N. d.	28.28	tander of the standard containing with the standard containing with the standard containing the standa
IMES SAMPLING Monitoring 8 Inc.		×	300.8	seed by the e e the orifice, the orifice, the orification of concentrated to in to m3 to m3 reduce ambie order ambie
MPLE VOLU MENT NO2 : Misent Air AMET-Asi	Am	ų	37.8	ferms are freture, it more mine, minute minute minute minute e through a volume co volume co volume co frirogen en doxide from iters it from item items items it from items items it from items items it from items items it from items it
STANDARDZED SAMPLE VOLUMES FOR ZA-HOUR AMBIENT NO2 SAMPLING PROJECT NAME: Ambient Alf Montbring COMPANY NAME: AMET-Asis Inc.	-	Station	AQN3	A Nonmenclature (Terms are fisted by the order of their apparance in the table above) T = ambient temperature, K Para * ambient temperature, mm Hg t = total sampling time, minute Qu = actual flowrate through the orifice, fixed at 0.2 fam Vinistal = sampled volume corrected to standard conditions, Mm3 Vinistal = sampled volume corrected to standard conditions, Mm3 Vinistal = sampled volume corrected to standard conditions, Mm3 NOZ conc. = nitrogen dioxide concentrations, µg/Nm3 1,000 = conversion from items to m3 1,000 = conversion from items to m3 Philippine Standard Pressure and Temperature, K [25°C + 273) 750 = Standard atmospheric pressure, mm Hg 760 = Standard atmospheric pressure, mm Hg



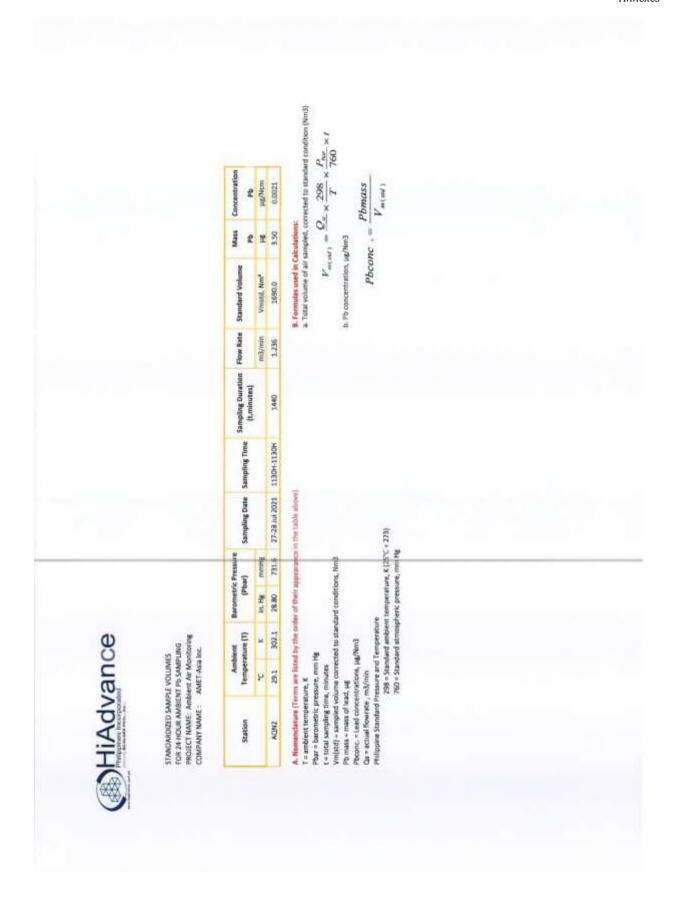
CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

	9			ident condition (A	
	Concentration	O, Hg/Ncm	89'0	mulas used in Calculations: it volume of air sampled, corrected to standard $L_{m(nM)} = \frac{Q_{11}}{T} \times \frac{298}{T} \times \frac{P_{NE}}{760} \times t$ oncentration, $\mu_0 N m^3$ mas $S_2 conc. = ("O_3" mas$	
	Mass	đ I	0.31	Calculations: Sampled, co. Q_a × 2 Q_b × 7 ("O ₃ " n ("O ₃ " n (Std))	
	How Rate Standard Volume	Vmstd, Nm*	0.456	a. Total volume of air sampled, corrected to standard condition (Nm3) $V_{m(val)} = \frac{Q_{a}}{2} \times \frac{298}{T} \times \frac{P_{NL}}{T_{60}} \times I$ b. C), concentration, μ_{a}^{a} /km² $O_{3}conc. = ("O_{3}" mas)$ $S)/V_{-}(m(std))$	
	Flow Rate	m3/min	1.0	4 4	
	Sampling Duration	(t,minutes)	480		
		Sampling Date Sempling Time 27-28 Jul 2021 1130H-1130H			
	Sampling Date		27-28 Jul 2021 1130H-1130H	n the table above)	
	Barometric Pressure (Pbar)	In. Mg mmMg	28.80 731.6	ms are listed by the order of their apparatoce in the ta sture, it. Sture, mm Hg Smithes S	
OLUMES SAMPLING Nr Monitoring T-Asia Inc.	Ambient Temperature (T)	2	29.1 302.1	re listed by she onto	
STANDARDZED SAMPLE VOLUMES TOR 24-HOUR AMBIENT, C, SAMPLING PROJECT NAME: Ambient Air Montioning COMPANY NAME: AMET-Aus Inc.	Startion		AGN2 25	A. Nomesociature (Terms are listed by the order of their apparation in the table above) T = ambient temperature, X Pbar = barometrik pressure, mm Hg t = total sampling time, minutes V-mistal = sampling time, minutes V-mistal = sampling time, minutes Qv mass = mass of Ozone, µg Qu = acrual flowrate, m3/min Philippire Standard Pressure and Temperature 256 = Standard ambient temperature, X (AS*C + 273) 760 = Standard atmospheric pressure, mm Hg	



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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

	Concentration	PM10	19.7	pled, corrected to standard condition (Nm3) $V_{m(cost)} = \frac{Q_{st}}{T} \times \frac{298}{T} \times \frac{P_{nor}}{760} \times I$ $eNm3$ $cong = \frac{PM10m ass}{V_{m(cost)}}$	
		PM10	31700	ed to standard	
	Standard Volume	Venanti. Nemi	1609.3	a. Total volume of siz sampled, corrected to standard condition (Vm3) $V_{mi,nat} = \frac{Q_{ai} \times 298}{T} \times \frac{P_{bot}}{T}$ b. PM10 concentration, lightn3 $PM10 con = \frac{PM10 m ass}{V_{mi,nat}}$	
	Flow Rate	million	1117	A. Formulas us A. Total volume A. PM10 concer	
	Sampling Duration	(Lminutes)	1440		
	Samolna Time		1130H-1130H		
		Sampling Date		in the table above)	
187	Barometric Pressure (Phart	In. Hg mmHg	28.80 731.6	A. Momenchature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, X. Plast = baroneristic pressure, mm Hg T = total sampling time, initiate Whit of a sampled volume corrected to standard conditions, MnG PM10 cmas = mass of particulate matter 10, μg This actual flowerse, makine PM10 cone, a Particulate Matter 10 concentrations, μg/Nm3 Qs = actual flowerse, makine PM10 cone, a Particulate Matter 10 concentrations, μg/Nm3 Qs = actual flowerse, makine PM10 cone, a Familiant and temperature Z98 = Standard atmosphasic pressure, mm Hg 750 = Standard atmosphasic pressure, mm Hg	
AES SAMPLING Sonitoring Inc.	Ambient Temperature (T)		302.1	and by the ond in Hg ected to stand or matter 10, i or 10 concents of Temperatur dar ambient to	
MPLE VOLUN SIENT PM10 S mbient Air M AMET-Asia	Amt	,	29.1	Terms are leg rature, K pressure, mm line, minutes volume corru of perticular collate with minutes in yallmin i Pressure an 298 = Stand 760 = Stand	
STANDARDZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PM10 SAMPLING PROJECT NAME: Ambient Air Moniboring COMPANY NAME: AMET-Asia Inc.	Station		AGNZ	A. Nomenclature (Terms are listed by the order T = ambient temperature, X. Plays - benometric pressure, xm. Hg. Plays - benometric pressure, xm. Hg. re-total sampling time, minutes whites = ampled volume corrected to standers PM10 cms = mass of particulate matter 10, jug. PM10 cms = Particulate Matter 10 concentration. PM10 conc. = Particulate Matter 10 concentration are actual flowars, m3,0mm. PM1(ppire \$tandard Pressure and Temperature PM1(ppire \$tandard Pressure and Pm1).	



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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		agg and	an i	8. Formedas used in Calculations: a. Total volume of air sampled, connected to standard condition (Nin3). $V_{out ant')} = \frac{Q_u}{N} \times \frac{298}{T} \times \frac{P_{har}}{T} \times I$ b. TSP concentration, $v_B N mass$ $TSP concernation = \frac{TSP mass}{V_{out(m)}}$	
	Sampling Duration Flow Rate Standard Volume	Vmstd, Nm³	Ш	B. Formulas used in Calculatio a. Total volume of air sampled. Volume 1 = Vo	
	Flow Rat	m3/min	1.236		
		(t,minotes)	1440		
	Sampline Date Sampline Time		27-28 tol 2021 1130H-1130H	9	
	Campline Date		NIEL.	in the table above	
	Barometric Pressure	mmilig		ms are listed by the order of their apparament in the sours, Mm. Mg. Sours, mm. Mg. 1, minute the standard conditions, Mm.B. Source corrected to standard conditions, Mm.B. Source corrected to standard in the source in the source and source in the source in the source and Temperature, M. (155 C = 273) 780 = Standard atmospheric pressure, mm. Mg.	
	Bardonett	In. He	28.80	rder of their view conditions, up re-introdions interperation pharic press	
MES MPLING contoring a inc.	Ambient Temperature (T)	*	-97	mm High content of their appearance of their a	
APLE VOLLIN IENT TSP SA Inbient Air M AMET-As	Tampa	۲	29.1	ature, K stude, K ressure, mm ressure, mm ressure, mm ressure, minutes volume corr rotati super spended Par spended Par Spa &	
STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT TSP SAMPLING PROJECT NAME: Ameleint As Monttoring COMPANY NAME: AMET-Asia Inc.	Chatino		AQNZ	A. Nomenclature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, K Plast = barometric pressure, mm Mg 1 = total sampling time, milentes 1 = total sampling time, milentes TSP mass = mass of total supended perfociates, NB TSP conc. = Total Suspended Perfociates concentrations, pag/Nmi Qs = actual flowrate, milentes and Temperature, K (15)C + 273) 750 = Standard atmospheric pressure, mm Mg	





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PROPONENT: Department of Public Works and Highways in cooperation with JICA

				× Poor × 760						
	Concentration	HE/Nom	422	a. Total volume of all sampled, corrected to standard condition (Nm3) $V_{\text{mi,snd}} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{\text{tot}}}{760} \times t$ to 502 concentration, $\mu \mu \text{Nm3} = \frac{SO_z}{V_{\text{mi,snd}}} = \frac{SO_z max}{V_{\text{mi,snd}}}$						
	Mass	ž ž	1.53	B. Formulas used in Calculations: a. Total volume of air sampled, cor V						
	Standard Volume	Vmstd,	0.2735	B. Formulas						
	Flow Rate	U/min	0.2							
	Sampling	(t,minutes)	1440							
	Semuline Time		1130H-1130H	(and						
	Semaline Data	Sampling Date		Sampling Date		Sempling Date				order of their appearance in the table above) sed at 0.2 fpm andard conditions, Nm3 spg/Nm3 sture there pressure, mm Hg spheric pressure, mm Hg
	Pressure er)	Mmm	731.6	if appearing in the control of the c						
	Barometric Pressure (Pbar)	in. Hg	28.80	arder of the eed at 0.2 is bag/Nm3 barric press pheric press						
AES MPLLNG bentbaring inc.		×	302.1	sture, K ressure, mm Hg nessure, mm Hg nessure, mm Hg ne, mirute rescure, mercated to 32 pm olyme confected to standard conditions, Nm3 suffar doodse, ug owide concentrations, µg/Nm3 ressure and Pressure and Pressure and Pressure and Theperature, K 780 = Standard atmospheric pressure, mm Hg 780 = Standard atmospheric pressure, mm Hg						
MPLE VOLUP TENT SOZ SA Publient Air N AMET-Asia	Ambient Temperature (T)	ų	29.1	ferms are listed by the order of their separatrance in the sessure, K. ressure, M. ressure, mm Hg me, minute me, minute restrough the orifice, fixed at 0.2 (pm volume corrected to standard conditions, Nm3 sulfur diorofe, yg from listers to m3 Fressure and Temperature, K. (25°C + 273) 750 = Standard atmospheric pressure, mm Hg 760 = Standard atmospheric pressure, mm Hg						
PHISTORING INCORPORATION STANDARDIZED SAMPLE VOLUMES STANDARDIZED SAMPLE VOLUMES SOR 24-HOUR AMBIENT SOZ SAMPLING PROJECT NAME: Ambient Air Monitaring COMPANY NAME: AMET-Asia inc.	Certon		SNOW	A. Nomenclature (Terms are listed by the order of their apparrance T = ambient temperature, K Plar = barometric pressure, mm Hg t = stolal sampling time, minute Qa = actual flowrate through the orifice, fixed at 0.2 fpm Vin(std) = sampled volume correctand to standard conditions, Nm3 QQ2 assas = mass of sulfur disorder, up SQ2 conc. = Sulfur disorder, up TQC = Standard ambient temperature, K TSC = Standard atmospheric pressure, mm Hg						



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PROPONENT: Department of Public Works and Highways in cooperation with JICA

				× Preserve × 760		
	Concentration NO,	Hg/Nom	6.20	B. Formulas used in Cakrulations: a. Total volume of air sampled, corrected to standard condition (Nm3): $V_{av(und)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{mir}}{760} \times t$ b. NO2 concentration, ug/Nm3 $NO_5 conce. = \frac{NO_5 maxs}{V_{av(und)}}$		
	Mass NO,	9H	1,697	B. Formulas used in Calculations: a. Total volume of air sampled, cor Part and 1 = 6 b. NO2 concentration, up/Nm3 NO2-come.		
	Standard	Vmstd, Nm*	0.2735	6. Total volumes us		
	Flow Rate	Ll/min	0.2			
	Sampling	(t,minutes)	1440			
	Councillos Tinta	Sampling Date Sempling Time 27-28 Jul 2021 1130H-1130H		Sempling Time		(and
	Barometric Pressure (Pbar) Sampling Date in. Hg mm/86			Am3 Am3 Am4 Sr C + 273 on Hg		
		73386				
(I) See			28.80	y the order of the dat to standard to standard to standard training, jugi training, jugi morature morature temporature tempora		
UDCE VOLUMES NO2 SAMPLI E AIT MONIES	umbient	× ;	29.1 302.1	are listed by , K min Hg minute web, man Hg minute web the ord we concern filters to m3 sure and Ter sure and		
HIAdvance FINISHED FOR THE POLUMES FOR 24-HOUR AMBIENT NOZ SAMPLING PROJECT NAME: AMBET-ABIB INC.	T.		AQN2 Z	A. Monienclature (Terms are listed by the order of their apparation T = ambient temperature, K Phar = barometric pressure, mm Hg t = total sampling time, minute Qa = actual flowrate through the orffice, fixed at Q.2 jpm Vol(std) = setual flowrate through the orffice, fixed at Q.2 jpm NOZ reas = mass of nitrogen dioxide, log. NOZ conc. = nitrogen dioxide concentrations, lug/Nm3 1,000 = conversion from liters to m3 Philippine Standard Pressure and Temperature, K [25°C+760] 760 = Standard atmospherit pressure, K [25°C+76] 760 = Standard atmospherit pressure, mm Hg		



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	Freeze			and condition (Nu 766) × t
	Concentration	pag/hem	4.56	of at sampled, corrected to standard condition of at sampled, corrected to standard condition $V_{m, cat}$, $= \frac{Q_w}{T} \times \frac{298}{T} \times \frac{P_{mw}}{760} \times t$ (for, $p_g N m^*$) mas $(m(std))$
	Mass	ő N	3.18	Satisfactions: sampled, co. $a_{int} = \frac{Q_i}{2}$ $a_{int} = \frac{Q_i}{2}$ $a_{int} = \frac{Q_i}{2}$ $a_{int} = \frac{Q_i}{2}$
	Standard Volume	Venshil, New*	0.4680	a. Total volume of alt sampled, corrected to standard condition (Nm3) $V_{\rm int, out} = \frac{Q_w}{T} \times \frac{298}{T} \times \frac{P_{\rm int}}{760} \times t$ b. O ₄ concentration, $\mu_{\rm s} = \frac{Q_w}{T} \times \frac{298}{T} \times \frac{P_{\rm int}}{760} \times t$ b. O ₅ concentration, $\mu_{\rm s} = \frac{Q_w}{T} \times \frac{298}{T} \times \frac{P_{\rm int}}{760} \times t$ S)/ $V_{\rm c} = \frac{Q_w}{T} \times \frac{298}{T} \times \frac{P_{\rm int}}{T} \times \frac{P_{\rm int}}{760} \times t$
	Flow Rate	11/min	1.000	
	Sampling Duration	(L,minutes)	480	
	ampling Time		1000H-1000H	
	Sampling Date Sampling Time		26-27 Jul 2021 1000H-1000H	n the table above; 223)
	Barometric Pressure (Pbar)	In. Hg shandig	29.68 753.8	and conditions, Amiliand conditions, Amiliand conditions, Amiliand conditions, Amiliand conditions, Amiliand conditions are a conditions and conditions are a conditions are a conditions and conditions are a conditional are a conditions are a conditional are a conditions are a conditional are a conditi
PLE VOLUMES NT Cs, SAMPLING Ambient Air Monitoring AMET-ASIA, INC.	Ambient Temperature (T)	y y	30.2 303.2	A. Nomenclature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, K Phar = banonestric pressure, mm Mg + total sampling time, minutes V- missel = samples volume corrected to standard conditions, fim3 Qu mass = mass of Conserving time, pay/Nen ³ Qu mass = mass of Conserving time, pay/Nen ³ Qu = actual flowrate, m3/Nen Philippine Standard Pressure and Temperature 256 = Standard armotent temperature, K (15°C + 273) 750 = Standard atmospheric pressure, mn Mg
STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT O, SAMPLING PROJECT NAME: Ambert Air Moc COMPANY NAME: AMET-ASIA, INC.	Station	The state of the s	AGNI	A Nomenclature (Terms are listed by the T = amblent temperature, K Pau = barometric pressure, mm ligg to the state of sample volume corrected to st Vm(std) = sampled volume corrected to st C mass = mass of Conone, jug/Num * Co. cour. — Oxoche concentrations, jug/Num * Co. cour. — Oxoche concentrations, jug/Num * Philippine Stendard Pressure and Tempera Philippine Stendard are presented as the stendard as the stendard are presented as the stendard as



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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	Flow Rate Standard Volume Mass Concentration	3	1,239 1739.4 21.7 0.0125	B. Formulas used in Calculations. a. Total volume of air samples, corrected to standard condition (Next) $V_{meast} = \frac{Q_m \times 298}{T} \times \frac{P_{me}}{760} \times I$ b. Po concentration, ug/Nm3 $Pbconc \ , = \frac{Pbmass}{V_{meast}}$	
	5	(L'minuces)	1660		
	Sampling Time		1000H-1000H		
	Sampling Date Sampling Time		26-27 Jul 2021 1000H-1000H	n the table above)	
	Barometric Pressure (Plear)	h.Ng nmhg	29,68 753.8	was are fixted by the order of their appearance in the taue, K. ssare, mm Mg. L. microtest L. microtest L. microtest L. d. le Interiors, se/Nm3 mi3/min mi3/mi	
HE VOLUMES AT PE SAMPLING Ambient Air Monitoring AMET-ASIA, INC.	Ambient B Temperature (T)	× v	30.2 303.2	nre are fisted by the order of their apparations. Int., K. Seire, mm Hig. Seire, mm Hig. Seire, mm Hig. Seire, mm Hig. Librates Librates A. Lig. Intelions, sig/Nm3 All Seire, sig/Nm3 Seire, sig/Nm3 Seire, sig/Nm3 Seire, sig/Nm3 Properature Z86 = Standard ambient temperature, K (LSYC) Z96 = Standard atmospheric pressure, mm Hig.	
STANDARDIZED SAMPLE VORUMES FOR 24-HOUR AMBIENT PE SAMPLING PROJECT NAME: Ambient Air Monitoring COMPANY NAME: AMET-ASA, INC.	Station		AGN1	A. Nomenclature (Terms are fated by the order of their appearance in the table above) T = ambient temperature, K. Plear = barometric pressure, mm Mg. Flear = barometric pressure, mm Mg. Flear = barometric pressure, mm Mg. Flear = ampled volume corrected to standard conditions, Mm3 Plear = ampled volume corrected to standard conditions, Mm3 Dp. = actual flowrate, m3/mm3 Dp. = actual flowrate, m3/mm3 Dp. = actual flowrate, m3/mm3 Please,	



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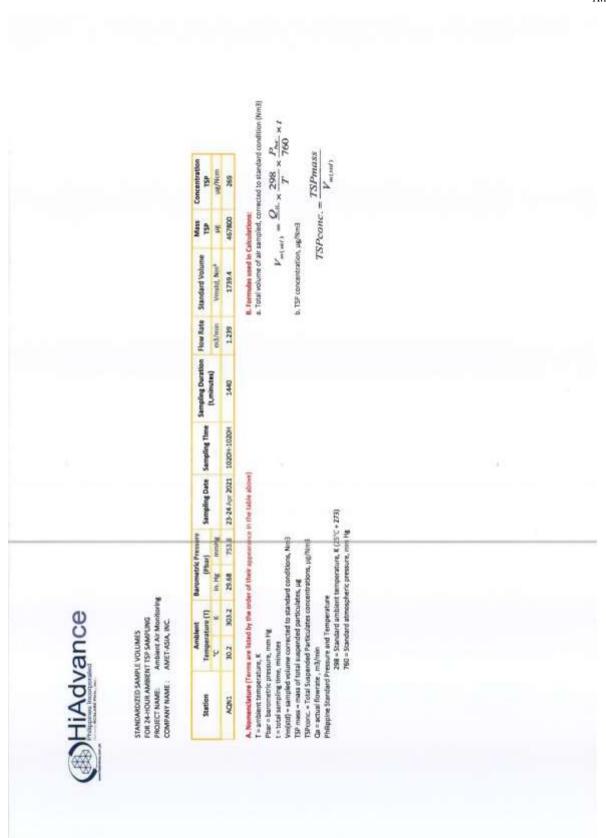
	Concentration	PM10	Н	where t is the problem (Nm3) t in the t is the t in t
	Mass	PMATO	108500	$= \frac{Q_{ii}}{N} \times \frac{PM10m a}{V_{minim}}$
	Standard Volume	Vinstd, Nov	1656.6	B. Formules used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3). $V_{sol(nM)} = \frac{Q_{ss}}{T} \times \frac{298}{T} \times \frac{P_{sss}}{T60}$ b. PM10 concentration, jug/Nm3 $PM10conc = \frac{PM10m ass}{r_{minth}}$
	Flow Rate	m3/min	1.180	A. Total volume
	Sampling Duration	(r,menutes)	1440	
	Sampling Time		1020H-1020H	
	Sampling Date		23-24 Apr 2021	in the table above) 273)
	Barometric Pressure (Pbar)	inchig munic		A. Nomentature (Terms are isted by the order of their appearance in the table above) T = ambient temperature, K Plan = berowning into, minute. T = total sampled withins, minute. PM10 mass = mass of particulate matter 10, pg PM10 cons. = Particulate Matter 10 concentrations, ug/Nm3 Obe = actual flowarise, milymes and Temperature 298 = Standard ambient temperature, K [25°C * 273] 760 = Standard almosphelic pressure, mm7g 760 = Standard almosphelic pressure, mm7g
MPIE VOLUMES AND TAND SAMPLING AMBIERT AR Montoring AMET-ASIA, INC.	Ambient Temperature (1)	×	303.2	m Hg m Hg m Hg rected to stand the matter 10, p er 10 concentra er 10 concentra da Temperatum uland atmostphe
MPLE VOLU Ambient A Ambient A Amet-ASA	Am	Y	30.2	Terms are in reture, K pressure, m pressure, m muste minute with minute of particula Matter (of particula Matter (of particula Matter) (of particula Matte
STANDARDZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT PM10 SAMPLING PROJECT NAME: Ambient Air Monitoric COMPANY NAME: AMET-KSIA, INC.	Station		NON1	A. Nomenchaure (Terms are issed by the order of their apper T = ambient temperature, K Flour = becomedic pressure, mm Hg Flour = becomedic pressure, mm Hg Flour = becomedic pressure and the standard conditions, Whistol = ampled volume corrected to standard conditions, PM10 cans. = mass of particulate matter 10 pg DM10 cans. = antuel flowners = m3/m10 matter 10 concentrations, ug/Nm3 DM10 cans. = actuel flowners = m3/m10 matter 10 concentrations, ug/Nm3 DM10 cans. = 298 = Standard atmosphetic pressure, x 760 = Standard atmosphetic pressure, m



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Cagayan de Oro City, Malaybalay City, Municipalities of Tagologn, Manolo Fortich, Sumilao, In

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				B. Formulas used in Calcountions: a Total volume of air sampled, corrected to standard condition (Nen3) $V_{m(virt)} = \frac{Q_{\rm ul}}{1,000} \times \frac{298}{T} \times \frac{P_{\rm blue}}{760} \times t$ b. 502 concentration, ug/km3 $SO_2 conc. = \frac{SO_2 mass}{V_{\rm int, rat/1}}$
	Concentration	Jug/Nom	<11.9	a. Total volume of air sampled, corrected to state of the sampled, corrected to state of the sampled, corrected to state of the sampled of t
	Mass	ž ž	0.68	B. Formulas used in Calculation a. Total volume of air sampled, $V_{m(vid)} = \frac{Q_0}{1,00}$ b. SO2 concentration, $\mu g/Mm3$
	Standard	Vmstd, Nm²	0.2808	a. Total vol
	Flow Rate	U/min	07	
	Sampling	(Lminutes)	1440	
	Samoline Time		26-27 tol 2021 1000H-1000H	(and
	Semoline Date		26-27 Jul 2021	A. Nomendature (Terms are listed by the order of their apparames in the table above) T = ambient temperature, K Flav = barometric pressure, mm kg Space mass of faufur dioxide, fixed at 0.2 lpm Vm[std] = sampled volume corrected to standard conditions, Nm3 SQ2 core. = sufur dioxide concentrations, µg/Nm3 SQ2 core. = sufur dioxide concentrations, µg/Nm3 Fluitpine Standard Pressure and Temperature 298 - Standard armbent temperature, K (25°C + 273) 760 = Standard armbent temperature, mm Hg
	Pressure ar)	9 ₈ mm	7538	om ditions, Nm sare, dem H
20	Barometric Pressure (Pbar)	ii. H	29.68	order of the wed at 0.2 it pag/Nm3 thure otheric pres
Ce MES AMPLING Wr Manitori A, INC.	Ambient Temperature (T)	×	303.2	ature, K. ressure, mm Mg suffur donlide, pg suffur donlide, pg suffur donlide, pg Pressure and Temperature 286 = Standard ambient temperature, £ (25°C + 273) 780 × Standard ambient temperature, g mm Mg
Vance med Americal American Am	Am	۲	30.2	Terns are it pressure, K pressure, m pressure, m into through I volume cod fi sultur doo dioxide con dioxide con dioxide con 7 you will be suitur doo si sultur doo si si si you si si si you si si si you si
Phitpones Proposited STANDARDIZED SAMPLE VOLUMES FOR 24-HOUR AMBIENT SOZ SAMPLING PROJECT NAME: Ambienz & Minister & Min	Station		AGN1	A. Nomendature (Terms are listed by the order of their apparame, T = ambient temperature, K Pbu = barometric pressure, mm kg Pbu = barometric pressure, mm kg Da = actual flowrate through the orifice, fixed at 0.2 fpm Vm(std) = sampled volume corrected to standard conditions, Nm3 SO2 mass = mass of suffur dioxide, la SO2 core. aufur droibe concentrations, jug/Nm3 J.000 = correction from liters to m3 Philippine Standard Pressure and Temperature 298 = Standard armbent temperature, 6 (25°C 760 = Standard armbent temperature, 6 (25°C



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Flow Rate Standard	Flow Rate Volume NOs	utes) Li/min Vmstd, Nm* µ8 µg/Ncm	B. Formulas used in Calculations: a. Total volume of air sampled, corrected to standard condition (Nm3): $V_{m(sust)} = \frac{Q_0}{1,000} \times \frac{298}{T} \times \frac{P_{met}}{760} \times t$ b. NO2 concentration, $\mu p Nm3$ $NO_2 conce. = \frac{NO_2 m coss}{V_{metrics}}$
Samoline	Sampling Time Duration	-	(and
NF2	Sampling Date	-	A. Nomenclature (Terms are listed by the order of their appearance in the table above) T = ambient temperature, K Paar = barometric pressure, mm Hg t = total sempling time, minute (A) = attual flowrate through the orifice, fixed at 0.2 fpm A) = attual flowrate through the orifice, fixed at 0.2 fpm NOZ mass = mass of histogen dioxide, as NOZ conc. = nitrogen dioxide concentrations, ug/Nm3 1,000 = conversion from liters to m3 Philippine Standard Pressure and Emperature Philippine Standard Pressure and Emperature (255°C = 273)
10th	(Pbar)	in. Hg romHg	order of their app wed at 0.2 ipm andard conditions uns, µg/Nm3
Ambient Air Monitoring AMET-ASIA, INC. Ambient Ba	Temperature (T)	7 K	serms are listed by the order of their appearance in the sture, R. ressure, mm Hg. Through the orifice, fixed at 0.2 jpm. Through the orifice, fixed at 0.2 jpm. Through the orifice, Lig. Through dioxide, Lig. I dioxide concentrations, Lig/Nm3 Tomillars to m3 Pressure and Temperature Tomillars to m3 Tomillars to m4 Tomillars to m6 Tomillars to m6 Tomillars to m7 Tomillars to m7 Tomillars to m8
PROJECT NAME: Ambient Air Mon COMPANY NAME: AMET-ASIA, INC. Ambient	Station	and a	A. Nomenclature (Terms are listed by the order of their appearant T = ambient temperature, K Phar = barometric pressure, mm Hg t = total sampling time, minute Ga = actual flowrate through the orifice, flust at 0.2 jpm VMISIG1 = sampling volume corrected to standard conditions, Nm3 NOZ conc. = misse of natiogen dioxide concentrations, µg/Nm3 1,000 = conversion from illers to m3 Philippine Standard Pressure and Temperature Philippine Standard Pressure and Temperature 7295 - Standard ambient temperature (7257)



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Pasao de Magallanes, 1232 Makall City, Philippines Office: +632.7729.4327 Fax No: +632.8854.8365 Email: Info@hiadvance.com.ph Website: www.hiadvance.com.ph

ATTACHMENT 2

Certificate of Laboratory Analysis

M21H151

AMET-Asia Inc./ Ambient Air Sampling and Testing Report

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magallanes, 1232 Makati City, PHILIPPINES

Office: +632,729,4327 Fax No: +632,854,8365 philippines@hiadvance.com

SUMMARY REPORT

Amet Asia, Inc.

Project: Ambient Air Monitoring

Unit 303, One Corporate Center, Julia Vargas Ave. Cor.

Project Number: [none]

Meralco Ave., Pasig, PHILIPPINES

Project Manager: Ms. Pamelle Andrea L. Pomida

ANALYZED: 10-Aug-21 to 24-Aug-21

SAMPLED: 26-Jul-21 to 06-Aug-21

RECEIVED: 10-Aug-21

REPORTED: 24-Aug-21 18:31

LAB#	M21H151-01	M21H151-02	M21H151-03	M21H151-04	M21H151-05
MATRIX	Ambient Air				
SAMPLE ID	Stn 1	Stn 2	5tn 3	Stn 4	Stn 5
	AQN1	AQNZ	AQN3	AQN4	AQN5

Parameters

Total Suspended Particulates, TSP	269	54.5	45.8	103	27.6	µg/Ncm	High Volume – Gravimetric Metho
Nitrogen Dioxide	5.02	6.20	4.44	<3.27*	5.03	µg/Ncm	Griess- Saltzman Method
Sulfur Dioxide	<11.9*	<12.2*	<12.4*	<12.5*	<12.6*	µg/Ncm	Pararosaniline Method
Particulate Matter 10 Micron, PM10	65.6	19.7	19.5	43.5	19.3	µg/Ncm	High Volume – Gravimetric Metho

Special Notes

HiAdvance Philippines Incorporated

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Report Prepared by

Certified Correct by

Annabelle Bangoy Project Manager

Princess Galvez, RCh Laboratory Manager

Page 1 of :

^{*} Values detected are below the laboratory's Method Detection Limit



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines

HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St. Paseo de Magallanes, 1232 Makati City, PHILIPPINES

Office: +632.729.4327 Fax No: +632.854.8365 philippines@hiadvance.com

SUMMARY REPORT

Amet Asia, Inc.

Project: Ambient Air Monitoring

Unit 303, One Corporate Center, Julia Vargas Ave. Cor.

Project Number: [none]

Meralco Ave., Pasig, PHILIPPINES

Project Manager: Ms. Pamelle Andrea L. Pomida

ANALYZED: 10-Aug-21 to 24-Aug-21

SAMPLED: 26-Jul-21 to 06-Aug-21 RECEIVED: 10-Aug-21

REPORTED: 24-Aug-21 18:31

LAB #	M21H151-06	M21H151-07	M21H151-08	M21H151-09	M21H151-10
MATRIX	Ambient Air				
SAMPLE ID	Stn 8	Stn 6	Stn 7	Stn 9	Stn 10
	AQNB	AQN6	AQN7	AQN9	AQN10

Parameters

Total Suspended Particulates, TSP	63.5	59.2	21.5	184	73.0	µg/Ncm	High Volume – Gravimetric Metho
Nitrogen Dioxide	4.91	4.50	5.64	6.25	7.19	µg/Ncm	Griess- Saltzman Method
Sulfur Dioxide	<12.9*	<12.6*	<12.7*	<12.8*	18.0	μg/Ncm	Pararosaniline Method
Particulate Matter 10 Micron, PM10	24.5	30.0	10.8	49.7	37.6	µg/Ncm	High Volume – Gravimetric Metho

Special Notes

HiAdvance Philippines Incorporated

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Report Prepared by

Certified Correct by

Annabelle Bangoy Project Manager

Princess Galvez, RCh Laboratory Manager

Page 2 of 2

^{*} Values detected are below the laboratory's Method Detection Limit



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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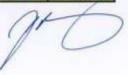
Data Summary for Ambient Air Analysis

TSP	M21H151-01	M21H151-02	M21H151-03	M21H151-04	M21H151-05
Pressure, inHg	29.68	28.80	28.28	28,10	27.76
Temperature, °C	30.2	29.1	27.8	29.4	26.2
Flowrate, m³/min	1.239	1.236	1.224	1.226	1.222
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Nm ³	1739.4	1690.0	1650.6	1633.8	1626.1
µg TSP (MDL = 1665)	467800	92100	75600	168700	44800
Concentration, µg/Ncm	269	54.5	45.8	103	27.6

NO ₂	M21H151-01	M21H151-02	M21H151-03	M21H151-04	M21H151-05
Pressure, inHg	29.68	28.80	28.28	28.10	27.76
Temperature, *C	30.2	29.1	27.8	29.4	26.2
Flowrate, L/min	0.2	0.2	0.2	0.2	0.2
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29,92
Temperature, STD	298	298	298	298	298
Volume of Air, Vm	0.2808	0.2735	0.2697	0.2665	0.2661
μg NO ₂ (MDL 24hrs=0.871)	1.41	1.70	1.20	0.696	1.34
Concentration, µg/Ncm	5.02	5,20	4,44	2.61	5.03
Reported as less than, ug/Nom				3.27	

SO ₂	M21H151-01	M21H151-02	M21H151-03	M21H151-04	M21H151-05
Pressure, inHg	29.68	28.80	28.28	28.10	27.76
Temperature, °C	30.2	29.1	27,8	29.4	26.2
Flowrate, L/min	0.2	0.2	0.2	0.2	0.2
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Vm	0.2808	0.2735	0.2697	0.2665	0.2661
μg SO ₂ (MDL 24hrs=3.34)	0.682	1.53	0.512	3.07	1.19
Concentration, µg/Ncm	2.43	5.61	1.90	11.5	4.49
Reported as less than, ug/Ncm	11.9	12.2	12.4	12.5	12.6

Note: Values in Italics are less than the laboratory's Method Detection Limit







CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Data Summary for Ambient Air Analysis

PM10	M21H151-06	M21H151-07	M21H151-08	M21H151-09	M21H151-10
Pressure, inHg	27,06	27.79	27.30	27.07	27.62
Temperature, °C	27.6	26.7	25.1	25.4	25.2
Flowrate, m³/min	1.167	1.167	1.167	1.158	1.165
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Nm ³	1506.5	1551.2	1532.8	1506.6	1546.8
µg PM10 (MDL= 1972)	36900	46600	16500	74900	58100
Concentration, µg/Non	24.5	30.0	10.8	49,7	37,6





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Annexes



Data Summary for Ambient Air Analysis

TSP	M21H151-06	M21H151-07	M21H151-08	M21H151-09	M21H151-10
Pressure, inHg	27.06	27,79	27.30	27.07	27.62
Temperature, *C	27.6	26.7	25.1	25.4	25.2
Flowrate, m³/min	1.223	1.223	1.224	1.215	1.218
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Nm ³	1578.8	1625.6	1607.7	1580.8	1617.2
μg TSP (MDL = 1665)	100200	96300	34600	290200	118100
Concentration, µg/Ncm	63.5	59.2	21.5	184	73.0

NO₂	M21H151-06	M21H151-07	M21H151-08	M21H151-09	M21H151-10
Pressure, inHg	27.06	27.79	27.30	27.07	27.62
Temperature, °C	27.6	26.7	25.1	25.4	25.2
Flowrate, L/min	0.2	0.2	0.2	0.2	0.2
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Vm	0.2582	0.2660	0.2627	0.2602	0.2657
μg NO ₂ (MDL 24hrs=0.871)	1.27	1.20	1.48	1.63	1.91
Concentration, µg/Nom	4.91	4.50	5.64	6.25	7.19

SO ₂	M21H151-06	M21H151-07	M21H151-08	M21H151-09	M21H151-10
Pressure, inHg	27.06	27,79	27.30	27.07	27.62
Temperature, °C	27.6	26.7	25.1	25.4	25.2
Flowrate, L/min	0.2	0.2	0.2	0.2	0.2
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29.92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Vm	0.2582	0.2660	0.2627	0.2602	0.2657
μg SO ₂ (MDL 24hrs=3.34)	0.682	0.853	0.853	0.512	4.78
Concentration, µg/Ncm	2.64	3.21	3,25	1.97	18.0
Reported as less than, ug/Ncm	12.9	12.6	12.7	12.8	

Note: Values in italics are less than the laboratory's Method Detection Limit



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Data Summary for Ambient Air Analysis

PM10	M21H151-01	M21H151-02	M21H151-03	M21H151-04	M21H151-05
Pressure, inHg	29.68	28,80	28.28	28.10	27.76
Temperature, "C	30.2	29.1	27.8	29.4	26.2
Flowrate, m³/min	1.180	1.177	1.171	1.169	1.156
Sampling Duration, min	1440	1440	1440	1440	1440
Pressure, STD	29.92	29,92	29.92	29.92	29.92
Temperature, STD	298	298	298	298	298
Volume of Air, Nm ³	1656.6	1609.3	1579.1	1557.8	1538.2
µg PM10 (MDL= 1972)	108600	31700	30800	67800	29700
Concentration, ug/Nom	65.6	19.7	19.5	43.5	19.3







CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Unit 201-203 & 406 Rizalina Annex Bldg. 1677 Quezon Avenue, Quezon City Tel. No. 8927-77-15 Fax No. 8929-4824 Email: info@etarsi.com

CLIENT

HI ADVANCE PHIL. INC

Lab. Report No.

212319-AA

ADDRESS

3rd Floor, Maga Center Bidg., Paseo de Magailanes, Makati

Date Sampled Date Received 06-27-21 to 08-06-21 08-13-21

Contact Number Nature of Sample/s 8854-8365 Ambient Air Sample Date Analyzed 08-13-21

No. of Sample/s Submitted

Eleven (11)

Date Reported 08-20-21

[REPORT OF ANALYSES]

Sample No.	Sample ID	Ozone (O ₃), µg ³
ES-2111535	M21H151-01 - AQN1	2.18
ES-2111536	M21H151-02 - AQN2	0.31
ES-2111537	M21H151-03 - AQN3	4.73
ES-2111538	M21H151-04 - AQN4	0.41
ES-2111539	M21H151-05 - AQN5	0.45
ES-2111540	M21H151-06 - AQN8	6.10
ES-2111541	M21H151-07 - AQN6	3.41
ES-2111542	M21H151-08 - AQN7	< 0.30
ES-2111543	M21H151-09 - AQN9	0.55
ES-2111544	M21H151-10 - AQN10	0.34
ES-2111544A	M21H151 - Blank	< 0.30

^{8 -} Method 411 / Colorimetric

Analyzed By

Checked By:

Certified Georget By:

MARINELLA FRANCESCA S. CARLOS, RChT

Laboratory Chemical Technician

PRC Lic. No. 0003462

MARINELLA FRANCESCA S. CARLOS, RChT

Laboratory Supervisor

PRC Lic. No. 0003462

RENATO M. GOFREDO, JR., RCh

Laboratory Supervisor

PRC Lic. No. 0003462

PRC Lic. No. 0003462

Test results reflect the quality of the samples as received. No portion of this report may be reproduced in any form without written authorization of ELARSI, inc. This report is not valid without the official dry seal and watermarks of the laboratory





Page 1 of 1 Pages

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Main Office: Mach Union Building, 335 Alabang-Zapote Road, Talon 3, 1740 Las Piñas City, Philippines Extension Office: Anfra Bidg., FMC-LTO Cmpd., 314 Alabang-Zapote Road, Talon 1, 1740 Las Piñas City Tel. No.: (02) 8553-8381 / (02) 8553-8382 / (02) 8553-8879 / (02) 8550-2573 Fax No.: (02) 8553-8878 Email: info@machunion.com • Website: www.machunion.com
Annetted Philippins Americans Survey (STA-46) • Department of Hyalth (DDI) • Pinel & Drugh Americans
Anneptins' Department of Statement & Result Resources (DEN) • Reverse of Annes Industry (DA-26)

Result of Analysis

Job Number:

MU21030184

Laboratory Number

MU21030184-001

08/19/2021

Customer

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Address:

3rd Flr. Unit 5&6 Maga Center Bldg., San Antonio St., Passo De Magallenes, Makati City

Date Sampled:

08/08/2021

Analyzed Date: 08/13/2021

Date:

Date Received: Sample Description:

08/13/2021

Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-0000E9 HIADVANCE PHILIPPINES, INC.

Mach Union Water Laboratory, Inc. does not guarantee that sample(s) sub was (were) taken. Her

Sample ID

Method

Units

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n of Inorganics Compound in Ambient Air, US EPA, 1999

"Customer's islare given (7) days upon receipt of reg

PROF 0013661

PRC#: 0005465

MU210301M_FDIAL_210619 1533H

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Anovelled: Philippine Accordation Sureau (OTI PAS) * Department al Neuth (DGN) * Prod & Ongh de
Necognizad: Department of Eminement & Natural Resources (DBN) & Renne of Animal Institut
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Result of Analysis

Job Number:

MU21030183

Laboratory Number

Date: 08/19/2021

Customer: Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

3rd Fir. Unit 5&6 Maga Center Bidg., San Antonio St., Paseo De Magailanes, Makati City

Date Sampled:

08/05/2021

Analyzed Date: 08/14/2021

Date Received:

08/13/2021

Sample Description:

Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of INCRANCT-000588 HIADVANCE PHILIPPINES, INC.

Mach Union Water Laboratory, Inc. does not guarantee that sample(s) submitted is (ars) was (were) taken. Reproduction of this report is not authorized except in full, without written approval of

Sample ID

Parameters

Method

Units ug

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ndium of Methods for the Determination of Inorganics Compound in Ambient Air, US EPA, 1999

men's islans given (7) days upon receipt of report to question any discrepancies (i.e. customer name & address, sample description, result, etc.)

This document has been signed by those names that appa ar on this report and are the authorised signatories.

PROF 2013681

PRC# 0005465

Supervising Che

MU21000183_PINAL_210819 155318

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Result of Analysis

Job Number:

MU21030182

Laboratory Number

Date: 08/19/2021

Customer Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

3rd Fir. Unit 5&6 Maga Center Bidg., San Antonio St., Paseo De Megallenes, Makati City

Date Sampled:

08/04/2021 *

Analyzed Date: 08/14/2021

MU21030182-001

Date Received:

08/13/2021

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Mach Union Water Laboratory, Inc. does not guarantee that sample(s) sub-was (were) taken. Reproduction of this report is not authorized except in full, without w ut written approval of the laboratory.

Sample ID

Parameters

Method

Units

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Flame AAS

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mination of Inorganics Compound in Ambient Air, US EPA, 1999

This document has been signed by those names that appear on this report and are the authorised signaturies

Checked by

PRC# 0013681

Cortified by

PRC#: 0005465

MUZS030182_PIKAL_210819 153311

Page 1 of 1



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Main Office: Much Union Building, 335 Alabang-Zapote Road, Talon 3, 1740 Las Piñas City, Philippines Extension Office: Anfra Bidg., FMC-LTO Cmpd., 314 Alabang-Zapote Road, Talon 3, 1740 Las Piñas City Tel. No.: (02) 8563-8381 / (02) 8553-8382 / (02) 8553-8879 / (02) 8550-2573 Fax No.: (02) 8553-8878 nachunion.com = Website: www.mach sine Accretiation Burew (517-740) = Department

Result of Analysis

Job Number:

MU21030161

MU21030181-001

Date:

Customer

MU21030181 Laboratory Number NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

08/19/2021

Address:

3rd Fir. Unit 586 Maga Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

08/03/2021

Analyzed Date: 08/14/2021

08/13/2021

Sample Description:

Air Ambient Sample in Fifter Paper

Analysis are based on sample (s) of: NCRMKT-000009 HADVANCE PHILIPPINES, INC.

Mach Union Water Lab was (were) taken. Reprodu cratory, Inc. down not gu le(n) mu

Sample ID M21H151 - 07 C **Parameters**

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on of Inorganics Compound in Ambient Air, US EPA, 1895

PRC#: 0013661

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Certified by

PRC#: 0005465

Page I of 1



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Accretise: Politiquire Accretistion Serses (IT-148) • Department of Mexic (Dolic • Food & Drugs Adminiutus
Acception: Department of Evoluntum & Nature Resources (ISNN-EMS) • Serses of Admini Industry (IA-SAI)

Result of Analysis

Job Number:

MU21030180

Laboratory Number

MU21030180-001

08/19/2021

Customer: Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Date:

3rd Fir. Unit S&6 Maga Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled: Date Received: 08/02/2021 *

08/13/2021

Analyzed Date: 08/14/2021

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-00009 HIADVANCE PHILIPPINES, INC.

Mach Union Water Laboratory, Inc. does not guarantee that sample(s) sub-was (were) taken. Reproduction of this report is not authorized except in full, without w

Sample ID

Parameters

Units

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M21H151 - 06 C

Lend

Flame AAS

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3.40

Reference: Compendium of Methods for the Determination of Inorganics Compound in Ambient Air, US EPA, 1999

**Customen's islane given (7) days upon receipt of report to quastion any discrepancies (i.e. customer name & address, sample description, result, etc.)

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Checked by

MU21030180 FINAL 210819 153338

Supervising Che

PRC#: 0005465

Technical Manager

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Result of Analysis

Job Number:

MU21030179

Laboratory Number

MU21030179-001

Customer:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Date: 08/19/2021

Address:

3rd Fir. Unit 5&6 Maga Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

08/01/2021 *

Analyzed Date: 08/14/2021

Date Received:

08/13/2021

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-00088 HADVANCE PHILIPPINES, INC.

Mach Union Water Laboratory, Inc. does not guarantee that sample(s) submitted is (erv) repwax (wers) taken. Reproduction of this report is not authorized except in full, without written approval of the was (wors) taken. Rep

Sample ID

Parameters

Method

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Conpendium of Methods for the Determination of Inorganics Compound in Ambient Air. US SPA, 1999

"Customet's islare given (7) days upon receipt of report to question any discrepancies (i.e. customer name & address, sample description, result, etc.)

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Certified by:

Supervising Chr PRC# 0005465

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Main Office: Mach Union Building, 335 Alabang-Zapote Road, Taion 3, 1740 Las Piñas City, Philippia nsion Office: Anfra Bidg., FMC-LTO Cmpd., 314 Alabang Zapote Road, Talon 1, 1740 Las Piñas City Tel. No.: (02) 8553-8381 / (02) 8553-8382 / (02) 8563-8879 / (02) 8550-2573 Fax No.: (02) 8553-8878 Email: info@machunion.com + Website: www.machunion.com Avorditck: Philippine Accreditatis Burna; (001/00) + Operiored of Enable (0010) + Operiored (0010) + Operi

**	40	4	
Result	t of	Ana	weie

Job Number:

MU21030178

Laboratory Number

MU21030178-001

08/19/2021

Customer: Address:

NCRMKT-000889 HIADVANCE PHILIPPINES, INC.

3rd Fir. Unit 5&6 Maga Center Bldg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

07/30/2021 *

Analyzed Date: 08/14/2021

Date Received:

08/13/2021

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

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Sample ID

Parameters

Method

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Compendium of Methods for the Determination of Isospanics Compound in Ambient Air. US EPA. 1999.

"Customents is large given (7) days upon receipt of report to question any discrepancies (i.e. customer name & address, sample description, result, etc.)

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PRC# 0013681

Certified by:

Supervising Chemis

PRC#: 0005465

Technical Manage

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Main Office: Mach Union Building, 335 Alabang-Zapote Road, Talon 3, 1740 Las Piñes City, Philippines Extension Office: Antra Bidg., FMC-LTD Cmpd., 314 Alabang-Zapote Road, Talon 1, 1740 Las Piñas City Tel. No.: (02) 8553-8381 / (02) 8553-8382 / (02) 8553-8879 / (02) 8550-2573 Fax No.: (02) 8553-8878 Email: info@machunion.com • Website: www.macht. Acordinet Philippine Aconditation formus (OTPAE) • Department o Recagnitude Department of Environment & Nettural Recounts (OTPAE)

Result of Analysis

Job Number

MU21030177

Laboratory Number

MU21030177-001

08/19/2021

Customer: Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Date:

3rd Fir. Unit 586 Maga Center Bldg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

07/29/2021 *

Analyzed Date: 08/14/2021

Date Received:

08/13/2021

Sample Description: Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-000889 HIADVANCE PHILIPPINES, INC.

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Sample ID M21H151 - 03 C Parameters

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Flame AA5

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3.30

Reference: Compendium of Methods for the Determination of Inorganics Compound in Ambient Air, US EPA, 1999

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PRC# 0013881

Technical Manager

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Main Office: Mach Union Building, 335 Alabang-Zapote Road, Talon 3, 1740 Las Piñas City, Philippin Extension Office: Anfra Bidg., FMC-LTO Cmpd., 314 Alabang-Zapote Road, Talon 1, 1740 Las Piñas City Tel. No.: (02) 8553-8381 / (02) 8553-8382 / (02) 8553-8879 / (02) 8550-2573 Fax No.: (02) 8553-8878 Hel. Inc., (U.2), 0003-4004.7 (U.2), 0003-4004.7 (U.2), 0003-400197 (U.2), 0004-2013-148 (U.2), U.2), U.2),

Result of Analysis

Job Number:

MU21030176

Laboratory Number MU21030176-001 Date: 08/19/2021

Customer: Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

3rd Fir. Unit 5&6 Maga Center Bldg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

07/28/2021 *

Analyzed Date: 08/14/2021

Date Received:

08/13/2021

Sample Description:

Air Ambient Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Mach Union Water Laboratory, Inc. does not guarantee that sample(s) sub-was (went) taken. Reproduction of this report is not authorized accept in full, without a

M21H151 - 02 C

Parameters

Flame AAS

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Result 3.50

Compendium of Methods for the Determination of Inorganics Compound in Ambient Air, US EPA, 1999

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Chemig

PRC# 0013881

Supervising Cl

PRC# 0005465

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Result of Analysis

Job Number:

MU21030175

Laboratory Number

MU21030175-001

08/19/2021 Date:

Customer: Address:

NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

3rd Fir. Unit 6&6 Maga Center Bidg., San Antonio St., Paseo De Magallanes, Makati City

Date Sampled:

07/27/2021

08/13/2021

Analyzed Date: 08/14/2021

Date Received: Sample Description: Air Ambient, Sample in Filter Paper

Analysis are based on sample (s) of: NCRMKT-000089 HIADVANCE PHILIPPINES, INC.

Much Union Water Laboratory, Inc. does not guarantee that semple(s) submitted is (any) rep-was (went) taken. Reproduction of this report is not authorized except in full, without written approval of the

Sample ID M21H151 - 01 C Parameters

Method

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Flame AAS

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ndium of Methods for the Determination of inorganics Compound in Ambient Air, US EPA, 1998

中Cusaments island given (7) days upon receipt of report to question any discrepancies (i.e. customer name & address, sample description, result, やに)

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Mariana Supervising Che PRC# 0005485

Technical Manager

Page 1 of 1

MU21030175_F0NAL_210819-153181

524 | Page





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes 1232 Makati Caty, Philippines Office: +632,7729-4327 Fax No: +632,8854,8365 Emait: info@hiadvance.com.ph Website: www.hiadvance.com.ph

ATTACHMENT 3

- > Field Data Sheet
- > Sampling Pictures

M21H151

AMET-Asia inc./ Ambient Air Sampling and Testing Report



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

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HiAdvance Philippines, Inc.

five/flow Whago Contine Son Antonio St. Povezo de Whogoskovey Mekan CHV, 1232 Plane Not (832) (833-8181) Fan Not (832) 729-1327

SULFUR DIOXIDE (502) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Amble	Ambient Temp., T Barometric Pressure, Phar Sampling		Sampling	Flow Rate	Standard Volume		
Reading	''C	К	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm
0	74.7	347.7	17-56	200.6	01 PMA 21	15 ICH		<
1	24-2	297.7	22-50	7005		16 15 H		
2	26-1	2991	27-58	700.5		17154		
3	25.5	7543	27.57	2m-3		12 15 H		
4	24.7	757.7	27.59	714.8		19 15 H	4	
5	24.8	7528	27.59	7mg		2015 4		
6	240	259-0	27 62	7-7-5		31/24		
7	242	793.7	29 47	21.5		30 JE H		
8	229	7957	27.66	702.6		315 H	0.1	
9	11-7	255-7	27.04	701.1	52 hus Is	24 1511	1	
10	22.7	275-2	14.61	7001		A TE OIM	P M	
11	11.1	275 8	17.64	712.1		1 1 QISH		
12	11.7	7957	27.67	79.8		THE BY AND		
13	20,4	275.4	17.64	7021		M SIND		
14	11.	225/	27-11	70.1		PELEH.		
15	11.	795.4	11.13	71.8		43190		
16	239	2947	27 64	7021		U715H		
17	24.8	2778	24 64	742-1		现证件		
18	244	277.4	27.64	70.6		19 15 H		
19	29.5	345	27.64	701		10 15 14		
20	19.7	347	27-64	742.1		11 11/11		
21	27.4	hwy	27 64	797/		AMY		
22	276	762.5	27.02	2015		131514		
23	29.5	3023	27.61	50-3		197211		
24	29.0	3026	27-61	70.3	1	15158		1

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{missill} = sampled volume corrected to standard conditions, Nm³

 Q_a = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m3

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm⁵)

 $V_{m(srd)} = \frac{Q_o}{1,000} \times \frac{298}{T} \times \frac{P_{bor}}{760} \times R_{bor}$

Team Leader:

QA / QC / Date:

MP-AR-018-F02c



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambier	nt Temp., T	Barometric Pr	essure, Phar	Sampling	Sampling	Flow Rate	Standard Volume	
Reading	,c	×	in Hg	mm Hg	Date	Time	ljom	Vstd, Nori	
0	107	34.7	2756	747 6	OC BA Z'	RUBI		-	
1	24-2	199.2	29:5%	7005	1	16 1514			
2	26.1	299.1	37.58	7005		Hut H			
3	23.5	294.5	22.57	7003		18 157			
4	24.7	2727	27.59	701.8		19,5 4			
5	24.8	7478	27,57	700.8		H 21 OF			
3	24.0	7620	27.62	707-5		H 24 16			
7	24.2	201.7	27.62	701-5		A ZI CL			
8	22 9	29.50	27.66	701.6	L	11 71 62			
9	29.7	275 Z	27 6	702-6	OT MATE	H 7/00			
10	22.7	2052	27.61	7021		H 2110	U M		
11	21.6	2755	27.04	50.1		03 12 11			
12	127	2952	23.42	Sm.K		112(40)	0.4		
13	22.11	281.4	27. 14	707.1		Walto.	il		
14	221	775.1	17.44	711./		DSFH	100		
15	12.1	7SSY	17-13	70.8		DEFE			
tő	23 9	206.5	27 64	702.1		1121 82	1		
17	248	2028	27.64	702.1		09154			
18	24.4	7-4.9	27.46	TOLL		44 120			
19	28.5	305	27.64	70-1		1012 1			
20	28.7	34.2	17.64	and		HILH			
21	23.4	3,10 4	27.64	702-1		131CH			
22	27.6	7,00-6	27.07	774.5		12121			
23	29-5	3025	27 61	200		NIC!			
24	29-6	3026	27.61	701.3	1	1551		-	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{fiar} = barometric pressure, mm Hg

t - total sampling time, minutes

V_{relatel} = sampled volume corrected to standard conditions, Nm³

Q = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hig.

8. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm^a)

1,000

MP-AIR-017-F03c Rev. O: 8 Way 2018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonio St. Pasco de Magallanes Makati City. 1232 Phone No. (632) 854-8365 Fax No. (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	10				Paris 20),
Parameter:	779	P	M 2.5	PM 10	TSP
Filter Paper No.	8		c	2162	21.175
Hourly Flow Rat	te (m³/m)	1			*****
Average Flow R	ate (m³/m)				
Total Operation	Time (min)			1440	1440
Initial Weight of	Initial Weight of Filter Paper (g)			4 1970	2 6907
Final Weight of	Filter Paper (g)	1 1			
Dust Contents (g)	1 /			
Total Volume of	Air Sampled (m³)		P		

Remarks:	~	
Name & Signa	ture of Official on Duty:	

Team Leader: () Colul

QA / QC / Date:

MP-AIR-012-F03b Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



AMBIENT AIR SAMPLING FIELD DATA SHEET

Company: AMET-Asia Inc. Unit 303, One Corp	orate Center, Julia Vargas Ave.	cor. Meralco Ave, Pasig	Date: N. N. Rog old	21
arometric Pensure: 31 ilter ID No: 11-167 ampled Parameters: Noz, So emarks: Sampling pur	End Time:	Used: Quartz/Glassfiber d and Wind Direction, Noise, main highway creeked	Initial Weight: 4 hg- Carbon Monoxide, Ozone of grassing area is n	to 2.402
	to the one proclame	- bust to many of	- Maritan	7
SP Sample : Model: TE-5070X	Serial No: 2/99/2139	Calibration Date:	Jun 2 2021 / Sep. 8, 202	1
MODEL: TE-5070X	Serial No:2169/2/3	Calibration Date:	Jun 24, 2021 / Sep. 8/202	1
Phree (3) Gas Sampler: Model: V C (N.K.)	Serial No: 53004001	Flow Rate:	0.2 L/min	
Barometer/Thermometer: Model: Lutron/Traceable	e Serial No: AH.54310/18150	08474 Calibration Date:	Ian. 24, 2021 / Aug. 5, 2021	
Model: And You Meter i Model: And You Make NITIAL FILTER PRESSURE:	CONTRACTOR	Caribration Date: Carbon Monoxide: Total VOC:	20 Tune 2021 Both logger	
	torn total	Bampling pt		SP I
Residential	Birthon sa Leard	es Chapel		
Team Leader:	184	QA/QC/Date:	y 19 St	1
1			272/711	-001-F05 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HIAdvance Philippines, Inc. Jul Asse Ways Destre Ses Anchele St. Posto de Magallanes Motion (Sey, 1252 Motion No. (632) 414-4381 Fair No: (832) 729-4327

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Amble	nt Temp., T	Barometric Pr	ressure, Pbar		Sampling	Flow Rate	Standard Volume
Reading	°C	K	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm
0	28 2	303	24.91	(m.5	NAW II	140H		T
1	280	3000	26.91	483.5		152014		
2	24.0	7,00-0	26.90	103		16501		
3	29.9	700	26 %	483.3		17 to F1		
4	24-7	3600	d. 99	U14.6		IK TO F		
5	34-1	292/	24-96	04.8		H #2.91		
5	24-2	2017.7	26.95	614.5		Jata A		
7.	24.9	776, 9	26.96	689.8		21.02 11		
В	28.5	2965	22.02	683.6		2250 d		
9	23.0	24.0	29.02	484.5		29 th d		
10	227	294.9	27.01	G8E 1	DE ANG U	DOTE A		
11	225	-296-7	29.04	Lee-y		01.50 4	0.2	
12	72-7	795.5	2909	tech	1	6250 pl	Ln	
13	225	295-0	27.04	69.3		A 17.50		
14	22.0	194.8	27.02	44.3		DV50 4		
15	229	295.9	26.95	623		4 02 20		
16	233	2993	26.99	6855		6650 A		
17	217	2000	27.20	710.6		4 47 10		
18	251	2048	22.76	703.6		08 to A		
19	25.4	2986	22.7/	7078		of so a		
20	23.5	3945	2.18	1612 8		10494		
21	29-4	306	24.98	6853		H #2 !!		
22	507	701	dt-78	683.3		(PEU P		
23	7/0.0	3050	din	1833		H 02.6		
24	ho.1	304.1	26.98	U85 3		142011		L

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{har} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{riotitl} = sampled volume corrected to standard conditions, Nm³

Q = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

8. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³).

MP-AIR-018-F02s



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO₂) AIR VOLUME CALCULATION Twenty Four (24) Hour Sampling

Hourly	Ambie	nt Temp., T	Barometric Pr	essure, Phar		Sampling	Flow Rate	Standard Volume
Reading	°C	К	in Hg	mm Hg	Date	Time	lpm .	Vstd, Nm ¹
0	28.2	31-1	26.91	683.8	NI Pro J	1450 H		7
1	180	300	26.91	6875		150 H		
2	19.0	301.0	26.90	089.4		40131		
3	23.9	309	14.90	unt		13.00 p		
4	247	797 7	de gn	4840		1850 H		
5	241	7921	26-96	CL3-8		10204		
6	14-7	2-4.2	2495	4875		20.20 0		
7	200	296.9	26.96	614.8		dv.90#		
-8	29.5	7945	27300			22.00 H		
9	23.0	7900	27 02	416 43		2300 H		
10	229	25.7	27.0/	4554	AT NIGO	4 Ozgo		
11 -	727	275.7	27.04	0868		H 0210		
12	225	7.455	27.03	686-6		6210H		
13	220	2750	27.06	423		DATE II		
14	218	744,8	27.02	2023		04ED #		
15	220	7057	7698	6153		H 0220	- 10	
16	233	7903	2699	6855		JUST P		
17	27.7	7967	23.76	7015.6		H02.F0		
18	,25.1	278-1	77-10	703 6		H 02.80		
19	266	7-8-6	27.7	700 8		6940 6		
20	19.5	24.5	26.99	1853		10.50		
21	116	3016	26 94	Us 3		1).50 A		
ZZ	胡丁	347	34.98	415.3		1250 #		
23	100 D	nat	2.98	603		H OZAI		1
24	ho-	20.1	21.98	6853	1	N-2014		1

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} + barometric pressure, mm Hg

t = total sampling time, minutes

V_{nosti} = sampled volume corrected to standard conditions, Nm[®]

Q_a = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C = 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $V_{m(sid)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times R_{bar}$

Team Leader:

QA / QC / Date:

MP-AM-017-F02c Sev. 0; 5 May 2018



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonio St. Paseo de Magailanes Makati City, 1232 Phone No. (832) 854-8365 Fax No. (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station: 9		Date: 04 - 07	Ma 2021	
Parameter:	PM 2.5	PM 10	TSP	
Filter Paper No.		21.159	21.198	
Hourly Flow Rate (m³/m)	1		-	
Average Flow Rate (m³/m)				
Total Operation Time (min)		1440	144-	
Initial Weight of Filter Paper (g)		4 4795	2.6645	
Final Weight of Filter Paper (g)				
Dust Contents (g)	/ h			
Total Volume of Air Sampled (m³)	1 14			

Remarks:	12		
Name & Signa	ture of Official on Duty		

Team Leader: 0 / 0

QA / QC / Date:

MP-AIR-012-F03b Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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AMBIENT AIR SAMPLING FIELD DATA SHEET

		Location:	lia Vargas Ave. cor. N A GN9 - Legy / a		2 12 12 12 12 12 12 12 12 12 12 12 12 12
Start Time:	4500	End Time:	145011	GPS Reading: 1	atitude \$-195198
Ambient Tempa	rature:	22.2		ī	ongitude (20 15h 16)
Barometric Pas	sure:	26.91	Weather Condition:	Currow to Fair	100
Filter ID No: 1			of Filter Paper Used:		Initial Weight: 4.4/45 214
Sampled Parame	eters: No2, So	2, TSP, PM10, Le	ad, Wind Speed and	Wind Direction, Noise, C	Carbon Monoxide, Ozone
Remarks: 1	Surprised !	excelled at s	have by the	men chicken h	milter is strongly and and in little
n to 4 mit		n the backer	a (4 taker)	fallow to have not?	
anned Joseph	W HEAVY W	no accur	alected contract	- 0	
- see of the see of the see	All March 2	11.55.11			
TSP Sample			·		
Model:	TE-5070X	Serial No:	2169/2139	Callberties Dave.	Jun 24, 2021 / Sep. 8, 2021
wiodel.	1E-30/0X	Serial No:	4199/2139	Calibration Date:	Jun-24, 2021 / Sep. 8, 2021
PM2.5/PM10 Sa	mpler:				
Model:	TE-5070X	Serial No:	2169/209	Calibration Date:	Jun 24, 2021 / Sep. 8, 2021
1100-00 PM	7.4.4.4.4.4.4.	25,121,130)	-	delia dion adde	THE PERSON NAMED AND POST OF THE PERSON NAMED AND PARTY OF THE PER
Three (3) Gas Sa	mpler:				
Model:	ske lunu	Serial No:	£30 09 00 1	Flow Rate:	0.2 L/min
2012-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0				narasa vos ma	
Barometer/Ther		210	6		~
Model: Li	tron/Traceable	Serial No. A	AH.54710/181508474	Calibration Date: 1	an. 25/2021 / Aug. 6; 2021
Multi RAE / Air t Model:		Serial No:	10 J.O	Calibration Date:	21 Trans (10)
Model: 1	RESSURE:	200 V	190	Carbon Monoxide:	
Model: 17	RESSURE:	200 24.00	190	Carbon Monoxide: Total VOC:	
Model: 17	RESSURE:	200 24.00	40 40	Carbon Monoxide: Total VOC:	
Model: 17	RESSURE:	200 24.00	40 40	Carbon Monoxide: Total VOC:	
Model: 17	RESSURE:	200 24.00	40 40	Carbon Monoxide: Total VOC:	
Model: 17	RESSURE:	200 24.00	40 40	Carbon Monoxide: Total VOC:	
Model: 17	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC: Uして基づ	
Model: 17	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC:	
Model: 1	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC: Uして基づ	
Model: 1	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC: Uして基づ	
Model: 17	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC: Uして基づ	
Model: 1	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC: Uして基づ	
Model: 1	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC: Uして基づ	
Model: Le	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC:	data loogee
Model: 1	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC: Uして基づ	data loogee
Model: Le	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC:	data loogee
Model: Le	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC:	data loogee
Model: Le	RESSURE:	200 24.00	HO DO PO	Carbon Monoxide: Total VOC:	data loogee





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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And Short Maga Centre
Sim Arramo St. Proven de Magaillaines
Mosair Chy. 1232
Phone No. (612) 854-8561
Fee No. (812) 729-4327

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambie	nt Temp., T	Barometric Pr	ressure, Phar	Sauchung	Sampling	Flow Rate	Standard Volume	
neating	*C	K	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm ⁴	
0	Han	-315.6	13.01	680-5		(2) (2) (1)	1	T	
1	33.3	44.3	27.00	LISE	3	14mg			
2	35.1	you!	27.00	6838		/STON			
3	34,0	3460	27.40	CRS. Y		[6 and			
4	30.2	7,69.2	2701	186 T		Heat			
5	27-2	700-7	27.01	C84.1	DIANG LOLL	15000			
6	20.4	299.6	27.01	C44.1		Hasel			
7	24.€	2978	27.04	Little 8		Zoupit			
8	242	292.2	27.07	647.6		2000			
9	242	297. 2	2709	Les. 1		inere			
10	23.0	2940	12-10	4803		DAGE			
11	12.9	75.9	27.10	48.3		d. Frati	b-allmm		
12	الله	2951	27.89	007		Maail	1		
13	11.8	745.1	4707	4875		breek			
14	22.0	294-0	17.07	617.6		N-MARH			
15	11- 1	294.8	21 93	687.8		Model			
16	10.3	294.7	27 81	647.8		Mari			
17	32.1	2859	P0.FL	Tim. 1		tt-opt			
18	3C.D	200.0	17.16	CV8.3		tritteri			
19	297	3027	13-09	G18:1	DIADRION LON	NO. DE			
20	30.2	3112	27.00	6828		Adami			
21	30.9	707 9	27-08	208		Leadel			
22	317	JKY 7	22.01	6821		TNH			
23	324	3159	24.05	(89.)		Цоон			
24	37,0	3000	77. CC	6824		134 nH		-	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{her} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{m(std)} = sampled volume corrected to standard conditions, Nm³

Q_e = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm3)

 $V_{m(std)} = \frac{Q_o}{1,000} \times \frac{298}{T} \times \frac{P_{bur}}{760} \times I$

Team Leader:

QA / QC / Date:

MP-AIR-018-F026



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Amble	nt Temp., T	Barnmetric P	ressure, Phar	Sampling Date	Sampling	Flow Rate	Standard Volume	
*c	*c	K	in Hg	mm Hg	Date	Time	lpm-	Vstd, Nm ²	
0	42.4	315-6	23-42	684.8	1	17)444	11	-	
1	34.7	2003	27.00	tess		Hook		7	
2	79.1	3/04	27.00	486.8		ISTOR			
3	330	7460	27.00	4458		1600#			
- (30.1	30-2	170	C54-1		171111			
5	272	341.7	2701	4861		Isaae			
6	264	200.9	2701	T461	The second	Hoself			
7	24.8	2728	20 04	1.15-8	D 400 333	289 011			
	24.2	277.1	23.07	W24		21558			
9	24.2	797.1	27-09	248.1	-1	320ef			
10	220	2966	27-10	CHES		830M	bill min		
1.1	119	2515	27-10	cars		26846			
12	42-1	2951	29-09	9426		Diades			
13	111	751/	1947	C026		6.2 66.M			
14	22.1	542.6	2707	1821		HERFT			
15	1 8	774.8	27. 207	C17. P		Hoota		1	
16	21-7	2542	21-11	428		CCDAH			
17	12.4	786-9	1119	7.88		0 k acrit			
18	45.0	7.78.0	27./0	6987		Flight			
19	19.7	327	1789	CHE	N. Iva ba	17,10%			
20	30.2	30.2	27 08	40. f	A STATE OF	Ant			
21	369	3,0,9	27.08	2500		Innull			
22	31.7	34.7	2707	6136		Oroff			
23	324	725 8	27.05	101)ggmi		-1	
24	33.0	3000	27.06	6823		Hase)		-	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

Pag = barometric pressure, mm Hg

t = total sampling time, minutes

V_{relate} = sampled volume corrected to standard conditions, Nm³

 $\mathbf{Q}_{\mathbf{a}}$ = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hig

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm^b)

MANAGEMENT FOR

Rev. 0; 6 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonio St. Paseo de Magañanes Makati City, 1232 Phone No: (632) 854-8365 Fox No: (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	AGRO.		Date: August 01-02, 2021			
Parameter:		PM 2.5	PM 10	TSP		
Filter Paper	No.		21.160	21.231		
Hourly Flow Rate (m ³ /m)		-				
Average Flo	w Rate (m³/m)					
Total Opera	tion Time (min)		1140	1146		
Initial Weig	ht of Filter Paper (g)		4.4191	2.6999		
Final Weight of Filter Paper (g)						
Dust Contents (g)		-				
Total Volum	ne of Air Sampled (m ³)					

Remarks: —	
Name & Signature of Official on Duty:	

Team Leader:

QA / QC / Date:

MP-AIR-012-F03b Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Ambient Temperature: U 1	0	(Marakan Pandistan		ongitude 125-6299744
Filter ID No: #1.01/ 21.163		Weather Condition: e of Filter Paper Used:		Initial Weight: 9,698 9 / 4 4232
Sampled Parameters: No2, So.	The second secon		(Appellation of the Control of the C	No. of the second secon
Remarks: Complian sta		Contract of the Contract of th		to away som the man and ;
near residential age !	2 major a	may) patring	or light takening	rehield here observed.
main mad (2 land)		To Miller E		
TSP Sampler:		-	,	
Model: TE-5070X	Serial No:	2169/2139	Calibration Date:	Jun 24, 2021 / Sep. 8, 2021
NAME OF TAXABLE PARTY.				
PM2.5/PM10 Sampler: Model: TE-5070X	Serial No:	2169/2139	Calibration Date:	Jun 24, 2021 / 5ep. 8, 2021
110000	- Scharto.	**********	-	701, 2-1, 2022 / 2020 0/ 0002
Three (3) Gas Sampler:				0000000000
Model: JK4 pump	Serial No:	ESUM IN	Flow Rate:	0.2 L/min
Barometer/Thermometer:	163			
Model: / Lutron/Traceable	Serial No:/	AH 54310(181508474	Calibration Date: J	an. 24, 2021 / Aug. 6, 2021
	- Commone A		- Terrendonion	
Multi RAE / Air Quality Meter E		47.200	C-Ub-seller Bate	
Model: (0 (analyze)	Serial No:	B 617210	Calibration Date:	
INITIAL FILTER PRESSURE:	2h 4 /	PAID	Carbon Monoxide:	data Inadec
FINAL FILTER PRESSURE:	74.4/	9-0	Total VOC:	
	2	-		
The part white	41	Corn blockspirit		
1200	a children	Who extra acti	Revolution	
			7	-
			* Someting pt.	
~ ~				000
5 X 3	()		C 11 4	X) Com
45-13	1	Record ential	MART WIP	MALLINAS HALLON HARMAN
	1	North Court and		and to bright it of county it was also
				-1-11
Team Leader: (No./ /	Colil		QA/QC /Date:-	11/ 1/1/
reach reamer 1 w / /	7		QA/QC/Date:	The state of
(70/				





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc. Int Nov Maye Centre son Antonia III. Posse de Mayahnes

Hotel Cric (432) #54-4383 Fee No. (632) #54-4383

SULFUR DIOXIDE (50,) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambie	ent Temp., T	Barometric Pr	ressure, Pbar		Sampling	Flow Rate	Standard Volume	
Reading	*c	и	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm*	
0	90.6	765-6	13.22	61.4	NA BAS ECO	141011		1	
1	770 7	313.3	27.22	CAL-Y	1	WOOD			
2	15.9	798.9	27.2h	U11.6		161011			
3	JL.o.	299.0	27.75	t91. L		13/04			
4	259	79r.5	27.32	691.4		1810 1			
5	22.	275.6	27.11	CA27		1916 4			
5	224	295.4	27. 12	1939		2010 P			
7	22.6	795.0	27.73	6999		2110 4			
8	23.0	7950	27.57	693.9		JOIN A			
9:	11.7	295-7	13 34	294.4		29 to H			
1.0	4.3	775.7	27- 15	694.7	minu Ze	P ogo		- 4	
11	21.5	274.9	27. 32	473.9	W) I CO	Dito W	OFIR		
12	41.7	294.7	27 - 12	643.5		0310 %			
13	21-1	2741	27-36	693.7		0310 1			
14	2017	2748	F7 - 37	44.2		DV 10 - A			
15	20-3	2000	23. 42	\$40.9		05% B			
16	14.6	7026	27-33	U14 2		0610 11			
17	14.1	1251	13.43	044.2		17710 W			
18	tt n	794.9	11 31	494.2		ogin H			
19	74 5	3,75	0771	1.4.5		07 to 1			
20	101	395	23.77	694.2		folio g			
21	29.4	30.4	27-71	6227		Mary.			
22	296	7,126	27 m	C45.4		Plyc P			
23	29.7	312.2	27.74	Cm. 7		4 or ex			
24	70-6	74.6	27.31	C73.7		MIDP		1	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{har} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{nesed} = sampled volume corrected to standard conditions, Nm³

Q_e = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm^a)

 $V_{m(vid)} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times R_{bar}$

Team Leader:

OA / OC / Date:

MP-AIR-DUB-102c



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Amble	nt Temp., T	Barometric P	ressure, Pbar	Sampling Date	Sampling	Flow Rate	Standard Volume	
neading	'C	к	in Hg	mm Hg	Date	Time	tpm	Vstd, Nm ³	
.0	20.6	313.6	17.82	491_4	15 No. JO.	14,104		一丁	
1	100.77	307-3	27.22	1511.4		1Closs	1		
2	25.9	298.9	29.24	191.6		1010 H			
3	160	2976	27.21	691.4		T-Inn			
4	25.7	2981.9	19.20	691.4		18 10 11			
5	The	7056	33. N	7.977		191014			
6	13-4	795 4	22.11.2	1,4329		2010 H			
7	33.0	2950	34.72	W129		3110 H			
8	220	2950	JA-72	698.9		d210 H			
9	01.7	7957	46 FB	V94.4		# cutte			
10	21.3	7753	27.35	1947	64 Aug 21	001014	6-2 Hm		
11	219	794.9	2477	49.7	, ,	0110 H			
12	21.7	2947	74. 72	4929		HOVED	1		
13	41	7741	1432	699.9		1310H			
14	20.4	7995	4.7.33	1945		4 alpa			
15	20.7	774.5	27-72	6985		4.0020			
15	104	296	37.33	44.2		66,10.14			
17	32:1	5-1	27.35	C50 2		67to P			
18	11.4	24 9	27 47	694.2		Of 10 H			
19	no.5	300	29.71	6.45		09 to P			
20	74.4	304	23.11	U17.2		[010 H			
21	284	314	27.11	(99.78		1110 B			
22	196	34.6	29 30	277.4		1210 A			
23	29.7	34.7	2770	4939		1510 H			
24	20.6	7126	27.71	677 7		1400		1	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

Phar = barometric pressure, mm Hg

t = total sampling time, minutes

V_{monet} = sampled volume corrected to standard conditions, Nm⁴

Q = actual flowrate through the orifice, fixed at 0.2 ipm

1,000 = conversion from liters to m*

Philippine Standard Pressure and Temperature

298 - Standar ambient temperature, K (25°C + 273).

760 - Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm3)

MP-ME-DIT-FIGS

Rev. 0; # May 2018



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre Son Antonio St. Paseo de Magailones Makari Cris, 1232 Phone No. (632) 854-8365 Fax No. (632) 729-8327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station: 4 7	Date: 10 - M PMq - aco)				
Parameter:	PM 2.5	PM 10	TSP		
Filter Paper No.	N.	21-153	21-250		
Hourly Flow Rate (m³/m)	7				
Average Flow Rate (m³/m)	1				
Total Operation Time (min)		以 勒a	HIN		
Initial Weight of Filter Paper (g)		4400	2 4118		
Final Weight of Filter Paper (g)					
Dust Contents (g)	1 / 8				
Total Volume of Air Sampled (m3)	1				

Remarks:	_	
Name & Signature of	f Official on Duty	
Hamse or Signature of	Official on Duty.	

Team Leader:

QA / QC / Date: _

MP-AIR-012-F03b Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Station No: 3	Location:	ilia Vargas Ave. cor.	Lagorhuna 3m.c.7	
Start Time: with (I	End Time:	14600	GPS Reading: Latitu	de 8-20074
The second secon	0 1	1700	Longit	The state of the s
PORT CONTRACTOR OF THE PROPERTY OF THE PROPERT	br.	Weather Condition		then the
Filter ID No: 31 1/3 2 3/2	The second secon		: Quartz/Glassfiber	Initial Weight: 4 970 /3 LLLL
Sampled Parameters: No2, So			and the second s	
AND THE RESERVE OF THE PARTY OF			pened they letter first	
			The second secon	
stock least held to		and of popper to	holds him house by	but the on property short.
- Andrews	4			
TSP Sampler:				A
Model: TE-5070X	Serial No:	/2,169/2139	Calibration Date: Jur	24-2021 / Sep. 3, 2021
PM2.5/PM10 Sampler;		0		M 3
Model: TE-5070X	Serial No:	2169/2/139	Calibration Date:jur	24/2021/Sep 8/2021
			p.s.	
Three (3) Gas Sampler:			0.000 0.000	
Model: Ske May	Serial No:	101001122	Flow Rate:	0.2 L/min
Barometer/Thermometer:		7		2-
Model: Lutron/Tracesbi	e Serial No:	AH.54310/18150847/	Calibration Date: Jany 2	4, 2021 / Aug. 6, 2021
	-			
Multi RAE / Air Quality Meter I	A STATE OF THE PERSON NAMED IN	To the same	Manage (Manage Taylor Taylor	
Model: ten Instances	Serial No:	6617710	Calibration Date: 27:	Nec 201
Comment from the street street street	127	Lann	200 32 70	
INITIAL FILTER PRESSURE:	24.0	13.0		to Loager
FINAL FILTER PRESSURE:	37.0	18.0	Total VOC:	
	-	1	-	
	t==1	-		
- 0	X	1X		
A STATE OF THE STA		10 M	A A A A	V
AN PORT WAY THE	(Managara)	Want I'm / Nowa	mor martingho	en My My My ma Andre Am
10 100				
12 11/1/		ELEVATE		11/1/16-19
1 1 - 1		The second of th		2 / 11
~				
ASSESS TO ASSESS		. 77.00	were a	
The house	96	N.CCESS	PO HO	
1141414141	transi	410	Chy Ch	- RESTAURTING HOUSES
	44-41-311		W.	
A	1	NAV.		1011
Team Leader: 1047	1611	<i>[</i>]	QA/QC /Date: M	15411
1770	1/5	-	sary sp. / travel -	1000
100		1	/	
				MP-AIR-000-F08
				MP-A(8-003-F08- Ray, 0; 8 May 2038





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

and Javar Ahaga Cantra San Antonio II. Pinete de Magallanes Maños Che, 1237 Phone No. (631) 414 4385 (No. No. (632) 729 4327

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambie	int Temp., T	Barometric F	ressure, Pbar	Settisbuild	Sampling	Flow Rate	Standard Volume	
Resumg	7°C	К	in Hg	mm Hg	Date	Time	lpm	Ystd, Nm*	
0	m-7	314.7	27.74	>nu c	(F - MW ED	Bhon		5	
1	316	3746	27.72	704-1	,	ון מלוא			
2	3715	7445	-23.71	707.8	M.	ICho A			
3	717	314.3	1777	787.8		11,700			
4	27.12	7006	_ 27.72	74.1		1770 1			
5	277	310.3	1274	746		1ghe II			
6	24.4	296.4	27-81	741		107kg k			
7	19 V	704.9	17-50	7266.1		20% "			
3	24.4	200.4	27-80	721		213/0 11			
9	22.4	2759	21 63	74.2		237- 4			
10	20.8	205-8	27-83	4049		13 mg	0.3114		
11	21.8	274.5	17.80	7001	CS Nut - J1	00308			
12	11.7	294.9	14 80	746.1		0170 H			
13	22.0	2950	27-80	704.1		5255 R			
14	31.5	2945.5	71 89	756.1		9330H			
15	22-6	2756	27-82	Stre		ONAB P			
16	25.1	2941	27.93	79.6		nc3o ₄			
17	22-6	2756	41.84	74,		6630 A			
18	26.2	271	29.63	716-9		03 80 H			
19	20. 1	3120	23.02	740		DE No. 14			
20	71.0	34.11	13/8	7046		19 No A			
21	7117	3465	27 12	714.6		10.70° H			
22	211.0	346	17.0	7001		II to a			
23	7n . 0	3,44.0	27-74	704.6		P. Xu y			
24	m-7	777.7	37.74	7046		1370 H		1	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

Phar = barometric pressure, mm Hg.

t = total sampling time, minutes

V_{m(std)} = sampled volume corrected to standard conditions, Nm³

 Q_a = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm⁸)

 $V_{m(xid)} = \frac{Q_o}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times$

Team Leader:

QA/QC/Date:

MP-AR-018-F02x



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambie	int Temp., T	Barometric P	ressure, Phor	Sampi		Sampling	Flow Rate		ndard lume
neaurig	70		in Hg	mm Hg	Date		Time	lpm -	Vstd, Rim ³	
0	711-7	204.7	27.74	703.6	-1		13301		-	
1	भा ७	241.6	27.70	704/			1430 A			
2	77.5	30,5	27.71	709.8		1 0	1570 4			
3	m 7	3047	27.71	2038			1670 a			
-4	8.16	3004	21.32	704.	#2 heg	20	Fabr a			
5	27.7	310.3	d7 TV	344			1826 4			
5	mid	2964	27-81	206.4			1936 II			
7	29-1	2449	27.80	3061			ao 7e n			
8	24	256.4	23.80	20/01			JI NO A			
9	11.9	2959	1723	2049			JONO A			
10	\$2.5	1.52.8	21-83	100.9	-		2570 %			
11	41.8	2946	17.80	4100.1	T		outso il			
12	21-9	794.9	23.91	7601		- 0	017e n	0-J		
13	12.7	256	24-80	704			6Fox	yn.		
14	22.1	795.5	27.90	2021		- 0	02.70 ц			
15	22.6	755.6	37-32	7000			Dryn W	I		
16	131	244.1	24.82	rus	ol mu		оСъе и			
17	224	2966	27.84	741	C A		06701			
18	16.	7791	27 83	706.9			27% a			
19	29.4	302.4	14.92	746			082m #			
20	W.0	340	378	7046			09 To 11			
21	317	3413	270	7.126	1		pilho p			
22	711.0	311.0	37.27	706.5	31	- 4	II AQ A			
53	710	304.0	JA N	200.6			10 A0 F			
24	711.7	2047	07.74	546	1		13 no 1		1	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{missit} = sampled volume corrected to standard conditions, Nm³

Q = actual flowrate through the orifice, fixed at 0.2 ipm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm^b)

 $V_{m(snd)} = \frac{Q_o}{1,000} \times \frac{298}{T} \times \frac{P_{bor}}{760} \times t$

Team Leader:

QA/QC/Date: yn JASTS

NP-AM 017-702e Nev. O; B May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

Ind floor Maga Centre Son Antonio St. Paseo de Magalianes Son Antonio St. Paseo de N Makati City, 1232 Phone No: (632) 854-8365 Fox No: (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station: 6	6			
Parameter:	PM 2.5	Date: 67- 63 Mug.	TSP	
Filter Paper No.	h .	21 15	21 203	
Hourly Flow Rate (m ³ /m)	1"			
Average Flow Rate (m³/m)				
Total Operation Time (min)		1446	1440	
Initial Weight of Filter Paper (g)		4 47152	7.6611	
Final Weight of Filter Paper (g)				
Dust Contents (g)	1 0			
Total Volume of Air Sampled (m³)				

Remarks: -						
Name & Signature of Official on Duty:	-	_	_			

Team Leader:

MP-AIR-012-F03b

Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Start Time: 1336H	End Time:	12)308	GPS Reading: 1		98 104948
Ambient Temperature: 11	the state of the s	estron arman		ongitude 25-1	13813
Barometric Pressure:		Weather Condition		Total I III and the second	R.F. Flora
Filter ID No: 31 Joh \ di kt		e of Filter Paper Used		Initial Weight	
Sampled Parameters: No2, So.					
Remarks: Equipment is		it graces ground b		The same of the sa	Janay.
A CONTRACTOR OF THE PARTY OF	em The la	glenay (a lamis)	comy meather con	A-h-m	100
- symmed Committee light y	the part of	EVP.			
TSP Sampler:		10		0	
Model: TE-5070X	Serial No:	21,69/2139	Calibration Date:	Juny24/2021 / Sep	8, 2021
-		0	- www.waters.va-	-	
PM2.5/PM10 Sampler;		Secretary Att.			A
Model: TE-5070X	Serial No:	2169/2439	Calibration Date:	Jun 24, 2021 / Sep	8, 2021
Thosa (2) Cas Court		0			
Three (3) Gas Sampler: Model: (X.c. huma	Sarial Me	ATT TOU MAN 1	Plane Bar	0.317-1-	
Model: CKC TWAY	Serial No:	EBUD PON I	Flow Rate: _	0.2 L/min	
Barometer/Thermbmeter:	35			2	
Model: Lutron/Traceable	Serial No:	AH.54310/18150B474	Calibration Date: 1	an. 34, 2021 / Aug. 6	2021
-		0			
Multi RAE / Air Chality Meter Er	quipment:				
Model: You Instrument	Serial No:	AGITTIO .	Calibration Date:	ST BLEE LAR!	
Marie at Primary and a series	TSP	Per Si	AND WALLEST WALLEY CO.		
INITIAL FILTER PRESSURE: FINAL FILTER PRESSURE:	24-6	18.0	Carbon Monoxide:	Clata Lagger	-
PINAL PILIER PRESSURE:	20.0	10.0	Total VOC:		
		-		631	
		-		(Hrs	
				0,41	
-			Street Street	nh.	
100 -			K - H	A	NEAR
and h					HOUSE
Ind the					Meller
119191					
		HIGHWAY I	LAHES		
		Allowan with	e and see II views		-
m m				00 59	
41 91				011011	
					++1
1	11	A		10	111
Team Leader:	164	1	QA/QC /Date:	yy T.	mou)
100	(0)	1		/ /	
	100000	I A			M7-A/R-001-F05
					METALE COLLEGE





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



SULFUR DIOXIDE (50₅) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Amble	nt Temp., T	Barometric Pr	ressure, Pbar	marriage and	5ampling	Flow Rate	Standard Volume	
Kending	*c	к	in Hg	mm Hg	Date	Time.	lpm	Vstd, Nm ³	
0	711-15	314-8	27.74	704.6	31.July 2021	1260 H	1	-0	
1	71.1	201	27.73	704.3	1	D00 p			
2	30.9	20.9	23.79	704.3		PU 00 H			
3	70.6	20.6	27.71	703.8		1500 H			
4	712	314.2	17-70	73.6		16 00 A			
5	22.0	2950	17.79	718.9		17 cm p			
6	227	295.3	37.79	783		12 00 21			
7	12.7	275.7	17-78	7026		1900 4			
8	Jh/1	244.1	27.80	204-1		An gro u			
9	119	295.9	278.1	744		21.00 4			
10	200	196.0	24.80	2041		1)00 4			
11	23.1	7441	2380	704		29,000	01)		
12	29.0	790-0	27.80	7041	61 And 201	60st 4	4		
13	22.9	295.3	27. 74	705.9	4	DI CO LL			
14	22.0	295.0	27 29	7659		62 00 M			
15	241	297.1	27.72	7056		6300.0			
15	240	197.0	27.73	7051		ou do n			
17	243	277.7	刀米	748.1		PZ.coh			
18	34.7	2427	27.75	7051		10 fr (21) 14			
19	254	797.6	nk	725.1		H-00 FB			
20	154	798.4	27.76	705		08 00 0			
21	7yo. 9	300.9	27.79	.7043		0.9 to 11			
22	711-1	2009	27.74	3001		10 170 11			
23	m1.9	7 W-8	27 71	704 E		1,00 6			
24	219	304.9	d7.74	209.C	1	13 120 4	1		

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{har} + barometric pressure, mm Hg

t = total sampling time, minutes

V_{m(std)} = sampled volume corrected to standard conditions, Nm³

Q = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m*

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $V_{m(sid)} = \frac{Q_{\sigma}}{1,000} \times \frac{298}{T} \times \frac{P_{bur}}{760} \times t$

MP-A/8-018-F02c Rev. 0. 8 May 2018



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO₂) AIR VOLUME CALCULATION Twenty Four (24) Hour Sampling

Hourly Reading	Amble	nt Temp., T	Barometric P	ressure, Pbar		Sampling	Flow Rate	Standard Volume
seaung	10	K	In Hg	mm Hg	Dute	Time	ipm -	Votd, Nm
0	718	34.8	27- FV	704.6	mails day	Root		T
1	71-1	3W. 1	27.99	704.3		Boo H		
2	70.9	3077	27-17	79.3		N OO H		
3	700 4	304.6	17.71	7099		ICOD H		
4	41-1	3412	27.70	79.6		16004		
5	22.0	7950	27.79	749		17 00 1		
8	22.3	2953	29.79	705.9		12 00 11		
7	33.3	796 2	13:32	703 6		19 m H		
8	1.16	7961	22.90	304.1		A0.5%H		
9	229	74.9	22.81	744		21 00 A		
10	24.0	2500	12.53	70C.1		22 00 H	0.3	
11	24.1	7991	77.80	704.1	1	Monu	2/10	
12	27.0	200	27.80	200.1	01 Aug. 20			
13	22.3	735.3	27-79	767		F 64 19		
14	220	285.0	. 27.79	7439		87 00 H		
15	24.1	792/	27.70	7636		63,00 H		
16	740	293.0	27 78	78.6		MODIF		
17	34.7	7422	27.76	742)		01 QD 70		
18	24.7	747.2	27.76	741		0000 11		
19	24.6	797.6	27. 70	741		0700 H		
20	154	791.9	23-36	7151		DE GO H		
21	non	2.42.5	22.71	749.3		০৭০৬ ৮		
22	71-9	30.9	27 74	700.5		10.00 4		
23	11. F	3.08	27.74	7045		TI ON IT		
24	319	7,14.9	23.34	700		12 00 H	-	Ju

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{ter} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{minut} = sampled volume corrected to standard conditions, Nm^a

Q = actual flowrate through the onfice, fixed at 0.2 ipm

1,000 = conversion from liters to $m^{\rm h}$

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm²)

 $V_{m(stil)} = \frac{Q_{\theta}}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

Team Leader:

QA / QC / Date:

MF-ARL/217-P02c





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonio St. Paseo de Magallanes Makati City, 1232 Phone No. (632) 854-8365 Fax No. (532) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	5		Date: 71 tuly - 61	Mila Jose
Parameter:		PM 2.5	PM 10	TSP
Filter Paper	No.	to /	21.121.	21.201
Hourly Flow	Rate (m ³ /m)	1"		
Average Flo	w Rate (m³/m)			
Total Opera	tion Time (min)		144-	1440
Initial Weigh	nt of Filter Paper (g)	1	4-4578	2.6564
Final Weight	of Filter Paper (g)	l n		-
Dust Conten	its (g)	/ "		
Total Volum	e of Air Sampled (m³)			

Remarks:		
Name & Signature of Official on Duty:	_	

Team Leader: 100 Soluti

QA/QC/Date:

MP-AIR-012-F03b Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Company: AMET-Asia Inc.				Date: JUAN AI - A	Mg. 61 201
Address: Unit 303, One C	Corporate Center, Ja Location:	Abril - Brau - L			
Start Time: Usa N	End Time:	Vote	GPS Reading: 1	0 320 22	
Ambient Temperature	nt 8	NOR		THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWIND TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN	
		Weather Conditions	coming with strong		
Filter ID No: JUL 1	fau Type	of Filter Paner Used:	Quartz/Glassfiber	Initial Weight: A	
sampled Parameters: No2					
Remarks: Duish (a.)				diasse gland, san	
coathon to be as				le which order	history des
amount least the part	TOUR .		1 1000	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	
TSP Sampler					
Model: TE-5070X	Serial No:	/2169/2139	Calibration Date:	Jun 24, 2021 / Sep. 8,	2021
15 30100		17	Parity actors pares	Tyri an, Eller / Sch. o.	EVEL
PM2.5/PM10 Sampler:		-			7)
Model: TE-5070X	Serial No:	2169/2(39	Calibration Date:	Jun 24, 2021 / Sep. 8,	2021
					100000000000000000000000000000000000000
Three (3) Gas Sampler:					
Model: IKC AMM	Serial No:	Executor	Flow Rate:	0.2 L/min	
larometer/Thermometer:					
Model: Lutron/Trace:	able Serial No:	AH.54310/181508474	Calibration Date: J	lan. 24, 2021 / Aug. 6, 20	21
Model: feed his to be NITIAL FILTER PRESSURE: INAL FILTER PRESSURE:	24.8	31 0 32 0	Calibration Date:	John leagur	
A)				1.25	
	e A 7	3		TYD? TH	
	-	-		-T 02 12	1
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*		F	1 .		19
to ot .	· t	t 1 + 1	1 + +		4
					2
Comp. A	Room &	(Lor	ion 2	200mi)
from 4	Local O		8	THE COLD	1
				1	
100		(4)		- /	111
	1/	1		11/1	17/
Feam Leader: Vhy	5 / Sald	4	QA/QC /Date:	J. C	
10	0	1		1	
					Vacantary.
					AIR-001-F05 . U; 8 May 2018
				100	





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambier	st Temp., T	Barometric P	ressure, Phar	- aminibution	Sampling	Flow Rate	Standard Volume
Reading	*c	K	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm*
0	709.1	312.1	28.01	712.5	24 M 1252	H orezt	,	7
1	ትት 8	7,048	21 01	712.5		16704		
2	44.8	7466	28.61	711-0		13 Note		
3	314	701,4	28.03	712.0		18.70 H		
4	30.9	309.5	2802	7/1.2		19 No A		
5	28.3	30-3	28.05	7/2-1		Lam a		
6	24.6	746	28.06	711.2		21 NO H		
7	25.9	798.9	28.09	7140		Jamo H		
8	25-1	208.1	28.4	7107		2370 H		
9	246	297.6	28-19	7142	nomb 20	t origa		
10	24.5	ママステ	281	7148	1	# OF 10		
11	24.5	2475	2809	7-h.2	1 3	OTTO A	1.2	
12.	24.3	7973	28.10	714.0		DA PAP AL	L/n	
13	24.2	297.7	28.08	719.7		outing a		
14	24.01	796 5	28.08	7140		acmo #		
15	25 (4	2456	2810	H3.7		067m ii		
15	29.4	307.9	28:10	713.7		OTTO H		
17	700	313.0	28.19	74-2		097/0 H		
18	200	340	16 -	74.6		09m A		
19	120 27	715.7	21- 15	7150		1070 #		
20	72.6	300 6	21:15	7150		1 m H		
21	128	348	18:02	714.8		(27/a f		
22	39 f	Total to	19:06	744		3,40 4		
23	33.0	340.0	28-04	7147		N300 #		
24	39	304.1	24.00	7/4.0		15 No F		

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{mistal} = sampled volume corrected to standard conditions, Nm⁵

Q = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $V_{m(std)} = \frac{Q_u}{1,000} \times \frac{298}{T} \times \frac{P_{bur}}{760} \times t$

Team Leader:

OA/OC/Oate yn JAth

MP-AR-018-F02:



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO₂) AIR VOLUME CALCULATION Twenty Four (24) Hour Sampling

Hourly Reading	Ambie	nt Temp., T	Barometric P	ressure, Phar	Sampling Date	Sampling Time	Flow Rate	Standard Volume
neouvig	,c	K :	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm
0	79.1	312-1	28:01	7125	1934 LOI	BOFZI	1	
1	27.8	2008	280)	7/25	1	168011		
2	3n.g	344.8	18.0/	7/20		1340 11		
3	31.4	3140	2803	7/2 0		18/100		
4	309	2009	28.02	7/2.2		1990 11		
5	283	203	14-05	7/2 2		24% H		
- 5	274	3006	28.06	7/2.2		2174- 11		
2.	259	2989	28.09	741.0		22/10/1		
8	25.1	298.	28.11	714.5		25004		
9	246	27#16	28.13	714.2	20 July 201	00% s		
10	245	297.5	2811	7/4.8		017-7	8:3	
11	24.5	7775	2810	714.2		OFFO A	4/4	
12	243	197.5	28.09	7/4.0		4370 A		
13	24.2	7973	78.08	7/3.7		MOP H		
14	23.0	2909	2808	7/4.0		0.530 H		
15	25.6	2726	2810	7127		06% F		
16	29.9	2029	Jk-10	715.7		UTTO H		
17	h 0	2000	10,10	214.2		08 90 H		
18	7000	200	29.10	714.8		697011		
19	127	2,057	275 38	7150		10.70 H		
20	W. 6	100 L	24.06	715.0		17 No. H		
21	728	3159	28 28	7410		127c A		
22	33.4	7164	19.06	714.5		1390 A		
23	71.0	34.6	18.00	7-14.2		Nº A		
24	33-1	2021	28-04	2140	1	2404		

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

 $P_{\rm hor}$ = barometric pressure, mm Hg

t = total sampling time, minutes

 $V_{\rm relate}$ = sampled volume corrected to standard conditions, Nm 6

 $\mathbf{Q}_{\mathbf{k}}$ = actual flowrate through the crifice, fixed at 0.2 ipm

1,000 = conversion from liters to m³

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $V_{m(sid)} = \frac{Q_g}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

eam Leader:

QA / QC / Date:

MF-ARI-017-F03E

Rev. 0; 6 May 2218



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Maga Centre San Antonio St. Passo de Magallanes Makarl City, 1232 Phone No. (632) 354-8365 Fan No. (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station: 4	Oate: 29 30 0	Date: 19 30 (70h) 201			
Parameter:	PM 2.5	PM 10	TSP		
Filter Paper No.	,	21.158	A1 200		
Hourly Flow Rate (m ³ /m)	-				
Average Flow Rate (m³/m)					
Total Operation Time (min)		1940	1440		
Initial Weight of Filter Paper (g)		4 4/82	I 667/		
Final Weight of Filter Paper (g)					
Dust Contents (g)					
Total Volume of Air Sampled (m ³)	/ P/				

Remarks:	-	
Name & Sig	gnature of Official on Duty:	

Team Leader: QA/QC/Date: YAOUS

MP-AIR 012-F03b Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Station No: 4	Locat	nter, Julia Vargas Ave. co ion: Renu - 27		
Start Time:	10hall End T		GPS Reading:	Latitude X-ILtaCl
Ambient Temperatu		18.001	and the state of t	Longitude 125-1279.25
Barometric Pressure	21.6	Weather Condition	on: spray who that	TO Our
Filter ID No: 3-300	13.128	Type of Filter Paper Use	ed: Quartz/Glassfiber	Initial Weight: 3 643/ 4 8H3
Sampled Parameters	No2, So2, TSP, PA	M10, Lead, Wind Speed a	nd Wind Direction, Noise,	Carbon Monoxide, Ozone
Remarks: Ehrlie		W Smit dias G		he highway server is maked
local some for street			and the second s	owney with their and tran-
POLICE MUNICIPAL OF	d half yelliches			
Salara I				
TSP Sampler:				
The state of the s	-5070X Serial	No: 2169/2139	Politica de la Politica	. fi day in a sum
Moder 15	-SUTUK Senai	NO: 2199/2139	Calibration Date:	Jup 24, 2021 / Sep. 8, 2021
PM2.5/PM10 Sample	EFF.			03
water and the contract of the	-5070X Serial	No: 2169/2/39	Calibration Date:	Jun 24, 2021 / Sep./8, 2021
112	SOTON SETTIN	140. 2103/4139	Calibration Date.	Jun 24, 2021 / Sep/8, 2021
Three (3) Gas Sample	-			
Model: Ckt		No: Expysto:	Flow Rate:	0.2 L/min
	Marie III			i amin'
Barometer/Thermor	neter:			
Model: /Lutron	/Traceable Serial	No: AH.54310/1815084	74 Calibration Date: J	Ing. 24-2021 / Aug. 5, 2021
-				
Multi RAE / Air Quali		t de		
Model: No.	mentatt Serial	Mary Mary Control	Calibration Date:	June St. State
	W.	- Love		400
INITIAL FILTER PRESS		0 100	Carbon Monoxide:	Da la laggen
PINAL PILIER PRESSU	ME: 21	0 Jag	Total VOC:	-
		PI GHWAT		
			707	CHARLES THE CONTRACT OF THE CO
n	1-	-	CY BY CAGY	CTA CANO
2 ~	h	TE TE	1 1-1 b	FI DESTON
1	1	14	1	1247
1		MILL		
		1	- " No	CREEK
		e f p r	1	0 1 1019
Various and				
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STOPE		T		1
STOPE				1
STOPE	1	Α.	- 4	
STORE	1)		
STOPE	0	<u> </u>		- 1 + 1 + 1
	land 1	en l	04/05/5	ing Ats
STORE Team Leader:	lms 1 8	aud .	QA/QC/Date:	ying Lots
	frot 18	544	QA/QC /Date:	ying Lots
	1 100 / E	544	QA/QC/Date:	,
	1 100 / 8	34	QA/QC/Date:	MP-AIR DOZ-195 Nov. D. B Mary 2021



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Amble	nt Temp., T	Barometric P	ressure, Pbar		Sampling	Flow Rate	Standard Volume
nending	°¢	x	In Hg	mm Hg	Date	Time	lpm	Vstd, Nm ⁴
0	291	302	29.27	7170	AT MAL MA	Head		T
1.	240	301.0	28 24	717.3		It oo H	1	
2	191	30.1	28-24	743		Heaft		
3	20 2	201-2	28 -24	717.3		18 CTON		
4	27.0	7,10.6	20 23	218-2		19 00 u		
5	32.7	298.7	28 - 28	7/6-3		1 m H		
-6	361	299.1	28.71	719		H OUT		
7	30.2	255-2	19.33	7196		12 coll		
8	77. A.C.	796-0	28.77	7196	-	Do !		
9	21.2	795.2	28 31	919-1	19 res 100.	4 an ao		
10	247	792.7	2. to	118.8	1	pi coli	0.0	
11	12.4	7584	23. 17	718.6		es ash	LA	
17	24.6	277-6	28-21	314.5		H COED	218	
13	14.0	297 U	28-18	718-3		64004		
14	34.0	7020	21 - 28	7/87		organ		
15	24.3	797.3	19-30	718-8		040014		
16	14.4	399.0	28.30	7188		HOD FO		
17	23-4	gar	28.32	719.3		0800 M		
18	41-2	2 W. 2	15-42	717.7		10 A 60		
19	72.0	3000	28.42	7/5.5		10004		
20	720	305.0	21.2	718-8		11 00 4		
71	226	Bost	15.28	783		12 60 4		
22	12.5	305	10.15	7/3.5		13 50 1		
2.3	727	3457	26-3	7153		H 60 1+		
24	12.L	3056	25.25	718.3	100	Ke0 4		-

A. Nomendature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

Phy = barometric pressure, mm Hg

t = total sampling time, minutes

V_{recital} = sampled volume corrected to standard conditions, Nm⁸

Q_a = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m3

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm^b)

 $\times \frac{P_{hur}}{760} \times t$

Team Leader:

MP-AIR-018-F02:



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO₂) AIR VOLUME CALCULATION Twenty Four (24) Hour Sampling

Hourly	Amble	nt Temp., T	Barometric P	ressure, Phar	Security	Sampling	Flow Rate	Standard Volume
Reading	٦,	1	in Hg	mm Hg	Dute	Time	Ipm	Vstd, Nm ²
0	A	3tt-1	39.29	717.0	At 161 MI	Hog2i		7
1	20	311.0	20.24	217.3	1	1600 H		
2	221	201-	27.31	74.3		HOOH		
3	-20 2	301.2	20 N	74.7		12 mg H		
4	22-0	210.6	26 27	218-7		IQua H		
5	25.7	257.1	21 23	718.4		DEEDH		
6	201	199	A9 .71	219.1		d) on th		
7	202	998-7	29.43	TAG	8 IA	22 mg H		
8	17.1	798.0	28.33	7/9.6		Mrs H		
9	250	248.7	19.31	7/9/	AMHA			
10	24.9	2929	28-30	7188		H Gald	0.2	
11	25.4	754-4	28.29	718.6		H egsu	LA	
12	21.6	7976	18.21	\$16 S		60260		
13	24.0	794.0	1679	7/83		ONEON		
14	240	297.0		7/1.5		Worth		
15	29 3	297.1	13 70	7/8:2		D6 00 H		
15	264	399:4	37.70	219.2		5700 H		
17	24.4	7,05	13 31	719 9		DECOH		
18	31.2	2W2	28.32	3/91		89 en 11		
19	320	7.40	28.32	7/9 1		1000 4		
20	100	34.0	38.70	NES		11 60 4		
51	22.6	206	25 12	7/8, 5		1380 H		
22	19:5	7.46.5	28.38	3/E:		19 CO pt		
23	72.3	3/27	28 78	3/5 2		H 00 11		
24	2016	7156	21.28	78.3		1280 P		-

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{her} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{ecinti} = sampled volume corrected to standard conditions, Nm⁹

 $\Omega_{\rm d}$ = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m²

Philippine Standard Pressure and Temperature

298 + Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $Q_o \times \frac{298}{\times P_{har} \times t}$ 1,000 760

MP-AIR-017-750s Bev. 0; 8 May 2018



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd flaor Maga Centre Son Antonio St. Paseo de Magañanes Makoti City, 1232 Phone No: (632) 354-8365 Fox No: (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	3			Date: 1 - 19 10	N JACO
Parameter:		P	M 2.5	PM 10	TSP
Filter Paper N	lo.	-	1	21-163	2.199
Hourly Flow F	Rate (m³/m)	-	1		
Average Flow	Rate (m³/m)		1		
Total Operati	on Time (min)			1440	1440
Initial Weight	of Filter Paper (g)			4.44.25	16422
Final Weight	of Filter Paper (g)				
Dust Content	s (g)		Dr.		
Total Volume	of Air Sampled (m3)				

Remarks:			
N 0.6/			
Name & Signature of Official on Duty:	~		

Team Leader: 1975 Sall

QA/QC/Date: 4 Jot

MP-AIR-012-F03b Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Station No:	t 303, One Corpo	Location:	ABUST -	cor Meralco		210012	H 4	13311	
Start Time: Ambient Tempi	ECON 30	End Time:	HOW H		GPS Reading	Littitude		LO BI	
Barometric Rra			Weather Con	dition: too	nd to har		194-1	22	tsf
Filter ID No:			e of Filter Paper	Lised: Owner	r/direction	Initial Park	ist Wele	ht: 4445	2.4
	eters: No2, So2					Carbon Me	vocasirie	Ozone	2.643
Remarks: 👊	- contrate the second s	at - et lu	THE RESERVE OF THE PARTY OF THE	al . Wade	A PROPERTY OF THE PARTY OF THE	ACCUPATION OF THE PARTY NAMED IN	Me fem	Avai now	1/4
the state of the s	estima as w	7	4	FOA SAMP	10-15 me	-	CVID	to neve in	. 38
Property 13		THE RESERVE OF THE PARTY OF THE		offi	100	Contract Con	-		
		110							
TSP Sampler:			0			-			
Model:	TE-5070X	Serial No:	/2169/2135	9 7	alibration Date	where	2022 15	0 2024	
(VIOUCS)	TESUTON	DEFIGITION.	1 2393(233)		andradon Date	Jyn 290	2021/3	ep. 8, 2021	ř
PM2.5/PM10.5	amplec		-	w73		-			
Model:	TE-5070X	Serial No:	2169/213	9 0	alibration Date	: Jun 24.	2021 / 5	ep. 8, 2021	
Wennell	133133					2411.676	OEE 1 0	Contraction	
Three (3) Gas Sa	ampler:								
Model:	Annual State of State	Serial No:	£9009001		Flow Rate	10	0.2 L/m	nio	
Barometer/The						-			
Model: /	utron/Traceable	Serial No:	AH.54310/1815	08474 C	alibration Date	Jan. 24, 20	21 / Aug	6, 2021	
I WILLIAM TO THE	A STANSFORM								
	Quality Meter Ec		061-20	20		-	227.3	200	
Model: Ke	d Inchuncin		0617710		alibration Date	Julye	37. 36	1	
INCOME.	Description of the last of the	7401	Part .	100		tal I			
FINAL FILTER P		24.4	18:1	Carbo	n Monoxide:	Jah leg	ACV.		
TIMAL FILTER PI	(ESSURE)	10-11	19.0		Total VOC	_		_	
		-	CIMPS 4	1 945			_		_
1 N/2	CVW	N. V.	VAV.	13/ CV	Sarket	raid	Suc.	0 38 VI	13
H W.	1-1-4	1-1	1 7-	7 1-11	more	4 717	J.	more	XY
1		_1 1	2 1 1	1 / 1	100	0/4/	10,		100
			F	A				m	
) A /			T	B	-			6.10	13
10/								XU	VV
13/								100	-
E	-	1						JC.	-7
6	/					n	1-		2
	1	-1			/	1791	12	My ou	11
10		1-1-	Company of the Control		(M	2.6	17/12	18
2		5 A	¥T			- X C	10	V	6
- 10		17111					1-	0 10	
	4								
Team Leader:	50010	11	111		Dr. Inc. In	il	0/	1	
ream Leader:	DX.V	150	المطع		QA/QC/Date	4	7#	001	_
	100	1)			100	N.		
	*							MF-6/R-001-70	
								Nev. 9; 8 May 2	018





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Fix No. (N.E.) 729-4327

SULFUR DIOXIDE (50,) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambier	nt Temp., T	Barometric Pr	ressure, Phar	agendening.	Sampling	Flow Rate	Standard Volume	
Reading	10	K	In Hg	mm Hg	Date	Time	lpm	Vittd, Nm ³	
0	71-6	344	18:60	728.7	In right J.D.	II TO A	-	9	
1	ال الد	714.6	29.60	728-1		HIT A			
2	nos	303.8	58.45	728.2		197ho A			
3	70.5	70.5	18:59	7536		Nm H			
4	Thes	303.5	28.59	754.0		ICho a			
5	710.6	3036	24.59	727.2		1670 11			
6	199	322	29-60	7295		The it			
7	76.4	799 4	71 45	227.7		18270 g			
0.	203	299.3	28-64	731.0		19770 11			
9	25.4	798.4	20.69	730 5		dono l			
10	25.4	238.4	29.62	730.5		2170#			
11	25.5	2985	28 18	730.3		2270	1.2		
12	250	298.5	28 67	730-3	1	24 70 4	LL		
13	247	728.0	21.68	730.0	12 Ma20	0070 H			
14	243	247.7	28.66	730.7	13	0170 4			
15	240	272.3	29.67	129 7		C270 #			
16	24.1	797.0	21 67	7500		好物用			
17	71.8	7920	21 61	7303		0470 1			
18	25.9	797.6	28.68	730.1		OCM A			
19	754	-278-7	26.69			0620 1			
20	45.7	3001	28.69	7303		DFM A			
21	45.9	7088	18-34	7-29.01		00% A			
22	70.0	3080	21.69	127.0		09 7º 6			
23	31.8	348	28.69	729.0		1030 #			
24	7/4	317.)	29.70	729.0	1	11 70 H			

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

Phy = barometric pressure, mm Hg

t = total sampling time, minutes

V_{robati} = sampled volume corrected to standard conditions, Nm³

Q_a = actual flowrate through the orifice, fixed at 0.2 ipm

1,000 = conversion from liters to m⁸

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm⁸)

MF-4/R-018-F02:



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly	Ambie	int Temp., T	Barometric Pr	essure, Phar	Sampling	Sampling	Flow Rate	Standard Volume
Reading	3"	K	in Hg	mm Hg	Date	Time	lpm .	Vitid, Nm ³
0	71.6	304.6	मि कि	728.7	DE HIEFE	117104	1	ST
1	71.6	314.6	28.60	7287	1	LTho R		
2	70.2	3038	28:19	7281		וו שלדיו		
1	no.5	700.5	32.69	7130		14790 H		
4	から	303.5	18.59	7.54.4		I Cho H		
- 5	706	3026	28 29	7297		16.7m p		
6	299	302.9	1660	229.5		1770 H		
7	24	2994	28 65	729-7		IENO H		
- 8	dus	799.3	22:26	D. Idya		1970#		
9	254	12981	28.68	700.2		2070 H		
1.0	25.4	298.4	2140	7305		2170 1	-	
11	25.5	2985	28.65	350.5		gaho II	0.3	
12	250	298.0	28 67	730-5		2300 H	E/m	
13	247	2972	28 48	730.0	2874m 207	appe H	1	
14	243	7973	2.8.66	750.3	1	01 % H		
15	240	2720	28.67	7-292		NORTH		
16 .	24.0	2770	29-67	2500		0.57m H		
17	24.1	2728	28.67	2303		61/240 H		
18	259	295.9	33.63	2503		4 of 24		
19	75	70814	2869	7303		C6 76 a		
20	757	2000	8869	7503		מן שאדם		
21	75.9	.3069	17.70	700.0		082m H		
22	20.0	309.0	# 69	779.0		597kg H		
-29	71.8	कार्यः प्	21.70	229.0		ाण्यकः स		
24	70.1	309.9	21.30	779.0		1170 11		-

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{ter} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{mintl} = sampled volume corrected to standard conditions, Nm^a

 $\Omega_{\!_{B}}\!=\!$ actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m⁴

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm⁵)

 $V_{m(ml)} = \frac{Q_a}{1,000} \times \frac{298}{T} \times \frac{P_{bor}}{760} \times t$

Team Leader: GAU | DAVA-

QA / QC / Date:

MF-AH-017-700c



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.

3rd floor Mage Centre San Antonio St. Paseo de Magallarus Makoti City, 1232 Phone No: (632) 854-8365 Fax No: (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	2	1			Date: 27-39 JVM 201		
Parameter:		P	M 2.5	PM 10	TSP		
Filter Paper N	Vo.			31 144	82 KF		
Hourly Flow I	Rate (m³/m)	n		1			
Average Flow	Rate (m³/m)						
Total Operati	on Time (min)			1940	1440		
Initial Weight	t of Filter Paper (g)			ने गर्गकेव	2 8849		
Final Weight	of Filter Paper (g)		6		-		
Dust Content	s (g)		/ 13				
Total Volume	of Air Sampled (m ³)						

Remarks: N	
The state of the s	
Name & Signature of Official on Duty:	

Team Leader: Styl logo

QA/QC/Date: MA JAST

MP-AIR-012-F03b Rev. 0; 8 May 2018

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



	MET-Asia Inc.				Date: 17 - 28 JUL	ALT.
	Init 303, One Corr		lia Vargas Ave. cor. M			
Station No:	2	Location:	The state of the s	nt 7 Mambertangan		
Start Time:	11 204	End Time:	11 Troll	GPS Reading: I		
Ambient Tem		7.6			anertude 124 STATE	1
Barometric P	191	60	Weather Condition:	summy to Pair Ma	they condition to	115.00
Filter ID No:		Type	of Filter Paper Used:	Quartz/Glassfiber	Initial Weight: 1 km	9 444
Dampieu rara	meters: Noz, 50	12, 13P, PM10, LE	ad, Wind Speed and		arbon Monoxide, Ozone	
memarks.	Edward 12	art me in a	y has list that	asky alkally 3	meter two per the	
Brook 12	that light nun	pathya pt . with	No. 22 - As MANAGE	and the the wir	dental area may can	ing god get
EBACO TO	THE SEATO THE	- June - Date				
TSP Sampler			2		1	
Model:	TE-5070X	Serial No:	2169/2139	Calibration Date:	Jun 24, 2021 / Sep. 8, 2021	
	and the same of th					
PM2.5/PM10	robritanio est bezona.		1			4
Model:	TE-5070X	Serial No:	2169/2139	Calibration Date:	Jun 24, 2021 / Sep: 8, 2021	2

Three (3) Gas	The second secon	20202000	ALC: ALC: A		5000000	
Model:_	of thing	Serial No:	£8109001	Flow Rate:	0.2 L/min	
I ammonar Pri	terpometer:	and a	-			
	Lution/Traceable	e Carlot No.	VH 54310/181508474	ACHELON - W	Land or and	
Twinder.	COLION/Traceson	E Serial NO: A	H-54310/181508474	Calibration Date: Ji	an. £4, 2021 / Aug. 6, 2021	
Multi RAF / A	ir Quality Moter E	en domento				
Model: 1	Reed Inchropen	Serial No:	G-419814	Calibration Date:	black by terry	
	ACC. INTERNACE	nl	P7WO	Canoración Date:	July 20 201	
INITIAL FILTER	R PRESSURE:	220 1	3.4	Carbon Monoxide:	datalogger	
FINAL FILTER	PRESSURE:	22.8	10. 1	Total VOC:	SAUSCALL	
		94-0	-	10111111111	1	
	1 4 4					la A
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	19					CARA BE
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fanan lassifa		/ UNCL	2	QA/QC /Date: <	1/4 FOW	((
eam Leader:	Shy	1				
eam Leader:	SH				e. n	
eam Leade <u>r:</u>	24					
eam Leade <u>r:</u>	84				MPARAS	5000000
eam Leade <u>r:</u>	84				MP-AIR-GO Rev. C; S M	5000000
eam Leader:	84					5000000





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



HiAdvance Philippines, Inc.
Jed Stor Maga Cante
Jen Actions St. Pages St Magazines

San Arcono Sr. Passo de Mogaliume Maries Cay, (230) Plume No. (632) 254-2363 For No. (632) 779-4327

SULFUR DIOXIDE (SO2) AIR VOLUME CALCULATION

Twenty Four (24) Hour Sampling

Hourly Reading	Ambie	ent Temp., T	Barometric P	ressure, Pbar	Sanishing.	Sampling	Flow Rate	Standard Volume	
Keading	,c	×	in Hg	mm Hg	Date	Time	lpm	Vstd, Nm ³	
D	77.9	306.4	29.66	753.4	21 714 105	H 00:01	1	-	
1	41.2	746.5	29.65	7591		1100 11			
2	54.4	344	29 65	753.1	1	1200 H			
3	机玉	304.5	29-65	753.1		Am H			
4	MA-L	346	19.65	30.1		NEO H			
5	刊力し	7416	09:65	763.1		ICON H			
6	775	7145	29.65	753.1		H TO JI			
7	777	2,04,2	29.45	7531		H mfl			
8	41.8	204.8	3945	7521		1900 P			
9	ni a	2013	39.66	73.0		1909 14			
10	28.3	301-3	29.77	755.1		20001	0-2		
11	28.5	300	19 79	750.1		21 6V H	Hm		
12	28-1	20.1	29.71	794.6		2200 13	1		
13	48 D	7,11:0	49.71	754.6	1	d3 _{cm} H			
14	117	7,00.7	27.69	7943	23 Tal 440	CO CO H			
15	27.0	206	19 69	79.1		0100 1			
16	17-5	345	27.68	789		0200 1			
17	17 1	300-2	17.68	755.9		53 CW H			
18	2.7	7997	1767	7556		of ov i			
19	14.8	797.8	19.48	7549		01.00 M			
20	177	3007	19.61	755		06000			
21	27.0	200	24.68	7599		Of ca. H			
22	194	306	1949	714.1		08-04			
23	30 8	308	29.68	7159		Of on H			
24	31.6	704.6	29.69	7541	1	togo H		-	

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{bar} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{actood} = sampled volume corrected to standard conditions, Nm³

 $Q_{\rm e}$ = actual flowrate through the orifice, fixed at 0.2 lpm

1,000 = conversion from liters to m⁴

Philippine Standard Pressure and Temperature

298 = Standar ambient temperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm³)

 $V_{m(sid)} = \frac{Q_{\sigma}}{1,000} \times \frac{298}{T} \times \frac{P_{bar}}{760} \times t$

Team Leader:

QA/QC/Date: YLJ LA

MP-AIR G18-FG2: Rev ID T May 7318



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



NITROGEN DIOXIDE (NO₂) AIR VOLUME CALCULATION Twenty Four (24) Hour Sampling

Hourly Reading	Ambier	nt Temp., T	Borometric P	ressure, Pbar	Seattleburg.	Sampling	Flow Rate	Standard Volume	
weaming	70		in Hg	mm Hg	Date	Time	(pro	Vstd, Nm ³	
D	359	3666	20-66	753.Y	26-341-141	10001		T	
-1	34.5	702.5	29.65	753.1	1	11.69.11			
2	33.4	7. Ch. 4	27 65	73.1		1200 H			
3	33.5	7465	29.65	753.1		Boo A			
4	33.6	3146	29-65	7530		4001			
- 5	3.36	7046	14.65	753.1		MOO A			
6	24.2	4165	29.65	753.)		11,00 1			
7	31.7	7,190.7	29.65	7331		19:00 H			
- 8	71.8	314.8	24.65	303 F		1800 H		100	
9	m.d	342	P.44	757 4		19mp H			
10	683	30.9	29.73	755.1		2000 11			
11.	28 3	300	N9.75	755.1		2100 H			
12	A 34-2 TE	30	29-41	7546		2200 #			
13	18.0	300	19.71	7546		Month.	0.2		
14	177	307	19.69	759.1	23 +164,40	Photo W	. L/m	1	
15	17.6	2006	29.67	739 1	-	glot u	1		
16	7.15	242.5	1968	75.9		tidon H			
17	17 7	7/02	19.68	なりた		thos u			
18.	16.7	1912	19.67	765.C		evice ii	- 16		
19	24.8	277 C	29.63	7439		of on 11			
20	17-2	7,10.1	29.68	7535		Oleon H			
21.	290	200	29.6%	7/55		07 cp ¹⁴			
22	474	3006	29.61	7001		DECEN			
23	304	3/th 4	29.68	7,35		0700 H			
24	310	704.6	29.69	504.1		1000 H			

A. Nomenclature (Terms are listed by the order of their appearance in the table above)

T = ambient temperature, K

P_{ber} = barometric pressure, mm Hg

t = total sampling time, minutes

V_{mints} - sampled volume corrected to standard conditions, Nm⁸

Q = actual flowrate through the prifice, fixed at 0.2 lpm

 $1,000 = \text{conversion from liters to m}^3$

Philippine Standard Pressure and Temperature

298 = Standar ambient remperature, K (25°C + 273)

760 = Standard atmospheric pressure, mm Hg

B. Formula used in Calculation:

a. Total volume of air sampled, corrected to standard condition (Nm*)

 $V_{m(xnd)} = \frac{Q_u}{1,000} \times \frac{298}{T_A} \times \frac{P_{har}}{760} \times t$

Team Leader:

OA / OC / Date:

MP-AIR-017-F92c



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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3rd floor Midgo Centro San Antonio St. Pasea de Magalames Makatr City. 1232 Phone No: (632) 854-8365 Fax No: (632) 729-4327

FIELD DATA SHEET FOR PARTICULATE MATTER

Twenty four (24) Hour Sampling

Station:	ATB H1		Date: 11 1	Date: 11- 17 July 101		
Parameter:		PM 2.5	PM 10	TSP		
Filter Paper I	No.		21-165	21-197		
Hourly Flow	Rate (m³/m)	V-				
Average Flov	v Rate (m³/m)					
Total Operat	ion Time (min)		1440	(440		
Initial Weigh	t of Filter Paper (g)		4.412\	1 6788		
Final Weight	of Filter Paper (g)			1		
Dust Conten	ts (g)	/ w				
Total Volume	e of Air Sampled (m ³)	1				

Remarks: M	

Name & Signature of Official on Duty: --

Team Leader:

QA/QC/Date: 41)

MP-AIR-012-F03b Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



ddress: Unit 303, One (Comporate Cartes India to	and he are the set	Aug Basis	late: JL - 27 Tall July
tation No: 1	Corporate Center, Julia Var	- Bray (Acing Ut	Ave, Pasig	
art Time: terrosi	End Time: Letto		GPS Reading: Latitu	de 8.51573
The state of the s	39 66		Longit	The state of the s
rometric Pressure:	7m 9 Weath	er Condition: Game	. medicale was	A blowned Press Till
	Type of Filte	r Paper Used: Quartz	/Glassfiber	Initial Weight: 4 4 1 1 1 6 78
	, 5o2, TSP, PM10, Lead, Wi			
marks: Set up in	a graw tracky gram	appret an	nckly may tree	
may whatev could	hanny vehicles w	market hinger	tial burn papers	8 day leakes I least up to som
month of them to	HANG VERLOOF W.	Car Ingerra -		
P Sample :		1		
Model: TE-5070)	Serial No: 21	50/2139 Ca	libration Date: Jur	24, 2021 / Sep. 8, 2021
12.5/PM10 Sampler:				
Model: TE-5070X	Serial No: 21	69/(£139) Ca	libration Date: Jur	24, 2021 //Sep. 8, 2021
	30.00.00		and detail and tell and	14, 1011 / 3001 0, 1021
ree (3) Gas Sampler:				
Model: CKC fried	Serial No: EX00	900	Flow Rate:	0.2 L/min
and the first state of the same of the sam	CORNER			
Model: Lutron/Trace	able Serial No: AH.543	0.011100174	libration Data: 30, 2	4, 2021 / Aug. 6, 2021
THE STATE OF THE PARTY OF THE P	An.343	Lagrada 13000474 Ca	noración pare yan, y	4, 20237 Aug. 6, 2021
ulti RAE / Air Quality Met	er Equipment:			
Model: SALL WITH		17316 Ca	libration Date: An	e 2021
	t/2 Luno	natione and	with the second second	Control of the Contro
ITIAL FILTER PRESSURE:	24.0 18.0	parties -		WELDER
NAL FILTER PRESSURE:	220 13		Total VOC:	
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				MP-4/8-003-F25
				Rev. 0; 8 May 2018



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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COMPANY NAME: AMET-Asia Inc.

Company Address: Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig
24-Hours Ambient Air Sampling and Monitoring
SAMPLING SITE: Cagayan De Oro to Bukidnon

Station AQN9



Station AQN10





M21H151

AMET-Asia Inc./ Ambient Air Sampling and Testing Repor



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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COMPANY NAME: AMET-Asia Inc.

Company Address: Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig 24-Hours Ambient Air Sampling and Monitoring SAMPLING SITE: Cagayan De Oro to Bukidnon

Station AQN7



Station AQN8



MZIH151

AMET-Asia Inc./ Ambient Air Sampling and Testing Repor



jica

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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COMPANY NAME: AMET-Asia Inc.

Company Address: Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig
24-Hours Ambient Air Sampling and Monitoring
SAMPLING SITE: Cagayan De Oro to Bukidnon

Station AQN5





Station AQN6





M21H151

AMET-Asia Inc. J Ambient Air Sampling and Testing Repor



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Station AQN3





Station AQN4



M21H151

AMET-Asia Inc./ Ambient Air Sampling and Testing Repor



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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COMPANY NAME: AMET-Asia Inc.

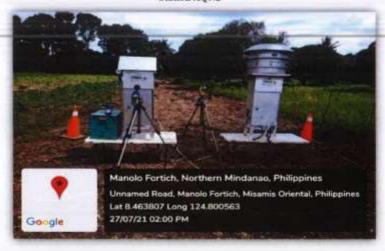
Company Address: Unit 303, One Corporate Center, Julia Vargas Ave., cor. Meralco Ave. Pasig 24-Hours Ambient Air Sampling and Monitoring SAMPLING SITE: Cagayan De Oro to Bukidnon

Station AQN1





Station AQN2



M21H151

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Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Annex 8. Air dispersion modeling methodology

The AERMOD model is a steady-state plume model that assumes all concentrations at all distances during a modeled hour are governed by the temporally averaged meteorology of the hour. The steady state assumption yields useful results since the statistics of the concentration distribution are of primary concern rather than specific concentrations at particular times and locations. The flow of information implemented by the model is shown in **Figure 2-1**.

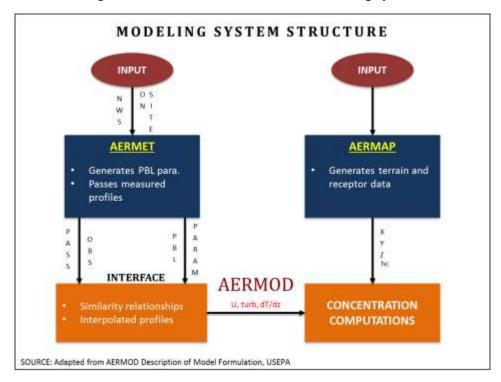


Figure 2-1. Data flow in the AERMOD modeling system

Modeling domain and receptors - The model domain is 60-kilometer square with a 200-meter resolution grid (Figure 2-2, Table 2-1). The coordinates and elevations of each node were determined Google Earth, ExcelTM formulas, online tools, and data from the Space Shuttle Radar Topography Mission 3 (SRTM3) database. In addition to the grid nodes, a sensitive receptor at 25, 50, 100, 200, and 300 meters from the center of the roads were also generated (Figure 2-5).

Table 2-1. Technical description of the model domain

Parameter	Axis	Value
Axis length, m	Х	60000
	У	60000
SW corner UTM	X	684588
	У	893371
NE corner UTM	X	744588
	У	953371
Resolution, m	Х	200
	У	200
# of lines	X	301
	у	301

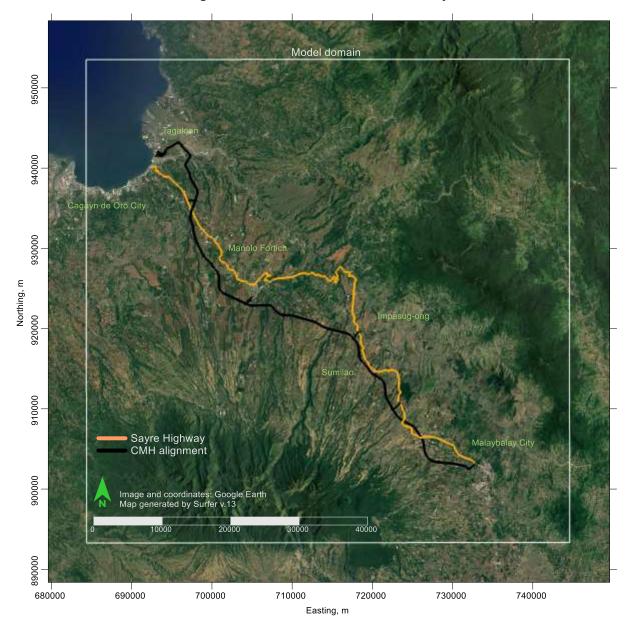


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of nodes x,y 90601

Figure 2-2. Model domain of the CMH Project



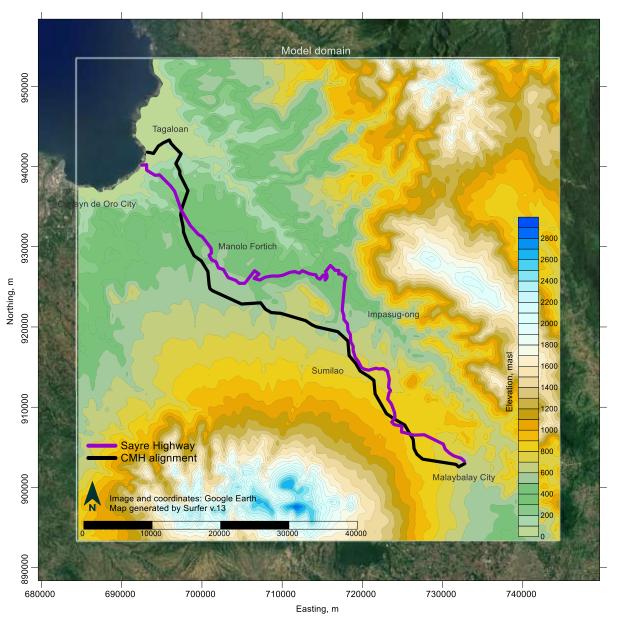
Digital Elevation Model (DEM) – A DEM was generated to determine the elevations inside the model domain (**Figure 2-3**). Topography inside the DEM domain is characterized by mountainous terrain with elevations ranging from sea-level to 2,884 masl with a mean of 936 masl. Such terrain is called as "complex" in air dispersion modeling and will have effects on the predicted GLCs because these elevations are higher than the emission sources.

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Meteorological data – The three-stage procedure for generating the required 2020 surface and profile met files for the AERMOD model is described below.

Stage 1 — Weather Research and Forecasting Model (WRF) - The WRF is a next-generation mesoscale numerical weather prediction system designed for both atmospheric research and operational forecasting applications. It is the most commonly used prognostic model by the USEPA and the modeling community and provides state-of-the-science parameterizations of the atmosphere. The WRF (version 4.1, ARW core) was initialized with the NCEP FNL (Final) Operational Global Analysis Data 3 operationally prepared every 6 hours on a 1x1 degree grid. The model was run at 45 vertical levels, up to 50 mb, with a three-level nested domain with resolutions of 27, nine, and three kilometers. The innermost WRF domain extended about 200 km along both longitude and latitude.



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 Stage 2 – Mesoscale Model Interface Program (MMIF) - The USEPA MMIF was used to convert the WRF output fields to the parameters and formats required for direct input into AERMET, the meteorological pre-processor of AERMOD. The MMIF has options to produce either input files for AERMET or meteorological input files for AERMOD bypassing AERMET. The MMIF was used to create the required files ONSITE for the AERMET pre-processor.

2. Stage 3 – AERMET Pre-processor - The AERMOD surface and profile met files with hourly resolution were generated by AERMET. The variables included in the surface file are: sensible heat flux, friction velocity, convective velocity, vertical temperature gradient in the first 500m above the planetary boundary layer, extents of the convective and mechanical boundary layers, the Monin-Obukhov length, surface roughness, Bowen ratio, albedo, wind speed, wind direction, anemometer height, temperature, and thermometer height. Variables included in the vertical profile for each elevation above ground are elevation, wind speed, wind direction, temperature, and standard deviations of wind direction and vertical wind speed.

Source configuration – The existing Sayre Highway and proposed CMH alignment were divided into five sections based on the traffic projections of JICA (**Figure 2-4**). Emission rates assigned to each section were dependent on existing traffic count and projections. The roads were represented as volume sources following USEPA guidelines. The model objects in the AERMOD software representing the roads and receptors are shown in **Figure 2-5**.

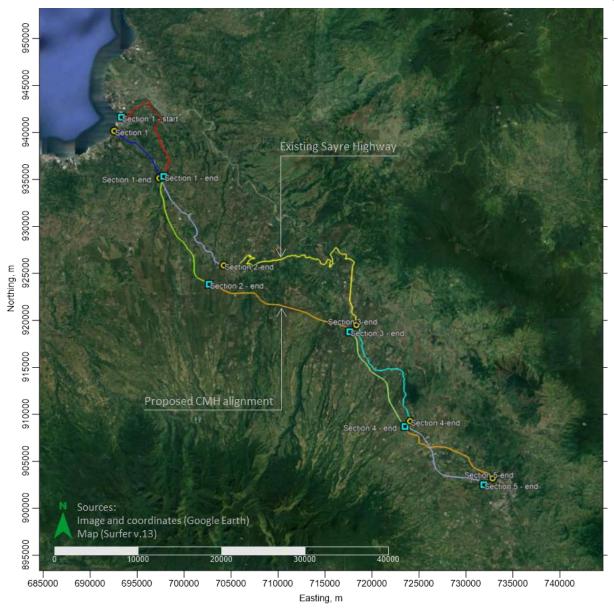
Figure 2-4. Source configuration for modelling

1

ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey

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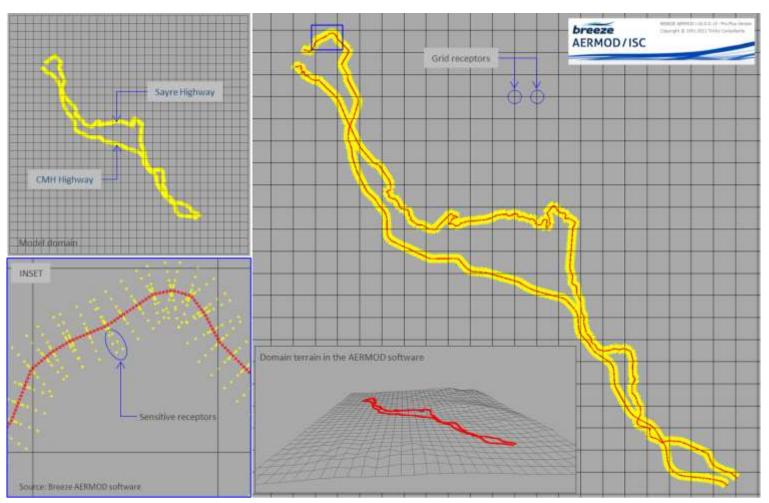


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Figure 2-5. Model objects in the AERMOD software





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Emission rates – The first step in estimating the emission rates was to determine the existing and projected traffic. The existing traffic was based on the survey conducted during the EIA while the traffic projection in 2040 by section was provided by JICA (**Table 2-2**). The traffic projection in 2026 was hindcasted from the 2040 projection using the equation below.

$$r = \left[\left(\frac{P^{(t+n)}}{P_t} \right)^{\frac{1}{n}} - 1 \right] x \ 100$$

where $\, r$ - average annual growth rate $\, P_t - \text{traffic count of base year} \, P^{(t+n)}$ - traffic count at projected year $\, n$ - time interval in years

Table 2-2. Traffic projections in Sayre Highway and proposed CMH (2040)

Road	Vehicle Type	Section 1	Section 2	Section 3	Section 4	Section 5
Proposed	Car	13,600	11.700	12,000	10,500	10,600
CMH	Jeepney	0	0	0	0	0
	Bus	2,200	2.200	1,500	1,600	1,600
	Truck	4,800	4.800	3,500	3,400	3,500
	Sub-Total	20,600	18,700	17,000	15,500	15,700
Existing Sayre	Car	4,900	6.000	3,100	4,100	3,700
Highway	Jeepney	1,000	900	600	600	500
	Bus	0	100	100	0	0
	Truck	0	100	100	100	0
	Others	0	0	0	0	0
	Sub-Total	5,900	7.100	3,900	4,800	4,200
	GRAND TOTAL	26,500	25,800	20,900	20,300	19,900

Source: JICA

The traffic volumes used to estimate emissions for the scenarios *With Project (Sayre Highway only), With Project (CMH only),* and *Cumulative (both Sayre Highway and CMH alignment)* are shown in **Table 2-3**.

Table 2-3. Number of vehicles for calculating emission rates

		Without Project*		With Project**		CMH and Sayre	
Section	Vehicle type	2026	2040	2026	2040	2026	2040
	CAR	778,658	1,106,250	2,292,097	3,295,951	3,070,755	4,402,201
	JPY	45,978	65,321	359,573	517,282	405,551	582,604
1	BUS	19,940	28,329	101,306	145,707	121,246	174,037
1	TRU	671,212	953,599	1,630,065	2,344,052	2,301,277	3,297,651
	OT	0	0	222,414	320,013	222,414	320,013
	TOTAL	1,515,788	2,153,500	4,605,456	6,623,006	6,121,244	8,776,506
	CAR	993,971	1,412,098	1,753,611	2,491,770	2,747,583	3,903,869
	JPY	20,815	29,571	151,505	215,201	172,320	244,773
2	BUS	20,459	29,066	69,033	98,032	89,492	127,098
	TRU	788,844	1,120,681	1,098,718	1,560,798	1,887,561	2,681,479
	OT	0	0	59,564	84,603	59,564	84,603



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	Without Project*		With Project**		CMH and Sayre		
Section	Vehicle type	2026	2040	2026	2040	2026	2040
	TOTAL	1,824,090	2,591,417	3,132,430	4,450,405	4,956,520	7,041,822
	CAR	525,765	746,555	1,166,964	1,669,294	1,692,728	2,415,849
	JPY	21,446	30,692	89,976	129,005	111,423	159,697
3	BUS	17,398	24,554	84,826	121,237	102,224	145,791
3	TRU	437,353	621,699	1,066,687	1,525,430	1,504,040	2,147,129
	OT	0	0	186,920	267,803	186,920	267,803
	TOTAL	1,001,962	1,423,500	2,595,373	3,712,769	3,597,335	5,136,269
	CAR	663,636	942,839	1,400,319	2,029,093	2,063,955	2,971,932
	JPY	13,350	18,966	261,571	379,054	274,920	398,020
4	BUS	26,497	37,645	87,501	126,818	113,997	164,463
7	TRU	529,736	752,604	1,158,607	1,678,766	1,688,342	2,431,371
	OT	0	0	247,298	358,384	247,298	358,384
	TOTAL	1,233,218	1,752,054	3,155,295	4,572,116	4,388,513	6,324,170
	CAR	430,250	611,242	1,262,440	1,793,529	1,692,690	2,404,772
	JPY	185,728	263,858	414,796	589,294	600,524	853,153
5	BUS	19,624	27,879	65,909	93,703	85,532	121,581
3	TRU	443,461	630,011	637,882	906,221	1,081,343	1,536,232
	OT	0	0	405,339	575,970	405,339	575,970
	TOTAL	1,079,062	1,532,990	2,786,366	3,958,717	3,865,428	5,491,707

The next step was to estimate the emission rates of NOx, SOx, and particulates using the emission factors in **Table 2-4**. Fugitive particulate emissions were also calculated from vehicles travelling in paved roads using the equation¹ below. The values used for the parameters are 0.024 (TSP) and 0.0046 (PM10) for k_i , sL=0.1, and AW=3.1 (default). The resulting emission factors using the equation are 0.0036 kg/km for TSP and 0.000689 kg/km for PM10.

$$EF_i = k_i * (SL/2)^{0.65} * (AW/3)^{1.5}$$

where EFi – emission factor for particle size i, kg/km
Ki – empirical factor for particle size i
sL – road surface silt loading, g/m²
AW – average vehicle weight, MT

Table 2-4. Vehicle emission factors for NOx, SOx, SPM

Pollutant	Vehicle type	EF, g/km	Pollutant	Vehicle type	EF, g/km			
	Car	2.78		Car	0.05			
NOx	Truck	3.53	SPM	Truck	0.05			
	Jeepney	7.01		Jeepney	0.81			
	Bus	9.22		Bus	0.80			
	OT	5.64		OT	0.43			
	Car	0.01	Source: JICA & NEDA, Roadmap for Transport Infrastructure Development for					
SOx	Truck	3.53						
	Jeepney	0.11	Metro Mani	la and its Surroun	ding Areas			

¹ Emissions Estimation Technique Manual, National Pollutant Inventory, Department of Agriculture, Water, and Environment, Australian Government



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Pollutant	Vehicle type	EF, g/km	Pollutant	Vehicle type	EF, g/km			
	Bus	0.10	Final Report	, Technical Report	t No. 1, March			
			2014; NOTES: OT – mean of Car, Jeepney					
	OT 0.94 Bus, Truck; vehicle speed >20kph; S							
			suspended particulate matter					

The annual emissions from traffic and particulate matter from unpaved roads at each section, scenario, and year are summarized in **Table 2-5** to **Table 2-9** and the final emission rates for the simulations are shown in **Table 2-10**.

Table 2-5. Annual pollutant emissions from vehicles in Section 1

		Without	Project*	With Pr	oject**	CMH and Sayre	
Parameter	Vehicle type	2026	2040	2026	2040	2026	2040
	CAR	778,658	1,106,250	2,292,097	3,295,951	3,070,755	4,402,201
	JPY	45,978	65,321	359,573	517,282	405,551	582,604
Number of	BUS	19,940	28,329	101,306	145,707	121,246	174,037
vehicles	TRU	671,212	953,599	1,630,065	2,344,052	2,301,277	3,297,651
	OT	0	0	222,414	320,013	222,414	320,013
	TOTAL	1,515,788	2,153,500	4,605,456	6,623,006	6,121,244	8,776,506
	CAR	1.83E+07	2.60E+07	8.45E+07	1.22E+08	1.85E+08	2.66E+08
	JPY	2.72E+06	3.86E+06	3.34E+07	4.81E+07	6.17E+07	8.86E+07
NOx	BUS	1.55E+06	2.20E+06	1.24E+07	1.78E+07	2.43E+07	3.48E+07
NOX	TRU	2.00E+07	2.84E+07	7.63E+07	1.10E+08	1.76E+08	2.53E+08
	OT	0.00E+00	0.00E+00	1.66E+07	2.39E+07	2.72E+07	3.91E+07
	TOTAL	4.25E+07	6.04E+07	2.23E+08	3.21E+08	4.75E+08	6.81E+08
	CAR	7.23E+04	1.03E+05	3.34E+05	4.81E+05	7.33E+05	1.05E+06
	JPY	4.27E+04	6.06E+04	5.25E+05	7.55E+05	9.68E+05	1.39E+06
Say	BUS	1.68E+04	2.39E+04	1.34E+05	1.93E+05	2.63E+05	3.78E+05
Sox	TRU	2.00E+07	2.84E+07	7.63E+07	1.10E+08	1.76E+08	2.53E+08
	OT	0.00E+00	0.00E+00	2.77E+06	3.98E+06	4.53E+06	6.51E+06
	TOTAL	2.01E+07	2.86E+07	8.01E+07	1.15E+08	1.83E+08	2.62E+08
	CAR	5.18E+07	7.36E+07	1.52E+06	2.19E+06	3.33E+06	4.78E+06
	JPY	1.64E+07	2.34E+07	3.86E+06	5.56E+06	7.13E+06	1.02E+07
PM	BUS	7.38E+06	1.05E+07	1.07E+06	1.55E+06	2.10E+06	3.02E+06
PIVI	TRU	9.83E+07	1.40E+08	1.08E+06	1.55E+06	2.50E+06	3.58E+06
	OT	0.00E+00	0.00E+00	1.26E+06	1.81E+06	2.06E+06	2.97E+06
	TOTAL	1.74E+08	2.47E+08	8.80E+06	1.27E+07	1.71E+07	2.46E+07

NOTES: values are in grams; JPY – jeepney; TRU – trucks; OT – oversized trucks; PM – particulate matter; *Sayre Highway only; **CMH only

Table 2-6. Annual pollutant emissions from vehicles in Section 2

		Without Project*		With Project**		CMH and Sayre	
Parameter	Vehicle type	2026	2040	2026	2040	2026	2040
	CAR	993,971	1,412,098	1,753,611	2,491,770	2,747,583	3,903,869
	JPY	20,815	29,571	151,505	215,201	172,320	244,773
Number of	BUS	20,459	29,066	69,033	98,032	89,492	127,098
vehicles	TRU	788,844	1,120,681	1,098,718	1,560,798	1,887,561	2,681,479
	OT	0	0	59,564	84,603	59,564	84,603
	TOTAL	1,824,090	2,591,417	3,132,430	4,450,405	4,956,520	7,041,822
NOx	CAR	3.57E+07	5.08E+07	6.55E+07	9.31E+07	2.01E+08	2.86E+08
NUX	JPY	1.89E+06	2.68E+06	1.43E+07	2.03E+07	3.19E+07	4.53E+07



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		Without	Project*	With Project**		CMH and Sayre	
Parameter	Vehicle type	2026	2040	2026	2040	2026	2040
	BUS	2.44E+06	3.47E+06	8.55E+06	1.21E+07	2.18E+07	3.09E+07
	TRU	3.60E+07	5.12E+07	5.21E+07	7.41E+07	1.76E+08	2.50E+08
	OT	0.00E+00	0.00E+00	4.51E+06	6.41E+06	8.85E+06	1.26E+07
	TOTAL	7.61E+07	1.08E+08	1.45E+08	2.06E+08	4.40E+08	6.25E+08
	CAR	1.41E+05	2.01E+05	2.59E+05	3.68E+05	7.97E+05	1.13E+06
	JPY	2.96E+04	4.21E+04	2.24E+05	3.18E+05	5.00E+05	7.10E+05
Sox	BUS	2.65E+04	3.76E+04	9.28E+04	1.32E+05	2.36E+05	3.35E+05
SUX	TRU	3.60E+07	5.12E+07	5.21E+07	7.41E+07	1.76E+08	2.50E+08
	OT	0.00E+00	0.00E+00	7.51E+05	1.07E+06	1.47E+06	2.09E+06
	TOTAL	3.62E+07	5.15E+07	5.35E+07	7.59E+07	1.79E+08	2.54E+08
	CAR	6.43E+05	9.13E+05	1.18E+06	1.67E+06	3.62E+06	5.15E+06
	JPY	2.18E+05	3.10E+05	1.65E+06	2.34E+06	3.68E+06	5.23E+06
PM	BUS	2.12E+05	3.01E+05	7.42E+05	1.05E+06	1.89E+06	2.68E+06
FIVI	TRU	5.10E+05	7.25E+05	7.38E+05	1.05E+06	2.49E+06	3.54E+06
	OT	0.00E+00	0.00E+00	3.42E+05	4.86E+05	6.72E+05	9.54E+05
	TOTAL	1.58E+06	2.25E+06	4.65E+06	6.61E+06	1.24E+07	1.76E+07

NOTES: values are in grams; JPY – jeepney; TRU – trucks; OT – oversized trucks; PM – particulate matter; *Sayre Highway only; **CMH only

Table 2-7. Annual pollutant emissions from vehicles in Section 3

		Without	Project*	With Pr	oject**	CMH and Sayre	
Parameter	Vehicle type	2026	2040	2026	2040	2026	2040
	CAR	525,765	746,555	1,166,964	1,669,294	1,692,728	2,415,849
	JPY	21,446	30,692	89,976	129,005	111,423	159,697
Number of	BUS	17,398	24,554	84,826	121,237	102,224	145,791
vehicles	TRU	437,353	621,699	1,066,687	1,525,430	1,504,040	2,147,129
	OT	0	0	186,920	267,803	186,920	267,803
	TOTAL	1,001,962	1,423,500	2,595,373	3,712,769	3,597,335	5,136,269
	CAR	4.37E+07	6.20E+07	5.25E+07	7.51E+07	2.17E+08	3.09E+08
	JPY	4.49E+06	6.43E+06	1.02E+07	1.46E+07	3.60E+07	5.16E+07
NOx	BUS	4.79E+06	6.77E+06	1.27E+07	1.81E+07	4.34E+07	6.19E+07
NOX	TRU	4.61E+07	6.56E+07	6.10E+07	8.72E+07	2.45E+08	3.49E+08
	OT	0.00E+00	0.00E+00	1.71E+07	2.44E+07	4.85E+07	6.95E+07
	TOTAL	9.91E+07	1.41E+08	1.53E+08	2.19E+08	5.89E+08	8.42E+08
	CAR	1.73E+05	2.45E+05	2.08E+05	2.97E+05	8.58E+05	1.22E+06
	JPY	7.05E+04	1.01E+05	1.60E+05	2.30E+05	5.65E+05	8.09E+05
Sox	BUS	5.20E+04	7.34E+04	1.37E+05	1.96E+05	4.71E+05	6.72E+05
30X	TRU	4.61E+07	6.56E+07	6.10E+07	8.72E+07	2.45E+08	3.49E+08
	OT	0.00E+00	0.00E+00	2.84E+06	4.07E+06	8.08E+06	1.16E+07
	TOTAL	4.64E+07	6.60E+07	6.43E+07	9.20E+07	2.55E+08	3.64E+08
	CAR	7.86E+05	1.12E+06	9.45E+05	1.35E+06	3.90E+06	5.57E+06
	JPY	5.19E+05	7.43E+05	1.18E+06	1.69E+06	4.16E+06	5.96E+06
PM	BUS	4.16E+05	5.87E+05	1.10E+06	1.57E+06	3.77E+06	5.37E+06
PIVI	TRU	6.54E+05	9.29E+05	8.64E+05	1.23E+06	3.47E+06	4.95E+06
	OT	0.00E+00	0.00E+00	1.29E+06	1.85E+06	3.68E+06	5.28E+06
	TOTAL	2.37E+06	3.37E+06	5.38E+06	7.70E+06	1.90E+07	2.71E+07

NOTES: values are in grams; JPY – jeepney; TRU – trucks; OT – oversized trucks; PM – particulate matter; *Sayre Highway only; **CMH only

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Table 2-8. Annual pollutant emissions from vehicles in Section 4

		Without	Project*	With Project**		CMH and Sayre	
Parameter	Vehicle type	2026	2040	2026	2040	2026	2040
	CAR	663,636	942,839	1,400,319	2,029,093	2,063,955	2,971,932
	JPY	13,350	18,966	261,571	379,054	274,920	398,020
Number of	BUS	26,497	37,645	87,501	126,818	113,997	164,463
vehicles	TRU	529,736	752,604	1,158,607	1,678,766	1,688,342	2,431,371
	OT	0	0	247,298	358,384	247,298	358,384
	TOTAL	1,233,218	1,752,054	3,155,295	4,572,116	4,388,513	6,324,170
	CAR	2.62E+07	3.72E+07	4.73E+07	6.85E+07	1.51E+08	2.18E+08
	JPY	1.33E+06	1.89E+06	2.23E+07	3.23E+07	5.08E+07	7.35E+07
NOv	BUS	3.47E+06	4.93E+06	9.80E+06	1.42E+07	2.77E+07	4.00E+07
NOx	TRU	2.66E+07	3.77E+07	4.97E+07	7.20E+07	1.57E+08	2.26E+08
	OT	0.00E+00	0.00E+00	1.69E+07	2.45E+07	3.67E+07	5.32E+07
	TOTAL	5.76E+07	8.18E+07	1.46E+08	2.11E+08	4.23E+08	6.11E+08
	CAR	1.04E+05	1.47E+05	1.87E+05	2.71E+05	5.98E+05	8.62E+05
	JPY	2.09E+04	2.96E+04	3.49E+05	5.06E+05	7.97E+05	1.15E+06
Sox	BUS	3.76E+04	5.35E+04	1.06E+05	1.54E+05	3.00E+05	4.33E+05
30X	TRU	2.66E+07	3.77E+07	4.97E+07	7.20E+07	1.57E+08	2.26E+08
	OT	0.00E+00	0.00E+00	2.82E+06	4.08E+06	6.11E+06	8.86E+06
	TOTAL	2.67E+07	3.80E+07	5.31E+07	7.70E+07	1.65E+08	2.37E+08
	CAR	4.71E+05	6.70E+05	8.50E+05	1.23E+06	2.72E+06	3.92E+06
	JPY	1.54E+05	2.18E+05	2.57E+06	3.73E+06	5.87E+06	8.50E+06
PM	BUS	3.01E+05	4.28E+05	8.50E+05	1.23E+06	2.40E+06	3.47E+06
PIVI	TRU	3.76E+05	5.35E+05	7.04E+05	1.02E+06	2.22E+06	3.20E+06
	OT	0.00E+00	0.00E+00	1.28E+06	1.86E+06	2.79E+06	4.04E+06
	TOTAL	1.30E+06	1.85E+06	6.26E+06	9.07E+06	1.60E+07	2.31E+07

NOTES: values are in grams; JPY – jeepney; TRU – trucks; OT – oversized trucks; PM – particulate matter; *Sayre Highway only; **CMH only

Table 2-9. Annual pollutant emissions from vehicles in Section 5

		Without	Project*	With Project**		CMH and Sayre	
Parameter	Vehicle type	2026	2040	2026	2040	2026	2040
	CAR	430,250	611,242	1,262,440	1,793,529	1,692,690	2,404,772
	JPY	185,728	263,858	414,796	589,294	600,524	853,153
Number of	BUS	19,624	27,879	65,909	93,703	85,532	121,581
vehicles	TRU	443,461	630,011	637,882	906,221	1,081,343	1,536,232
	OT	0	0	405,339	575,970	405,339	575,970
	TOTAL	1,079,062	1,532,990	2,786,366	3,958,717	3,865,428	5,491,707
	CAR	1.50E+07	2.12E+07	4.05E+07	5.75E+07	1.13E+08	1.61E+08
	JPY	1.63E+07	2.31E+07	3.35E+07	4.76E+07	1.01E+08	1.44E+08
NOx	BUS	2.26E+06	3.21E+06	7.01E+06	9.96E+06	1.90E+07	2.69E+07
NOX	TRU	1.96E+07	2.78E+07	2.60E+07	3.69E+07	9.18E+07	1.30E+08
	OT	0.00E+00	0.00E+00	2.63E+07	3.74E+07	5.49E+07	7.80E+07
	TOTAL	5.31E+07	7.54E+07	1.33E+08	1.89E+08	3.80E+08	5.40E+08
	CAR	5.92E+04	8.41E+04	1.60E+05	2.28E+05	4.48E+05	6.36E+05
	JPY	2.55E+05	3.63E+05	5.26E+05	7.48E+05	1.59E+06	2.26E+06
Sox	BUS	2.45E+04	3.49E+04	7.60E+04	1.08E+05	2.06E+05	2.92E+05
SUX	TRU	1.96E+07	2.78E+07	2.60E+07	3.69E+07	9.18E+07	1.30E+08
	OT	0.00E+00	0.00E+00	4.38E+06	6.23E+06	9.14E+06	1.30E+07
	TOTAL	1.99E+07	2.83E+07	3.11E+07	4.42E+07	1.03E+08	1.47E+08
PM	CAR	2.69E+05	3.82E+05	7.28E+05	1.03E+06	2.03E+06	2.89E+06



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		Without Project*		With Project**		CMH and Sayre	
Parameter	Vehicle type	2026	2040	2026	2040	2026	2040
	JPY	1.88E+06	2.67E+06	3.88E+06	5.51E+06	1.17E+07	1.66E+07
	BUS	1.96E+05	2.79E+05	6.08E+05	8.65E+05	1.64E+06	2.34E+06
	TRU	2.77E+05	3.94E+05	3.68E+05	5.23E+05	1.30E+06	1.85E+06
	OT	0.00E+00	0.00E+00	2.00E+06	2.84E+06	4.17E+06	5.92E+06
	TOTAL	2.62E+06	3.73E+06	7.58E+06	1.08E+07	2.08E+07	2.96E+07

NOTES: values are in grams; JPY – jeepney; TRU – trucks; OT – oversized trucks; PM – particulate matter; *Sayre Highway only; **CMH only

Table 2-10. Final emission rates for model input

		Without Project		With I	Project	CMH and Sayre		
Pollutant	Year	2026	2040	2026	2040	2026	2040	
	Section 1	1.35	1.92	7.08	10.18	15.05	21.59	
	Section 2	2.41	3.43	4.60	6.53	13.94	19.81	
Nox	Section 3	3.14	4.47	4.86	6.96	18.69	26.69	
	Section 4	1.83	2.59	4.63	6.71	13.43	19.36	
	Section 5	1.68	2.39	4.23	6.01	12.05	17.12	
	Section 1	0.64	0.91	2.54	3.65	5.80	8.31	
	Section 2	1.15	1.63	1.70	2.41	5.67	8.05	
SO2	Section 3	1.47	2.09	2.04	2.92	8.07	11.53	
	Section 4	0.85	1.20	1.68	2.44	5.23	7.53	
	Section 5	0.63	0.90	0.99	1.40	3.27	4.65	
	Section 1	6.39	9.08	4.46	6.41	9.63	13.81	
	Section 2	1.66	2.37	3.03	4.30	9.34	13.27	
TSP	Section 3	2.12	3.02	3.05	4.36	11.94	17.05	
	Section 4	1.24	1.76	2.82	4.09	8.42	12.14	
	Section 5	1.01	1.43	2.44	3.47	7.02	9.97	
	Section 1	0.17	0.24	0.80	1.15	1.74	2.50	
	Section 2	0.31	0.44	0.55	0.78	1.71	2.44	
PM10	Section 3	0.39	0.56	0.55	0.79	2.17	3.10	
	Section 4	0.23	0.33	0.50	0.73	1.52	2.19	
	Section 5	0.18	0.25	0.42	0.60	1.22	1.73	

NOTE: emission rates are in grams per second

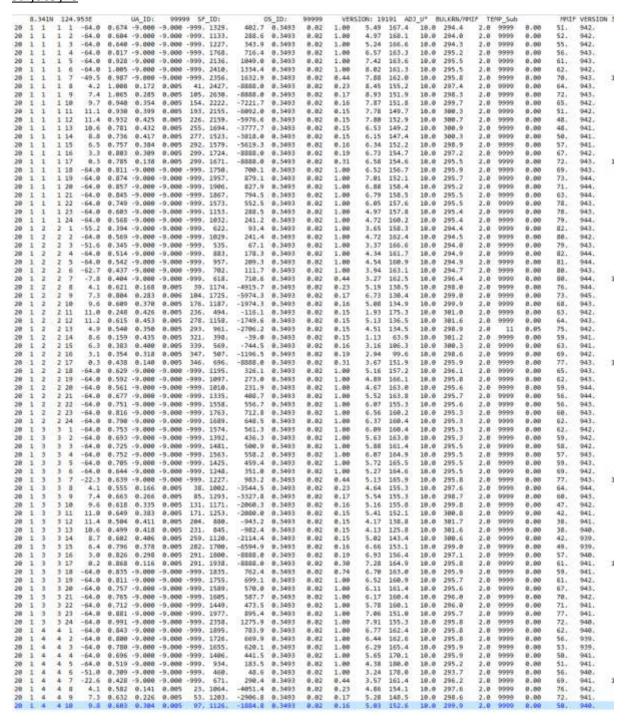


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PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Attachment 1. Sample AERMOD Meteorological Input File (.sfc/.pfl)

Surface file





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20	1	1	1	2.0 0	999.0	999.00	21.29	99.00	99.00
20	1	1	1	10.0 0	167.4	5.49	22.09	99.00	99.00
20	1	1	1	30.0 0	167.4	8.22	22.98	99.00	99.00
20	1	1	1	60.0 0	164.5	9.76	23.01	99.00	99.00
20	1	1	1	120.0 0	159.2	11.19	23.07	99.00	99.00
20	1	1	1	240.0 0	142.3	9.93	22.99	99.00	99.00
20	1	1	1	480.0 0	113.4	5.93	22.05	99.00	99.00
20	1	1	1	920.0 0	72.9	7.72	19.92	99.00	99.00
20	1	1	1	1600.0 0	74.1	6.38	16.56		
20	1	1	1	2500.0 0			11.68	99.00 99.00	99.00 99.00
20	1	1	1	3500.0 1	85.8 92.6	5.52 8.76			
20	1	1	2	2.0 0		999.00	5.55 20.86	99.00	99.00
20	1	1	2	10.0 0	999.0 168.1	4.97	21.78	99.00 99.00	99.00 99.00
20	1	1	2	30.0 0	168.1	7.76	22.92		99.00
20	1	1	2	60.0 0	164.5	9.39	22.92	99.00 99.00	99.00
20	1	1	2	120.0 0	159.0	10.96	23.05	99.00	99.00
20	1	1	2	240.0 0	140.9	9.71	23.08	99.00	99.00
20	1	1	2	480.0 0	113.0	5.31	22.18	99.00	99.00
20	1	1	2	920.0 0	73.3	6.89	19.82	99.00	99.00
20	1	1	2	1600.0 0	73.5	6.82	16.62	99.00	99.00
20	1	1	2	2500.0 0	94.6	5.38	11.80	99.00	99.00
20	1	1	2	3500.0 1	94.7	7.98	5.64	99.00	99.00
20	1	1	3	2.0 0	999.0	999.00	21.13	99.00	99.00
20	1	1	3	10.0 0	166.6	5.24	21.13	99.00	99.00
20	1	1	3	30.0 0	166.6	7.94	22.87	99.00	99.00
20	1	1	3	60.0 0	163.3	9.52	23.00	99.00	99.00
20	1	1	3	120.0 0	157.1	10.57	23.17	99.00	99.00
20	1	1	3	240.0 0	139.5	8.42	23.17	99.00	99.00
20	1	1	3	480.0 0	112.8	5.45	21.95	99.00	99.00
20	1	1	3	920.0 0	76.1	6.54	19.16	99.00	99.00
20	1	1	3	1600.0 0	78.6	6.75	16.53	99.00	99.00
20	1	1	3	2500.0 0	88.8	5.62	12.27	99.00	99.00
20	1	1	3	3500.0 1	88.4	7.41	5.85	99.00	99.00
20	1	1	4	2.0 0	999.0	999.00	22.01	99.00	99.00
20	1	1	4	10.0 0	163.3	6.57	22.57	99.00	99.00
20	1	1	4	30.0 0	163.3	9.31	23.13	99.00	99.00
20	1	1	4	60.0 0	161.1	10.78	23.06	99.00	99.00
20	1	1	4	120.0 0	156.9	12.10	22.94	99.00	99.00
20	1	1	4	240.0 0	143.2	10.90	22.64	99.00	99.00
20	1	1	4	480.0 0	111.8	7.47	21.84	99.00	99.00
20	1	1	4	920.0 0	73.3	7.47	19.51	99.00	99.00
20	1	1	4	1600.0 0	80.3	6.40	16.73	99.00	99.00
20	1	1	4	2500.0 0	80.0	5.50	12.26	99.00	99.00
20	1	1	4	3500.0 1	83.9	7.52	5.96	99.00	99.00
20	1	1	5	2.0 0	999.0	999.00	22.32	99.00	99.00
20	1	1	5	10.0 0	163.6	7.42	22.75	99.00	99.00
20	1	1	5	30.0 0	163.6	10.28	23.17	99.00	99.00
20	1	1	5	60.0 0	161.9	11.69	23.06	99.00	99.00
20	1	1	5	120.0 0	158.4	13.05	22.90	99.00	99.00
20	1	1	5	240.0 0	146.3	12.55	22.57	99.00	99.00
20	1	1	5	480.0 0	116.3	8.97	21.75	99.00	99.00
20	1	1	5	920.0 0	76.4	8.98	19.64	99.00	99.00
20	1	1	5	1600.0 0	82.5	7.31	16.91	99.00	99.00
20	1	1	5	2500.0 0	92.8	5.25	12.35	99.00	99.00
20	1	1	5	3500.0 1	87.3	7.55	6.11	99.00	99.00
20	1	1	6	2.0 0	999.0	999.00	22.35	99.00	99.00
20	1	1	6	10.0 0	161.3	8.02	22.72	99.00	99.00
20	1	1	6	30.0 0	161.3	11.00	23.07	99.00	99.00
20	1	1	6	60.0 0	159.4	12.36	22.93	99.00	99.00
20	1	1	6	120.0 0	156.1	13.63	22.76	99.00	99.00
20	1	1	6	240.0 0	144.6	12.88	22.38	99.00	99.00
20	1	1	6	480.0 0	113.0	9.32	21.42	99.00	99.00
20	1	1	6	920.0 0	76.5	8.27	19.31	99.00	99.00
20	1	1	6	1600.0 0	86.1	6.97	17.20	99.00	99.00
20	1	1	6	2500.0 0	86.0	5.43	12.28	99.00	99.00
20	1	1	6	3500.0 1	82.4	7.91	6.07	99.00	99.00
20	1	1	7	2.0 0	999.0	999.00	22.60	99.00	99.00
20	1	1	7	10.0 0	162.0	7.88	23.01	99.00	99.00
20	1	1	7	30.0 0	162.0	10.80	23.40	99.00	99.00
20	1	1	7	60.0 0	159.9	12.08	23.30	99.00	99.00
20	1	1	7	120.0 0	156.3	13.28	23.19	99.00	99.00
20	1	1	7	240.0 0	144.3	12.40	23.05	99.00	99.00
20	1	1	7	480.0 0	113.7	8.97	22.33	99.00	99.00
20	1	1	7	920.0 0	77.8	7.93	20.00	99.00	99.00
20	1	1	7	1600.0 0	85.2	7.49	17.17	99.00	99.00
20	1	1	7	2500.0 0	92.1	5.39	12.02	99.00	99.00
20	1	1	7	3500.0 1	81.2	7.75	5.79	99.00	99.00
20	1	1	8	2.0 0	999.0	999.00	24.27	99.00	99.00
20	1	1	8	10.0 0	155.2	8.45	24.40	99.00	99.00
20	1	1	8	30.0 0	155.2	11.32	24.58	99.00	99.00



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Attachment 2. Sample DEM for AERMOD

	i.dem	Lakes	Envi	comen	tal So	ftware	- DEM	Conve	rter	-01/		I lain	الألالا	1446	Tools.	Trans.	1000	1000	13.00	1505			
353	352	352	352	343	347	349	345	342	342	348	338	336	335	334	334	334	333	331	329	327	331	323	31
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368	361	362	358	359	357	354	351	348	345	347	344	348	539	336	335	333	332	335	326	320	322	321	3
545	566	578	585	578	589	613	633	624	599	581	578	565	566	561	564	540	586	488	477	483	489	507	54
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367	365	362	360	359	359	357	357	353	350	349	346	346	346	346	346	344	329	195	180	189	174	166	11
569	599	680	597	615	622	622	643	644	618	688	591	579	545	515	500	493	587	514	505	522	551	574	5
1	11	669	1		835998					831854			999966	000000	60+66	0.80	900000	000000	a0+66	8.88	100000	000000	1001
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376 591	373 609	371 617	372 622	369 628	365 623	364 628	362 684	358 595	356 578	355 556	354 531	352 518	349 511	345 518	312 543	383 576	310 571	275 574	187 596	184 517	197 615	247 688	5
1	15	669	1		848001					831054			999999					000000			100000		
8	8	0	0	9	0	8	0		0	0	0	0		*****	00.00	30,000		No bearing		3000	******	000000	100
4	2	8	0	8	8	a	. 0	8	0	8	8	0	8	0	8	8	8	8	0	9	8		
367	368	367	366	368	372	371	361	356	335	382	273	285	388	266	201	195	284	207	289	219	268	319	3
623	643	643	632	635	629	596	572	540	530	536	547	553	571	684	689	612	625	639	633	521	617	592	5
1	19	668	1		860003					831054		0.000	999999	000000	8D+88	0.80	999999	000000	90+69	1,023	60000	999999	100+
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378 675	375 664	367 659	366	362 684	356 595	356 563	341 547	295 545	239 549	283 553	312 555	298 576	252 613	228 638	229 640	224 648	212 621	200 602	219 596	385 593	345 571	340 582	3
1	23	668	632		872806					831954			999999					000000			100000	1000	7.7
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273	314	313	272	258	254	248	272	328	361	361	368	361	357	354	351	351	351	347	348	345	348	353	3
688	662	632	682	598	597	572	561	566	598	613	634	649	654	642	618	688	588	689	624	688	621	646	6
1	27	668	1	4,48	884668	789862	50+05	2.98	588881	831054	70+04	0.000	999999	000000	BD+88	8.80	999999	000000	99+09	1.016	60000	999999	100+
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381	378	376	377	375	370	370	368	368	366	366	364	363	363	361	358	355	356	355	350	347	346	345	3
647	630	627	628	614	596	581	575	604	648	653	657	641	628	612	595	619	646	658	659	657	665	650	6
1 8	31	668	1 8	4.48	896811; Ø	8 252539	10105	2.90	9	831854	/D+04	8.000	999999	000000	90+66	0.00	000000	000000	95+66	1.03	100000	999966	601
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391	386	385	382	384	380	378	379	374	370	368	367	363	362	359	361	358	355	355	353	352	349	349	3
603	681	679	654	610	599	616	665	702	684	666	649	637	642	641	629	636	651	682	698	684	688	688	6
1	35	668	1	4.48	900013	916015	6D+05	2.98	588881	831054	7D+04	0.000	999999	000000	90+09	8.88	999999	000000	90+66	1.05	700000	999999	100
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389	388	387	383	382	380	379	579	375	372	368	365	364	363	362	364	359	356	355	354	354	354	352	3
679	638	619	631	669	699	715	716	697	678	678	682	687	680	693	703	702	590	681	675	682	681	667	6
1 8	9	668	1 0	4.40	920016	479492 0	2D+05	2.90	288661	831054	/D+84	0.000	999999	enonas	80+66	0.00	ooooo	000000	90+66	1.05	100000	annen	804
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387	387	383	388	388	378	376	388	378	376	373	370	368	366	365	368	358	356	350	354	349	348	345	3
647	636	667	719	751	722	722	719	716	713	789	711	784	694	683	695	683	668	665	664	658	642	646	6
1	43	668	1		932010					831854			000000				1100000	000000			100000		
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382	351	386	387	384	379	376	376	373	370	370	372	363	365	363	360	362	366	364	360	358	359	388	4
689	696	712	722	753	738	729	724	716	711	712	799	694	702	705	699	681	668	639	634	632	644	648	6
1	47	668	1		944021					831054		0.000	999999	666699	00+00	0.00	999999	000000	90+96	1.11	500000	966666	604
8	0	8	9	0	8	9	8	8	8	8	8	1023		8	347	6	100	192	100	36	1 (40	100	
9	9 170	9 172	9 200	9 272	9.70	160	9	160	9	9 200	8	415	477	437	850	e	8 510	405	494	810		800	4
382 788	379 796	373 787	369 785	373 775	378 771	368 762	368 755	369 748	378 742	388 738	400 723	415 789	423 595	682	458 675	491 666	518 672	495 675	494 687	510 692	511 696	498 712	7
1	51	668	1		956824					831054			999999					886669			200000		
à		000	â	9	8	8	8	8	8	8	8	0.00				0.100					-		1
8		0	0	0			. 0		0			e	0	0		0		.0			. 0		
461	476	490	583	510	521	522	518	527	533	532	529	531	549	569	592	616	651	633	624	624	606	587	- 5
822	823	817	818	887	790	778	757	758	745	748	745	748	733	727	714	782	695	718	728	734	739	732	3
1	55	668	1	4,48	967999	267578		2.98		831854		8,886	999999	000000	60+66	0.00	000000	000000	90+06	1.18	600000	999999	100
0	. 0	0	0	0	.0	0	.0	.0	0	0	.0												
1	0	0	. 0	. 0	. 0	0	0	. 0	0	0	0	0	0	0	0	0	0		0	0	0	- 0	أبرؤ
686	605	593	584	588	566	552	541	542	553	572	584	580	586	592	599	628	652	691	695	675	670	656	6
	841	834	818	811	799	794	792	784	766	752 831054	742	736	734	734	733	731	732	723 886668	789	598	694	678	6
841 1	59	668	1	Section 19	988881	STREET,	reference and the second																



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Attachment 3. Sample AERMOD input file (.ami)

	5. Sample ALMINO	·		
** BREEZE AE	ERMOD			
** Trinity 0				
** VERSION				
CO STARTING				
CO TITLEONE	Sayre only (Section	1) - CO R	un 2026	
CO MODELOPT	CONC FASTALL NODE	RYDPLT NOW	ETDPLT	
CO RUNORNOT	RUN			
CO AVERTIME				
CO POLLUTID	CO			
CO FINISHED				
CO STABITANG				
SO STARTING SO ELEVUNIT	METERS			
SO LOCATION		692734 4	940179.6	6 23
** SRCDESCR		032734.4	3401/3.0	0.23
SO LOCATION		692760.5	940146.7	6.69
** SRCDESCR				
SO LOCATION		692786.6	940113.8	6.96
** SRCDESCR	Sayre Segment 1			
SO LOCATION	_	692812.7	940080.9	7.22
** SRCDESCR				
SO LOCATION	_	692844.3	940062.9	8.06
** SRCDESCR		C0200F C	040074 0	0.00
** SRCDESCR	_	692885.6	940071.0	8.82
SO LOCATION		602026 8	940079.0	10.47
** SRCDESCR		092920.0	340073.0	10.47
SO LOCATION		692968.0	940087.0	13.34
** SRCDESCR				
SO LOCATION		693008.8	940096.7	15.72
** SRCDESCR	Sayre Segment 1			
SO LOCATION	—	693048.2	940111.3	18.98
** SRCDESCR				
SO LOCATION		693087.6	940125.8	21.41
** SRCDESCR				
** SRCDESCR		693127.0	940140.3	24.59
SO LOCATION		603166 /	940154.8	28.3
** SRCDESCR		093100.4	340134.8	20.5
SO LOCATION	, .	693205.8	940169.3	29.81
** SRCDESCR				
SO LOCATION		693245.2	940183.8	28.95
** SRCDESCR	Sayre Segment 1			
SO LOCATION	_	693264.6	940171.5	31.61
** SRCDESCR	, ,			
SO LOCATION	_	693261.8	940129.5	38.26
** SRCDESCR		C03350 C	040007 6	44 22
SO LOCATION	SS1_18 VOLUME	693259.0	940087.6	44.21
** SRCDESCR SO LOCATION	-	693259 6	940046.9	49.19
** SRCDESCR		0,,2,5,0	J-100+0.5	77.13
SO LOCATION		693286.6	940014.7	53.43
** SRCDESCR				
SO LOCATION		693313.7	939982.5	53.63
** SRCDESCR				
SO LOCATION	_	693340.7	939950.4	56.59
** SRCDESCR				
SO LOCATION		693336.3	939927.1	60.53
** SRCDESCR		502005 5	020012 5	
SO LOCATION	SS1_24 VOLUME	693296.5	939913.8	62.06
** SRCDESCR SO LOCATION		603256 6	939900.4	62 11
** SRCDESCR		093230.0	939900.4	02.11
SO LOCATION		693278.9	939865.0	68.17
** SRCDESCR				
SO LOCATION	SS1_27 VOLUME	693301.4	939829.6	73.76
** SRCDESCR				
SO LOCATION		693323.9	939794.1	80.5



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Attachment 4. Sample AERMOD Summary file (.sum)

```
*** AERMOD - VERSION 21112 ***

*** AERMET - VERSION 19191 ***
                                     *** Sayre only (Section 2) - CO run 2040
                                                                                                                                       11/02/21
                                                                                                                           ***
                                                                                                                                       PAGE 1
*** MODELOPTs: NonDFAULT CONC ELEV FASTALL NODRYDPLT NOWETDPLT RURAL ADJ U* MMIF Data
                                                         MODEL SETUP OPTIONS SUMMARY
**Model Is Setup For Calculation of Average CONCentration Values.
  -- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT =
**Model Uses NO WET DEPLETION. WETDPLT = F
**Model Uses RURAL Dispersion Only.
**Model Allows User-Specified Options:

    Stack-tip Downwash.

         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.
**Other Options Specified:
         FASTALL - Use effective sigma-y to optimize meander for
                     POINT and VOLUME sources, and hybrid approach
to optimize AREA sources (formerly TOXICS option)
         ADJ_U* - Use ADJ_U* option for SBL in AERMET
MMIFData - Use MMIF met data inputs
                     MMIF VERSION 3.4.1 2019-03-11
         BULKRN - Use BULKRN Delta-T and SolarRad option for SBL with MMIF
         TEMP_Sub - Meteorological data includes TEMP substitutions
**Model Assumes No FLAGPOLE Receptor Heights.
**The User Specified a Pollutant Type of: CO
**Model Calculates 2 Short Term Average(s) of: 1-HR 8-HR
**This Run Includes:
                         309 Source(s);
                                                 1 Source Group(s); and 1711 Receptor(s)
                             0 POINT(s), including
                 with:
                             0 POINTCAP(s) and
                                                        0 POINTHOR(s)
                  and.
                           309 VOLUME source(s)
                  and:
                             0 AREA type source(s)
                             0 LINE source(s)
                  and:
                             0 RLINE/RLINEXT source(s)
                  and:
                             0 OPENPIT source(s)
                             0 BUOYANT LINE source(s) with a total of
**Model Set To Continue RUNning After the Setup Testing.
**The AERMET Input Meteorological Data Version Date: 19191
**Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)
          Model Outputs External File(s) of Concurrent Values for Postprocessing (POSTFILE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)
**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours _{\rm m} for Missing Hours
                                                                         b for Both Calm and Missing Hours
                                                                                                                  ; Rot. Angle =
**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 615.00 ; Decay Coef. = 0.000
                                                                                                                                         0.0
                   Emission Units = GRAMS/SEC
                                                                                     ; Emission Rate Unit Factor =
                   Output Units = MILLIGRAMS/M**3
**Approximate Storage Requirements of Model =
                                                         3.9 MB of RAM.
```



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Attachment 5. AERMOD 98th percentile output file (.pco)

```
Percentile Report
Parameters:
  Source group = ALL
  Avg. period = 1 hour
               = 2020/1/1/1 to 2020/12/31/24
  Period
  Avg. periods = 8784
  Percentiles = 98
  Scaling
               = 1
  Translation
               = 0
               = Micrograms/m**3
  Units
All Receptors:
            Corresponding
                               Receptor
                                            Receptor
            Highest Value
                            X-coord (m)
Percentile
                                         Y-coord (m)
                                                       Concentration
98
                       176
                              701243.38
                                           928936.13
                                                           .10144E+03
Individual Receptors:
Receptor
             Receptor
                           Receptor
                                    Percentile > > >
Number
          X-coord (m)
                        Y-coord (m)
                                             98
            684588.00
                          893371.00
                                     .22919E-01
1
                          893371.00
                                     .24649E-01
2
            686588.00
3
            688588.00
                          893371.00
                                     .23859E-01
4
            690588.00
                          893371.00
                                     .24305E-01
5
            692588.00
                          893371.00
                                     .24788E-01
6
            694588.00
                          893371.00
                                     .25434E-01
            696588.00
                          893371.00
                                     .27155E-01
8
            698588.00
                          893371.00
                                     .28214E-01
                          893371.00
                                     .30026E-01
            700588.00
10
            702588.00
                          893371.00
                                     .36442E-01
11
            704588.00
                          893371.00
                                     .37186E-01
12
            706588.00
                          893371.00
                                     .42165E-01
13
            708588.00
                          893371.00
                                     .44637E-01
                                     .48207E-01
14
            710588.00
                          893371.00
                                     .45656E-01
15
            712588.00
                          893371.00
16
            714588.00
                          893371.00
                                     .50814E-01
17
            716588.00
                          893371.00
                                     .53561E-01
18
            718588.00
                          893371.00
                                     .58677F-01
19
            720588.00
                          893371.00
                                     .61684F-01
20
            722588.00
                          893371.00
                                     .70466E-01
21
            724588.00
                          893371.00
                                     .76222E-01
22
            726588.00
                          893371.00
                                     .81600E-01
23
            728588.00
                          893371.00
                                     .85213E-01
24
            730588.00
                          893371.00
                                     .81161E-01
25
            732588.00
                          893371.00
                                     .74273E-01
                                     .87949E-01
26
            734588.00
                          893371.00
                          893371.00
27
            736588.00
                                     .11420E+00
            738588.00
                          893371.00
                                     .10980E+00
28
29
            740588.00
                          893371.00
                                     .96797E-01
30
            742588.00
                          893371.00
                                     .49419E-01
31
            744588.00
                          893371.00
                                     .41904E-01
32
            684588.00
                          895371.00
                                     .22233E-01
                                     .22340E-01
33
            686588.00
                          895371.00
                                     .25234E-01
34
            688588.00
                          895371.00
35
            690588 00
                          895371.00
                                     .24536E-01
36
            692588.00
                          895371.00
                                     .21436E-01
37
            694588.00
                          895371.00
                                     .24493E-01
38
            696588.00
                          895371.00
                                     .22999E-01
39
            698588.00
                          895371.00
                                     .24843E-01
40
            700588.00
                                     .31490E-01
                          895371.00
41
            702588.00
                          895371.00
                                     .31254E-01
42
            704588.00
                          895371.00
                                     .39807E-01
43
            706588.00
                          895371.00
                                     .38029E-01
44
            708588.00
                          895371.00
                                     .39737E-01
45
            710588.00
                          895371.00
                                     .45576E-01
            712588.00
                          895371.00
                                     .46207E-01
                          895371.00
```

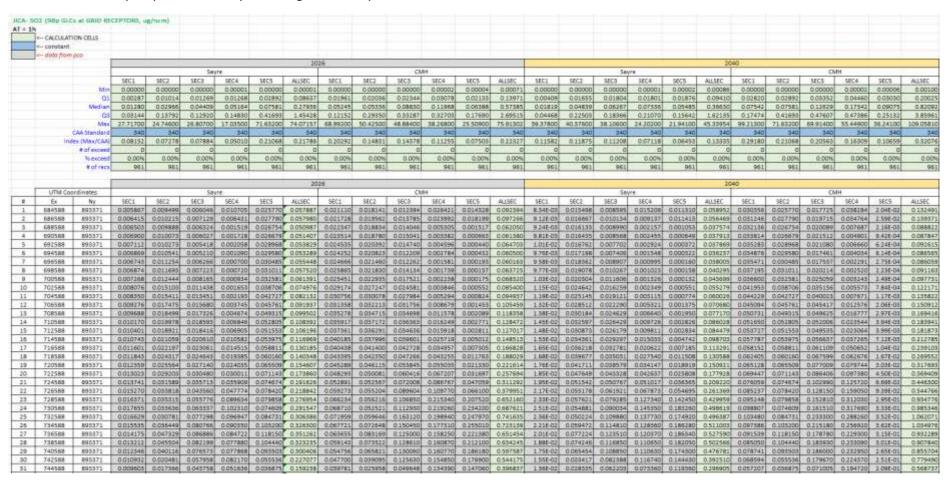




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Attachment 6. Sample spreadsheet of processing model outputs





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Annex 9. Laboratory report of sound measurements



HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes, 1232 Makati City, Philippines Office: +632,7724-6327. Fax No: +632,8654,8365 Email: info@hiadvance.com.ph Watalite: www.hiadvance.com.ph

NOISE LEVEL MEASUREMENT REPORT

Company Name	AMET-Asia Inc.
Address	Unit 303, One Corporate Center, Julia Vargas Ave.,cor. Meralco Ave. Pasig
Project Name	Ambient Air Monitoring
Project Site(s)	Cagayan De Oro-Bukidnon
Sampling Date	23 rd of April to 6 th of May, 2021
Project Manager	Ms. Pamella Andrea L. Pomida

1.0 Noise Analysis Background

HiAdvance Philippines, Incorporated (HiAdvance) was contracted by AMET-Asia Inc. to monitor the Noise level at ten (10) sampling locations for twenty-four (24) hours with five (5) Minutes recording interval. Sampling locations are located in the site mentioned above. The noise level monitoring was conducted last April 23 to May 6, 2021.

Noise is defined as unwanted or excessive sound. Sound becomes unwanted when it interferes with normal activities within the work premises. Sound (noise) is described in terms of loudness, frequency and duration. Loudness is the sound pressure level measured on a logarithmic scale in units of decibels (dB).

2.0 Noise Introduction

Noise is measured in terms of sound pressure level and is usually expressed in decibels (dB). The human ear is less sensitive to higher and lower frequencies than it is to mid-range frequencies. To provide a measurement meaningful to humans, a weighting system that reduces the sound level of higher and lower frequency sounds, similar to what the human ear does, was developed. This filtering system is used in virtually all noise ordinances. Measurements taken with this "A weighted" filter are referred to as "dBA" readings.

There are two primary noise measurement descriptors that are used to assess noise impacts from traffic and transit projects, the L_{eq} and the L_{tds} described below:

 L_{ne} . The equivalent sound level (L_{eq}) is the level of a constant sound for a specified period of time that has the same sound energy as an actual fluctuating noise over the same period of time.

The peak-hour L_{eq} is used for all traffic and light rail noise analyses at locations with daytime use, such as schools and libraries.

L_{dn}. The day-night sound level (L_{dn}) is an L_{eq} over a 24-hour period, The L_{dn} is the primary noise-level descriptor for light rail noise at residential land uses.

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HiAdvance Philippines Incorporated 3F Maga Center, San Antonio St., Paseo de Magallanes 1232 Masali City, Philippines Office: +632 7729-4527 Fax No: +632 8854 8365 Emai: info@hiadvance.com.ph Website: www.hiadvance.com.ph

In addition to the L_{oq} and L_{do} , there is also a descriptor called the L_{max} . The L_{max} is the loudest 1 second over a measurement period and is used in many local and state ordinances for noise coming from private land uses and for construction impact evaluation.

3.0 Noise Evaluation Methodology

For noise level monitoring, sound level frequency characteristics are based upon human hearing, using an Aweighted [dB (A)] frequency filter. The A-weighted filter is used to approximate the way humans hear sound.

EXTECH Model SDL600 with Serial No. H.399668, a digital sound level meter that meets ANSI and IEC Type 2 specifications was used to measure the noise level at the sampling points specified by the client. This measuring device has ±1.5 dB accuracy with 0.1 dB resolution.

Prior to actual noise measurement, the digital sound level meter was calibrated using Extech 407766 Sound level Calibrator set at 94 dB.

4.0 Sampling Location

Station AQN1- Brgy. Casinglot Purok Zone 2B

Latitude: 8.515825 N Longitude: 124.757942 E

Station AQN2- Brgy. Purok 7 Mambatangan

Latitude: 8.463833 N Longitude: 124.800872 E

Station AQN3- Zone 4 Alae

Latitude: 8.412193 N Longitude: 124.804962 E

Station AQN4- Zone 1 Diclum

Latitude: 8.371687 N Longitude: 124.852996 E

Station AQN5- Brgy. San Roque Purok 4

Latitude: 8,329792 N

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Longitude: 124.933255 E

Station AQN6- Brgy. Poblacion

Latitude: 8.312317 N Longitude: 124.983626 E

Station AQN7- Brgy. Lafortuna Zone 7

Latitude: 8.266137 N Longitude: 124.996892 E

Station AQN8- Brgy. Impalutao Zone 3

Latitude: 8.23260 N Longitude: 125.028944 E

Station AQN9- Brgy. Patpat Zone 5

Latitude: 8.195157 N Longitude: 125.053188 E

Station AQN10- Brgy. Kalasungay Zone 1

Latitude: 8.165801 N Longitude: 125.113448 E

4.1 Sampling period: TWENTY-FOUR (24) HOURS

- > Five (5) minutes with ten (10) seconds interval for unattended
- > One (1) minute with ten (10) seconds interval for attended noise

5.0 Data and Discussion of Results

5.1 Station AQNI- (Start Sampling time @ 1020H, 23rd-24th of April, 2021 (Station AQNI)

Sampling equipment was set up in a grassy ground, beside highway, approximately 1-2 meters away from the road. The sources of noise are the frequent passing of light to heavy vehicles; and animal sounds such frogs croaking, birds chirping, crickets and other insects present at nighttime.

The weather condition during sampling is sunny to rainy with light wind blowing. Traffic situation is moderate since it is near from the highway.

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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5.1.1 For Five (5) Minutes with ten (10) seconds interval

Table 1: Hourly Equivalent Sound Level, (Leq (h) - Station AQN1)

HOUR	TIME DURATION	Leq/Hr
1	10:20:04-11:20:04	51.7
2	11:20:04-12:20:04	52.6
3	12:20:04-13:20:04	54.8
4	13:20:04-14:20:04	53.1
5	14:20:04-15:20:04	51.1
6	15:20:04-16:20:04	52.8
7	16:20:04-17:20:04	41.7
8	17;20:04-18;20:04	50.8
9	18:20:04-19:20:04	51.7
10	19:20:04-20:20:04	44.8
11	20:20:04-21:20:04	45.5
12	21:20:04-22:20:04	49.8
13	22:20:04-23:20:04	45,9
14	23:20:04-00:20:04	42.7
15	00:20:04-01:20:04	37.3
16	01:20:04-02:20:04	41.9
17	02:20:04-03:20:04	41.8
18	03:20:04-04:20:04	40.1
19	04:20:04-05:20:04	46.1
20	05:20:04-06:20:04	48.6
21	06:20:04-07:20:04	49.6
22	07:20:04-08:20:04	47.0
23	08:20:04-09:20:04	42.7
24	09:20:04-10:20:04	44.1

5.2 Station AQN2- (Start Sampling time @ 1420H, 24th-25th of April, 2021

Sampling equipment was set up in a rocky and grassy ground, approximately 50 meters away from the residential area, 5-10 meters away from the access road. Noise mainly comes from light vehicles, and animal sounds such as dogs barking, birds chirping, crickets and other insects present at nighttime.

The weather condition during sampling is sunny to cloudy with moderate wind blowing. Traffic situation is light since it is far from the highway.

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5.2.1 For Five (5) Minutes with ten (10) seconds interval

Table 2: Hourly Equivalent Sound Level, (Leq (h) - Station AQN2)

HOUR	TIME DURATION	Leq/Hr
1	14:20:03-15:20:03	32.7
2	15:20:03-16:20:03	26.3
3	16:20:03-17:20:03	27.4
4	17:20:03-18:20:03	24.4
5	18:20:03-19:20:03	28.0
6	19:20:03-20:20:03	23.7
7	20:20:03-21:20:03	23.8
8	21:20:03-22:20:03	25.1
9	22:20:03-23:20:03	23.1
10	23:20:03-00:20:03	23.0
11	00:20:03-01:20:03	22.4
12	01:20:03-02:20:03	19.9
13	02:20:03-03:20:03	20.8
14	03:20:03-04:20:03	24.5
15	04:20:03-05:20:03	27.8
16	05:20:03-06:20:03	25.8
17	06:20:03-07:20:03	27.8
18	07:20:03-08:20:03	32.4
19	08:20:03-09:20:03	30.2
20	09:20:03-10:20:03	25.5
21	10:20:03-11:20:03	27.7
22	11:20:03-12:20:03	32.6
23	12:20:04-13:20:04	34.3
24	13:20:04-14:20:04	32.7

5.3 Station AQN3-(Start Sampling time @ 1509H, 27th-28th of April, 2021

Sampling equipment was placed in a rocky and grassy ground. It is approximately 10-15m away from residential houses, surrounded by trees. The source of noise are the passing of light vehicles such as motorcycles and tricycles; and animal sounds such as dogs barking, birds chirping, chicken noise, crickets and other insects present at nighttime.

The weather condition during sampling is cloudy with moderate wind blowing. No traffic situation because it is far away from the road.

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5.3.1 For Five (5) Minutes with ten (10) seconds interval

Table 3: Hourly Equivalent Sound Level, (Leq (h) - Station AQN3)

HOUR	TIME DURATION	Leq/Hr
1	15:09:18-16:09:18	35.2
2	16:09:18-17:09:18	38.4
3	17:09:18-18:09:18	34.6
4	18:09:18-19:09:18	27.2
5	19:09:18-20:09:18	25.6
6	20:09:18-21:09:18	27.3
7	21:09:18-22:09:18	26.1
8	22:09:18-23:09:18	31.4
9	23:09:18-00:09:18	28.3
10	00:09:18-01:09:18	25.4
11	01:09:18-02:09:18	24.6
12	02:09:18-03:09:18	36.0
13	03:09:18-04:09:18	39.5
14	04:09:18-05:09:18	39.2
15	05:09:18-06:09:18	40.1
16	06:09:18-07:09:18	40.6
17	07:09:18-08:09:18	38.8
18	08:09:18-09:09:18	34.1
19	09:09:18-10:09:18	31.1
20	10:09:18-11:09:18	30.5
21	11:09:18-12:09:18	28.0
22	12:09:18-13:09:18	32.3
23	13:09:18-14:09:18	39.3
24	14:09:18-15:09:18	39.5

5.4 Station AQN4- (Start Sampling time @ 1301H, 26th-27th of April, 2021)

Sampling equipment's set up in a rocky with some grass ground. Noise comes from the passing light to heavy vehicles along the road approximately 3-5 meters away from the sampling point, and insects such as crickets present in the night time.

The weather condition during sampling is sunny with moderate wind blowing. Traffic situation is light to moderate since it is near the highway.

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5.4.1 For Five (5) Minutes with ten (10) seconds interval

Table 4: Hourly Equivalent Sound Level, (Leg (h) - Station AON4)

HOUR	TIME DURATION	Leg/Hr
1	13:01:08-14:01:08	45.2
2	14:01:08-15:01:08	46.3
3	15:01:08-16:01:08	43.6
4	16:01:08-17:01:08	44.6
5	17:01:08-18:01:08	45.9
6	18:01:08-19:01:08	44.3
7	19:01:08-20:01:08	43.1
8	20:01:08-21:01:08	42.5
9	21:01:08-22:01:08	46.4
10	22:01:08-23:01:08	42.4
11	23:01:08-00:01:08	38.5
12	00:01:08-01:01:08	47.1
13	01:01:08-02:01:08	40.6
14	02:01:08-03:01:08	37.2
15	03:01:08-04:01:08	41.5
16	04:01:08-05:01:08	45.3
17	05:01:08-06:01:08	41.2
18	06:01:08-07:01:08	43.2
19	07:01:08-08:01:08	48.7
20	08:01:08-09:01:08	44.0
21	09:01:08-10:01:08	46.5
22	10:01:08-11:01:08	48.6
23	11:01:08-12:01:08	45.8
24	12:01:08-13:01:08	44.8

5.5 Station AQN5- (Start Sampling time @ 0956H, 30th of April - 01th May, 2021)

Sampling equipment's set up at a grassy ground inside the vicinity of San Roque Elementary school. It is approximately 8 meters away from the access road and 20 meters away from the residential area. The source of noise are the passing of minimal light vehicles along the road and animal sounds such as dogs barking; chicken noise, birds chirping, crickets and other insects present at nighttime.

The weather condition during sampling is fair with light wind blowing. Traffic situation is light to moderate since it is near the main and access road.

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5.5.1For Five (5) Minutes with ten (10) seconds interval

Table 5: Hourly Equivalent Sound Level, (Leq (h) - Station AQN5)

HOUR	TIME DURATION	Leq/Hr
1	09:56:18-10:56:17	27.6
2	10:56:17-11:56:17	22.5
3	11:56:17-12:56:17	32.9
4	12:56:17-13:56:17	29.4
5	13:56:17-14:56:17	26.1
6	14:56:17-15:56:17	33.3
7	15:56:17-16:56:17	32.1
8	16:56:17-17:56:17	30.7
9	17:56:17-18:56:17	42.8
10	18:56:17-19:56:17	43.2
11	19:56:17-20:56:17	43.2
12	20:56:17-21:56:17	43.3
13	21:56:17-22:56:17	43.3
14	22:56:17-23:56:17	43.3
15	23:56:17-00:56:17	43.1
16	00:56:17-01:56:17	43.0
17	01:56:17-02:56:17	43.9
18	02:56:17-03:56:17	44.0
19	03:56:17-04:56:17	43.7
20	04:56:17-05:56:17	43.3
21	05:56:17-06:56:17	41.3
22	06:56:17-07:56:17	35.3
23	07:56:17-08:56:17	36.4
24	08:56:17-09:56:17	35.3

5.6 Station AQN6- (Start Sampling time @ 1730H, 28h-29th of April, 2021)

Sampling equipment's set up at in a grassy and soft soil ground approximately 5 meters away from the road and 5 meters away from the residential area. Noise mainly comes from the passing of light to heavy vehicles passing in the access road; minimal noise contribution from animal sounds such as dogs barking; birds chirping, crickets and other insects present at nighttime.

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The weather condition during sampling is fair with light wind blowing. Traffic situation is light to moderate since it is near the access road.

5.6.1 For Five (5) Minutes with ten (10) seconds interval

Table 6: Hourly Equivalent Sound Level, (Leq (h) - Station AQN6)

HOUR	TIME DURATION	Leq/Hr
1	17:30:37-18:30:36	51.2
2	18:30:36-19:30:36	41.7
3	19:30:37-20:30:36	44.2
4	20:30:37-21:30:36	40.3
5	21:30:37-22:30:36	41.6
6	22:30:37-23:30:36	45.0
7	23:30:37-00:30:36	40.6
8	00:30:37-01:30:36	38.1
9	01:30:37-02:30:36	46.3
10	02:30:37-03:30:36	40.9
11	03:30:37-04:30:36	46.3
12	04:30:37-05:30:36	48.2
13	05:30:37-06:30:36	52.4
14	06:30:37-07:30:36	50.2
15	07:30:37-08:30:36	47.8
16	08:30:37-09:30:36	51.3
17	09:30:37-10:30:36	50.7
18	10:30:37-11:30:36	42.0
19	11:30:37-12:30:36	43.5
20	12:30:37-13:30:36	44.8
21	13:30:37-14:30:36	45.8
22	14:30:37-15:30:36	50.1
23	15:30:37-16:30:36	41.9
24	16:30:37-17:30:36	48.2

5.7 Station AQN7- (Start Sampling time @ 1325H, 01rd-02rd of May, 2021)

Sampling equipment's set up at grassy/soil ground approximately 5 meters away from the access road and 8-10 meters away from the residential. The source of noise are the passing of light vehicles and from animal sounds such as dogs barking, birds chirping, crickets and other insects present at nighttime.

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The weather condition during sampling is fair with light wind blowing. Traffic situation is light since it is far from the highway road.

5.7.1 For Five (5) Minutes with ten (10) seconds interval

Table 7: Hourly Equivalent Sound Level, (Leq (h) - Station AQN7)

HOUR	TIME DURATION	Leq/Hr
1	13:25:06-14:01:06	38.2
2	14:25:06-15:01:06	31.8
3	15:25:06-16:01:06	28.8
4	16:25:06-17:01:06	29.6
5	17:25:06-18:01:06	35.1
6	18:25:06-19:01:06	34.1
7	19:25:06-20:01:06	30.1
8	20:25:06-21:01:06	24.7
9	21:25:06-22:01:06	24.7
10	22:25:06-23:01:06	29.8
11	23:25:06-00:01:06	23.5
12	24:25:06-01:01:06	24.8
13	01:25:06-02:01:06	31.1
14	02:25:06-03:01:06	25.7
15	03:25:06-04:01:06	28.9
16	04:25:06-05:01:06	41.1
17	05:25:06-06:01:06	44.9
18	06:25:06-07:01:06	43.4
19	07:25:06-08:01:06	38.7
20	08:25:06-09:01:06	42.0
21	09:25:06-10:01:06	36.6
22	10:25:06-11:01:06	31.6
23	11:25:06-12:25:06	31.2
24	12:25:06-13:25:06	50.8

5.8 Station AQN8- (Start Sampling time @ 0900H, 03rd-04th of May, 2021)

Sampling equipment's set up in a grassy/soil ground beside the main road, approximately 3-5 meters away from the highway. The source of noise are the passing of various light to heavy vehicles and from animal sounds such as birds chirping, crickets and other insects present at nighttime.

The weather condition during sampling is sunny with strong wind blowing. No Traffic situation since it is far from the highway.

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5.8.1. For Five (5) Minutes with ten (10) seconds interval

Table 8: Hourly Equivalent Sound Level, (Leq (h) - Station AQN8)

HOUR	TIME DURATION	Leq/Hr
1	09:00:36-10:00:36	50.5
2	10:00:36-11:00:36	47.0
3	11:00:36-12:00:36	42.9
4	12:00:36-13:00:36	44.8
5	13:00:36-14:00:36	45.7
6	14:00:36-15:00:36	46.4
7	15:00:36-16:00:36	49.8
8	16:00:36-17:00:36	43.5
9	17:00:36-18:00:36	46.2
10	18:00:36-19:00:36	48.9
11	19:00:36-20:00:36	44.5
12	20:00:36-21:00:36	39.4
13	21:00:36-22:00:36	42.4
14	22:00:36-23:00:36	40.6
15	23:00:36-00:00:36	44.7
16	00:00:36-01:00:36	38.8
17	01:00:36-02:00:36	42.2
18	02:00:36-03:00:36	45.3
19	03:00:36-04:00:36	47.0
20	04:00:36-05:00:36	48.1
21	05:00:36-06:00:36	49.9
22	06:00:36-07:00:36	50.4
23	07:00:36-08:00:36	51.5
24	08:00:36-09:00:36	50.0

5.9 Station AQN9- (Start Sampling time @ 1001H, 04th -05th of May, 2021)

Sampling equipment's set up at in a soft soil surface ground, approximately 1-2 meters away from the 2lanes highway and 3-5 meters away from the poultry. The sources of noise are the passing of heavy and light vehicles in the highway and from animal sounds such as dogs barking, birds chirping, crickets and other insects present at nighttime.

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The weather condition during sampling is sunny to cloudy. Traffic situation is light to moderate since it is near the highway road.

5.9.1 For Five (5) Minutes with ten (10) seconds interval

Table 9: Hourly Equivalent Sound Level, (Leq (h) - Station AQN9)

HOUR	TIME DURATION	Leq/Hr
1	10:01:17-11:01:17	27.7
2	11:01:17-12:01:17	21.5
3	12:01:17-13:01:17	32.9
4	13:01:17-14:01:17	29.4
5	14:01:17-15:01:17	25.4
6	15:01:17-16:01:17	33.3
7	16:01:17-17:01:17	31.0
8	17:01:17-18:01:17	30.6
9	18:01:17-19:01:17	43.1
10	19:01:17-20:01:17	43.2
11	20:01:17-21:01:17	43,2
12	21:01:17-22:01:17	43.3
13	22:01:17-23:01:17	43.3
14	23:01:17-00:01:17	43.3
15	00:01:17-01:01:17	43.1
16	01:01:17-02:01:17	43.0
17	02:01:17-03:01:17	44.0
18	03:01:17-04:01:17	44.0
19	04:01:17-05:01:17	43.7
20	05:01:17-06:01:17	43.4
21	06:01:17-07:01:17	40.7
22	07:01:17-08:01:17	35.3
23	08:01:17-09:01:17	36.5
24	09:01:17-10:01:17	34.4

5.9 Station AQN10- (Start Sampling time @ 1300H, 05th -06th of May, 2021)

Sampling equipment's set up in a rocky and grassy ground beside the road, 1-2 meters away from the highway and approximately 8-10 meters away from the Birhen sa Lourdes Chapel. The sources of noise are the passing of light vehicles in the highway, blowing of horns and from animal sounds such as dogs barking, birds chirping, crickets and other insects present at nighttime.

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The weather condition during sampling is sunny to cloudy with light wind blowing. Traffic situation is light to moderate since it is near from the highway.

5.10.1 For Five (5) Minutes with ten (10) seconds interval

Table 10: Hourly Equivalent Sound Level, (Leq (h) - Station AQN10)

HOUR	TIME DURATION	Leq/Hr
1	13:00:39-14:00:39	43.8
2	14:00:39-15:00:39	48.1
3	15:00:39-16:00:39	44.0
4	16:00:39-17:00:39	44.5
5	17:00:39-18:00:39	44.0
6	18:00:39-19:00:39	44.7
7	19:00:39-20:00:39	48.2
8	20:00:39-21:00:39	51.4
9	21:00:39-22:00:39	49.3
10	22:00:39-23:00:39	47.7
11	23:00:39-00:00:39	47.9
12	00:00:39-01:00:39	47.9
13	01:00:39-02:00:39	45.2
14	02:00:39-03:00:39	48.6
15	03:00:39-04:00:39	45.5
16	04:00:39-05:00:39	46.5
17	05:00:39-06:00:39	46.3
18	06:00:39-07:00:39	46.8
19	07:00:39-08:00:39	47.9
20	08:00:39-09:00:39	46.9
21	09:00:39-10:00:39	46.5
22	10:00:39-11:00:39	48.3
23	11:00:39-12:00:39	47.9
24	12:00:39-13:00:39	47.6

The table in the next page summarizes the cumulative 24-hours exposure from all events at the ten (10) sampling stations. The highest L_{ds} was computed at Station AQN1 while the lowest computed L_{ds} is from the Station AQN2. These values may be used as a baseline on the impact assessment for the upcoming Project.

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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Table 8: Day-Night Sound Level for All Stations

Sampling Point	Leq (Day)	Leq (Day)	L_{da}
Station AQN1	51.3	45.9	49.0
Station AQN2	30.8	22.1	28.1
Station AQN3	38.6	25.3	35.4
Station AQN4	47.3	40.8	44.7
Station AQN5	43.0	40.3	40.5
Station AQN6	50.0	41.5	47,1
Station AQN7	42.8	27.8	39.5
Station AQN8	49.6	41.5	46.8
Station AQN9	41.5	40.4	40.5
Station AQN10	48.8	45.7	47.0

Prepared by: Reviewed by:

Marie Angellina Barcebal Team Leader (AQMD)

Noted by:

Princess Galvez, RCh Laboratory Manager

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AMET-Asia, Inc./ Ambient Noise Level Measurement Report

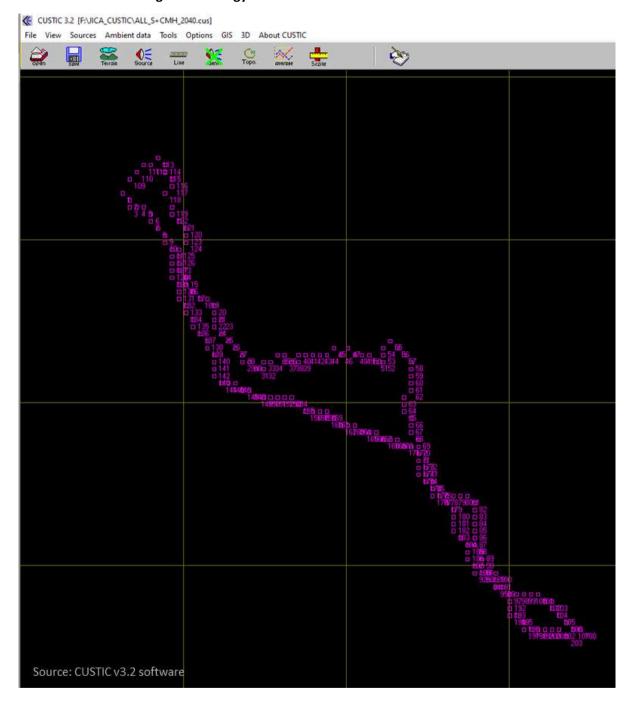
Regitor J. Sotelo QA/QC Manager (AQMD)



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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Annex 10. Noise modeling methodology





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Sound generators - The "Equivalent Vehicle", Ve, is a basic noise source unit that expresses the noise level emitted by heavy and medium trucks in terms of the equivalent noise level emitted by a certain number of automobiles. The Ve number is speed dependent. For example, at 88.5 kph one heavy truck produces the same noise level as 13 automobiles and at 56 kph the noise level is that of 31 automobiles. The Ve essentially normalizes heavy trucks, medium trucks, and autos to one vehicle group based on their acoustical energy. The automobile is used as a reference (1 auto = 1 Ve) and assumed that speeds of all vehicles at the Sayre Highway and CMH alignment are the same. The average vehicle speeds used were 34.8 (average based on traffic survey) and 80 kph (design) for Sayre Highway and CMH respectively.

The *Ve* is the product of three variables: traffic count, vehicle type and speed based on TNM REMELS and energy ratio correction based on vehicle speeds (**Table 2-11**). The *Ve* and energy ratio for the CMH road are the green cells in **Table 2-11**. The *Ve* (HT=28.11, MT=10.23, Auto=1.0) and energy ratio (0.123) for the Sayre Highway were derived from the regression equations in

Figure 2-6 and Figure 2-7.

The adjusted traffic counts used for the noise modelling is shown in **Table 2-12**.

Table 2-11. Number of equivalent vehicles and speed corrections

Speed, kph	Equiva	Equivalent vehicle									
- p,p	нт	MT	Auto	Energy ratio							
56	19.1	7.1	1	0.25							
64	15.1	5.8	1	0.37							
72	12.9	5	1	0.54							
80	11.5	4.5	1	0.74							
88.5	10.4	4.1	1	1							
94	9.6	3.7	1	1.32							
105	8.9	3.5	1	1.7							
113	8.3	3.2	1	2.19							

Source: California DOT, 2009; NOTES: based on TNM Reference Energy Mean Emission Levels; HT – heavy truck; MT – medium

truck; AUTO - automobile

Annexes

Figure 2-6. Regression equation for equivalent vehicles

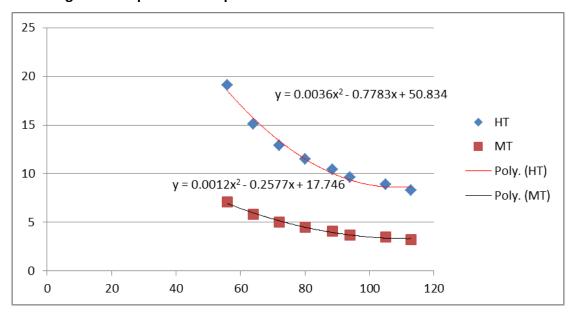
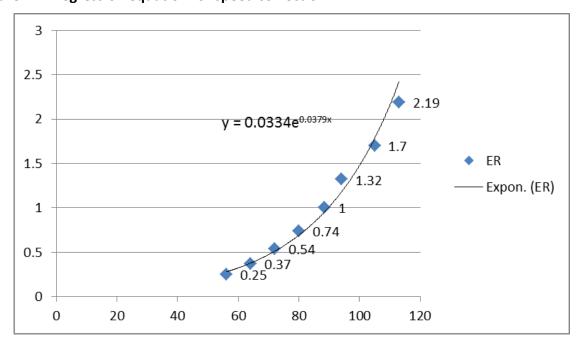


Figure 2-7. Regression equation for speed correction





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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

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Table 2-12. Adjusted Traffic Counts

		Sayre Highway only									CMH only								
				Year	: 2040			Year:	2026		Year: 2040								
Section	Vehicle type	TC	Ev	ER	Ve	TC	Ev	ER	Ve	TC	Ev	ER	Ve	TC	Ev	ER	Ve		
	CAR	2133	1.00	0.123	263	3031	1.00	0.123	373	6280	1.00	0.671	4213	9030	1.00	0.67	6058		
	JPY	126	1.00	0.123	16	179	1.00	0.123	22	985	1.00	0.671	661	1417	1.00	0.67	951		
1	BUS	55	10.23	0.123	69	78	10.23	0.123	98	278	4.81	0.671	897	399	4.81	0.67	1288		
1	TRU	1839	28.11	0.123	6367	2613	28.11	0.123	9047	4466	11.61	0.671	34784	6422	11.61	0.67	50019		
	OT	0	28.11	0.123	0	0	28.11	0.671	0	609	11.61	0.671	4743	877	11.61	0.67	6831		
	TOTAL	4153				5901				12618				18145					
	CAR	2723	1.00	0.123	335	3869	1.00	0.123	477	4804	1.00	0.671	3223	6827	1.00	0.67	4580		
	JPY	57	1.00	0.123	7	81	1.00	0.123	10	415	1.00	0.671	278	590	1.00	0.67	396		
2	BUS	56	10.23	0.123	71	80	10.23	0.123	101	189	4.81	0.671	610	269	4.81	0.67	868		
2	TRU	2161	28.11	0.123	7482	3070	28.11	0.123	10629	3010	11.61	0.671	23444	4276	11.61	0.67	33304		
	OT	0	28.11	0.123	0	0	28.11	0.123	0	163	11.61	0.671	1270	232	11.61	0.67	1807		
	TOTAL	4997				7100				8581				12194					
	CAR	1440	1.00	0.123	177	2045	1.00	0.123	252	3197	1.00	0.671	2145	4573	1.00	0.67	3068		
	JPY	59	1.00	0.123	7	84	1.00	0.123	10	247	1.00	0.671	166	353	1.00	0.67	237		
3	BUS	48	10.23	0.123	60	67	10.23	0.123	84	232	4.81	0.671	749	332	4.81	0.67	1071		
3	TRU	1198	28.11	0.123	4148	1703	28.11	0.123	5896	2922	11.61	0.671	22758	4179	11.61	0.67	32549		
	OT	0	28.11	0.123	0	0	28.11	0.123	0	512	11.61	0.671	3988	734	11.61	0.67	5717		
	TOTAL	2745				3899				7110				10171					
	CAR	1818	1.00	0.123	224	2583	1.00	0.123	318	3836	1.00	0.671	2573	5559	1.00	0.67	3729		
	JPY	37	1.00	0.123	5	52	1.00	0.123	6	717	1.00	0.671	481	1039	1.00	0.67	697		
4	BUS	73	10.23	0.123	92	103	10.23	0.123	130	240	4.81	0.671	774	347	4.81	0.67	1120		
	TRU	1451	28.11	0.123	5024	2062	28.11	0.123	7139	3174	11.61	0.671	24721	4599	11.61	0.67	35820		
	ОТ	0	28.11	0.123	0	0	28.11	0.123	0	678	11.61	0.671	5281	982	11.61	0.67	7648		
	TOTAL	3379				4800				8645				12526					
5	CAR	1179	1.00	0.123	145	1675	1.00	0.123	206	3459	1.00	0.671	2320	4914	1.00	0.67	3297		



ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

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PROPONENT: Department of Public Works and Highways in cooperation with JICA

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JPY	509	1.00	0.123	63	723	1.00	0.123	89	1136	1.00	0.671	762	1615	1.00	0.67	1083
BUS	54	10.23	0.123	68	76	10.23	0.123	96	181	4.81	0.671	584	257	4.81	0.67	829
TRU	1215	28.11	0.123	4207	1726	28.11	0.123	5976	1748	11.61	0.671	13615	2483	11.61	0.67	19339
OT	0	28.11	0.123	0	0	28.11	0.123	0	1111	11.61	0.671	8653	1578	11.61	0.67	12290
TOTAL	2957				4200				7635				10847			

NOTES: TC – traffic count; Ev - equivalent vehicle; ER – energy ratio; Ve - adjusted traffice count

ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

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Reference Energy Mean Emission Levels (REMEL) - The REMEL is generated by a defined vehicle type. Vehicles on a road do not have identical REMELS and dependent on a whole range of characteristics related to vehicles and the highways on which they travel. Among these are vehicle type, engine size, speed, number of wheels and axles, type of tires, as well as pavement type, age, texture, and condition.

The REMELS of the vehicle types at the Sayre Highway and CMH alignment calculated by the equation below is shown in Table 2-14 and the final input to the noise software is summarized in Table 2-15.

$$Ls_i = 10 \log_{10} \left[(0.62s_i)^{A/10} + 10^{B/10} + 10^{C/10} \right]$$

where Lsi = REMEL for vehicle type i at speed s si = speed of vehicle i (kph)A,B,C – constants (Table 2-13)

Table 2-13. Constants for calculation of REMELs

Vehicle type	Α	В	С
Auto (A)	41.740807	1.148546	50.128316
Medium truck (MT)	33.918713	20.591046	68.002978
Heavy truck (HT)	35.879850	21.019665	74.298135

Source: California DOT

Table 2-14. Calculated TNM REMELS (dBa) for Sayre Highway and CMH alignment

	Sayre Highway	СМН
Speed, kph	34.8	80
Auto (CAR)	56.78	70.85
Medium truck (MT)	68.03	68.38
Heavy truck (HT)	74.31	74.49
Bus (2-axle) (B2)	68.45	79.43
Motorcycle (M)	70.06	77.13

Source: Technical Noise Supplement to the Traffic Noise Analysis Protocol, California DOT, 2013; NOTES: TNM – Traffic Noise Model; REMELS - reference energy mean emission levels; HT - heavy trucks; MT medium trucks; auto - cars





Annexes

Table 2-15. Final input to the CUSTIC noise software

				Sayre only						CMH only						
		VREI	MEL	2026			2040				2026		2040			
Timeline	Туре	Sayre	СМН	Ve/day	Ve/h	TREMEL	Ve/day	Ve/h	TREMEL	Ve/day	Ve/h	TREMEL	Ve/day	Ve/h	TREMEL	
	CAR	56.78	70.85	263	10.95	67.17	373	15.56	68.70	4213	175.54	93.29	6058	252.41	80.80	
	JPY	68.03	68.38	16	0.65	66.13	22	0.92	67.66	661	27.53	82.78	951	39.61	84.00	
SECTION 1	BUS	68.45	79.43	69	2.89	73.06	98	4.10	74.58	897	37.38	95.15	1288	53.65	85.75	
SECTION	TRU	75.23	75.44	6367	265.29	99.46	9047	376.94	100.99	34784	1449.34	107.05	50019	2084.11	108.42	
	OT	74.31	74.49	0	0.00	#NUM!	0	0.00	#NUM!	4743	197.64	97.45	6831	284.61	98.85	
	TOTAL			6714	280	99.48	9540	398	101.00	45298	1887	107.92	65145.3	2714.39	108.91	
	CAR	56.78	70.85	335	13.97	68.23	477	19.86	69.76	3223	134.28	92.13	4580	190.83	79.59	
	JPY	68.03	68.38	7	0.29	62.69	10	0.42	64.21	278	11.60	79.02	396	16.49	80.20	
SECTION 2	BUS	68.45	79.43	71	2.94	73.14	101	4.20	74.69	610	25.41	93.48	868	36.17	84.04	
0101101111	TRU	75.23	75.44	7482	311.74	100.16	10629	442.87	101.69	23444	976.83	105.34	33304	1387.68	106.65	
	OT	74.31	74.49	0	0.00	#NUM!	0	0.00	#NUM!	1270	52.90	91.73	1807	75.29	93.08	
	TOTAL			7895	329	100.18	11216	467	101.70	28824.5	1201.01	105.98	40955	1706.46	106.88	
	CAR	56.78	70.85	177	7.39	65.47	3031	126.29	77.79	2145	89.36	90.36	3068	127.83	77.85	
SECTION 3	JPY	68.03	68.38	7	0.30	62.84	179	7.46	76.75	166	6.90	76.77	237	9.87	77.97	
	BUS	68.45	79.43	60	2.52	72.47	78	3.25	73.57	749	31.19	94.37	1071	44.64	84.95	



75.23	75.44	4148	172.82	07.00	2542								
			172.02	97.60	2613	108.88	95.60	22758	948.27	105.21	32549	1356.20	106.55
74.31	74.49	0	0.00	#NUM!	0	0.00	#NUM!	3988	166.16	96.70	5717	238.20	98.08
		4393	183	97.62	5901	245.875	95.75	29805.3	1241.89	106.21	42641.6	1776.73	107.16
56.78	70.85	224	9.33	66.48	318	13.26	68.00	2573	107.23	91.15	3729	155.39	78.69
68.03	68.38	5	0.19	60.81	6	0.27	62.29	481	20.04	81.40	697	29.04	82.66
68.45	79.43	92	3.83	74.29	130	5.41	75.78	774	32.27	94.52	1120	46.65	85.14
75.23	75.44	5024	209.32	98.43	7139	297.46	99.96	24721	1030.05	105.57	35820	1492.50	106.97
74.31	74.49	0	0.00	#NUM!	0	0.00	#NUM!	5281	220.03	97.92	7648	318.69	99.34
		5344	223	98.45	7593.28	316.387	99.98	33830.7	1409.61	106.68	49014.5	2042.27	107.70
56.78	70.85	145	6.05	64.60	206	8.60	66.12	2320	96.69	90.70	3297	137.36	78.16
68.03	68.38	63	2.61	72.20	89	3.71	73.72	762	31.75	83.39	1083	45.14	84.57
68.45	79.43	68	2.84	72.98	96	3.99	74.46	584	24.34	93.29	829	34.55	83.84
75.23	75.44	4207	175.27	97.66	5976	248.99	99.19	13615	567.27	102.98	19339	805.80	104.29
74.31	74.49	0	0.00	#NUM!	0	0.00	#NUM!	8653	360.55	100.06	12290	512.10	101.40
		4482	187	97.69	6366.79	265.283	99.22	25934.4	1080.59	105.25	36839	1534.96	106.15
	56.78 68.03 68.45 75.23 74.31 56.78 68.03 68.45 75.23	56.78 70.85 68.03 68.38 68.45 79.43 75.23 75.44 74.31 74.49 56.78 70.85 68.03 68.38 68.45 79.43 75.23 75.44	4393 56.78 70.85 224 68.03 68.38 5 68.45 79.43 92 75.23 75.44 5024 74.31 74.49 0 5344 56.78 70.85 145 68.03 68.38 63 68.45 79.43 68 75.23 75.44 4207 74.31 74.49 0	4393 183 56.78 70.85 224 9.33 68.03 68.38 5 0.19 68.45 79.43 92 3.83 75.23 75.44 5024 209.32 74.31 74.49 0 0.00 5344 223 56.78 70.85 145 6.05 68.03 68.38 63 2.61 68.45 79.43 68 2.84 75.23 75.44 4207 175.27 74.31 74.49 0 0.00	4393 183 97.62 56.78 70.85 224 9.33 66.48 68.03 68.38 5 0.19 60.81 68.45 79.43 92 3.83 74.29 75.23 75.44 5024 209.32 98.43 74.31 74.49 0 0.00 #NUM! 5344 223 98.45 56.78 70.85 145 6.05 64.60 68.03 68.38 63 2.61 72.20 68.45 79.43 68 2.84 72.98 75.23 75.44 4207 175.27 97.66 74.31 74.49 0 0.00 #NUM!	4393 183 97.62 5901 56.78 70.85 224 9.33 66.48 318 68.03 68.38 5 0.19 60.81 6 68.45 79.43 92 3.83 74.29 130 75.23 75.44 5024 209.32 98.43 7139 74.31 74.49 0 0.00 #NUM! 0 5344 223 98.45 7593.28 56.78 70.85 145 6.05 64.60 206 68.03 68.38 63 2.61 72.20 89 68.45 79.43 68 2.84 72.98 96 75.23 75.44 4207 175.27 97.66 5976 74.31 74.49 0 0.00 #NUM! 0	4393 183 97.62 5901 245.875 56.78 70.85 224 9.33 66.48 318 13.26 68.03 68.38 5 0.19 60.81 6 0.27 68.45 79.43 92 3.83 74.29 130 5.41 75.23 75.44 5024 209.32 98.43 7139 297.46 74.31 74.49 0 0.00 #NUM! 0 0.00 56.78 70.85 145 6.05 64.60 206 8.60 68.03 68.38 63 2.61 72.20 89 3.71 68.45 79.43 68 2.84 72.98 96 3.99 75.23 75.44 4207 175.27 97.66 5976 248.99 74.31 74.49 0 0.00 #NUM! 0 0.00	4393 183 97.62 5901 245.875 95.75 56.78 70.85 224 9.33 66.48 318 13.26 68.00 68.03 68.38 5 0.19 60.81 6 0.27 62.29 68.45 79.43 92 3.83 74.29 130 5.41 75.78 75.23 75.44 5024 209.32 98.43 7139 297.46 99.96 74.31 74.49 0 0.00 #NUM! 0 0.00 #NUM! 56.78 70.85 145 6.05 64.60 206 8.60 66.12 68.03 68.38 63 2.61 72.20 89 3.71 73.72 68.45 79.43 68 2.84 72.98 96 3.99 74.46 75.23 75.44 4207 175.27 97.66 5976 248.99 99.19 74.31 74.49 0 0.00 #NUM! 0 0.00 #NUM!	4393 183 97.62 5901 245.875 95.75 29805.3 56.78 70.85 224 9.33 66.48 318 13.26 68.00 2573 68.03 68.38 5 0.19 60.81 6 0.27 62.29 481 68.45 79.43 92 3.83 74.29 130 5.41 75.78 774 75.23 75.44 5024 209.32 98.43 7139 297.46 99.96 24721 74.31 74.49 0 0.00 #NUM! 0 0.00 #NUM! 5281 56.78 70.85 145 6.05 64.60 206 8.60 66.12 2320 68.03 68.38 63 2.61 72.20 89 3.71 73.72 762 68.45 79.43 68 2.84 72.98 96 3.99 74.46 584 75.23 75.44 4207 175.27 97.66 5976 248.99 99.19 13615 74.31 74.49	4393 183 97.62 5901 245.875 95.75 29805.3 1241.89 56.78 70.85 224 9.33 66.48 318 13.26 68.00 2573 107.23 68.03 68.38 5 0.19 60.81 6 0.27 62.29 481 20.04 68.45 79.43 92 3.83 74.29 130 5.41 75.78 774 32.27 75.23 75.44 5024 209.32 98.43 7139 297.46 99.96 24721 1030.05 74.31 74.49 0 0.00 #NUM! 0 0.00 #NUM! 5281 220.03 56.78 70.85 145 6.05 64.60 206 8.60 66.12 2320 96.69 68.03 68.38 63 2.61 72.20 89 3.71 73.72 762 31.75 68.45 79.43 68 2.84 72.98 96 3.99 74.46 584 24.34 75.23 75.44 4207	4393 183 97.62 5901 245.875 95.75 29805.3 1241.89 106.21 56.78 70.85 224 9.33 66.48 318 13.26 68.00 2573 107.23 91.15 68.03 68.38 5 0.19 60.81 6 0.27 62.29 481 20.04 81.40 68.45 79.43 92 3.83 74.29 130 5.41 75.78 774 32.27 94.52 75.23 75.44 5024 209.32 98.43 7139 297.46 99.96 24721 1030.05 105.57 74.31 74.49 0 0.00 #NUM! 0 0.00 #NUM! 5281 220.03 97.92 56.78 70.85 145 6.05 64.60 206 8.60 66.12 2320 96.69 90.70 68.03 68.38 63 2.61 72.20 89 3.71 73.72 762 31.75 83.39 68.45 79.43 68 2.84 72.98 96<	4393 183 97.62 5901 245.875 95.75 29805.3 1241.89 106.21 42641.6 56.78 70.85 224 9.33 66.48 318 13.26 68.00 2573 107.23 91.15 3729 68.03 68.38 5 0.19 60.81 6 0.27 62.29 481 20.04 81.40 697 68.45 79.43 92 3.83 74.29 130 5.41 75.78 774 32.27 94.52 1120 75.23 75.44 5024 209.32 98.43 7139 297.46 99.96 24721 1030.05 105.57 35820 74.31 74.49 0 0.00 #NUM! 0 0.00 #NUM! 5281 220.03 97.92 7648 56.78 70.85 145 6.05 64.60 206 8.60 66.12 2320 96.69 90.70 3297 68.03 68.38 63 2.61 72.20 89 3.71 73.72 762 31.75 8	4393 183 97.62 5901 245.875 95.75 29805.3 1241.89 106.21 42641.6 1776.73 56.78 70.85 224 9.33 66.48 318 13.26 68.00 2573 107.23 91.15 3729 155.39 68.03 68.38 5 0.19 60.81 6 0.27 62.29 481 20.04 81.40 697 29.04 68.45 79.43 92 3.83 74.29 130 5.41 75.78 774 32.27 94.52 1120 46.65 75.23 75.44 5024 209.32 98.43 7139 297.46 99.96 24721 1030.05 105.57 35820 1492.50 74.31 74.49 0 0.00 #NUM! 0 0.00 #NUM! 5281 220.03 97.92 7648 318.69 56.78 70.85 145 6.05 64.60 206 8.60 66.12 2320 96.69 90.70 3297 137.36 68.03 68.38 63

Self-monitoring Plan (AIR MODULE) for the JICA CMH Project

Environmental			Sampling & Measurement Plan				Annual	EQPL MANAGEMENT SCHEME						
Component per	Potential Impacts Per Envt'l Sector	Parameter to be Monitored	Method	Frequency	Location	Lead Person	Estimated		EQPL RANG	E*		MGT MEASUR	E	
Project Phase			Wethou	rrequency	Location		Cost	ALERT	ACTION	LIMIT	ALERT	ACTION	LIMIT	
					CONSTRU	CTION PHASE				ı	l			
Air component (Ambient air quality)	Particulate air pollution	TSP	(S) 24 hr High Volume- (A) Gravimetric USEPA 40 CFR, Part 50, Appendix B	Quarterly (minimum) or as required	construction sites and temporary	DPWH- appointed PCO	Part of operation cost	155	186	207 ug/ncm	source (construction	Implement appropriate corrective action at identified pollutant source	Temporary stoppage of identified construction activity or equipment	
Air component (Ambient air quality)	Particulate air pollution	PM10	24-hr High Volume with 10-micron particle-size inlet (A) Gravimetric USEPA 40 CFR, Part 50, Appendix J		facilities	DPWH- appointed PCO	Part of operation cost	101	121	135 ug/ncm	ID pollutant source (construction	Implement appropriate corrective action at identified pollutant source	Temporary stoppage of identified construction activity or equipment	
Air component (Ambient sound levels)	Increase in ambient sound levels in receptor areas	Sound levels	24 hr sound measurements using a sound meter			DPWH- appointed PCO	Part of operation cost	3 dB less than limit	2 dB less than limit	1 dB less than limit	Identification of possible source of noise	- Corrective action on noise equipment source - Re-scheduling of "noisy activities"	Avoid use or replacement of noisy equipment	
					OPERAT	TON PHASE								
Air component (Ambient air quality)	Particulate air pollution	TSP	(S) 24 hr High Volume- (A) Gravimetric USEPA 40 CFR, Part 50, Appendix B	Quarterly (minimum)	To be determined during the constitution of the MMT	PCO of highway operator	Part of operation cost	155	186	207 ug/ncm	 ID source of pollutant Monitor ambient levels at stations 	 Corrective action project operations emitting the pollutant. Conduct monitoring after corrective action 	Temporary stoppage of polluting source	
Air component (Ambient air quality)	Particulate air pollution	PM10	24-hr High Volume with 10-micron particle-size inlet (A) Gravimetric USEPA 40 CFR, Part 50, Appendix J	Quarterly (minimum)	To be determined during the constitution of the MMT	PCO of highway operator	Part of operation cost	101	121	135 ug/ncm	 ID source of pollutant Monitor ambient levels at stations 		Temporary stoppage of polluting source	



Air component	Increase in ambient	Sound levels	24 hr sound	Quarterly	To be determined	PCO of	Part of	3 dB less	2 dB less	1 dB less	- Identification	- Corrective action	Temporary stoppage
(Ambient sound	sound levels		measurements using a	(minimum)	during the	highway	operation cost	than limit	than limit	than limit	of possible	on noise	of noise source
(Ambient sound			sound meter		constitution of the	operator					source of	equipment	
levels)					MMT						noise	source	
											 Check buffer 	- Conduct	
											zones and	monitoring after	
											noise	corrective action	
											attenuation		
											measures		

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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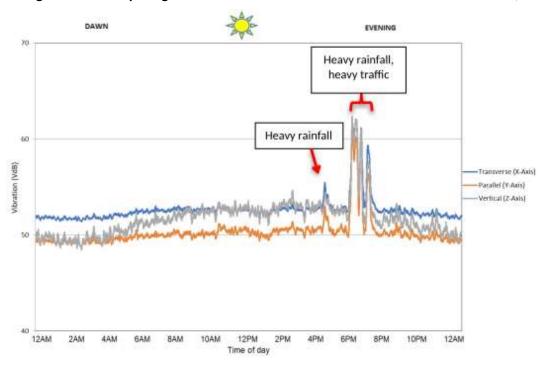
Annex 11. Vibration Report

The **AQ1** observation site is located near a major road in Tagoloan City. The sources of vibration are predominantly cargo trucks, cars and pedestrians. It can also be observed through the graphs that heavy rainfall at the time caused a significant effect on the background vibration levels. Traffic condition was moderate to heavy during the observation period.



Figure 8. The location of the survey site in Google Earth image

Figure 9. Chart depicting the maximum vibration levels in VdB in all three axes at AQ1



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Figure 10. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ1

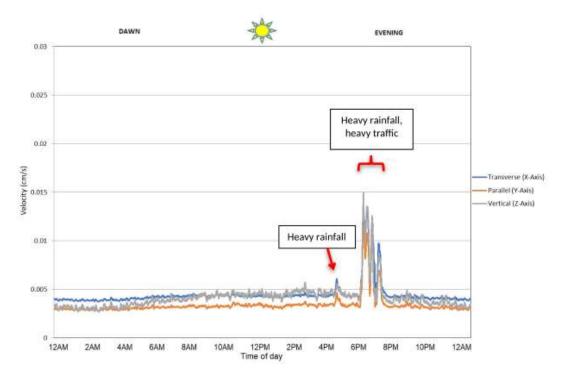
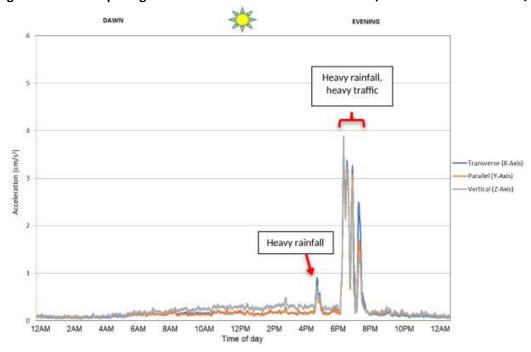


Figure 11. Chart depicting the maximum acceleration levels in cm/s2 in all three axes at AQ1



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Figure 12. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the horizontal, parallel axis (X-Axis).

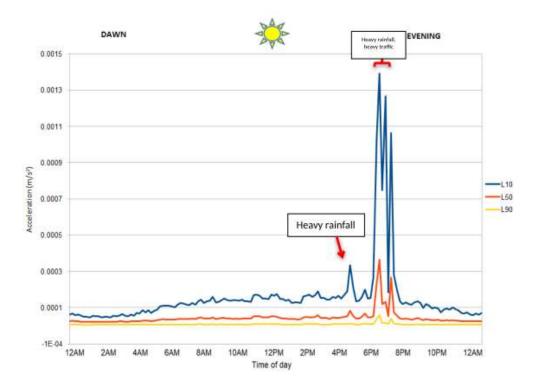
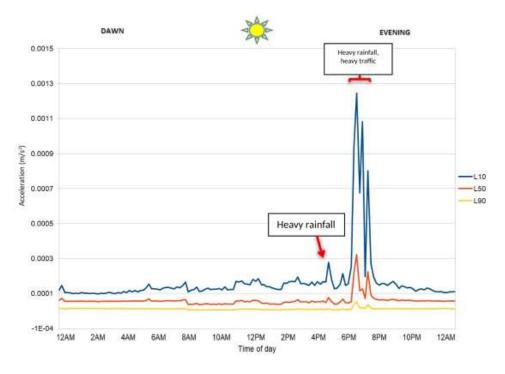


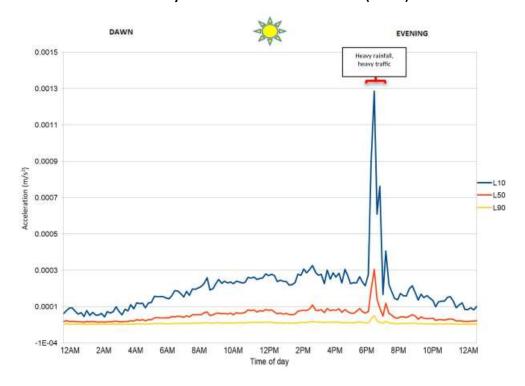
Figure 13. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).



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Figure 14. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the vertical axis (Z-Axis).



AQ2

The **AQ2** observation site is situated in Manolo Fortich, Bukidnon at approximately 200 meters from a farmland and 50 meters from the nearby community. The sources of vibration are predominantly large trucks, motorcycles and pedestrians. It can be observed in the graphs that vibration data display a possible source which may be a machinery operating nearby aside from the vehicles passing by. An image of the raw data is provided. Traffic condition is light to moderate during the observation period.







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Figure 16. Chart depicting the maximum vibration levels in VdB f in all three axes at AQ2

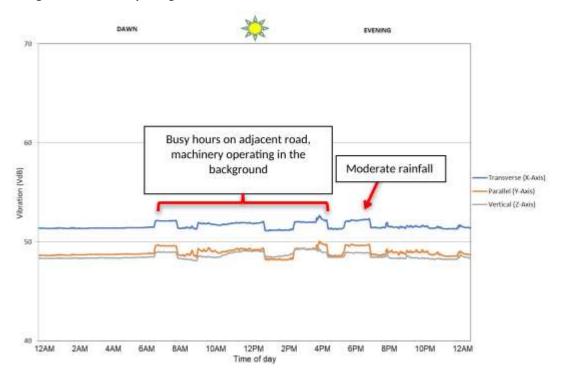
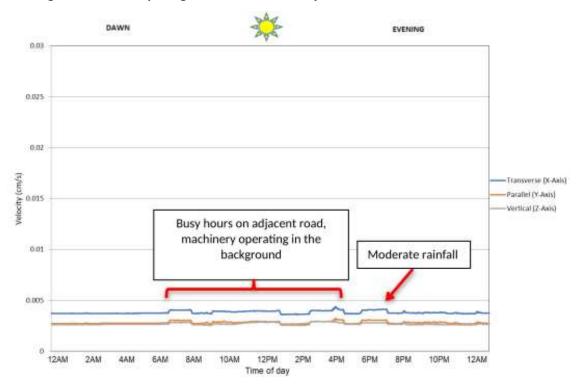


Figure 17. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ2



Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Figure 18. Chart depicting the maximum acceleration levels in cm/s 2 in all three axes at AQ2

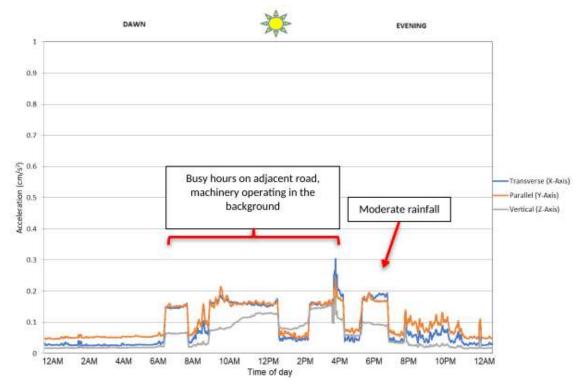
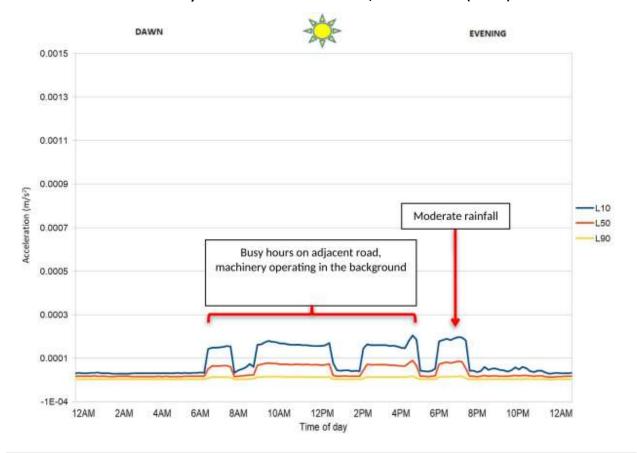


Figure 19. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the horizontal, transverse axis (X-Axis).



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Figure 20. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).

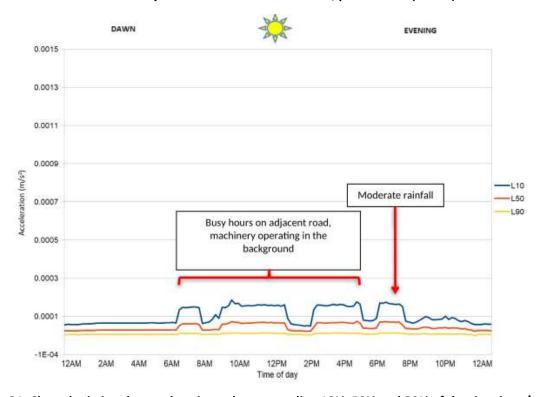
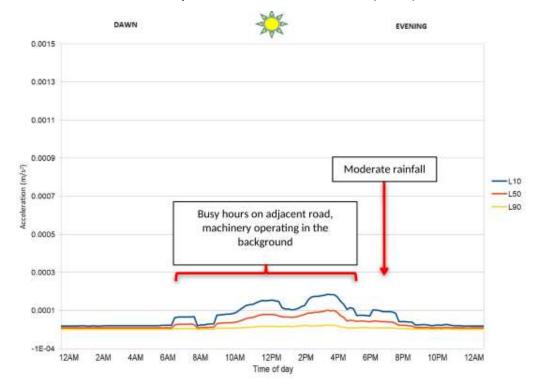


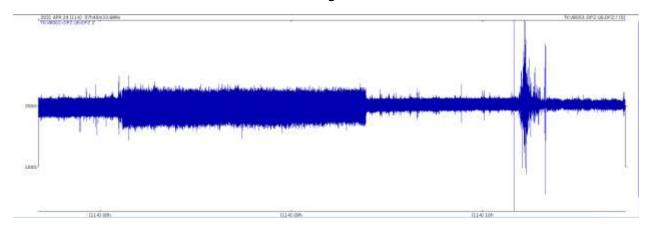
Figure 21: Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the vertical axis (Z-Axis).



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Figure 22. Chart depicting raw data at Site 2 for the Vertical Axis (Z-Axis) with high frequency vibration in the background.



AQ3

The AQN3 observation site is situated near a small community in Brgy. Alae, Manolo Fortich, Bukidnon. The sources of vibration are predominantly cars, motorcycles and pedestrians. Traffic condition is light to moderate during the observation period.



Figure 23. The location of the survey site in Google Earth image

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Figure 24. Chart depicting the maximum vibration levels in VdB in all three axes at AQ3

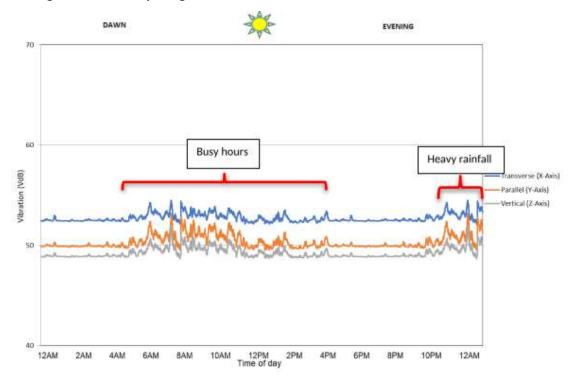
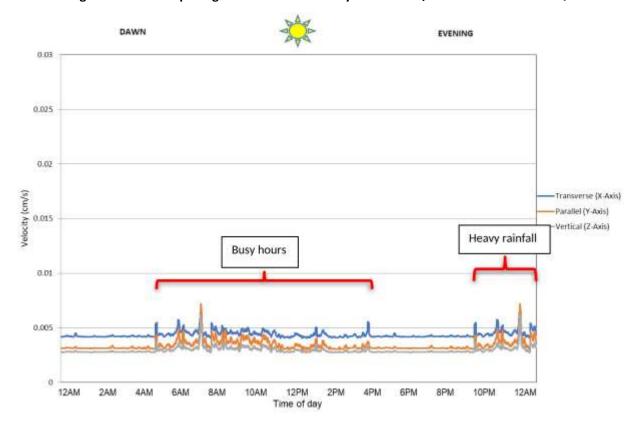


Figure 25. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ3



Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Figure 26. Chart depicting the maximum acceleration levels in cm/s 2 in all three axes at AQ3

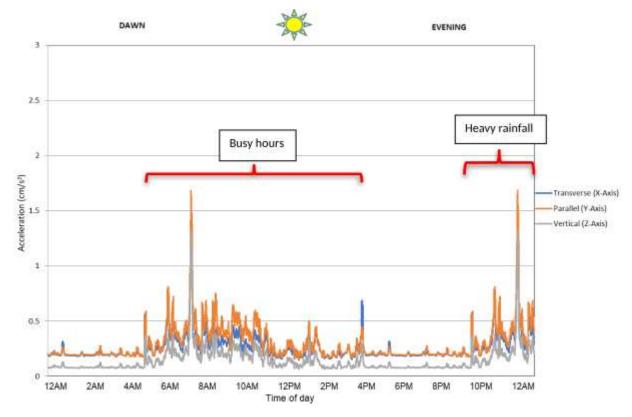
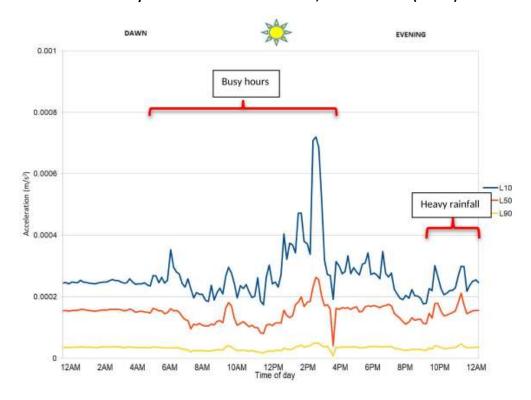


Figure 27. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the horizontal, transverse axis (X-Axis).



Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Figure 28. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).

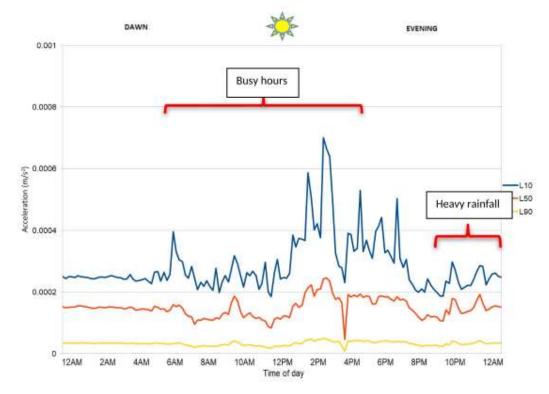
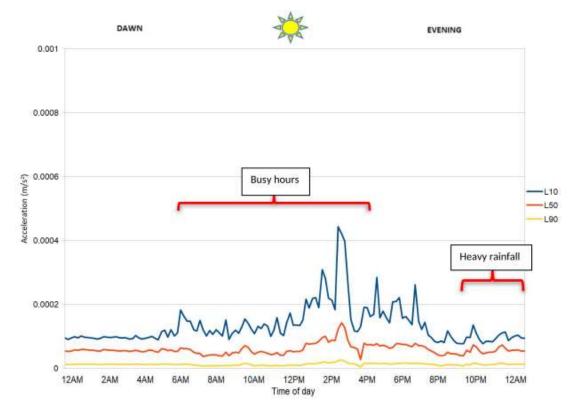


Figure 29. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the vertical axis (Z-Axis).



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AQ4

The AQN4 observation site at a major road in Brgy. Dicklum, Manolo Fortich, Bukidnon. Vibration levels during the observation is constantly above 50 VdB due to its position beside a major highway where cargo trucks, cars and motorcycles are the major sources. Traffic condition is light to moderate during the observation period.

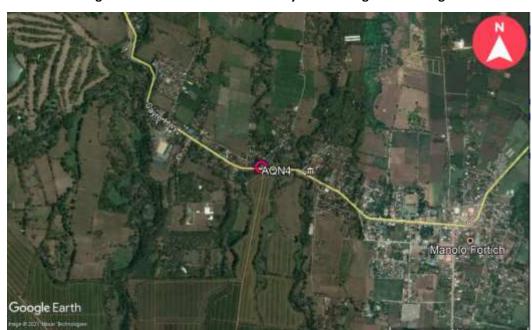
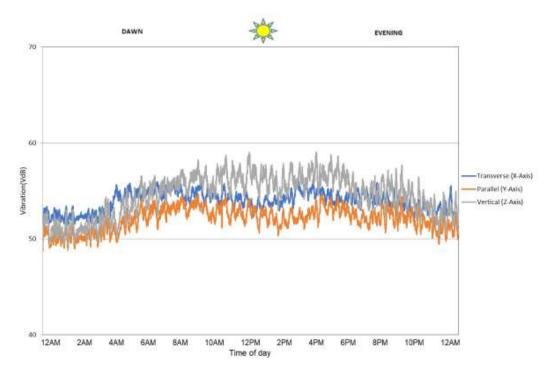


Figure 30. The location of the survey site in Google Earth image

Figure 31. Chart depicting the maximum vibration levels in VdB in all three axes at AQ4



Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Figure 32. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ4

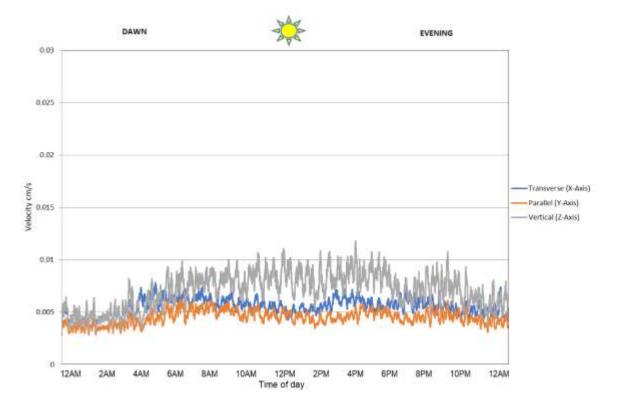
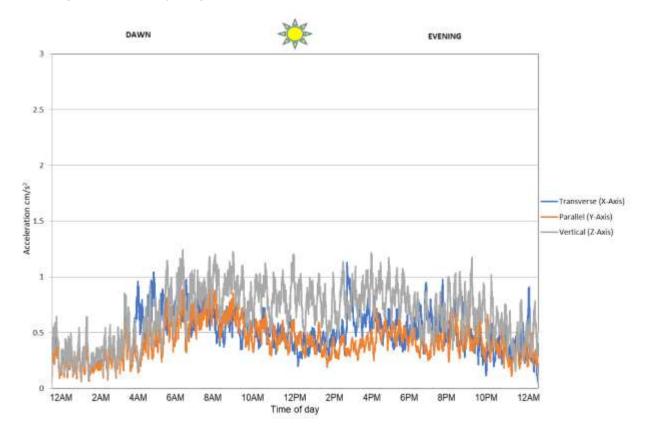


Figure 33: Chart depicting the maximum acceleration levels in cm/s 2 in all three axes at AQ4



Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Figure 34. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the horizontal, transverse axis (X-Axis).

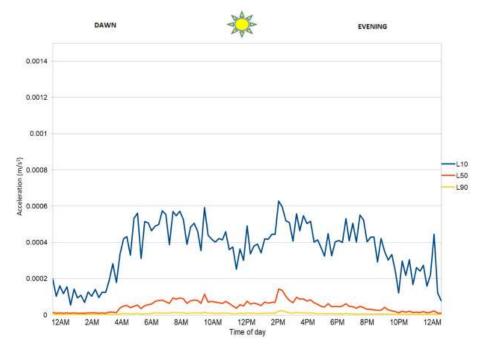
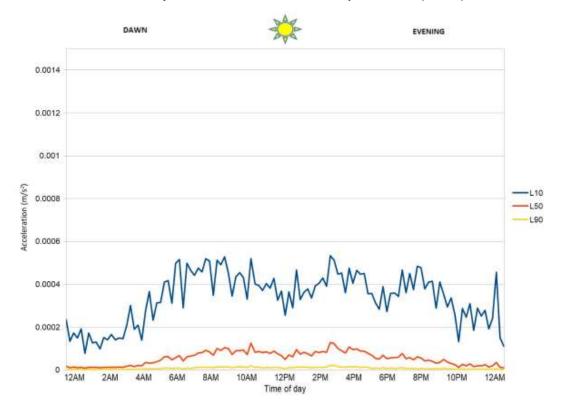


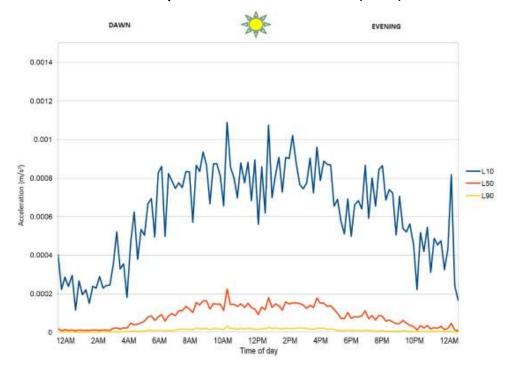
Figure 35. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s 2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).



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Figure 36. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the vertical axis (Z-Axis).



AQ5

The AQ5 observation site is situated at a community near farmlands in Brgy. San Roque, Sumilao, Bukidnon. The sources of vibration are predominantly cargo trucks, motorcycles and pedestrians. Traffic condition is light to moderate during the observation period.



Figure 37. The location of the survey site in Google Earth image

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Figure 38. Chart depicting the maximum vibration levels in VdB in all three axes at AQ5

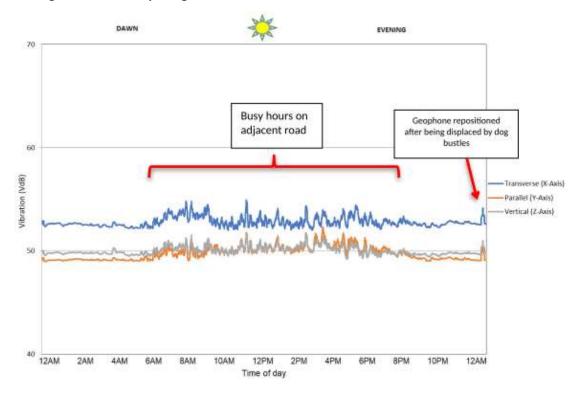
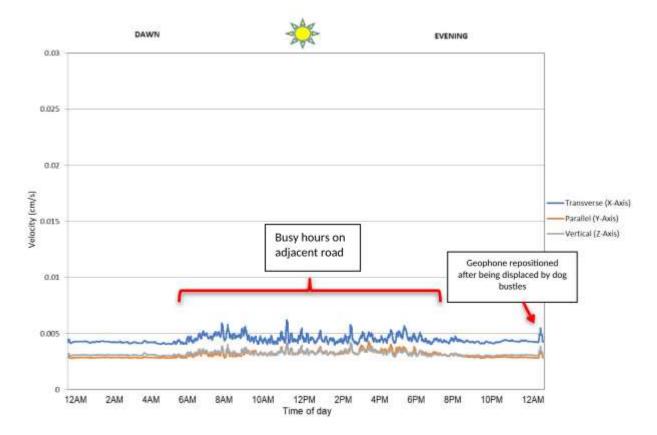


Figure 39. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ5



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Figure 40. Chart depicting the maximum acceleration levels in cm/s 2 in all three axes at AQ5

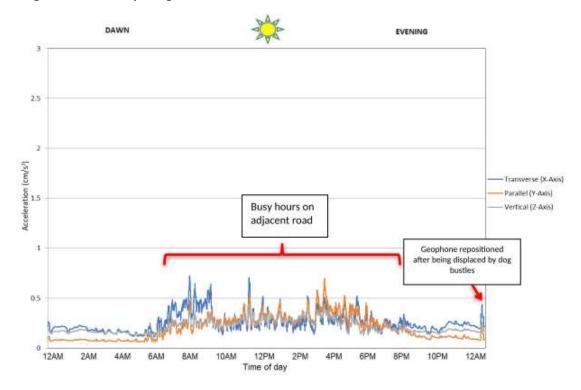
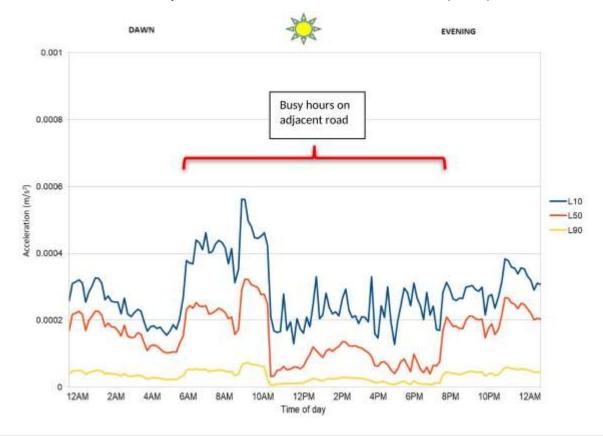


Figure 41. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, transverse axis (X-Axis).



Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Figure 42. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).

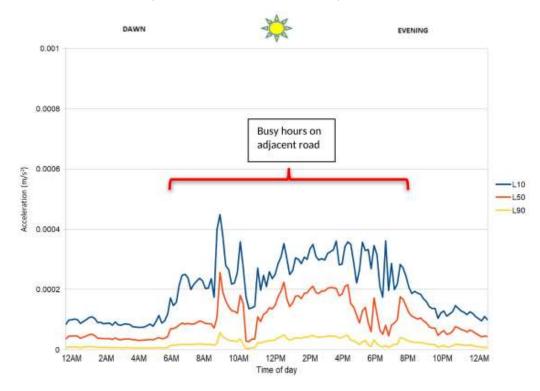
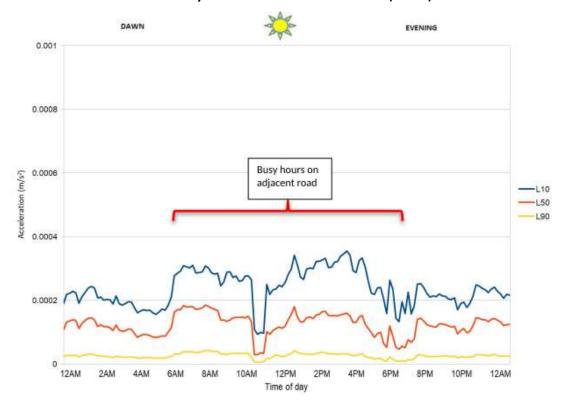


Figure 43.Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the vertical axis (Z-Axis).



Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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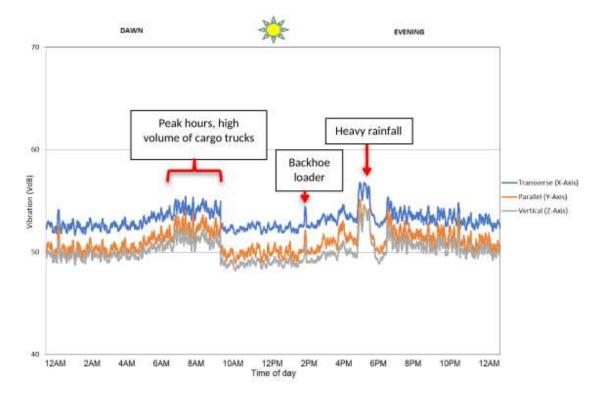
AQ6

The AQ6 observation site is situated near a major road in Brgy. Poblacion, Impasug-ong, Bukidnon. The sources of vibration are predominantly cargo trucks, cars, motorcycles and pedestrians. Traffic condition is light to moderate during the observation period.

Google Earth Impassig-ong

Figure 44: The location of the survey site in Google Earth image

Figure 45: Chart depicting the maximum vibration levels in VdB in all three axes at AQ6





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Figure 46. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ6

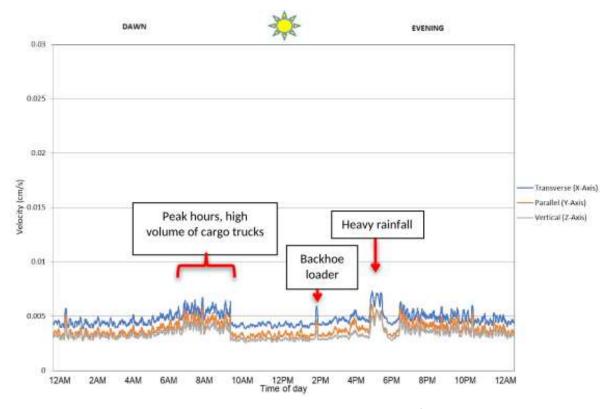
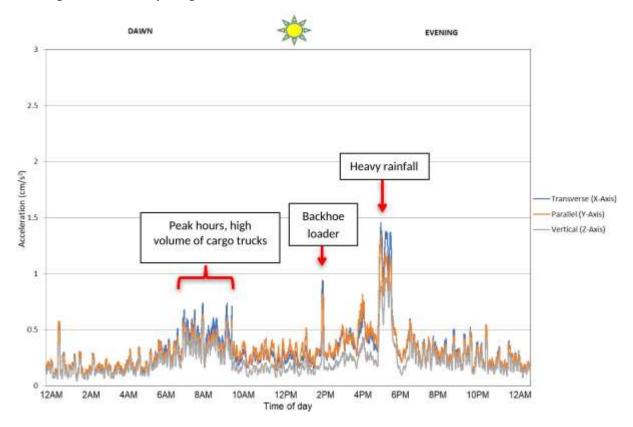


Figure 47. Chart depicting the maximum acceleration levels in cm/s 2 in all three axes at AQ6



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Figure 48. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, transverse axis (X-Axis).

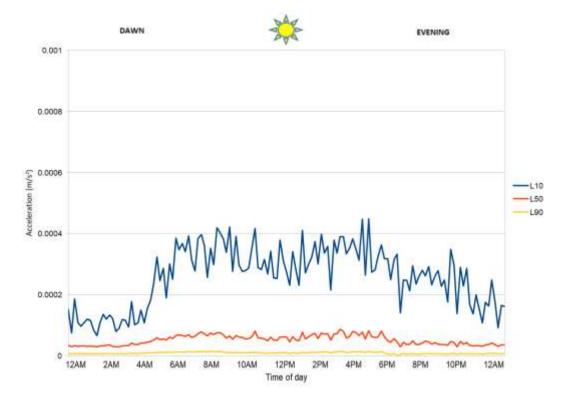
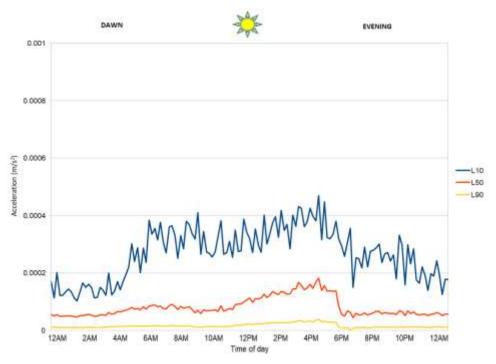


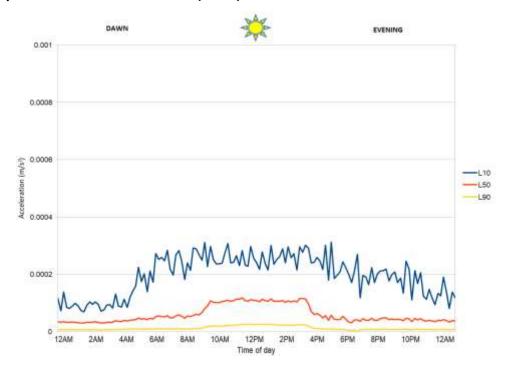
Figure 49. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).



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Figure 50. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the vertical axis (Z-Axis).



AQ7

The AQ7 observation site is situated at a farmland in Brgy. La Fortuna, Impasugong, Bukidnon. The sources of vibration are predominantly motorcycles, cars and pedestrians. Traffic condition is light to moderate during the observation period.

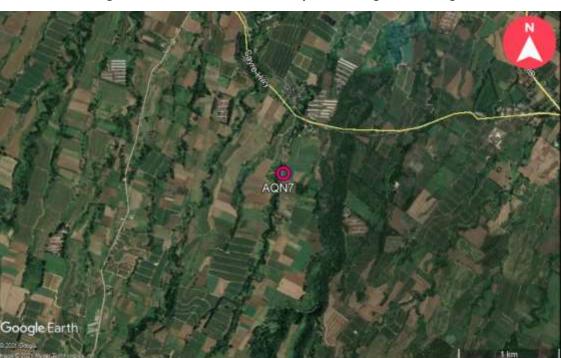


Figure 51. The location of the survey site in Google Earth image

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Figure 52. Chart depicting the maximum vibration levels in VdB in all three axes at AQ7

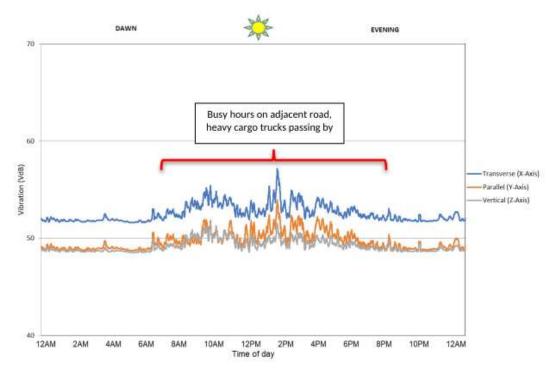
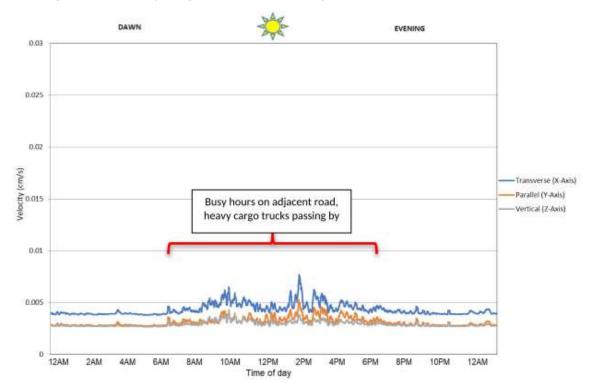


Figure 53. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ7



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Figure 54. Chart depicting the maximum acceleration levels in cm/s 2 in all three axes at AQ7

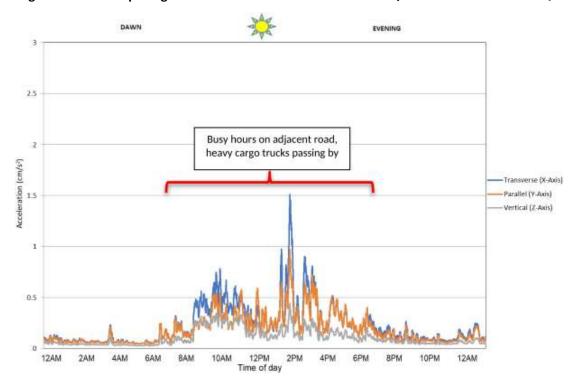
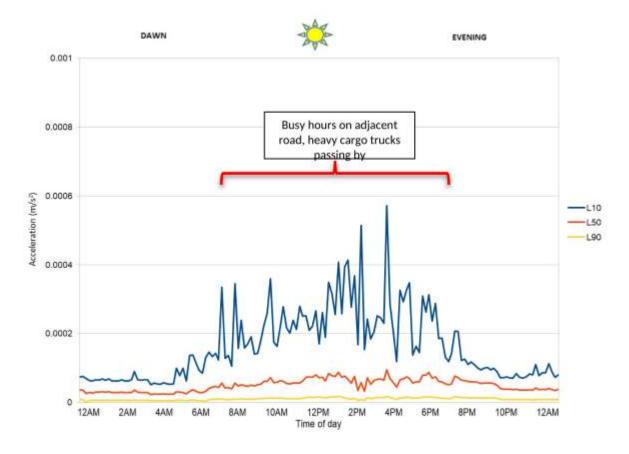


Figure 55. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, transverse axis (X-Axis).



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Figure 56. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).

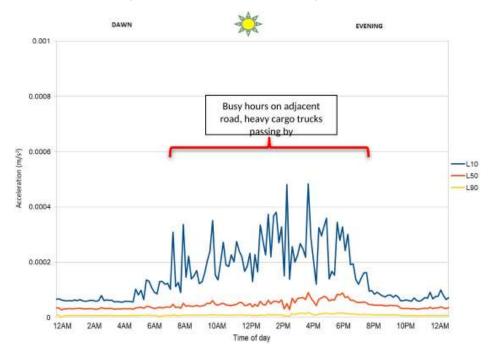
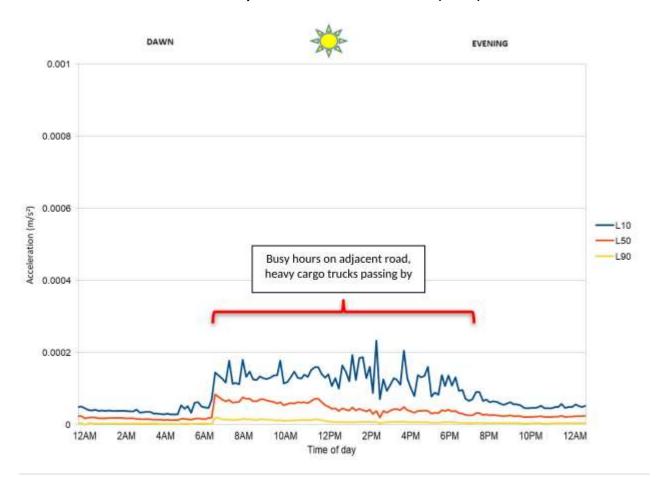


Figure 57. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the vertical axis (Z-Axis).



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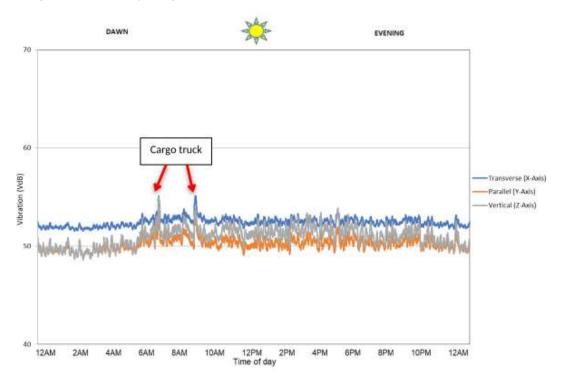
AQ8

The **AQ8** observation site is situated at a major road near a farmland in Brgy. Impalutao, Impasug-ong, Bukidnon. The sources of vibration are predominantly cargo trucks, cars, motorcycles and pedestrians. Traffic condition is light to moderate during the observation period.

Google Earth

Figure 58. The location of the survey site in Google Earth image

Figure 59. Chart depicting the maximum vibration levels in VdB in all three axes at AQ8.



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Figure 60. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ8

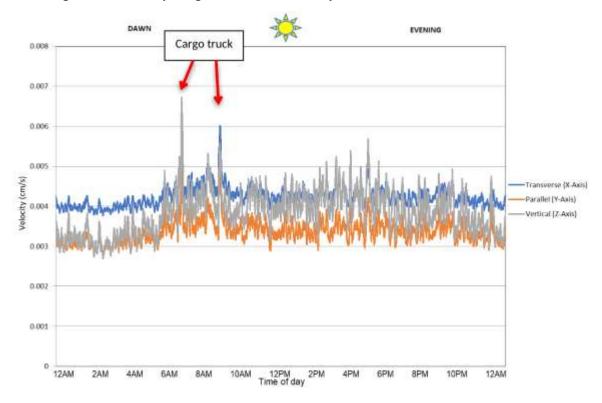
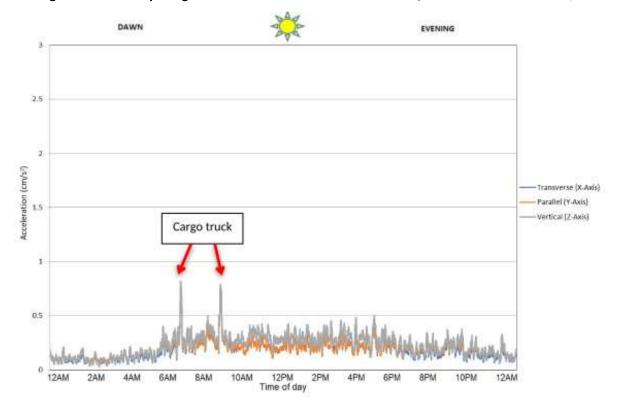


Figure 61. Chart depicting the maximum acceleration levels in cm/s 2 in all three axes at AQ8



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Figure 62. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, transverse axis (X-Axis).

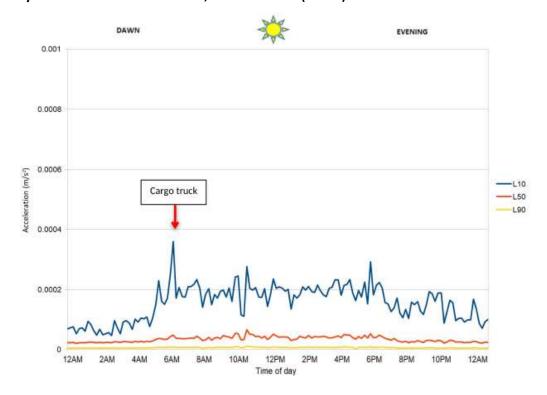
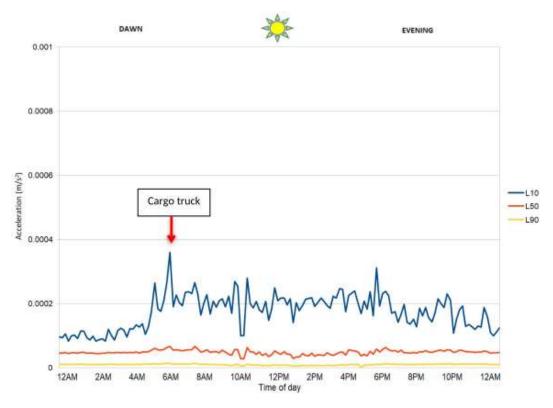


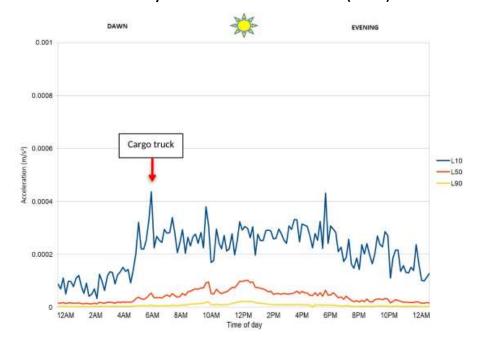
Figure 63. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).



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Figure 64. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the vertical axis (Z-Axis).



AQ9

The AQ9 observation site is situated at a major road in Brgy. Patpat, Malaybalay City, Bukidnon. The sources of vibration are predominantly cargo trucks, cars, motorcycles and pedestrians. Traffic condition is light to moderate during the observation period.

Figure 65. The location of the survey site in Google Earth image





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Figure 66. Chart depicting the maximum vibration levels in VdB in all three axes at AQ9

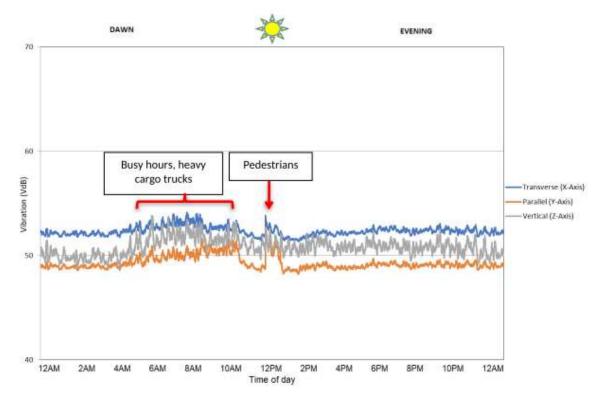
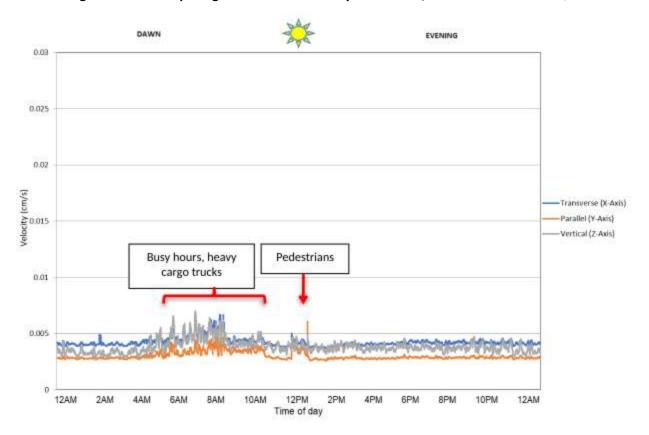


Figure 67. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ9



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Figure 68. Chart depicting the maximum acceleration levels in cm/s 2 in all three axes at AQ9

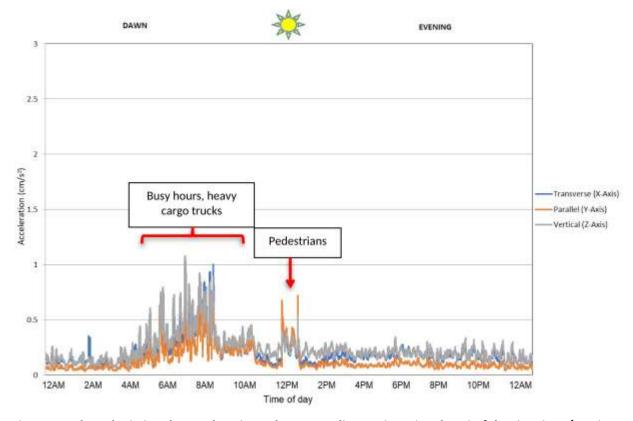
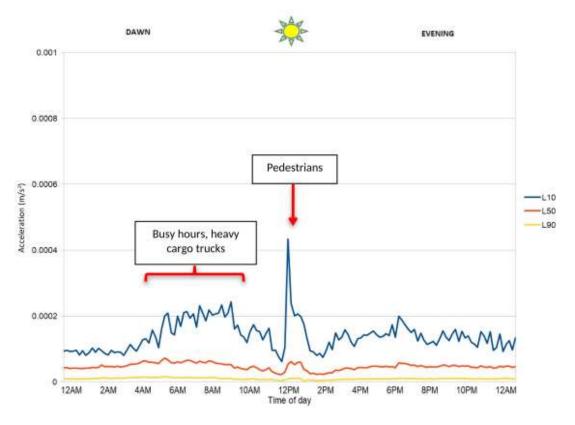


Figure 69. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, transverse axis (X-Axis).



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Figure 70. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).

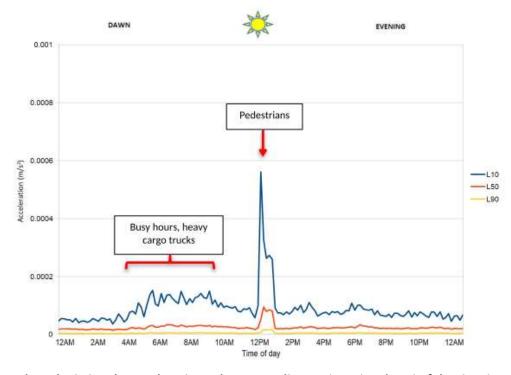
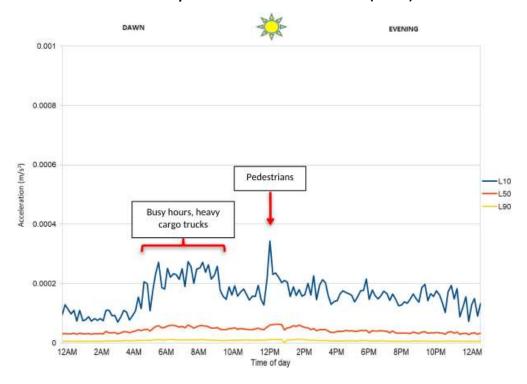


Figure 71. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the vertical axis (Z-Axis).



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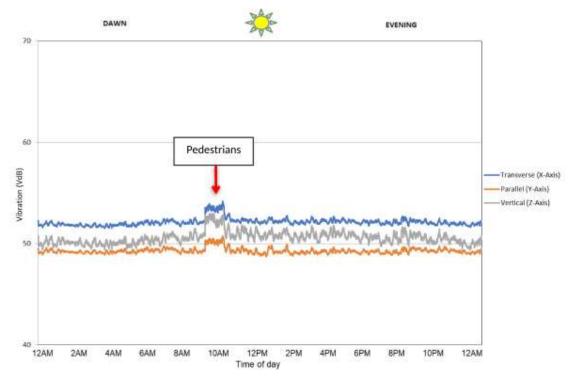
AQ10

The AQ10 observation site is situated at a major road in Brgy. Kalasungay, Malaybalay City, Bukidnon. The sources of vibration are predominantly cargo trucks, cars, motorcycles and pedestrians. Traffic condition is light to moderate during the observation period.



Figure 72. The location of the survey site in Google Earth image





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Figure 74. Chart depicting the maximum velocity levels in cm/s in all three axes at AQ10

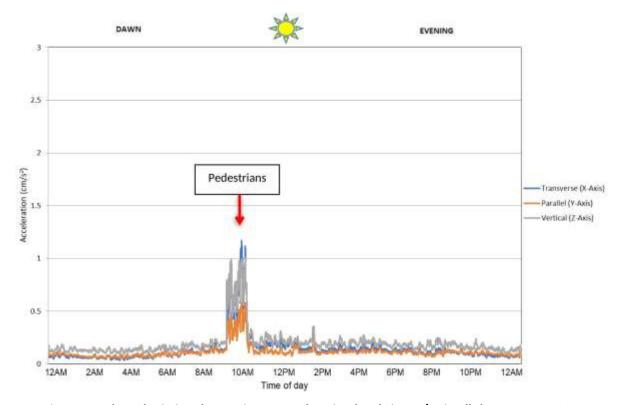
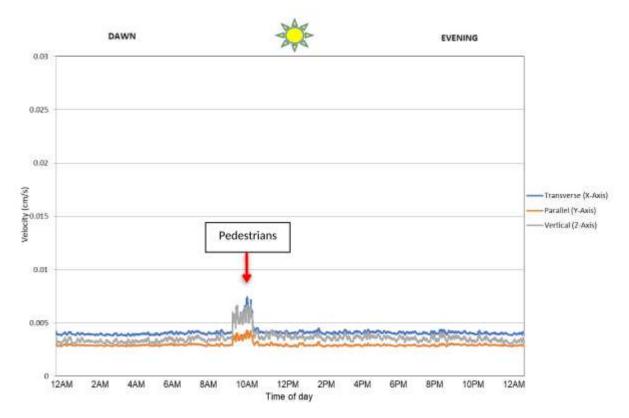


Figure 75. Chart depicting the maximum acceleration levels in cm/s2 in all three axes at AQ10



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Figure 76. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, transverse axis (X-Axis).

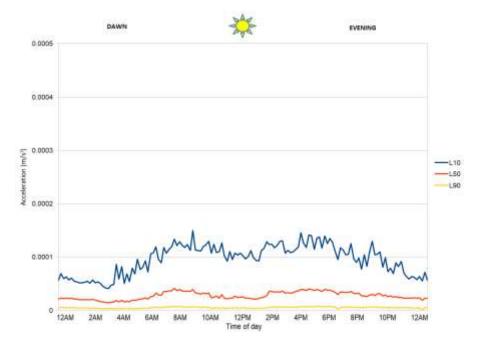
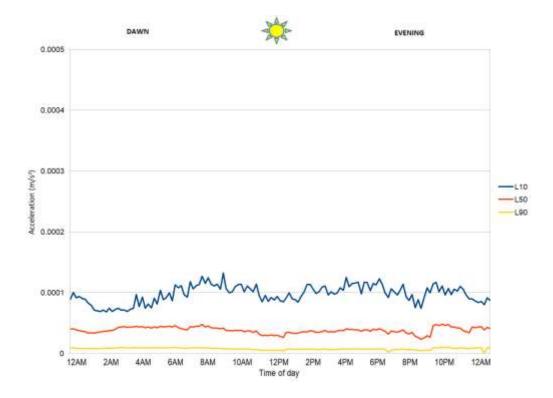


Figure 77. Chart depicting the acceleration values exceeding 10%, 50% and 90% of the time in m/s2, time sliced every 10 minutes for the horizontal, parallel axis (Y-Axis).





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Table 16. Maximum vibration levels (VdB) on all sites during certain periods of the day.

			Vibration	n (VdB)	
Survey Sta	ntions	Morning	Day	Evening	Dawn
		(5am-9am)	(9am-6pm)	(6pm-10pm)	(10pm-5am)
	X-axis	52 VdB	52 VdB	52 VdB	51 VdB
AQN1S	Y-axis	50 VdB	50 VdB	50 VdB	49 VdB
	Z-axis	51 VdB	51 VdB	53 VdB	49 VdB
	X-axis	52 VdB	51 VdB	51 VdB	41 VdB
AQN2i	Y-axis	48 VdB	49 VdB	48 VdB	48 VdB
	Z-axis	48 VdB	49 VdB	48 VdB	48 VdB
	X-axis	52 VdB	53 VdB	52 VdB	52 VdB
AQN3	Y-axis	50 VdB	52 VdB	50 VdB	50 VdB
	Z-axis	48 VdB	50 VdB	49 VdB	48 VdB
	X-axis	55 VdB	54 VdB	53 VdB	52 VdB
AQN4	Y-axis	53 VdB	53 VdB	52 VdB	50 VdB
	Z-axis	56 VdB	57 VdB	55 VdB	51 VdB
	X-axis	53 VdB	53 VdB	52 VdB	52 VdB
AQN5	Y-axis	49 VdB	51 VdB	49 VdB	49 VdB
	Z-axis	50 VdB	50 VdB	50 VdB	49 VdB
	X-axis	53 VdB	53 VdB	53 VdB	52 VdB
AQN6i	Y-axis	51 VdB	50 VdB	51 VdB	50 VdB
	Z-axis	51 VdB	49 VdB	50 VdB	49 VdB
	X-axis	49 VdB	50 VdB	49 VdB	49 VdB
AQN7	Y-axis	50 VdB	51 VdB	49 VdB	48 VdB
	Z-axis	50 VdB	51 VdB	49 VdB	48 VdB
	X-axis	53 VdB	53 VdB	52 VdB	51 VdB
AQN8i	Y-axis	50 VdB	50 VdB	50 VdB	49 VdB
	Z-axis	51 VdB	52 VdB	51 VdB	50 VdB
	X-axis	53 VdB	52 VdB	52 VdB	52 VdB
AQN9	Y-axis	50 VdB	48 VdB	48 VdB	48 VdB
	Z-axis	52 VdB	51 VdB	50 VdB	50 VdB
	X-axis	52 VdB	52 VdB	52 VdB	52 VdB
AQN10E	Y-axis	49 VdB	49 VdB	49 VdB	49 VdB
	Z-axis	50 VdB	51 VdB	50 VdB	50 VdB

Table 17. Maximum acceleration levels (cm/s2) on all sites during certain periods of the day.

		Velocity (cm/s)			
Survey Star	Survey Stations		Day	Evening	Dawn
		(5am-9am)	(9am-6pm)	(6pm-10pm)	(10pm-5am)
	X-axis	0.004 cm/s	0.004 cm/s	0.004 cm/s	0.003 cm/s
AQN1S	Y-axis	0.003 cm/s	0.003 cm/s	0.003 cm/s	0.002 cm/s
	Z-axis	0.003 cm/s	0.005 cm/s	0.004 cm/s	0.003 cm/s
	X-axis	0.003 cm/s	0.004 cm/s	0.003 cm/s	0.003 cm/s
AQN2i	Y-axis	0.002 cm/s	0.002 cm/s	0.002 cm/s	0.002 cm/s
	Z-axis	0.002 cm/s	0.002 cm/s	0.002 cm/s	0.002 cm/s



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	X-axis	0.004 cm/s	0.005 cm/s	0.004 cm/s	0.003 cm/s
AQN3	Y-axis	0.003 cm/s	0.004 cm/s	0.003 cm/s	0.003 cm/s
	Z-axis	0.002 cm/s	0.003 cm/s	0.002 cm/s	0.002 cm/s
	X-axis	0.006 cm/s	0.006 cm/s	0.006 cm/s	0.004 cm/s
AQN4	Y-axis	0.005 cm/s	0.004 cm/s	0.004 cm/s	0.004 cm/s
	Z-axis	0.009 cm/s	0.009 cm/s	0.007 cm/s	0.005 cm/s
	X-axis	0.005 cm/s	0.005 cm/s	0.004 cm/s	0.004 cm/s
AQN5	Y-axis	0.003 cm/s	0.003 cm/s	0.003 cm/s	0.002 cm/s
	Z-axis	0.003 cm/s	0.003 cm/s	0.003 cm/s	0.003 cm/s
	X-axis	0.005 cm/s	0.004 cm/s	0.006 cm/s	0.004 cm/s
AQN6i	Y-axis	0.004 cm/s	0.003 cm/s	0.004 cm/s	0.003 cm/s
	Z-axis	0.004 cm/s	0.003 cm/s	0.003 cm/s	0.003 cm/s
	X-axis	0.003 cm/s	0.004 cm/s	0.002 cm/s	0.002 cm/s
AQN7	Y-axis	0.003 cm/s	0.004 cm/s	0.003 cm/s	0.002 cm/s
	Z-axis	0.003 cm/s	0.005 cm/s	0.002 cm/s	0.002 cm/s
	X-axis	0.004 cm/s	0.005 cm/s	0.004 cm/s	0.004 cm/s
AQN8i	Y-axis	0.003 cm/s	0.003 cm/s	0.003 cm/s	0.003 cm/s
	Z-axis	0.004 cm/s	0.004 cm/s	0.00 cm/s	0.003 cm/s
	X-axis	0.005 cm/s	0.004 cm/s	0.004 cm/s	0.003 cm/s
AQN9	Y-axis	0.003 cm/s	0.002 cm/s	0.002 cm/s	0.002 cm/s
	Z-axis	0.005 cm/s	0.004 cm/s	0.004 cm/s	0.003 cm/s
	X-axis	0.004 cm/s	0.004 cm/s	0.004 cm/s	0.004 cm/s
AQN10E	Y-axis	0.002 cm/s	0.002 cm/s	0.002 cm/s	0.002 cm/s
	Z-axis	0.003 cm/s	0.003 cm/s	0.003 cm/s	0.003 cm/s

Table 18. Maximum acceleration levels (cm/s2) on all sites during certain periods of the day.

		Acceleration (cm/s²)				
Survey Sta	tions	Morning	Day	Evening	Dawn	
		(5am-9am)	(9am-6pm)	(6pm-10pm)	(10pm-5am)	
	X-axis	0.14 cm/s ²	0.18 cm/s ²	0.15 cm/s ²	0.08 cm/s ²	
AQN1S	Y-axis	0.13 cm/s ²	0.16 cm/s ²	0.15 cm/s ²	0.11 cm/s ²	
	Z-axis	0.17 cm/s ²	0.30 cm/s ²	0.21 cm/s ²	0.09 cm/s ²	
	X-axis	0.02 cm/s ²	0.16 cm/s ²	0.06 cm/s ²	0.03 cm/s ²	
AQN2i	Y-axis	0.05 cm/s ²	0.15 cm/s ²	0.09 cm/s ²	0.05 cm/s ²	
	Z-axis	0.02 cm/s ²	0.12 cm/s ²	0.02 cm/s ²	0.02 cm/s ²	
	X-axis	0.21 cm/s ²	0.41 cm/s ²	0.23 cm/s ²	0.19 cm/s ²	
AQN3	Y-axis	0.21 cm/s ²	0.48 cm/s ²	0.26 cm/s ²	0.19 cm/s ²	
	Z-axis	0.07 cm/s ²	0.25 cm/s ²	0.11 cm/s ²	0.08 cm/s ²	
	X-axis	0.81 cm/s ²	0.59 cm/s ²	0.56 cm/s ²	0.28 cm/s ²	
AQN4	Y-axis	0.75 cm/s ²	0.48 cm/s ²	0.50 cm/s ²	0.34 cm/s ²	
	Z-axis	1.02 cm/s ²	1.03 cm/s ²	0.81 cm/s ²	0.50 cm/s ²	
	X-axis	0.47 cm/s ²	0.32 cm/s ²	0.27 cm/s ²	0.21 cm/s ²	
AQN5	Y-axis	0.27 cm/s ²	0.36 cm/s ²	0.19 cm/s ²	0.07 cm/s ²	
	Z-axis	0.28 cm/s ²	0.30 cm/s ²	0.16 cm/s ²	0.14 cm/s ²	
A O N G	X-axis	0.49 cm/s ²	0.41 cm/s ²	0.36 cm/s ²	0.18 cm/s ²	
AQN6i	Y-axis	0.42 cm/s ²	0.38 cm/s ²	0.29 cm/s ²	0.21 cm/s ²	



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	Z-axis	0.40 cm/s ²	0.21 cm/s ²	0.25 cm/s ²	0.14 cm/s ²
	X-axis	0.29 cm/s ²	0.39 cm/s ²	0.11 cm/s ²	0.06 cm/s ²
AQN7	Y-axis	0.25 cm/s ²	0.47 cm/s ²	0.11 cm/s ²	0.05 cm/s ²
	Z-axis	0.27 cm/s ²	0.46 cm/s ²	0.12 cm/s ²	0.04 cm/s ²
	X-axis	0.29 cm/s ²	0.25 cm/s ²	0.18 cm/s ²	0.09 cm/s ²
AQN8i	Y-axis	0.28 cm/s ²	0.25 cm/s ²	0.22 cm/s ²	0.14 cm/s ²
	Z-axis	0.35 cm/s ²	0.35 cm/s ²	0.24 cm/s ²	0.14 cm/s ²
	X-axis	0.47 cm/s ²	0.18 cm/s ²	0.19 cm/s ²	0.12 cm/s ²
AQN9	Y-axis	0.30 cm/s ²	0.12 cm/s ²	0.10 cm/s ²	0.07 cm/s ²
	Z-axis	0.60 cm/s ²	0.23 cm/s ²	0.19 cm/s ²	0.17 cm/s ²
AQN10E	X-axis	0.10 cm/s ²	0.15 cm/s ²	0.13 cm/s ²	0.06 cm/s ²
	Y-axis	0.11 cm/s ²	0.12 cm/s ²	0.11 cm/s ²	0.06 cm/s ²
	Z-axis	0.16 cm/s ²	0.20 cm/s ²	0.19 cm/s ²	0.13 cm/s ²

Table 19. The recorded peak vibrations (VdB) at all sites.

Survey Sites	Recorded Peak Vibration (VdB)	Peak Time
AQN1S	53 VdB, Z-Axis	Evening (6pm-10pm)
AQN2i	52 VdB, X-axis	Morning (5am-9am)
AQN3	53 VdB, X-Axis	Day (9am-6pm)
AQN4	57 VdB, Z-Axis	Day (9am-6pm)
AQN5	53 VdB, X-axis	Morning (5am-9am) Day (9am-6pm)
AQN6i	53 VdB, X-Axis	Morning (5am-9am) Day (9am-6pm) Evening (6pm-10pm)
AQN7	51 VdB, Y-Axis, Z-Axis	Day (9am-6pm)
AQN8i	53 VdB, X-axis	Morning (5am-9am) Day (9am-6pm)
AQN9	53 VdB, X-Axis	Morning (5am-9am)
AQN10E	52 VdB, X-Axis	Morning (5am-9am) Day (9am-6pm) Evening (6pm-10pm) Dawn (10pm-5am)

Table 20. The recorded peak velocity (cm/s) at all sites.

Survey Sites	Recorded Peak Velocity (cm/s)	Peak Time
AQN1S	0.005 cm/s, Z-Axis	Day (9am-6pm)



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AQN2i	0.004 cm/s, X-Axis	Day (9am-6pm)
AQN3	0.005 cm/s, X-Axis	Day (9am-6pm)
AQN4	0.009 cm/s, Z-Axis	Morning (5am-9am) Day (9am-6pm)
AQN5	0.005 cm/s, X-Axis	Morning (5am-9am) Day (9am-6pm)
AQN6i	0.006 cm/s, X-Axis	Evening (6pm-10pm)
AQN7	0.005 cm/s, Z-Axis	Day (9am-6pm)
AQN8i	0.005 cm/s, X-Axis	Day (9am-6pm)
AQN9	0.005 cm/s, X-Axis	Morning (5am-9am)
AQN10E	0.004 cm/s, X-Axis	Morning (5am-9am) Day (9am-6pm) Evening (6pm-10pm) Dawn (10pm-5am)

Table 21: The recorded peak acceleration (cm/s2) at all sites.

Survey Sites	Recorded Peak Velocity (cm/s)	Peak Time
AQN1S	0.005 cm/s, Z-Axis	Day (9am-6pm)
AQN2i	0.004 cm/s, X-Axis	Day (9am-6pm)
AQN3	0.005 cm/s, X-Axis	Day (9am-6pm)
AQN4	0.009 cm/s, Z-Axis	Morning (5am-9am) Day (9am-6pm)
AQN5	0.005 cm/s, X-Axis	Morning (5am-9am) Day (9am-6pm)
AQN6i	0.006 cm/s, X-Axis	Evening (6pm-10pm)
AQN7	0.005 cm/s, Z-Axis	Day (9am-6pm)
AQN8i	0.005 cm/s, X-Axis	Day (9am-6pm)
AQN9	0.005 cm/s, X-Axis	Morning (5am-9am)
AQN10E	0.004 cm/s, X-Axis	Morning (5am-9am) Day (9am-6pm) Evening (6pm-10pm) Dawn (10pm-5am)

Table 22. The recorded peak acceleration (cm/s2) at all sites

Survey Sites	Recorded Peak Vibration (VdB)	Peak Time
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AQN1S	0.21 cm/s ² , Z-Axis	Evening (6pm-10pm)
AQN2i	0.16 cm/s ² , X-Axis	Day (9am-6pm)
AQN3	0.48 cm/s ² , Y-Axis	Day (9am-6pm)
AQN4	1.03 cm/s ² , Z-Axis	Day (9am-6pm)
AQN5	0.47 cm/s ² , X-Axis	Morning (5am-9am)
AQN6i	0.49 cm/s ² , X-Axis	Morning (5am-9am)
AQN7	0.47 cm/s ² , Y-Axis	Day (9am-6pm)
AQN8i	0.35 cm/s ² , Z-Axis	Morning (5am-9am) Day (9am-6pm)
AQN9	0.60 cm/s ² , Z-Axis	Morning (5am-9am)
AQN10E	0.20 cm/s ² , Z-Axis	Day (9am-6pm)

Table 23. Maximum vibration levels for the acceleration values (m/s2) exceeding 10%, 50% and 90% of the time, time sliced every 10 minutes for AQ 1 to 5.

		Acceleration (m/s²)				
Surve	Survey Stations		Morning	Day	Evening	Dawn
			(5am-9am)	(9am-6pm)	(6pm-10pm)	(10pm-5am)
		10%	0.00014 m/s ²	0.00015 m/s ²	0.00013 m/s ²	0.00010 m/s ²
	X-axis	50%	0.00003 m/s ²	0.00004 m/s ²	0.00004 m/s ²	0.00002 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
AQN1S		10%	0.00013 m/s ²	0.00015 m/s ²	0.00015 m/s ²	0.00010 m/s ²
AQNIS	Y-axis	50%	0.00005 m/s ²	0.00007 m/s ²	0.00006 m/s ²	0.00005 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00019 m/s ²	0.00027 m/s ²	0.00016 m/s ²	0.00007 m/s ²
	Z-axis	50%	0.00003 m/s ²	0.00006 m/s ²	0.00003 m/s ²	0.00003 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00016 m/s ²	0.00016 m/s ²	0.00005 m/s ²	0.00002 m/s ²
	X-axis	50%	0.00007 m/s ²	0.00007 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00014 m/s ²	0.00015 m/s ²	0.00008 m/s ²	0.00006 m/s ²
AQN2i	Y-axis	50%	0.00006 m/s ²	0.00006 m/s ²	0.00003 m/s ²	0.00002 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00006 m/s ²	0.00011 m/s ²	0.00004 m/s ²	0.00002 m/s ²
	Z-axis	50%	0.00003 m/s ²	0.00005 m/s ²	0.00003 m/s ²	0.00001 m/s ²
		90%	0.00001 m/s ²	0.00002 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00024 m/s ²	0.00026 m/s ²	0.00023 m/s ²	0.00023 m/s ²
	X-axis	50%	0.00015 m/s ²	0.00016 m/s ²	0.00011 m/s ²	0.00011 m/s ²
		90%	0.00003 m/s ²	0.00005 m/s ²	0.00003 m/s ²	0.00003 m/s ²
AQN3		10%	0.00026 m/s ²	0.00038 m/s ²	0.00023 m/s ²	0.00023 m/s ²
	Y-axis	50%	0.00011 m/s ²	0.00019 m/s ²	0.00016 m/s ²	0.00014 m/s ²
		90%	0.00002 m/s ²	0.00003 m/s ²	0.00002 m/s ²	0.00002 m/s ²
	Z-axis	10%	0.00015 m/s ²	0.00017 m/s ²	0.00010 m/s ²	0.00009 m/s ²

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		50%	0.00005 m/s ²	0.00007 m/s ²	0.00005 m/s ²	0.00005 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00057 m/s ²	0.00054 m/s ²	0.00042 m/s ²	0.00013 m/s ²
	X-axis	50%	0.00008 m/s ²	0.00007 m/s ²	0.00006 m/s ²	0.00003 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00051 m/s ²	0.00046 m/s ²	0.00041 m/s ²	0.00020 m/s ²
AQN4	Y-axis	50%	0.00009 m/s ²	0.00011 m/s ²	0.00006 m/s ²	0.00002 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00086 m/s ²	0.00087 m/s ²	0.00070 m/s ²	0.00052 m/s ²
	Z-axis	50%	0.00016 m/s ²	0.00018 m/s ²	0.00017 m/s ²	0.00004 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00043 m/s ²	0.00029 m/s ²	0.00030 m/s ²	0.00027 m/s ²
	X-axis	50%	0.00024 m/s ²	0.00014 m/s ²	0.00021 m/s ²	0.00022 m/s ²
		90%	0.00005 m/s ²	0.00003 m/s ²	0.00005 m/s ²	0.00005 m/s ²
		10%	0.00023 m/s ²	0.00035 m/s ²	0.00018 m/s ²	0.00008 m/s ²
AQN5	Y-axis	50%	0.00009 m/s ²	0.00022 m/s ²	0.00017 m/s ²	0.00005 m/s ²
		90%	0.00001 m/s ²	0.00005 m/s ²	0.00003 m/s ²	0.00001 m/s ²
		10%	0.00029 m/s ²	0.00033 m/s ²	0.00022 m/s ²	0.00021 m/s ²
	Z-axis	50%	0.00017 m/s ²	0.00016 m/s ²	0.00015 m/s ²	0.00017 m/s ²
		90%	0.00003 m/s ²	0.00003 m/s ²	0.00003 m/s ²	0.00003 m/s ²

Table 24. Maximum vibration levels for the acceleration values (m/s2) exceeding 10%, 50% and 90% of the time, time sliced every 10 minutes for AQ 6 to 10.

		Acceleration (m/s²)				
Surve	Survey Stations		Morning	Day	Evening	Dawn
	•		(5am-9am)	(9am-6pm)	(6pm-10pm)	(10pm-5am)
			0.00039 m/s ²	0.00038 m/s ²	0.00022 m/s ²	0.00013 m/s ²
	X-axis	50%	0.00007 m/s ²	0.00008 m/s ²	0.00005 m/s ²	0.00004 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
AQN6i		10%	0.00038 m/s ²	0.00040 m/s ²	0.00030 m/s ²	0.00020 m/s ²
·	Y-axis	50%	0.00009 m/s ²	0.00014 m/s ²	0.00006 m/s ²	0.00005 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00004 m/s ²	0.00001 m/s ²
		10%	0.00025 m/s ²	0.00029 m/s ²	0.00017 m/s ²	0.00013 m/s ²
	Z-axis	50%	0.00006 m/s ²	0.00011 m/s ²	0.00004 m/s ²	0.00003 m/s ²
		90%	0.00001 m/s ²	0.00004 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00027 m/s ²	0.00034 m/s ²	0.00011 m/s ²	0.00006 m/s ²
	X-axis	50%	0.00005 m/s ²	0.00008 m/s ²	0.00007 m/s ²	0.00002 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00022 m/s ²	0.00035 m/s ²	0.00009 m/s ²	0.00006 m/s ²
AQN7	Y-axis	50%	0.00005 m/s ²	0.00008 m/s ²	0.00005 m/s ²	0.00005 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00014 m/s ²	0.00016 m/s ²	0.00006 m/s ²	0.00004 m/s ²
	Z-axis	50%	0.00006 m/s ²	0.00004 m/s ²	0.00004 m/s ²	0.00003 m/s ²
		90%	0.00001 m/s ²	0.00003 m/s ²	0.00002 m/s ²	0.00001 m/s ²
AQN8i	X-axis	10%	0.00020 m/s ²	0.00022 m/s ²	0.00017 m/s ²	0.00010 m/s ²



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		50%	0.00004 m/s ²	0.00005 m/s ²	0.00004 m/s ²	0.00003 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00022 m/s ²	0.00021 m/s ²	0.00018 m/s ²	0.00012 m/s ²
	Y-axis	50%	0.00005 m/s ²	0.00004 m/s ²	0.00005 m/s ²	0.00005 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00015 m/s ²	0.00015 m/s ²	0.00010 m/s ²	0.00006 m/s ²
	Z-axis	50%	0.00006 m/s ²	0.00007 m/s ²	0.00004 m/s ²	0.00003 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00023 m/s ²	0.00015 m/s ²	0.00015 m/s ²	0.00011 m/s ²
	X-axis	50%	0.00006 m/s ²	0.00004 m/s ²	0.00005 m/s ²	0.00004 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00026 m/s ²	0.00019 m/s ²	0.00016 m/s ²	0.00010 m/s ²
AQN9	AQN9 Y-axis	50%	0.00006 m/s ²	0.00004 m/s ²	0.00004 m/s ²	0.00003 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00025 m/s ²	0.00018 m/s ²	0.00016 m/s ²	0.00011 m/s ²
	Z-axis	50%	0.00005 m/s ²	0.00005 m/s ²	0.00004 m/s ²	0.00003 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00013 m/s ²	0.00018 m/s ²	0.00017 m/s ²	0.00014 m/s ²
	X-axis	50%	0.00005 m/s ²	0.00007 m/s ²	0.00007 m/s ²	0.00004 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00011 m/s ²	0.00011 m/s ²	0.00011 m/s ²	0.00009 m/s ²
AQN10	Y-axis	50%	0.00004 m/s ²	0.00004 m/s ²	0.00004 m/s ²	0.00004 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²
		10%	0.00018 m/s ²	0.00019 m/s ²	0.00017 m/s ²	0.00013 m/s ²
	Z-axis	50%	0.00005 m/s ²	0.00005 m/s ²	0.00006 m/s ²	0.00004 m/s ²
		90%	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²	0.00001 m/s ²



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Annex 12 Meeting with IPs Primary Data

Minutes of the Meeting (FGD with the IP Leaders)

Activity : Meeting wuth the Tribal Leaders for Central Mindanao High Standard Highway

Construction Project (EIS)

Client/Agency : Japan International Cooperation Agency (JICA)

Date : April 27-28, 2021

Venue : Tankulan Covered Court, Manolo Fortich (April 27, 2021)

Tulugan Ta Sumilao, Kisolon, Sumilao (April 27, 2021)

Municipal Tree Park, Impasug-ong (April 28, 2021)

Old City Hall, Malaybalay City (April 28, 2021)

Online meeting thru Zoom

Attendees:

Host City/Municipality	Male		Female		Total
Host City/Municipality	No.	%	No.	%	Participants
Manolo Fortich, Bukidnon	12	18.75	20	21.51	32
Sumilao, Bukidnon	18	28.13	26	27.96	44
Impasug-ong, Bukidnon	16	25.00	25	26.88	41
Malaybalay City, Bukidnon	18	28.13	22	23.66	40
TOTAL	64	100.00	93	100.00	157

Programme

- 1. Registration
- 2. First part of the ritual (IP Ritualist)
- 3. Introduction of participants (Marie Superales NCIP R10)
- 4. Welcome Remarks and Overview of the Objectives (Marie Superales NCIP R10)
- 5. Presentation of the Project (Amabelle Embornas Amet-Asia)
- 6. Open Forum
- 7. Drafting of Resolution
- 8. Closing Remarks (Marie Superales NCIP R10)
- 9. Ritual



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MEETING HIGHLIGHTS

Important notes:

- Amet-Asia discussed to the IP Leaders the proposed project, the road alignment and the activities involved in the EIA Study
- NCIP and IP leaders commented that the activities involved in the EIA study are non-extractive, thus there is no need for a free and Prior Consent before the conduct of the survey
- Amet-Asia has been allowed to conduct the field survey as long as consent from the IPs must be sought prior to the actual conduct of the field survey
- Malaybalay Municipal Indigenous People Mandatory Representative (IPMR) stated that based on the maps presented there are no Ancestral Domain that will be traversed by the alignment in Malaybalay
- ➤ IP leaders advised that area-specific rituals shall be conducted, as part of IP tradition. Thru NCIP, Amet-Asia requested to limit the participation in the rituals to at the municipal level (Manolo Fortich, Sumilao, Malaybalay City, and Impasug-ong) and 1 at the barangay level: (Brgy. Ticala in Manolo Fortich as special required by Datu Iwag of Ticala).

II. Summary of Questions and Answers:

Attendee who raised question/concern	Question	Answer
Datu Iway Sawag and Datu Alex Payangga (Manolo Fortich)	Clarification on the purpose of consent. It is a resolution or MOA for FPIC?	 NCIP Mia Superales The acquisition of the consent is to allow Amet-Asia to only to conduct the study in the area
Datu Alex Payangga (Manolo Fortich) and Datu Casinabe (Malaybalay)	Provision of copies of the resolution, schedules and maps.	Amet Amabelle Embornas • This will be provided
Datu Iway Sawag	Provision of compensation to the tour guides	 NCIP Mia Superales Tour guides will be compensated in accordance to the salary range in the area
Datu Carlo Dahinao (Sumilao)	Head of DPWH will attend the meetings so they can give full response	NCIP Mia SuperalesThis will be noted
Barangay Captain (Poblacion, Impasug-ong)	When is the payment for the affected land?	 Amet Amabelle Embornas The RAP team will conduct the study on the affected land and its proper compensation
Participant (Bae) (Impasug- ong)	What are the reasons for constructing this new highway?	 Sayre highway is not fit for fast moving vehicles because the slope is prone to landslides and prone to accidents. Cagayan to Malaybalay area has a high possibility for development of the people, crops, and farm to market



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		access, easier travel for vehicles and transport of products to the market
Participant (Bae) (Impasug- ong)	Compensation for land with no titles	 Amet Amabelle Embornas This will be compensation based on National Housing Authority, DPWH and JICA guidelines
City IPMR (Malaybalay)	Looking at the map, it seems that the affected areas are private lands. Our CADTs are not affected.	 NCIP Mia Superales We will still overlay the NCIP CADT maps and the DPWH project map to confirm if there are affected CADTs
City IPMR (Malaybalay)	this project is different from the DPWH circumferential road	 NCIP Mia Superales Yes, this is different. The circumferential road is already implemented to Kalasungay

III. Major decisions made:

- Output of the study should be presented to the affected communities
- Local guide must be a member of IP groups recommended by the IP leaders to avoid crossing prohibited sacred places, and the guide must be paid in accordance to the labor code
- Rituals in the barangays must be made if required by the barangay IPMR

IV. Next steps/responsible party/target date:

- > Amet-Asia must coordinate with the brgy IPMRs prior to the conduct of the field survey
- Amet-Asia must provide an itinerary of the activities prior to the field survey

V. Sacred Places, Water sources, Hunting Grounds and Livelihood of the Indigenous People

List of sacred places (based on the Focus Group Discussion with the IP leaders and interviews with the Indigenous People Mandatory Representatives)

Sacred Places

Municipality/Barangay	Sacred Places	Туре
Manolo Fortich		
Alae	Alae Creek	Surface water
Dicklum	Dicklum Creek	Surface water
Mambatangan	Imbado Area	Ritual Site
	Mambatangan creek	Surface water
Sankanan	Burial Ground near Dicklum	Burial Grounds
	Kihare creek	
	Maninit creek	
San Miguel	Pulog Hill	Clubhouse/ritual site
Tangkulan	Susohon Creek	Surface water
	Balete tree	
	Pagbayuhan stone	
	Mangima river	Surface water
	Kalanawan Creek	Surface water



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Basag river	Surface water
Kumaykay River	Surface water
Inlapay River	Surface water
Sisimon Stone	Rock
Tungtungan	Burial Ground
Inigsinulan	Ritual Site
Basag Falls and Basag Cave	Surface water and Cave
Humuhulyaw creek	Surface Water
Alalum Falls	Surface Water
Ilihan Cave	Cave
Mt. Palaopao	Mountain/Cave
Taryaki	Ritual site
Mt. Kitanglad (San Vicente,	Mountain
Baungon)	
Danao cave	Cave
Inkalumad	Ridge
Lirupan	Ritual area
Ilihan cave	Cave
Segaba and kabakahan creek	Surface Water
Lumayaga and bag-as creek	Surface Water
Ipoon creek	Creek
Mt. Dapitan (Victory lantapan)	Ritual area
	Inlapay River Sisimon Stone Tungtungan Inigsinulan Basag Falls and Basag Cave Humuhulyaw creek Alalum Falls Ilihan Cave Mt. Palaopao Taryaki Mt. Kitanglad (San Vicente, Baungon) Danao cave Inkalumad Lirupan Ilihan cave Segaba and kabakahan creek Lumayaga and bag-as creek Ipoon creek

Water Source of IPs

Municipality/Barangay	Water Sources
Manolo Fortich	
Mambatangan	Balanban spring
Tankulan	Balanban spring
Alae	Balanban spring
Damilag	Balamban spring and Miranda deep well
San Miguel	Cawayanon deep well
Dicklum	Balanban spring and Cawayanon Spring
Sankanan	Sanda spring
Ticala	Balanban spring
Sumilao	
Puntian	Unahon Spring
Vista Villa	Basag falls
Poblacion	Molokbolok spring
San Roque	Unahon Spring, Palaopao Spring
Kisolon	Binoong spring
Impasug-ong	
La Fortuna	Inlero Spring
Cawayan	Sagumata spring



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	Annexe
Kibenton	Sagumata spring
Malaybalay	
Kalasungay	Water district, Lumayagana and Bag-as creek
Dalwangan	, Sawaga river
Sumpong	Ibalabag spring
Patpat	Yumayaban Spring

Hunting grounds of IPs

Municipality/Barangay	Sacred Places
Manolo Fortich	No more hunting grounds
Sumilao	Malabagyo and Matampay forest, Sayaw cave, Old Culasi, Kulaman river, Tigulutuan
Impasug-ong	No more hunting grounds
Malaybalay	Mt. Taraguya, MT. Ulang-ulang, Mt. Tagabnglo

Livelihood IPs

Municipality/Barangay	Sacred Places
Manolo Fortich	Farmer, laborer, employees, fruit vendors, abaca weaver
Sumilao	Farming, Animal husbandry, Abaca weaving, Bead making
Impasug-ong	Cash crop farming, employees
Malaybalay	Farming, employees, resort



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Photos of sacred areas



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Top row left to right: Alae Creek, Dicklum Creek, Middle row left to right: Burial ground near Dicklum, Kihare creek, Bottom row left to right: Manitnit creek, Susohon creek Manolo Fortich Bukidnon



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Annexes 86717 N, 124.86443 l

Top row left to right: Balete tree, Basag creek, Middle row left to right: Kumaykay river, Inlapay river, Manolo Fortich Bottom row left to right: Mangima River, Manolo Fortich and Inigsinulan creek, Sumilao



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Top row left to right: alalum Falls, Taryaki, Sumilao Middle row left to right: Mt. Palaopao, Sumilao inkalumad, Impasug-ong Bottom row left to right: Lirupan, Impasug-ong and Sebaga and Danao Cave



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Top row left to right: Sebaga and Kabakahan, and Diguman Malaybalay Middle row left: Ipoon Creek, Malaybalay



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Water supply sources of the IPs



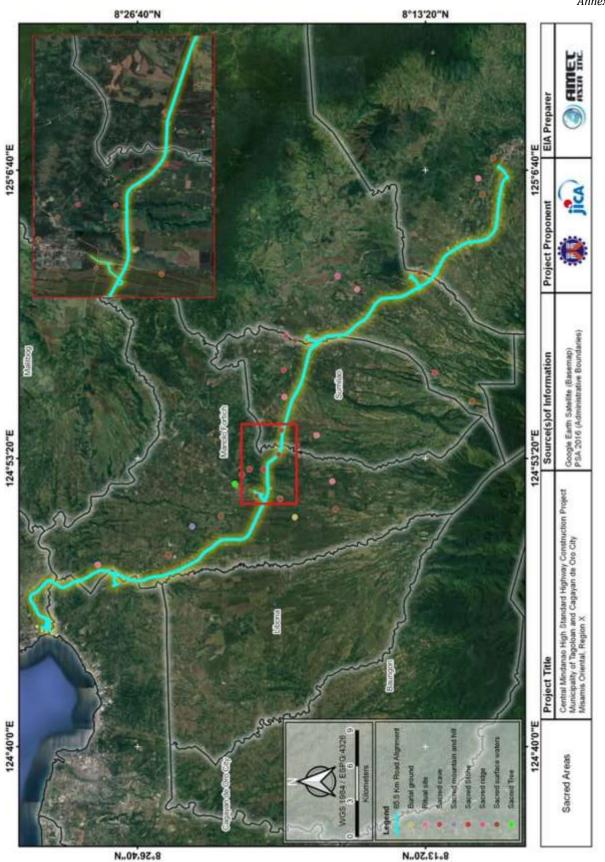






Top row left to right: Tuburan spring and Karan spring, Manolo Fortich Middle row left to right: Inlerop spring and Sanda spring and Manolo Fortich

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Annexes 8°24'0"N 8°6'0"N EIA Preparer Project Proponent 125°6'0"E 125°6'0"E Source(s)of Information 124°48"0"E Project Title Water Source for IPs 124°30'0"E

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Annex 13. Impact study on the Sayre roadside business



Department of Public Works and Highways in cooperation with JICA

IMPACT STUDY OF CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CMH) ON THE SAYRE ROADSIDE BUSINESS

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City to Malaybalay City

Submitted by:



Amet-Asia, Inc. #7 Pioneer St, cor. Sheridan, Mandaluyong, Metro Manila

September 2021

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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STUDY ON THE IMPACT OF CMH PROJECT ON SAYRE ROADSIDE BUSINESS

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City – Malaybalay City PROPONENT: Department of Public Works and Highways in cooperation with JICA



EXECUTIVE SUMMARY

The objectives of the proposed Central Mindanao High Standard Highway (CMH) project were to improve the transport efficiency in the region and contribute to enhancing the connectivity between the cities of Cagayan de Oro and Malaybalay as well as the economic development of the surrounding area. Although the CMH project has many perceived long-term benefits to a community, transportation improvements also cause changes in traffic flow, thereby posing challenges to surrounding local businesses along the Sayre Highway.

To determine the potential impact of the CMH to Sayre roadside businesses, Amet Asia conducted a quantitative survey with a standardized survey instrument from May 28 – June 4, 2021. The questionnaire aimed to obtain data on the business, drivers, and traveler representatives, their mode of transportation, problems encountered, and perceptions on the proposed CMH.

Results of the survey showed that the proposed CMH is not likely to have any significant negative impact on the existing business establishments along Sayre Highway, due to the following factors:

- most of the customers are locals or travelers who travel on foot or by motorcycle, signifying that these
 customers are coming from within the vicinity or municipality
- the usual destination of the respondents when using Sayre is within the municipality/city, stating that
 the respondents are residing near the area
- all of the businesses are small enterprises mostly focused on merchandising, with few workers, and can accommodate few customers per day, most likely patrons or loyal customers

The findings suggest that Sayre roadside businesses' customer base is within their immediate communities, whose buying patterns are not likely to be affected by the establishment of a new highway. The only concern raised about the CMH Project is if there will be relocation of affected Sayre properties, if any. A common situational problem raised was traffic, of which the respondents perceived road widening and construction of a new road as solutions. Thus, the respondents are in favor of the CMH project in order to address the traffic concerns.



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1.0 INTRODUCTION

The proposed Central Mindanao High Standard Highway Project (Cagayan de Oro - Malaybalay Section)
("Project", "alignment") is part of the Phase II of the Master Plan on High Standard Highway Network
Development. The objectives of the new alignment were to improve the transport efficiency in the region and
contribute to enhancing the connectivity between the cities of Cagayan de Oro and Malaybalay as well as the
economic development of the surrounding area.

Although new road alignment has many long-term benefits to a community, they can pose serious challenges especially on entrepreneurs and their employees who operate businesses along the existing road. The new road may potentially disrupt patrons' accessibility to businesses, and produce negative impacts on sales revenues especially if the main customers of existing roadside businesses are travelers or drivers.

This report presents data on existing businesses along Sayre, along with the respondents' mode of transportation, problems encountered, and perceptions on the proposed CMH, in order to determine the possibility and scale of negative impact on the existing roadside business due to the change of traffic flow during the operation of proposed highway.

2.0 METHODOLOGY

A quantitative survey with a standardized survey instrument is employed to elicit data on the existing businesses along Sayre. The study employed a stratified random sampling method. The respondents covered by the survey is limited to the business establishments, public transportation drivers, and travelers within the Direct Impact Barangays along Sayre Highway.

The utilization of Sayre Highway served as the strata of the sampling method. The total number of respondents was 65, representing twenty percent (20%) of the estimated number of business establishments (310 establishments) along the Sayre Highway. The approximate number of business establishments (310 establishments) along Sayre was obtained through desktop research, and 20% of the total size was utilized based on the JICA Study Team's recommendation in reference to ADB's safeguard policy on socioeconomic survey.

The data gathering was conducted from May 28 – June 4, 2021, during which the Province of Bukidnon was under Modified General Community Quarantine (MGCQ) and Cagayan de Oro is under Modified Enhance Community Quarantine (MECQ) as stated under the Inter-Agency Task Force (IATF) Resolution 118-A series of 2021. Thus, the flow of traffic, number of people outside, and opened establishments did not represent the normal situation in the area but were under the "new normal" situation.

To supplement the survey data, insights from interviews with the respondents (centering on follow-up questions or clarifications, conducted during the survey), and Consultants' observations during fieldworks (conducted in April to May and July – August 2021 for the Environmental Impact Assessment) were incorporated in this report.



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3.0 RESULTS OF THE SURVEY

3.1 Profile of the Respondents

Table 1 shows the respondents' category of which more than half of them are business representatives (61.54%), followed by public transportation drivers (35.38%), and travelers with 3.08%. It was also noted that all of the driver respondents are habal-habal (motorcycle) drivers.

Table 1. Category of the respondents

Respondent's Category	Number	Percentage
Drivers	23	35,38%
Business representatives	40	61.54%
Travelers	2	3.08%
Total	65	100%

3.2 Mode of Transportation

The major mode of transportation of the respondents is in the form of *habal-habal* (motorcycle) with 57.5%, followed by private cars with 26.25%, and public transportation with 12.50%. The least form of transportation is by the use of bicycle with 3.75% as represented in the yellow cells below.

Motorcycle as a form of transportation is the most common and convenient since it can easily access unpaved, narrow and muddy roads which is always present in the area. Based on the observations during fieldworks (April to May and July – August 2021) and interview with the locals during the survey, there are four (4) forms of public transportation along Sayre: habal-habal, multi-cab, jeepney, and provincial bus. Habal-habal is usually used in the unpaved roads far from Sayre, while multi-cab route is only along Sayre to town proper or nearby areas. Normal routes of jeepneys are within 2 to 3 municipalities while provincial buses pass the highway to go to Lanao del Norte, Lanao del Sur, South Cotabato, and Valencia, Bukidnon.

Table 2. Mode of Transportation

Transportation Category	Frequency of Responses*	Percentage
Bicycle	3	3.75%
Motorcycle	46	57.50%
Private Car	21	26.25%
Public Transportation	10	12.50%
Total	80	100%

^{*}Multiple responses are enabled Note: Answers to Driver's Travelers and/or Business Owners Q1

3.2 Number of travel usual destination when passing Sayre

Majority of the respondents are frequent travelers along Sayre of which most of them utilized the existing high way either daily (63.08%) or twice a week (20%) (yellow dells in **Table 3**), since Sayre is the only highway in the area. Half of the respondents utilized Sayre to go to places within their respective cities and municipalities, while 31 respondents travel along Sayre to go to Cagayan de Oro to buy products for their business and personal use.



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Table 3. Frequency of travel

Category	Frequency of Responses	Percentage
Daily	41	63.08%
Twice a week	13	20.00%
Weekly	7	10.77%
Twice a month	2	3.08%
Monthly	2	3.08%
Total	65	100%
Usual destination	Frequency of Responses	Percentage
Within the city/municipality	33	50.77%
To Cagayan de Oro City	31	47.69%
To Valencia, Bukidnon	1	1.54%
Total	65	100%

Note: Answers to Driver's Travelers and/or Business Owners Q2

3.3 Problems encountered when passing Sayre

As **Table 4** shows, most of the respondents encountered traffic (55.93%), accident (16.95%) and damaged roads (16.95%) when passing along Sayre. These problems are also confirmed by the team during fieldworks and interview by the team with their local drivers. With the problems encountered, the respondents' perceived solutions are road widening (32.39%), establishment of new road (25.35%), putting up traffic signals (21.13%) and fixing the damaged roads (15.49%) and fixing damaged roads (15.49%).

Table 4. Problems encountered when passing Sayre highway

Problems encountered	Frequency of Responses*	Percentage
Traffic	66	55.93%
Accident	20	16.95%
Damaged road	20	16.95%
Over speeding	5	4.24%
Wrong parking	3	2.54%
Checkpoints	4	3.39%
Total	118	100%
Perceived solution	Frequency of Responses*	Percentage
Traffic signals	15	21.13%
Fix road damages	11	15.49%
Road widening	23	32.39%
Construction of roundabout	1	1.41%
New road	18	25.35%
Motorcycle lane establishment	2	2.82%
Drive Safely	1	1.41%
Total	71	100%

*Multiple responses are enabled; Note: Answers to Driver's Travelers and/or Business Owners Q4 AND Q5



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3.4 Attitude towards the proposed Project

Positive response has been observed with the respondents, as 72.31% (Business representative – 32, Driver – 13, Traveler – 2) are favorable towards the project while 24.62% (Driver – 9, Business representative – 7) are neutral and 3.08% are unfavorable (1 driver and 1 business owner). In line with their attitude on the Project, the topmost reasons are as follows: less traffic (24.62%), more convenient travel (18.46%), less accidents (16.92%), easier accessibility (10.77%) and fast delivery of products (9.23%) (yellow cells in **Table 5**).

Based on the interviews during the survey, the respondents who were favorable of the new road perceived an improved traffic flow, and believed that the project will help them in transporting their products and in promoting community growth. Their only concern about the Project is if their properties will be affected and relocated. Both group of respondents who are unfavorable (3.08%) and who answered neutral were hesitant to state their reason.

This is also in line with the interviews conducted with the locals within all the Direct Impact Barangays (Key Informant Interviews for the Environmental Impact Assessment conducted in May to June 2021), wherein the top five reasons for a positive attitude towards the project are: accessibility of transportation, accessibility of farm-to-market roads for products, improvement in economic status, road improvement, and the younger generation's enjoyment of the benefits. On the other hand, for those who are unfavorable towards the project, their reasons include: accidents may happen, air pollution produced by more vehicles, might have an impact on the environment, inconvenience during construction, and if land affected will not be compensated justly.

Table 5. Attitude towards the proposed Project

Attitude to the CMH	Number	Percentage
Favorable	47	72.31%
Unfavorable	2	3.08%
Neutral	16	24.62%
Total	65	100%
Reason	Number	Percentage
Less accident	11	16.92%
Convenient travel	12	18.46%
Less traffic	16	24.62%
Easy accessibility	7	10.77%
Improvement to the community	3	4.62%
Fast delivery of products	6	9.23%
More customer	2	3.08%
Hopefully business will not be relocated	1	1.54%
No answer	7	10.77%
Total	65	100%

^{*}Multiple responses are enabled; Note: Answers to Driver's Travelers and/or Business Owners Q6

4.0 BUSINESS OWNERS

An additional set of questions were employed strictly to the business establishments in order to determine the necessary data about their type, nature, location and duration of business, and about their customers.



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4.1 Type of Operations and Business Category

Yellow cells in **Table 6** entails that all of the respondents under business establishments are operating in full time and belong to the micro-enterprise business category with an estimated annual sale of less than Php. 250,000.

Table 6. Type of operations, business category and annual sales

Type of Operations	Number	Percentage
Full time	40	100%
Part time	0	0.00%
Total	40	100%
Business Category	Number	Percentage
Micro-enterprise (<10 workers)	40	100%
Small to medium enterprise (<200 workers)	0	0.00%
Large enterprise (>200 workers)	0	0.00%
Total	40	100%
Estimated Annual Sales	Number	Percentage
Less than Php 250,000	40	100%
Php. 250,001 - 500, 000	0	0.00%
Php. 500,001 and above	0	0.00%
Over 10 years	0	0.00%
Total	40	100%

Note: Answers to Business Owners Q1 TO Q4

4.2 Nature of Business

Based on the survey conducted, almost all of the establishments covered are in the form of merchandising business of which the owners buy the products in wholesale and sell them at the retail price. The specific business type is shown in **Table 7**.

Table 7. Nature of businesses along Sayre

Nature of Business	Number	Percentage
Pharmacy	1	2.5%
Market Vendors	5	12.5%
Tailor shop	1	2.5%
Thrift shop	4	10%
Sari-sari store	7	17.5%
Water refilling station	1	2.5%
Eatery	2	5%
Motorcycle shop	4	10%
Internet café	1	2.5%
Grocery store	3	7.5%
Hardware store	2	5%
Cell phone shop	3	7.5%
Ambulant vendor	1	2.5%
Bakery	3	7.5%
Clothing shop	1	2.5%
Agricultural supplies	1	2.5%



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Nature of Business	Number	Percentage
Total	40	100%

Note: Answers to Business Owners Q3

4.3 Location and Duration of Business

Majority of the respondent's businesses are located in Manolo Fortich and Sumilao with 35% and 30% respectively (Figure 1). This is due to the fact that the town proper of these municipalities are located along Sayre Highway, thus business establishments are also located along the area. Most of the business along Sayre are within one (1) to five (5) years in operation (40%), followed by five (5) to ten (10) years (32.50%), and less than one (1) year (22.50%). Two of the respondents or 5% are operating for more than 10 years (**Table 8**).

Table 8. Location and duration of business

Location of Business	Number	Percentage
Manolo Fortich	14	35.00%
Sumilao	12	30.00%
Impasug-ong	3	7.50%
Cagayan de Oro	4	10.00%
Malaybalay	7	17.50%
Total	40	100%
Years of business	Number	Percentage
Less than 1 year	9	22.50%
1-5 years	16	40.00%
5-10 years	13	32.50%
10 years and above	2	5.00%
Total	40	100%

Note: Answers to Business Owners Q2 amd Q4

Figure 1. Location of business representatives





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Number and Type of Customers

All of the business establishment respondents can accommodate less than 50 customers per day. Of which 77.50% have both local and traveler customers and 22.50% have local customers only. (Table 9)

Table 9. Number and type of customer

No. of customers per day	Number	Percentage
< 50 persons	40	100%
50-100 persons	0	0.00%
100 persons and above	0	0.00%
Total	40	100%
Type of customers	Number	Percentage
Locals	9	22.50%
Travelers	0	0.00%
Both	31	77,50%
Total	40	100%

Note: Answers to Business Owners Q6, Q7 and Q8

4.5 Mode of Transportation of customers

As observed by the business representatives, majority of their customers go to their stores on foot (39.56%), through motorcycle (24.18%) and private cars (21.98%) (yellow cells in Table 10). This indicated that most of the customers of these establishments are located or residing nearby.

Furthermore, this proximity to the vendors suggests that a suki (patron or loyal customer) mentality, which is common in the Philippines, is also at work here, wherein a customer regularly purchases products from the same vendor, who in turn offers discounts and other perks for such loyalty. This builds a relationship between the vendor and the customer, strengthening the conclusion that the customers are likely to stay, even with the construction of a new road in the future.

Table 10. Customer's mode of transportation

Customer's Mode of Transportation	Frequency of responses*	Percentage
On foot	36	39.56%
Bike	3	3.30%
Motorcycle	22	24.18%
Private car	20	21.98%
Public transportation	10	10.99%
Total	91	100%

^{*}Multiple responses are enabled; Note: Answers to Business Owners Q8

5.0 CONCLUSION

Results of the survey showed that a new road is not likely to have any significant negative impact on the business establishments along Sayre Highway, since most of the customers are also within their vicinity or



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

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STUDY ON THE IMPACT ON THE SAYRE ROADSIDE BUSINESS

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City – Malaybalay City PROPONENT: Department of Public Works and Highways in cooperation with JICA



municipality as most of them are traveled by foot or motorcycle. The usual destination of the respondents when using Sayre is within the municipality, also indicating that most of their destination is within their vicinity. All of the businesses are small enterprises mostly focused on merchandising, with few workers, and can accommodate few customers per day.

These findings indicate that the Sayre businesses' customer base, who are mostly within their immediate communities and are probable loyal customers, are likely to have the same buying patterns even with the establishment of a new highway.

Furthermore, the interchanges strategically located on community central business districts of Sayre will serve as a positive factor since Sayre highway will be still accessible through CMH.

Most respondents looked forward to the possible improved traffic flow of traffic, and believed that the bypass road will help them in transporting their products and promote growth in the community as long as their establishments will not be relocated.

The summary of the survey is enumerated below:

- Majority of the respondents are frequent user of Sayre Highway of which they mostly use motorcycle
 as a form of transportation.
- All of the business representatives are small type of businesses mostly focused on merchandizing with few workers and can accommodate few customers per day. Their customers are perceived as locals and travelers who traveled mostly by foot and motorcycle
- Common problems encountered is traffic of which they perceived road widening as the solution followed by establishment of new road. Thus, the respondents are in favor of the CMH in order to less on the traffic.
- The only concern raised about the CMH Project is if there will be affected Sayre establishments and if they will be relocated.



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ATTACHMENTS

Attachment 1. Survey Instrument on the Sayre Roadside Business

Attachment 2. Photodocumentation

Attachment 3. Public transportation in Sayre

Attachment 4. Observed closed establishments during the survey

Attachment 5. Traffic observations and road development along Sayre observed during fieldworks



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Attachment 1. Survey Instrument on the Sayre Roadside Business



DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

Central Mindanao High Standard Highway Project Cagayan de Oro - Malaybalay Section



SUPPLEMENTAL QUESTIONS FOR SAVRE BUSINESSOWNERS/TRAVELERS/DRIVERS RESPONDENT'S PROFILE Businessowner Traveler Driver Category: I. For Drivers, Travelers and/or Business Owners 1. What is your usual mode of transportation Sayre Hi-way? Bike Motorcycle Private Car Public transportation 2. How many times you travel along Sayre Hi-way? Daily ____times a week ____ Weekly ____times a month ___Monthly 3. What is your usual destination of travel when passing Sayre Hi-way? __ 4. What are the usual problems you encounter when travelling along Sayre Hi-way? Traffic Accidents Others (please specify) 5. What do you think is the best solution to the problems encountered above? 6. What are your insights/attitude about the proposed Central Mindanao High Standard highway in relation to your business? __Favorable ___ Unfavorable ___ Neutral Why?_ II. For Business Owners 1. Operations | Full time | Part-time 2. Business category: Micro-enterprise (<10 workers) Small to Medium Enterprise (SME) (<200 workers) Large Enterprise (>200 workers) Nature of business 3. Business address: 4. How long have you been in business in the area? 1 to 5 years >5 to 10 years Over 10 years <1 year Estimated annual sales: __ <P250,000 __ P250 to P500,000 __ Over P500,000 How many customers can your business accommodate per day? ___<50 __50-100 __>100 7. What is the usual type of customers? __Locals ____Travelers ___ Both 8. Usual mode of transportation of customers? On foot Bike Motorcycle Private Car Public transportation



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Attachment 4. Observed closed establishments during the survey



Some of closed establishments during the survey



${\bf ENVIRONMENTAL\ IMPACT\ STATEMENT\ REPORT-Preparatory\ Survey}$





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Attachment 3. Public transportation in Sayre



Top row, left to right: habal-habal; Second row, left to right: multi-cabs; Third row, left to right: jeepneys; Last row: provincial buses





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Attachment 2. Photodocumentation



Top row, left to right: fruit vendor, sari-sari store, thrift shop; Second row, left to right: clothing shop, eatery, minimarket; Third row, left to right: motorcycle parts and accessories, rice dealer, cellphone repair and accessories; Last row: bakery, cakes and pastries shop, tailoring shop



Travelers





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
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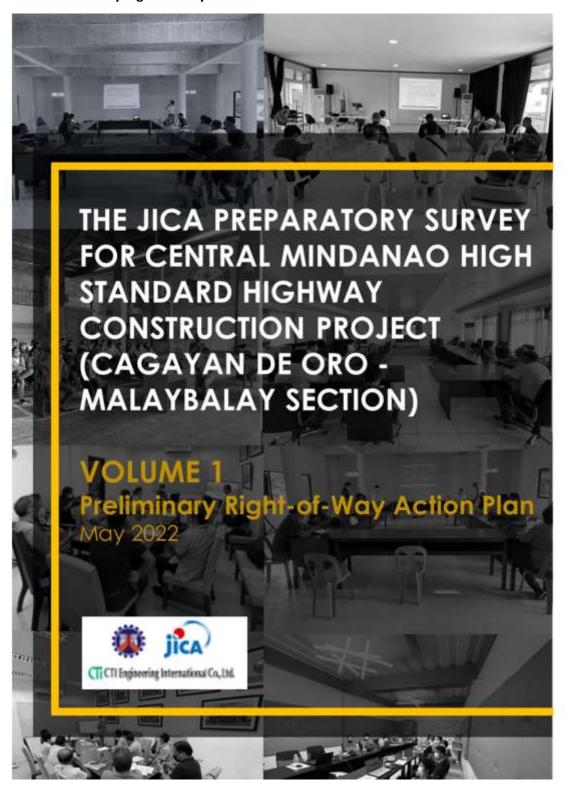
Attachment 5. Traffic observations and road development along Sayre observed during fieldworks



Top row, left to right: Traffic on Sayre along Impasug-ong and Sumilao; Bottom row, left to right: on going construction on Sayre along Sumilao and Manolo Fortich



Annex 14. Preliminary Right-of-Way-Action Plan



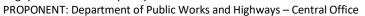


The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

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List of Abbreviations

AD Ancestral Domain

BIR Bureau of Internal Revenue

Central Mindanao High Standard Highway Construction Project CMHSHCP

CLOA Certificate of Land Ownership Award

DEO District Engineering Office

DPWH Department of Public Works and Highways

DMS Detailed Measurement Survey

DDR Due Diligence Report Executing Agency EA

EMA External Monitoring Agents

EO **Executive Order**

ESSD Environmental and Social Safeguards Division

FPIC Free and Prior Informed Consent COP Government of the Philippines GRDP Gross Domestic Product GRM Grievance Redress Mechanism Internal Monitoring Agent IMA. IPA Independent Property Appraiser

IOL Inventory of Loss

Indigenous People/Indigenous Cultural Community IP/ICC

IPP Indigenous People Plan IPRA. Indigenous People's Rights Act

Japan International Cooperation Agency JICA

LARR Land Acquisition, Resettlement and Rehabilitation

LARRIPP Land Acquisition, Resettlement, Rehabilitation and Indigenous Peoples Policy

LGU Local Government Unit LRP Livelihood Restoration Program

NCIP National Commission on Indigenous Peoples National Economic and Development Authority NEDA

NGO Non-Government Organization

PAF Project Affected Family Project Affected Person PAP PhP Philippine Peso

PIB Project Information Booklet

PPTA Project Preparatory Technical Assistance

Republic Act RA

RAP Right-of-Way Action Plan RCS Replacement Cost Study

RIC Resettlement Implementation Committee

RIPF Resettlement and Indigenous Peoples Framework

ROW Right-of-Way SES Socioeconomic Survey SIA Social Impact Assessment

SPS Safeguard Policy Statement TCT Transfer Certificate of Title

UPMO-RMC1 Unified Project Management Office-Road Management Cluster 1 (Bilateral)

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Definition of Terms

Abbreviated Resettlement Action Plan (ARAP) — The Resettlement Action Plan (RAP) refers to the planning document that describes what will be done to address the direct social and economic impacts associated with involuntary taking of land or land acquisition. The ARAP is acceptable if fewer than 200 people are affected. It is also acceptable if more than 200 people are affected so long as all land acquisition is minor (10 percent or less of all holdings is taken) and no physical relocation is required.

Affected Family (AF) — It consists of all members of a household residing under one roof and operating as a single economic unit, who will be adversely affected by the project. For resettlement purposes, Project Affected Persons (PAPs) will be dealt with as members of Project Affected Families (PAFs).

Affected Person (AP) — It includes any person or persons, household, a firm, or a private or public institution who, on account of the execution of the project, would have their right, title or interest in all or any part of a house, land (e.g., residential, agricultural or pasture), annual or perennial crops and trees, or any other fixed or moveable asset acquired or possessed, in full or in part, permanently or temporarily.

Ancestral Domain -- As defined in R.A. 8371 (IPRA), refers to all areas generally belonging to ICCs/IPs comprising lands, inland waters, coastal areas, and natural resources therein, held under a claim of ownership, occupied or possessed by ICCs/IPs, themselves or through their ancestors, communally or individually since time immemorial, continuously to the present except when interrupted by war, force majeure or displacement by force, deceit, stealth or as a consequence of government projects or any other voluntary dealings entered into by government and private individuals, corporations, and which are necessary to ensure their economic, social, and cultural welfare. It includes land, forests, pasture, residential, agricultural, and other lands individually owned whether inalienable and disposable or otherwise, hunting grounds, burial grounds, worship areas, bodies of water, mineral and other natural resources, and lands which may no longer be exclusively occupied by ICCs/IPs but from which they traditionally had access to for their subsistence and traditional activities, particularly the home ranges of ICCs/IPs who are still nomadic and/or who practice shifting cultivation. As clarified in Section 4 of R.A. 8371, ancestral domains cover not only the physical environment but the total environment including the spiritual and cultural bonds to the area which the ICCs/IPs possess, occupy, and use and to which they have claims of ownership.

Ancestral Lands — As defined in R.A. 8371 refers to land occupied, possessed and utilized by individuals, families and clans who are members of the ICCs/IPs since time immemorial, by themselves or through their predecessors-in-interest, under claims of individual or traditional group ownership, continuously, to the present except when interrupted by war, force majeure or displacement by force, deceit, stealth, or as a consequence of government projects and other voluntary dealings entered into by government and private individuals/corporations, including, but not limited to, residential lots, rice terraces or paddies, private forests, swidden farms and tree lots.

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Appraised Value – means the market value of a property as estimated by an Independent Property Appraiser or Government Financial Institution.

BIR Zonal Valuation — is an approved zonal schedule of fair market values on real property set by the Bureau of Internal Revenue (BIR) as basis for computation of internal revenue taxes.

Certificate of Land Ownership Award (CLOA) — It refers to a certificate issued to grantees of the comprehensive agrarian reform program. The provisions of CA 141 shall govern in the CLOAs awarded under the Public Land Act.

Compensation -- This means payment in cash or in kind at replacement cost for an asset to be acquired or affected by an infrastructure project.

Cut-off Date — It is the date of commencement of the census of affected families within the project boundaries. Persons not covered at the time of census-taking will not be eligible for claims of compensation entitlements. Cut-off date for land-taking will be set on the date that the parcellary survey was conducted but the value of the land will be based on the agreed values of the land at the time of taking.

Customary Law -- It refers to a body of written and/or unwritten rules, usages, customs and practices traditionally and continually recognized, accepted, and observed by respective ICCs/IPs.

Disturbance Compensation — It is the compensation amount for lessees of agricultural land severely affected (i.e., >20% of the land or when the land is no longer economically viable) by the project, equivalent to five times the average gross harvest during the last five years (RA 6389 and EO 1035, series of 1985).

External Monitoring Agent (EMA) -- It is an independent entity or individual designated by the Department to monitor the implementation of the RAP and the IPAP.

Financial Assistance — It is the cash amount paid to agricultural tenants/settlers/ occupants severely affected by the project, equivalent to the average gross harvest for the last three years and not less than PhP15, 000 per ha (EO 1035), in addition to the cash payment/compensation for their crops damaged by the project.

Free and Prior Informed Consent — As defined in R.A. 8371, it means the consensus of all members of the ICCs/IPs to be determined in accordance with their respective customary laws and practices, free from any external manipulation, interference, and coercion, and obtained after fully disclosing the intent and scope of the activity, in a language and process understandable and appropriate to the community.

Free and Prior Informed Consent Guidelines of 2006 — It is also known as National Commission on Indigenous Peoples' Administrative Order No. 1, Series of 2006 implementing Sections 44 (m), 46(a), 57, 58, 59, and 7 of Republic Act 8371 or the Indigenous Peoples' Rights Act

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Government Financial Institution or GFI — refers to a national government owned or controlled corporation that the Implementing Office may engage to provide property appraisal services, including estimates of the market values of the property, affected by the ROW for a project.

Implementing Agency or IA — refers to any department, bureau, office, commission, authority, or agency of the national government, including any government-owned or controlled corporation or state college or university, authorized by law or its respective charter to undertake national government projects. The DPWH is an IA.

Inconvenience Allowance — It is the compensation amount given to each PAP who holds full title to or a legalizable tax declaration over the land and structures severely affected by the project, and who consequently must move elsewhere.

Independent Property Appraiser or IPA – refers to an individual or firm that may be engaged by the Implementing Office to provide property appraisal services, including estimates of the market values of the property, affected by the ROW for a project.

Indigenous Cultural Community/Indigenous People — As defined in R.A. 8371, it refers to a group of people or homogenous societies identified by self-ascription and ascription by other, who have continuously lived as organized community on communally bounded and defined territory, and who have, under claims of ownership since time immemorial, occupied, possessed customs, tradition and other distinctive cultural traits, or who have, through resistance to political, social and cultural inroads of colonization, non-indigenous religions and culture, became historically differentiated from the majority of Filipinos. ICCs/IPs shall likewise include peoples who are regarded as indigenous on account of their descent from the populations which inhabited the country, at the time of conquest or colonization, or at the time of inroads of non-indigenous religions or cultures, or the establishment of present state boundaries, who retain some or all of their own social, economic, cultural and political institutions, but who may have been displaced from their traditional domains or who may have resettled outside their ancestral domains.

Indigenous Peoples' Action Plan (IPAP) — An IPAP is written when an infrastructure project has been found through the social assessment to have potentially adverse effects on Indigenous Peoples. The IPAP sets out measures through which the DPWH and other government agencies will ensure that Indigenous Peoples affected by the project receive culturally appropriate social and economic benefits. It also specifies ways that the identified adverse effects are avoided, minimized, mitigated, or compensated. The formulation of the IPAP is mandated by DPWH Department Order No. 327 series of 2003.

Informal Settler – refer to households living in a lot, whether private or public, without the consent of the property owner; or those without legal claim over the property they are occupying; or those living in danger areas such as esteros, railroad tracks, garbage dumps, riverbanks, shorelines, and waterways.

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Land Acquisition — It is the process of acquiring land from the current owners pursuant to the provisions of RA 8974 modes of acquisition. The modes of land acquisition are Donation, Barter or Exchange, Purchase, Quit Claim or Expropriation.

Market Value -- means the price of what a willing buyer would pay a willing seller for a given property or asset if both have a reasonable knowledge of the worth of the property.

Older People/ Elderly/ Senior Citizens - Individuals belonging to the age group 60 years and over

Parcellary Survey — refers to the activities undertaken as part of the Detailed Engineering Design of a project to define the proposed ROW alignment and limits, the affected lots showing the name of the owners/claimants, lot numbers, and areas, and technical descriptions, and all improvements within the ROW limits.

Poor — The Philippine Statistics Authority (PSA) said the poverty threshold per family amounted to PhP 12,082 a month. An income below this amount would categorize a family as being poor and an income above this would mean a family is nonpoor.

Prescription Period -- As stipulated in Article 1141 of Civil Code, real actions over immovables prescribe after thirty (30) years. This provision is without prejudice to what is established for the acquisition of ownership and other real rights by prescription (1963).

Production Cost (palay, vegetable and corn) -- This includes among others, land preparation, transportation, seedling, and fertilizer. The amount may vary depending on the location, type of seedling, etc.

Project Affected Family (PAF) - synonymous with the term "Affected Family"

Project Affected Person (PAP) - synonymous with the term "Affected Person"

Project Boundaries -- It may be defined as the project construction limits, or it may refer to the Right-of-Way limits, whose width varies from 20 to 60 meters as prescribed in the special laws such as Commonwealth Act 141 (Public Land Act), PD 635, EO 113 (1955), EO 621 (1980), etc.

Project Implementation Office — It refers to the duly designated Management Office (for foreign-funded projects) within the DPWH Central Office and to Regional and District Offices (for locally funded projects)

Rehabilitation Assistance -- It refers to assistance provided to PAFs seriously affected due to the loss of productive assets, incomes, employment, or sources of living, as supplement compensation for acquired assets in order to achieve full restoration of living standards and quality of life.

Relocation -- This refers to the physical displacement of a PAF from his/her pre- project place of residence and his/her transfer to another place.

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Replacement Cost — This is the amount necessary to replace the structure or improvements based on the current market prices for materials, equipment, labor, contractor's profit and overhead, and all other costs associated with the acquisition and installation in place of the affected improvements/installation.

Resettlement -- This is a generic term that covers all measures taken to mitigate all adverse social impacts of a project on the PAFs, including compensation and relocation.

Right-of-Way (ROW) -- means a part or the entirety of a property, site, or location, with defined physical boundaries, used or required by a government infrastructure project.

Right-of Way Action Plan (RAP) — refers to the document that defines the extent of the ROW to be acquired for a project, including, among other things, cost estimates for acquiring land, structures/improvements, crops/trees, relocation of informal settlers, and recommended compensation and entitlement package for owners and project-affected persons (PAPs), implementation schedule, and impact and mitigating measures for the ROW acquisition.

Social Impact Assessment or Social Assessment -- It is a framework for incorporating social or stakeholders' analysis and participatory processes in project design and implementation.

Time of Taking -- This refers to the time when both parties, the landowner, and the proponent, agreed on the true value of the land being purchased.

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The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

EXECUTIVE SUMMARY

- Project Description The proposed Central Mindanao High Standard Highway Project (CMHSHCP) ("Project", "alignment") is part of the Phase II of the Master Plan on High Standard Highway Network Development. The objectives of the plan were to improve the transport efficiency in the region and contribute to enhancing the connectivity between the cities of Cagayan de Oro and Malaybalay as well as the economic development of the surrounding area.
- Necessity of Land Acquisition And Resettlement Objectives of RAP The preparation
 of the RAP for land, structures and improvements, and crops and trees was in accordance
 with the Republic Act 10752, and as prescribed in the Land Acquisition, Resettlement,
 Rehabilitation and Indigenous People's Policy (LARRIP), the JICA Environmental and
 Social Safeguards Guidelines and other related social safeguards policies/issuances of the
 Department, such as Department Order (DO) Nos. 5 Series of 2003, DO 327 series of 2003,
 DO 34 series of 2007, DO 152: DPWH ROW Acquisition Manual series of 2017.
- Legal Framework The policy framework within which this Preliminary Right-of-Way
 Action Plan for land, structures, other improvements, and crops and trees will operate
 was derived from the Philippine Constitution, Republic Act 10752, DPWH LARRIP
 Policy, and other social safeguards issuances, and JICA Environmental and Social
 Safeguard Guidelines, relative to the ROW acquisition.
- 4. Summary of Project Impacts The CMHSHCP will involve road construction and improvements to include widening, slope protection and drainage that will require the road right-of-way acquisition of public land and private land. Land acquisition will cause physical and economic displacement such as (i) permanent loss of land along the required minimum of 60-m ROW, (ii) loss/damage to structures and improvement, (iii) loss of crops and trees, and (iv) loss of income/business.
 - A total of 379 PAPs with affected assets and properties within the road right-of-way, consists a total area of 3,943,800 m² of land which traverse 27 barangays in two (2) cities and four (4) municipalities.
- Grievance Redress Mechanism A project level GRM was developed to receive and resolve project related concerns, complaints, and grievances. Conflicts within affected communities will be addressed within the community itself through dispute resolution process and mechanisms.
- 6. Compensation Policy Compensation and entitlements are designed to enhance or at least restore the livelihoods of all displaced persons in real terms relative to pre-project levels and to improve the standards of living of the displaced poor and other vulnerable groups. DPWH will offer to the property owner concerned, as compensation price, the sum of 1) replacement cost of land based on the current market value of land, free of taxes;
 2) the replacement cost of structures and improvements; and 3) the current market value of crops and trees.

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- 7. Livelihood Restoration Program –The LRP provides the PAPs assistance whose livelihoods are directly adversely affected by the Project by restoring their income generating capacity to at least pre-project levels. For vulnerable PAPs, the LRP is also aimed at improving their living standards.
- 8. Institutional Framework The DPWH is the implementing agency for the Project. The overall direction and leadership for implementing the RAP will be exercised by the Secretary, supported by the Undersecretary of UPMO Operations and other members of the Executive Committee (EXECOM) of the DPWH composed of the Undersecretaries and Assistant Secretaries of the Department. The Roads Management Cluster I, Bilateral, Unified Project Management Office of DPWH is the overall project management unit. Land acquisition activities will be carried out in close coordination with the DPWH Planning Service through its ESSD, RO, DEO, LGUs, NCIP, RIC and all other pertinent agencies and instrumentalities of the government to fully address the impacts of involuntary resettlement.
- Possible Resettlement Site There are 96 PAFs (379 persons) whose houses and housescum-shops will be fully affected. If relocation is necessary to be undertaken during the implementation of the project, the Municipality of Sumilao committed to provide a land dedicated to affected families. The other LGUs are still determining the location of their relocation sites.
- 10. Implementation Schedule DPWH is expected to initiate the process of land acquisition and compensation for structures, crops and trees starting July 2023 to secure the project's ROW prior to construction. The DPWH shall ensure that ROW acquisition proceeds in close parallel with the construction schedule, making sure that land and structure owners are adequately compensated and re-established away from the construction site months ahead of the civil works implementation. The implementation of the RAP is expected to be completed by February 2023.
- 11. Budgetary Requirement The total budget for RAP Implementation of CMHSHCP, (Cagayan De Oro Malaybalay Section) is PhP 1,361,812,550 (USD 25,944,228). The budget items cover (i) compensation for loss of land, structures, trees, crops and other entitlements (ii) livelihood restoration program (iii) transitional allowance; (iv) administrative cost; (v) external monitoring; and (vi) contingencies. Table below shows the details of the budget to implement this RAP.

Summary of Budgetary Requirement

Kind of affected assets	Amount (PhP)	Amount (USD)
1. Land	847,966,900	16,154,828
2. Structures	53,789,139	1,024,750
	23,072,305	439,556
3. Crops (agricultural crops/coconut)	8,499,121	161,919
4. Trees (including seedling replacement)	120,051,751	2,287,136

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TOTAL	1,361,812,550	25,944,228
Cost contingencies (10% of Direct Costs: 1-7)	111,100,322	2,116,600
Administrative Costs (5% of Direct Costs: 1-7)	55,550,161	1,058,300
8. Other Assistance	84,158,852	1,603,331
7. Other Entitlements	5,280,000	100,591
6. Relocation and Resettlement	50,904,000	969,785
5. Livelihood Restoration Program	1,440,000	27,434

Note: 1 USD = PhP 52.49

- 12. Monitoring and Evaluation There will be two types of monitoring, the internal and external monitoring. The UPMO in coordination with the ESSD shall conduct the supervision and in-house monitoring of RAP implementation. An External Monitoring Agent (EMA) shall do the external monitoring and evaluation. The EMA for this Projects is a consultancy firm with qualified and experienced staff with Terms of Reference acceptable to the Bank.
- 13. Public Consultation The Coordination and Public Consultations Meetings for CMHSHCP were undertaken to inform the primary and secondary stakeholders about the project information such as background, scope, objectives, benefits, updates, basic resettlement policies (GOP and JICA), cut-off-date and announcement of succeeding resettlement activities such as conduct of socioeconomic survey and detailed measurement and inventory of affected assets and properties. The Coordination and Public Consultations for CMHSHCP were conducted on March 22 – May 19, 2021.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro - Malaybalay Section)

1 PROJECT DESCRIPTION

1.1 Project Area

The Central Mindanao High Standard Highway Construction Project (CMHSHCP) having a length of 65.73 kilometers will traverse 27 barangays of four (4) municipalities and two (2) cities in the Provinces of Misamis Oriental and Bukidnon in Region X (Northern Mindanao). The host barangays and general location and jurisdiction maps are shown in Table 1-1 and Figure 1-1, respectively.

Table 1-1. Jurisdictions of the Project alignment

Province	City/Municipality	Barangay
Misamis Oriental	Cagayan de Oro City	Casinglot
		Natumolan
		Bugo
	Tagoloan	Balubal
Name of the last o		Puerto
Bukidnon	Manolo Fortich	Mambatangan
		Alae
		San Miguel
		Damilag
		Diclum
		Tankulan (Poblacion)
		Sankanan
		Ticala
	Sumilao	Puntian
		Villa Vista
		San Roque
		Culasi
		Poblacion
		Kisolon
	Impasug-ong	Poblacion
	JAN 361 22403	La Fortuna
		Capitan Bayong
		Cawayan
		Impalutao
	Malaybalay	Dalwangan
	0.000.000000000000000000000000000000000	Patpat (Lapu-Lapu)
		Kalasungay



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

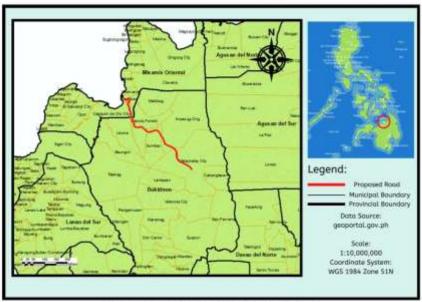


Figure 1-1. Jurisdictions of the Project alignment

1.2 Project Description

The proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Oro - Malaybalay Section) is part of the Phase II of the Master Plan on High Standard Highway Network Development. The objectives of the plan were to improve the transport efficiency in the region and contribute to enhancing the connectivity between the cities of Cagayan de Oro and Malaybalay as well as the economic development of the surrounding area.

The proposed Project will be spearheaded by the Department of Public Works and Highways (DPWH) with the assistance of the Japan International Cooperation Agency (JICA).

1.3 Project Design

The project design is summarized below.

1.3.1 Geometric design standard

The standard references used for the Central Mindanao High Standard Highway are a) Policy on Geometric Design of Highways and Streets, AASHTO 2011, 6th Edition, b) Design Guidelines, Criteria & Standards, volume 4 Highway Design, 2015, DPWH, and c) Japan Road Association, Road Structure Ordinance, 2019.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

1.3.2 Design speed

The recommended design speed of 80 kph taken from the previous pre-feasibility study (HSH MP Phase-2 report) was used for the main alignment. The design speed was selected considering moderate topographic conditions at the proposed alignment and traffic safety.

1.3.3 Interchange ramps

The interchange ramp design speed is 40 kph which is half of the highway design speed. It is also the identified minimum design speed in AASHTO 2011.

1.3.4 High Standard Highway geometry

The geometry applied to the design of main alignment and ramp is summarized in Table 1-2 and Table 1-3.

Table 1-2 Road geometric design standard for main alignment (80kph design speed)

Item	Unit	Standard	Absolute minimum
Design Speed	kph	80	
Design Vehicle	-	WB-19	
Stopping Sight Distance	m	130	
Passing Sight Distance	m	245	
ROW	m	60	
Terrain Condition	1000	Rolling	
Cross Section Elements			
Pavement			
Lane Width	m	3.65	
Median Width	m	3	
Inner shoulder Strip	m	0.75	
Outer shoulder Strip	m	3	2.5
Number of Lanes	Nos	4	
Normal Cross Slope	%	2	
Horizontal Alignment			
Minimum Radius	m	252	
Min. Transition Curve Length	m	70	
Min. Radius not requiring Transition Curve	m	379	
Min. Radius not requiring Super	m	3,500	
elevation	m	2,000	
Max. Relative Slope		1/200	



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

It	em	Unit	Standard	Absolute minimum
Vertical Alignment	li .			W
Maximum Vertical Gradient		%	4	5
Minimum K value	Sag		30	
Wilnimum K value	Crest		26	
Minimum Radius	Sag	m	2,000	
Minimum Radius	Crest	m	3,000	
Min Vertical Curve Length		m	70	
Max. Composition Grade		m	10.5	
Vertical Clearance				
Road		m	5.2	

Source: JICA Study Team

Table 1-3 Road geometric design standard for ramp (40kph design speed)

Item	Unit	Standard	Absolute minimum
Design Speed	kph	40	
Design Vehicle		WB-15	
Stopping Sight Distance	m	50	
Passing Sight Distance	m	140	
ROW	m	60	
Terrain Condition		Rolling	
Cross Section Elements		-	10
Pavement			
Lane Width	m	4.5	
Median Width	m	0	
Inner shoulder Strip	m	0.75	
Outer shoulder Strip	m	3	2.5
Number of Lanes	Nos	1	
Normal Cross Slope	%	2	
Horizontal Alignment			
Minimum Radius	m	43	
Min. Transition Curve Length	m	50	
Min. Radius not requiring Transition Curve	m	95	
Superelevation Runoff		1/143	
Vertical Alignment			
Maximum Vertical Gradient	%	6	8

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It	em	Unit	Standard	Absolute minimum
	Sag		9	
Minimum K value	Crest		4	
Min Vertical Curve	Length	m	35	
Max. Composition Grade		m	11.5	
Vertical Clearance				
Road		m	5.2	

Source: JICA Study Team

1.3.5 Vertical clearance

The design vertical clearances of the highway and crossing road is 4.0 to 5.2 meters.

1.3.6 Number of lanes

The alignment is a dual 2-lane (2x2) road in accordance with the traffic demand.

1.3.7 Carriageway, Shoulder, and Median widths

The recommended cross-section configurations are presented in the succeeding paragraphs.

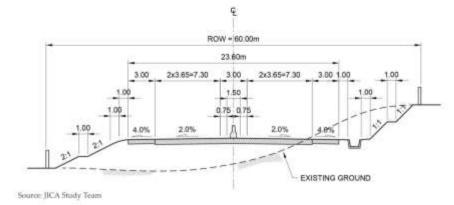
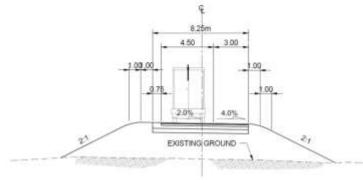


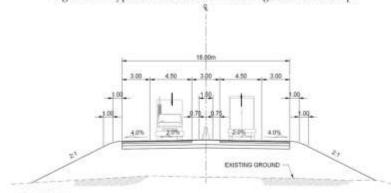
Figure 1-1-2 Typical Cross Section Embankment and Cut: Row=60m

The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro - Malaybalay Section)



Source: JICA Study Team

Figure 1-1-3 Typical Cross Section at Interchange: One-Lane Ramp



Source: JICA Study Team

Figure I-1-4 Typical Cross Section at Interchange: Two-Lane, Two-Direction Ramp

1.4 Project Targets

In the preparation of this preliminary RAP, the targets were identified to determine the type of assistance that will be included in the report. Below shows the summary of the project

Table 1-4. Project Targets

Summary of Project Targets	Total
No. of Affected Families (AFs)	96
No. of Affected Persons (APs) ² by Loosing Residential, Residential- Commercial & Commercial Structures	379

For this Preliminary RAP, the terms affected families (AFs) and project affected families (PAFs) are synonymous For this Preliminary RAP, the terms affected persons (APs) and project affected persons (PAPs) are synonymous

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Summary of Project Targets	Total
Number of Affected Families who will be displaced	96
No. of Affected Parcels of Land	405
Total Affected Land Area (m²)	3,943,800
Land Area of Affected Agricultural Crops (m²)	2,571,526
No. of Affected Coconut	2,552
No. of Affected Forest / Fruit Trees / Other Forest Products	9,815
Estimated Budgetary Requirement (PhP)	1,374,405,713

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2 NECESSITY OF LAND ACQUISITION AND OBJECTIVES OF RAP

2.1 Scale of Land Acquisition and Resettlement

The preparation of the RAP for land, structures and improvements, and crops and trees was in accordance with the Republic Act 10752, (An Act Facilitating the Acquisition of Right-of-Way Site or Location for National Government Infrastructure projects) and as prescribed in the Land Acquisition, Resettlement, Rehabilitation and Indigenous People's (LARRIP) Policy, the JICA Environmental and Social Safeguards Guidelines and other related social safeguards policies/issuances of the Department, such as Department Order (DO) Nos. 5 Series of 2003, DO 327 series of 2003, DO 34 series of 2007, DO 152: DPWH ROW Acquisition Manual series of 2017.

The preparation of this Preliminary RAP covers a length of 65.73 kilometers including the affected assets and properties within the ROW width required for the project. Twenty-seven barangays will be traversed by the project.

2.2 Objectives of the Study

The objectives of the Preliminary Right-of-Way Action Plan are as follow:

- To determine the number of Project Affected Persons (PAPs) and properties/assets affected by the project based on the road alignment in the feasibility study;
- To identify the extent of impacts of the project on their properties/assets and the measures to mitigate these impacts;
- To determine the compensation and entitlements to the PAPs for their affected properties/assets for inclusion in the Medium-Term Infrastructure Program (MTIP); and
- 4) To ensure public participation in the implementation and monitoring of the RAP.

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3 LEGAL FRAMEWORK

3.1 Legal Framework Policy on Eligibility for Compensation and Entitlement

The policy framework within which this Right-of-Way Action Plan for land, structures, other improvements, and crops and trees will operate was derived from the Philippine Constitution, Republic Act 10752, DPWH LARRIP Policy, and other social safeguards issuances, and JICA Environmental and Social Safeguard Guidelines, relative to the ROW acquisition.

3.1.1 Basic National Policy

The overall objective of this RAP Policy is anchored on the Bill of Rights of the Constitution of the Republic of the Philippines.

- Article III, Bill of Rights, Section 1: "No person shall be deprived of life, liberty, or property without due process of law, nor shall any person be denied the equal protection of the laws."
- Article III, Bill of Rights, Section 9: Private property shall not be taken for public use without "just compensation".
- 3) Article XII, Section 5: "The State...shall protect the rights of indigenous cultural communities to their ancestral lands to ensure their economic, social, and cultural well-being "By act of Congress, customary laws governing property rights or relations can be applied in determining the ownership and extent of ancestral domains.
- 4) Article XIII, Urban Land Reform and Housing, Section 10: "Urban or rural poor dwellers shall not be evicted, nor their dwelling demolished, except in accordance with law and in a just and humane manner. No resettlement of urban or rural dwellers shall be undertaken without adequate consultation with them and the communities where they are to be relocated."

3.1.2 RA 10752 "The Right-of-Way Act"

RA 10752- An Act Facilitating the Acquisition of Right-of-Way (ROW), Site or Location for National Government Infrastructure Projects, a law that was signed and took effect in March 2016 and its IRR. The RA 10752 provides the different bases for land valuation for the following modes of acquisition: negotiated sale and expropriation.

The law states that the Implementing Agency (IA) shall negotiate with the owner for the purchase of the property by offering the current market value issued by the Government Financing Institution (GFI) for the area where the affected property is located, or appraised market value identified by the private independent property appraiser (IPA) accredited by the Central Bank of the Philippines.

The law also states that valuation of the improvements and/or structures on the land to be acquired shall be based on the replacement cost which is defined as the amount necessary to replace the structure or improvement based on the current market prices for materials,

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equipment, labor, contractor's profit and overhead, and all other attendant costs associated with the acquisition and installation in place of the affected improvements/installation.

Methods of Negotiation - Under the law, RA 10752 specifies the following methods: Donation, Quit Claim, Exchange or Barter, Negotiated Sale or Purchase, Expropriation and any other modes of acquisition authorized by law.

Market Value - Standards to determine market value. Negotiated sale between DPWH and the property owner based on the following standards to determine the market value:

- 1) The classification and use for which the property is suited;
- 2) The development costs for improving the land;
- 3) The value declared by the owners;
- The current selling price of similar lands in the vicinity;
- The reasonable disturbance compensation for the removal and/or demolition of certain improvements on the land and for the value for improvements thereon;
- 6) The size, shape and location, tax declaration and zonal valuation of the land;
- The price of the land as manifested in the ocular findings, oral as well as documentary evidence presented; and
- 8) Such facts and events as to enable the affected property owners to have sufficient funds to acquire similarly-situated lands of approximate areas as those required from them by the government, and thereby rehabilitate themselves as early as possible.

Payment Mode - DPWH shall pay the property owner (i) fifty percent (50%) of the negotiated price of the affected land, exclusive of the payment of unpaid taxes remitted to the LGU concerned and (ii) seventy percent (70%) of the negotiated price of the affected structures. improvements, crops, and trees, exclusive of unpaid taxes remitted to the LGU concerned. DPWH shall pay the property owner the remaining fifty percent (50%) of the negotiated price of the affected land after the transfer of title in the name of the Republic of the Philippines, in cases where the land is wholly affected and at the time of the annotation of a deed of in cases where the land is partially affected. DPWH shall pay the remaining thirty percent (30%) of the affected structures, improvements, crops, and trees, exclusive of unpaid taxes remitted to the LGU concerned after the land is already completely cleared of structures, improvements, crops, and trees.

Quit Claim - A quit claim instrument is required to be executed by owners of lands acquired under the Public Land Act (Commonwealth Act 141) because of the reservation made in the issuance of patents or titles thereto. Even if the title or free patent describes the whole area as owned by the patentee or title holders, by operation of the law, a strip of 20 or 60 meters, as the case maybe, of that area described is not absolutely owned by him/her, because it is reserved by the government for public use. Hence, if the government should exercise its right to use the area reserved by it for public use, the owner shall be required to execute a Quit Claim over such area reserved and taken by the government for public use. This mode can be availed if the landowner is the original patent holder or the acquisition of the land from the original patent holder is through a gratuitous title, subject for the provision of CA 141 "Public Land Act" or PD 635. No payment shall be made for land acquired under the quit claim mode except for damages to improvements. However, if the landowner is not the

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original patent holder and any previous acquisition of said land is not through gratuitous title, then this land is subject to other mode of acquisition as enumerated in RA 10752.

In case PAPs are qualified for compensation but with arrears on land tax. To facilitate the processing of payment on land acquired from the PAPs with tax arrears, the DPWH upon request by the property owner, will pay the arrears and deduct the amount to the total compensation cost provided that the amount is not more than the negotiated price.

In case the PAPs are qualified but already dead and the heirs have not undergone extrajudicial partition, the PAPs will be given a grace period to meet the requirement within the validity period of allotment for two (2) years. Beyond two years that the PAPs cannot comply with the requirement they have to settle the case in court.

In case of expropriation, the following will be followed:

- For Structures: If the PAP rejects the compensation for structures at replacement cost offered by DPWH, the Department or the PAP may take the matter to court. When court cases are resorted to either by DPWH through expropriation or by the PAPs through legal complaints, the DPWH will deposit the replacement cost at current market value of structures and improvements.
- 2) For Land: If the owner contests the Department's offered value for compensation for land, the PAP or the DPWH may take the matter to court. DPWH shall immediately deposit to the court in favor of the owner the amount equivalent to a 100% of the value of the property based on the BIR zonal valuation. The court shall determine the just compensation, considering the standards for the assessment of the value of the land (Sec.7, RA 10752).

3.1.3 Other Applicable laws and Policies

DPWH Land Acquisition, Resettlement, Rehabilitation, and Indigenous Peoples Policy (LARRIPP) (March 2007) - To ensure uniformity of standards in the Resettlement Planning, a revised LARR Policy, 3rd edition, was formulated, now contains the Departments Indigenous People's policy in accordance with the Indigenous People Right Acts (IPRA) law, called the LARRIPP.

This policy includes the principles and objectives of the involuntary resettlement policy, the legal framework, eligibility, compensation and entitlements, the indigenous peoples' policy framework, implementation procedures that ensure complaints are processed, public support and participation, and the provision of internal and external monitoring of the implementation of the RAP and safeguard instrument for IPs.

Commonwealth Act 141 Section 112 or Public Land Act - prescribes a 20-meter strip of land reserved by the government for public use, with damages being paid for improvements only.

Presidential Decree 635 amended Section 112 of CA 141 increasing the width of the reserved strip of 20 meters to 60 meters.

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EO 113 (1955) and EO 621 (1980)

- National Roads shall have a ROW width of at least 20 meters in rural areas which may be reduced to 15 meters in highly urbanized areas.
- 2) ROW shall be at least 60 meters in unpatented public land.
- ROW shall be at least 120 meters through natural forested areas of aesthetic or scientific value.

EO 1035

- Financial assistance to displaced tenants, cultural minorities, and settlers equivalent to the annual gross harvest for the last 3 years and not less than PhP15, 000 per ha.
- 2) Compensation for improvements on land acquired under Commonwealth Act 141.
- 3) Government has the power to expropriate in case agreement is not reached.

MO 65, Series of 1983

- Easement of ROW where the owner is paid the land value for the Government to use the land, but the owner still retains ownership over the land.
- Quit claim where the Government has the right to acquire a 20 to 60 m width of the land acquired through CA 141. Only improvements will be compensated.

Republic Act 6389. Provides for disturbance compensation to agricultural lessees equivalent to 5 times the average gross harvest in the last 5 years.

Article 141, Civil Code. Real actions over immovable prescribe after thirty (30) years. This provision is without prejudice to what is established for the acquisition of ownership and other real rights by prescription (1963).

The Comprehensive Agrarian Reform Law Republic Act 6657 (1988). Section 28 provides that landowner shall retain his share of any standing crop un-harvested at the time the DAR shall take possession of the land under Section 16 of this Act and shall be given a reasonable time to harvest.

DPWH Department Order No. 34 s. 2007 to streamline and standardize its operating procedures DPWH issued the department order was issued to simplify the guidelines for the validation and evaluation of Infrastructure right-of-way claims. The Guidelines is in line with the provisions of the DPWH ROW Procedural Manual adopted under Department Order No.5, s. 2003, as amended, particularly in the validation and evaluation of claims for ROW acquisitions.

DPWH Department Order No.5 s. 2003 this order was issued to identify, acquire, and manage right-of-way (ROW) efficiently and in a timely manner for the implementation of infrastructure projects, an improved ROW process was adopted, among others, (i) it shall be applicable to all foreign-assisted and locally funded projects. (ii) The Implementing Office (10)

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shall ensure that ROW costs are always included in project budgets. (iii) All ROW must be fully acquired and cleared before the issuance before the Notice of Award for the project.

DPWH Department Order No. 130 Series of 2016 provides the guidelines for the Implementation of the Provisions of Republic Act No. 6685 and Republic Act 9710 or the Magna Carta of Women. The Implementing Rules and Regulations mandates that contractors to hire a minimum percentage of 50% of unskilled and 30% skilled manpower requirement from the unemployed bona fide residents of the locality and shall be equally accessible to both women and men.

DPWH Department Order No. 152 Series of 2017 Directing the Use of DPWH Right-of-Way Acquisition Manual (DRAM) by All Concerned DPWH offices. The Manual provides a clear, uniform, and user-friendly guide on the rules and procedures for the acquisition of DPWH ROW for its infrastructure projects.

Indigenous People. The Indigenous Peoples' Rights Act (IPRA) of 1997. IPRA sets conditions, requirements, and safeguards for plans, programs, and projects affecting IPs. The important provisions of IPRA are:

- 1) Right to their ancestral domains. (Chapter III, Section 11);
- Right to an informed and intelligent participation in the formulation and implementation of any project, government or private, that will impact upon their ancestral domains; (Chapter III, Section 7b);
- Right to participate fully, if they so choose, at all levels of decision-making in matters which may affect their rights, lives and destinies through procedures determined by them; (Chapter IV, Section 16);
- Right to receive just and fair compensation for any damages inflicted by or as a result of any project, government or private; (Chapter III, Section 7b);
- Right to stay in their territory and not be removed from that territory. If relocation is necessary as an exceptional measure, it can only take place with the free and prior informed consent of the IPs and indigenous cultural communities (ICC) concerned; (Chapter III, Section 7c);
- Right to be secure in the lands to which they have been resettled; (Chapter III, Section 7d);
- Right to determine and decide their own priorities for the lands they own, occupy, or use; (Chapter IV, Section 17);
- Right to maintain, protect, and have access to their religious and cultural sites; (Chapter IV, Section 33)

NCIP has issued number of administrative orders (AO) that put into operation the provisions of IPRA. The most important AO for purposes of this RAP is NCIP AO No. 3 or the Revised Guidelines on FPIC and Related Processes of 2012.

Republic Act 7279 is an act to provide for a comprehensive and continuing urban development and housing program, establish the mechanism for its implementation, and for other purposes. The law also provides that local government units in coordination with the National Housing Authority (NHA), shall implement the relocation and resettlement of persons living

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in danger areas such as esteros, railroad tracks, garbage dumps, riverbanks, shorelines, waterways, and in other public places as sidewalks, roads, parks, and playgrounds. The local government unit, in coordination with the National Housing Authority, shall provide relocation or resettlement sites with basic services and facilities and access to employment and livelihood opportunities sufficient to meet the basic needs of the affected families. s and estate management.

3.2 Objectives and Principles of the Involuntary Resettlement Policy

- 1) Involuntary resettlement should be avoided where feasible.
- Where population displacement is unavoidable, it should be minimized by exploring all viable project options.
- People unavoidably displaced should be compensated and assisted, so that their economic and social future would be generally as favorable as it would have been in the absence of the project.
- People affected should be fully informed and consulted on resettlement and compensation options.
- As far as possible, involuntary resettlement should be conceived and executed as part of the project.

3.3 JICA Policies

The key policies and principles governing involuntary resettlement prescribed in the Japan International Cooperation Agency (JICA) Guidelines on Social and Environmental Considerations (2010) are as follow:

- Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives.
- When, after such an examination, avoidance is proved unfeasible, effective measures to minimize impact and to compensate for losses must be agreed upon with the people who will be affected.
- People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported by project proponents in a timely manner.
- 4) Prior compensation, at full replacement cost, must be provided as much as possible.
- 5) Host countries must make efforts to enable people affected by projects and to improve their standard of living, income opportunities, and production levels, or at least to restore these to pre-project levels. Measures to achieve this may include providing land and monetary compensation for losses (to cover land and property losses), supporting means for an alternative sustainable livelihood, and providing the expenses necessary for the relocation and re-establishment of communities at resettlement sites.
- 6) Meaningful participation of affected people and their communities must be promoted in the planning, implementation, and monitoring of resettlement action plans and measures to prevent the loss of their means of livelihood.
- In addition, appropriate and accessible grievance mechanisms must be established for the affected people and their communities.

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- For projects that will result in large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public.
- 9) In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance.
- 10) When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people.

3.4 Gap Analysis and Project Principles

To ensure compliance and consistency with JICA Guidelines on Social and Environmental Considerations (2010), the review of JICA guidelines to compare to existing laws and policies on the road right-of-way acquisition has been conducted.

Table 3-1 present the results of the Gap Analysis.

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Table 3-1. Gap Analysis and Gap Filling Measures

No	JICA Guidelines and World Bank OP 4.12			Proposed Gap Filling Measures		
1	Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all	No person shall be deprived of life, liberty, or property without due process of law, nor shall any person be denied the equal protection of the laws (Article III, Bill of Rights, Section 1)	While there is no specific law in the Philippines, there is no notable gap.	The project will compare and analyze different project alternatives considering the economic,		
	viable alternatives. (JICA GL)	Private property shall not be taken for public use without "just compensation (Article III, Bill of Rights, Section 9).		environmental, and social impacts with priority given to the option that minimizes		
		Involuntary resettlement should be avoided where possible. Where population displacement is unavoidable, it should be minimized by exploring all viable project options (LARRIPP, 2007, Chapter II)		the scale of involuntary resettlement.		
2	When population displacement is unavoidable, effective measures to minimize impact and to compensate for losses should be taken, (JICA GL)	Provides compensation and entitlements for affected assets and properties within road right-of-way (LARRIPP, 2007, Chapter III)	There is no notable gap.	The impact on the PAPs will be analyzed in view of the land, structure, crops, trees. Once the impacts have been		
		impensate for losses RA 10752 - provide just compensation for affected assets and properties within road		identified, efforts to minimize such impacts would be undertaken and an appropriate level of compensation would be considered and described in the RAP for implementation.		
3	People who must be resettled involuntarily and people whose means of livelihood	Monetary compensation will be made to people that legally own the land and structures affected by the project (RA10752, Article 5).	LARRIPP covers compensation against lost livelihood including loss attributed to impact on	Compensation policy and package will be formulated based on the census, lost-asset		
	will be hindered or lost must be sufficiently	hindered or lost The government will, in coordination with		inventory, and socioeconomic surveys		

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No	JICA Guidelines and World Bank OP 4.12	Legislation of Philippines	Major Gaps	Proposed Gap Filling Measures		
4	compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels. (JICA GL.)	identifying the resettlement site and developing them (RA10752 No.9)	therefore, there is no notable gap while there			
		Government shall provide adequate appropriations that will allow Implementing Agencies to acquire ROW for national government projects. These appropriations include cost of development and implementation of resettlement projects including planning, and social preparation. Where necessary, this may include land development and housing construction, provision of basic services and community facilities, livelihood restoration and improvement (RA10752 Section 15).	are limitations for the compensation amount.	livelihood including the caused by project imparent business activities based on their socioeconomic status, the laws, and regulations in the Philippines and JICA Guidelines. Impact on business activities will be avoided as much as possible.		
		Among other types of entitlements that may be afforded to the PAFs/PAPs as compensation for lost livelihood is income loss and rehabilitation assistance (LARRIPP, 2007, Chapter III)				
		For illegal residents, LGUs and NHA will collaborate to provide low-cost housings or a resettlement site to the PAPs (RA7279).				
	Compensation must be based on the full replacement cost as much as possible. (JICA GL)	In negotiating the level of compensation, project proponents must pay to the owner. 1) Current market price of land;	For expropriation, CGT shall be paid by owner because the compensation is determined by the	provided to the PAPs based on the full replacement cost measured based on the		
	V 70000	 For negotiated sale, payment of capital gains tax (CGT) is shouldered by the IA. 	courts; hence, IA cannot offer an additional	current market value.		
		 Replacement cost for structure and other assets; and 	compensation outside the court's decision.			

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No	JICA Guidelines and World Bank OP 4.12	Legislation of Philippines	Major Gaps	Proposed Gap Filling Measures	
		 Current market value of the crops and trees (RA 10752 No.5, No.6). 			
5	Compensation and other kinds of assistance must be provided prior to displacement. (JICA GL)	Under R.A. 10752, PAPs will be paid only 50% of the negotiated price of the affected land and 70% of the negotiated price of the affected structures, improvements, crops, and trees upon the execution of a deed of sale. The balance of payment is paid as stated below provided that the land is already completely cleared of structures, improvements, crops, and trees. (1) At the time of the transfer of title in the name of the Republic of the Philippines, in cases where the land is wholly affected; or (2) At the time of the annotation of a deed of sale on the title, in cases where the land is partially affected.	Compensation and other support to the PAPs are not provided fully prior to displacement	All compensation and support will be provided to the PAPs prior to displacement.	
6	For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared	ge-scale involuntary ettlement, ettlement action ns must be prepared plan. Authority (NEDA) ICC Policy requires the prosect proponent to acquire the ROW and to prepare and submit a resettlement action plan.		RAP will be prepared and be made available on DPWH's webpage under this project.	
	and made available to the public during the validation of the IA. (JICA GL)	DPWH ROW Manual states that the RAP will be disclosed at the validation stage.	and or or the translature of the Control of the Con		
7	In preparing a resettlement action plan, consultations must be held with the affected people and their communities	No resettlement of urban or rural dwellers shall be undertaken without adequate consultation with them and the communities where they are to be relocated. (Philippine Constitution: Section 10).	There is no notable gap.	PAPs will be invited to attend the stakeholder meetings from the early stage of the project to implementation stage.	

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No	JICA Guidelines and World Bank OP 4.12	Legislation of Philippines	Major Gaps	Proposed Gap Filling Measures
	based on sufficient information made available to them in advance. (JICA GL)	resettlement with the duly designated		
8	When consultations are held, explanations must be given in a form, manner, and language that are understandable to the people (DENF Administrative Order No. 96-37 Article 2). language that are understandable to the affected people, (JICA GL)		While the laws in the Philippines do not clearly mention affected people ("instead they use the word beneficiaries), there appears to be no notable gap in essence.	Stakeholder meetings and public consultations will be held in a language widely used in the local area with visual aids.
9	Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans, (JICA GL.)	coordination with the Presidential Commission for the Urban Poor (PCUP) and relevant government bodies, participate in the decision-making process concerned with	There is no notable gap.	Participation of the PAPs will be promoted by having discussions with the PAPs from early stage of RAP preparation at the scoping stage throughout the survey.
		Public Consultation Meetings (PCMs) must be held in each barangay that will be traversed by the project. Venues for PCMs must be neutral grounds such as barangay halls, day care centers, public schools, and the like (DPWH ROW Acquisition Manual		Their livelihood will be monitored continuously into the implementation stage of the project.

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No	JICA Guidelines and World Bank OP 4.12	Legislation of Philippines	Major Gaps	Proposed Gap Filling Measures	
		Section 2.4 and 2.5).		Constitution (C)	
		With regards to monitoring, Chapter VIII of LARRIPP 2007 stipulates the objective, scope, monitoring mechanism, stages and frequency of monitoring, schedule of implementation, reporting and monitoring indicators			
10	Appropriate and accessible grievance mechanisms must be established for the	RA9285 (Alternative Dispute Resolution (ADR) Act of 2004) recommends that disputes be resolved through an alternative dispute resolution (ADR).	There is no notable gap.	A grievance redress mechanism (i.e. municipal and city RAP implementation	
	affected people and their communities. (JICA GL)	A grievance redress procedure is described in Chapter VI of the LARRIPP that if the complaint is not satisfactorily resolved in 15 days or the PAP does not receive any response from the RIC, the PAP can forward the complaint to or file an appeal at the DPWH Regional Office (RO) and if the complaint is not satisfactorily resolved in 15 days or the PAP does not receive any response from the DPWH RO, the PAP can file a legal complaint in any appropriate Court of Law.		committee/ M/CRIC) will be formed based on LARRIPP prior to implementation of the RAP and finalized in consultation with DPWH and other relevant government bodies.	
11	Affected people are to be identified and	LGUs must prepare an inventory of informal settler families (ISFs) (RA7279).	There is no notable gap.	Affected people will be identified at an earl	
	recorded as early as possible to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and	According to Article 4 of the rules for registers of welfare housing: • Under each LGU, the city/town will be responsible for registering socially vulnerable and homeless people; and • Registration will take place at the barangay level in the barangay		stage of the study as part of the RAP survey, which consists of census, lost-asset inventory, and socioeconomic surveys. A cut-off date will be set at the commencement day of the census survey and announced at the	

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No	JICA Guidelines and World Bank OP 4.12	Legislation of Philippines	Major Gaps	Proposed Gap Filling Measures
	socioeconomic survey), preferably at the project identification stage, to prevent a subsequent influx of encroachers of others who wish to take advance of such	registration committee with the barangay captain taking responsibility DRAM stipulates the procedures of preparing a RAP, which mentions carrying out creasus and socioeconomic surveys as well as tagging of affected structures.		first stakeholder meeting and/or through other appropriate means.
	benefits. (WB OP4.12 Para.6)	DRAM stipulates that PAPs shall be determined based on the cut-off date.		
12	Eligibility of benefits includes, the PAPs who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal legal rights to land at the time of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they	areas; and not a member of a professional squatter or squatter syndicate. According to RA Implementation Rule 10 of	Many informal settlers that do not meet the requirements may occupy the site of the government but unless they: (a) meet the requirements set forth in RA10752 and RA7279; or (b) have a certificate that shows the consent of the owner, they cannot receive compensation for their structure.	Based on the findings of socioeconomic survey, an entitlement matrix will be prepared for both formal and informal settlers.
	are occupying. (WB OP4.12 Para.15)	are occupying. (WB 10752, informal settlers of private land is:		
		The government, through the Housing and Urban Development Coordinating Council (HUDGC) and the National Housing Authority (NHA), in coordination with the		

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No	JICA Guidelines and World Bank OP 4.12	Legislation of Philippines	Major Gaps	Proposed Gap Filling Measures
		LGUs and implementing agencies concerned, shall establish, and develop resettlement sites for informal settlers. Eligible Residents (RA 7279) who are informal settlers are:		-20100000
		 having Filipino nationality; 		
		 be a homeless citizen below the poverty level; 		
		 do not own real estate in urban and rural areas; and 		
		 not a member of a professional squatter or squatter syndicate. 		-11. 1973
13	Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based. (WB OP4.12 Para.11)	According to Chapter III A-4-d of LARRIPP 2007, Land swapping if feasible, 'land for land', will be provided in terms of a new parcel of land of equivalent market value, at a location acceptable under zoning laws, or a plot of equivalent value, whichever is larger, in a nearby resettlement area with adequate physical and social infrastructure.	There is no legal rule that prioritize land- based resettlement strategies.	Preference would be given to the extent possible, subject to availability of land and other circumstances, to land-based resettlement strategies for displaced persons whose livelihoods are land-based. FGDs will be held based on the socioeconomic survey to ensure that there is no negative change when compared with the affected people's income before relocation (land-based livelihoods etc.).
14	Provide support for the transition period (between displacement	stipulates the "Transitional allowance" for	There is no notable gap.	Support for the transition period will be offered to the dislocated

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No	JICA Guidelines and World Bank OP 4.12	Legislation of Philippines	Major Gaps	Proposed Gap Filling Measures		
	and livelihood restoration). (WB OP4.12 Para.6)			PAPs under this project.		
15	Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the	RA 8381 section II declare that the states shall recognize and promote all the rights of Indigenous Cultural Communities /Indigenous Peoples.	There is no notable gap.	During the public consultation, the socially vulnerable groups will be invited to know their needs and solicit comments and		
	poverty line, landless, elderly, women and children, ethnic minorities etc. (WB OP4.12 Para.8)	DO 327 ANNEX B Guideline for Infra project stipulates the "Rehabilitation Assistance" in the form of special skill trainings for severely affected PAPs.		suggestions on what assistance they need. In addition to this, they will be identified during the RAP survey and necessary support will be provided.		
		LARRIPP 2007 Chapter II stipulated the provision of appropriate assistance to the vulnerable group.		**************************************		
16	For projects that entail land acquisition or involuntary resettlement of fewer than 200 people, abbreviated resettlement plan is to be prepared. (WB OP4.12 Para.25)	The Resettlement Action Plan (RAP) refers to the planning document that describes what will be done to address the direct social and economic impacts associated with involuntary taking of land or land acquisition. The ARAP is acceptable if fewer than 200 people are affected. It is also acceptable if more than 200 people are affected so long as all land acquisition is minor (10 percent or less of all holdings is taken) and no physical relocation is required (LARRIPP, 2007).	There is no notable gap.			



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4 SCOPE OF LAND ACQUISITION AND RESETTLEMENT

4.1 Summary of Project Impacts

The feasibility study aimed to identify the road alignment option that would result in minimal disturbance to the community especially in terms of involuntary displacement. However, the study showed that complete avoidance of existing properties was not possible, and displacement will still occur.

Project impacts are classified into three (3) main types, namely: impacts on land, impacts on structure and improvements, and impacts on crops and trees.

A total of 379 project affected persons (PAPs) will be affected by the project. In terms of number of project affected families, there are 96 PAFs comprising of 92 owners, two (2) coowners, and two (2) sharers/rent-free occupant.

Based on Table 4-1, a total of 298 structures will be affected by the project. These structures are distributed as residential structures (99 units); residential-commercial structures (1 unit); commercial structures (3 units); institutional structures (4 units); community structures (52 units); and other structures (139 units)

In terms of land acquisition, a total of 3,943,800 m² will be acquired which traverses the 27 barangays. The project affected area has a total of 352 parcels of land. In terms of loss of crops and trees, agricultural crops covering an area of 2,571,526 m² & 2,552 coconuts and 9,815 productive trees will lose, respectively.

A summary of the project impacts is shown in Table 4-1.

Table 4-1. Summary of Project Impacts

Total
96
dential, tures 379
99
ctures 1
3
4
52
139
405



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	Summary of Project Impacts	Total
	No. of Affected Persons by Losing Parcel of Land	352
	Total Affected Land Area (m²)	3,943,800
Loss of Crops	Land Area of Affected Agricultural Crops (m²) No. of Affected Coconut	2,571,526 2,552
Loss of Trees	No. of Affected Forest / Fruit Trees / Other Forest Products	9,815

4.2 Project Affected Families (PAFs)

In the conduct of the socioeconomic survey, the study team considered the households and business owners occupying the project area. These PAFs are either have structures for residential, residential-commercial, and commercial purposes and were surveyed to determine their socioeconomic profile. A total of 96 PAFs with 103 structures were classified further as 99 residential, one (1) residential-commercial, and three (3) commercial structures. These were considered in the survey (excluding under-construction and secondary structures) but only 71 PAFs were interviewed since the 15 PAFs were out during the survey, two (2) PAFs refused to be interviewed and eight (8) absentee house owners. The two households who did not participate in the survey were not supportive of the project since their properties will be affected and they are requesting for realignment.

Moreover, of the total PAFs, there were 22 IP PAFs who occupied land inside ROW they belong to Higaonon (15), Talaandig (6), and Bukidnon-Tagoloanon (1) tribes. The breakdown of the households is shown in Table 4-2.

Table 4-2. Total Project Affected Families (PAFs)

	Misamis	Oriental	Bukidnon				Total	
Tenurial Status	Tagotoa n	City of Cagaya n de Oro	Manot o Fortich	Sumila 0	Impassig -ong	City of Malaybala y	N	×
Interviewed	2	13	21	11	15	9	71	74%
Owner	2	13	19	10	15	8	67	
Co-owner	0	0	0	1	0	1	2	
Sharer/ Rent-Free Occupant	0	0	2	0	0	0	2	
Not Interviewed	1	6	11	1	3	3	25	26%
Out During Census	1	5	6	0	1	2	15	
Refused to be Interviewed	0	0	2	0	0	0	2	
Absentce House Owner	0	1	3	1	2	1	8	
Total	3	19	32	12	18	12	96	100

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4.3 Asset Inventory

The CMHSHCP will involve road construction and improvements to include widening, slope protection and drainage that will require the road right-of-way acquisition of public land and private land. Land acquisition will cause physical and economic displacement such as (i) permanent loss of land along the required 60-m ROW, (ii) loss/damage to structures and improvement, (iii) loss of crops and trees, (iv) loss of income/business, (v) increase vulnerability, and (vi) temporary loss or disruption of land use or other assets during construction works, specifically the nature of movement of construction materials to and from work sites is also anticipated.

4.3.1 Impacts on Land

The CMHSHCP measures 65.73 km long and will require a total land area of 3,943,800 m² of land. Since no complete/updated land use plan was provided by the LGUs, the RAP team delineated using GPS. The road traverses 27 affected barangays of the six (6) affected LGUs. Based on research data the land use classification of project area is agricultural land.

On the other hand, there are 405 parcels of land owned by 352 PAPs, of which 129 were identified based on the official land ownership documents provided by the LGUs and DENR. The remaining 223 PAPs will be determined during the conduct of parcellary survey under the DED stage. All land parcel owners live outside ROW.



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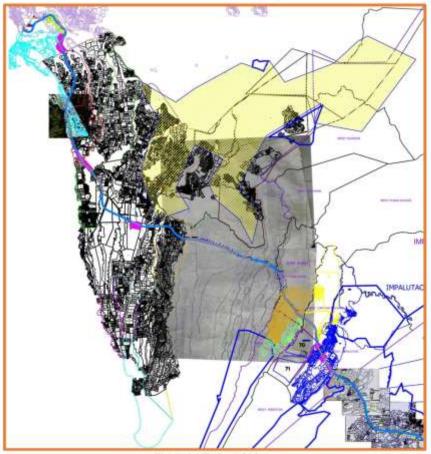


Figure 4-1 Cadastral Map

Table 4-3 provides details of the project components requiring land acquisition and bridge approaches (Appendix 1 – Impacts on Land).

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Table 4-3. Loss of Land

	100000	Total No.	of Affected	Landowner		Loss of	Land (sq.)	m.)		
Affected LGUs	No. of Parcel of Land*	Identified Landowner	To be identified during DED	Total No. of Affected Landowners	Agricultural	Canyon	Oth	River	Road	Total (sq.m.)
Misamis Oriental	80	37	20	57	598,415		1.0		2,506	600,924
Tagoloun	23	7	16	23	369,425			-	1,280	370,705
City of Cagayan de Oro	57	30	4.	34	228,993	1.0	-	1.4	1,226	230,219
Bukidnen	325	92	203	295	3,035,932	26,853	89,418	152,646	38,827	3,342,876
Manolo Fortich	729	-	129	729	1,329,240	1500 6	1,596	37,645	1,622	1,370,103
Sumitao	44		44	44	536,084	26,853	7,785	82,034	21,704	674,460
Impastig-ong	84	45	14	59	506,381		38,368	32,967	5,715	583,431
City of Malaybulay	68	47	16	63	664,227		41,669	-	8,986	774,882
Total	405	129	223	352	3,634,350	26,853	89,418	152,646	40,533	3,943,800
%		36.6%	63.4%	700%	92.2%	0.7%	2.3%	3.9%	1.0%	100%

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4.3.2 Impacts on Structures

Interviews conducted with structure owners revealed that all the affected structures are situated on private lands. Table 4-4 shows a list of these structures per LGU. Details such as the valuation of each structure based on replacement cost as defined in Section 10 of the IRR of R.A. 10752 are in Appendix 2 - Impacts on Structure.

Table 4-4 shows that out of the total 298 structures, 103 are considered main structures of which 99 are residential, one (1) residential-commercial, and three (3) commercial structures. There are also institutional and community facilities affected such as basketball court, chapel, stage, and electrical post. Other structures such as comfort rooms, kitchens, fences, storage, etc. account for almost half (139) of the total affected structures.

Table 4-4. Loss of Structures

			Loss of Str	uctures			
Affected LGUs	Residential	Residential Commercial	Commercial	Institutional	Community	Others	Total
Misamis Oriental	24	1	0	0	8	30	63
Tagoloan	- 3	0	0	.0	6	7	16
City of Cagayan de Oro	21	1	0	0	2	2.3	47
Bukidnon	75	0	3	4	44	109	235
Manolo Fortich	31	0	1	3	17	50	102
Sumilao	13	Ø	Ø	0	3	17	33
Impasteg-ong	19	0	1	1	11	29	51
City of Malaybalay	12	ä	1	0	13	23	49
Total	99	1	3	4	52	139	298
%	33.2%	0.3%	1.0%	1.3%	27.4%	46.6%	100%

Affected structures used for residential purposes are tabulated below. The 99 severely affected structures have an area of 4,059 m² and this translates to 98% severity.

Table 4-5. Loss of Residential Structures

	1 22 3 1	Affected Residential Structures						
Affected LGUs	No. of Residential Structures	Total Area	Affected	Severity				
			Arrea	o _n Severity	Marginally- Affected	Severely- Affected		
Misamis Oriental	24	721	721	100%	0	24		
Tagoloan	3	101	101	100%	0	3		
City of Cagayan de Oro	21	620	620	100%	0	21		
Bukidnon	75	3,443	3,339	97%	0	75		
Manolo Fortich	31	1,478	1,417	96%	0	31		
Sumilao	13	573	530	92%	0	13		
Impasug-ong	19	844	844	100%	. 0	19		



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	100.00	Affected Residential Structures						
Affected LGUs	No. of Residential	STANSON I	1000000000	Severity				
	Structures	Total Area	Affected Area	% Severity	Marginally- Affected	Severely- Affected		
City of Malaybalay	12	549	549	100%	0	12		
Total	99	4,163	4,059	98%	0	99		

For residential-commercial use, one (1) severely affected structure was identified during the socioeconomic survey covering an area of 22 m².

Table 4-6. Loss of Residential-Commercial Structures

	No. of	Affected Residential-Commercial Structures						
Affected LGUs	Residential-	Total	Affected	Severity				
	Commercial Structures	Area	Area	% Severity	Marginally- Affected	Severely- Affected		
Misamis Oriental	1	22	22	100%	0	1		
Tagoloan	.0	0	0	0%	0	0		
City of Cagayan de Oro	1	22	22	100%	0:	1		
Bukidnon	0	0	0	0%	0	0		
Manolo Fortich	0	0	0	0%	0	0		
Sumilao	0	0	0	0%	0	0		
Impasug-ong	0	0	0	0%	0	0		
City of Malaybalay	.0	0	0	0%	0	0		
Total	1	22	22	100%	0	1		

For the loss of commercial structure, it shows that there are three (3) severely affected structures with an area of $108\ m^2$.

Table 4-7. Loss of Commercial Structures

	***		Affected	Commerc	al Structures			
Affected LGUs	No. of Commercial	Total	Affected	Severity				
Affected Loca	Structures	Area	Area	% Severity	Marginally- Affected	Severely- Affected		
Misamis Oriental	0	0	0	0%	0	0		
Tagoloan	0	0	0	0%	0	0		
City of Cagayan de Oro	-0	0	0	0%	0	0		
Bukidnon	3	108	108	100%	0	3		
Manolo Fortich	1	8	8	100%	0	1		
Sumilao	.0	0	0	0%	0	0		
Impasug-ong	1	70	70	100%	0	1		
City of Malaybalay	1	30	30	100%	0	1		
Total	3	108	108	100%	0	3		

For the loss of institutional structures such as basketball court, chapels and stage, it shows that the four (4) severely affected structures have an area of 458 m².



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Table 4-8. Loss of Institutional Structures

	2,000,000		Affected	Institution	nal Structures			
Affected LGUs	No. of Institutional Structures	Total	Affected	Severity				
		Area	Area	Severity	Marginally- Affected	Severely- Affected		
Misamis Oriental	0	0	0	0%	0	0		
Tagoloan	0	0	0	0%	0	0		
City of Cagayan de Oro	0	0	0	0%	0	0		
Bukidnon	4	496	458	92%	0	4		
Manolo Fortich	3	447	409	92%	0	3		
Sumilao	0	0	0	0%	0	0		
Impasieg-ong	1	49	49	100%	0	1		
City of Malaybalay	0	0	0	0%	0	0		
Total	4	496	458	92%	0	4		

For the loss of community structures such as electric post, waiting shed, water tank, etc., it shows that all of them are severely affected structures.

Table 4-9. Loss of Community Structures

	No. of		Affected Community Structures							
Affected LGUs	Community Structures	Total	Affected	Severity						
		Area	Arrea	% Severity	Marginally- Affected	Severely- Affected				
Misamis Oriental	8	9	9	100%	0	8				
Tagoloan	б	0	0	0%	0	б				
City of Cagayan de Ora	2	9	9	100%	0	2				
Bukidnon	44	267	267	100%	0	44				
Manolo Fortich	17	30	30	100%	0	17				
Sumilao	3	36	36	100%	0	3				
Impasieg-ong	11	201	201	100%	0	11				
City of Malaybalay	13	0	0	0%	0.	13				
Total	52	276	276	100%	0	52				

Majority of the other structures are comfort room, dirty kitchen, extensions, fences, etc. are severely affected by the project.

Table 4-10, Loss of Other Structures

	No. of Other Structures	Affected Other Structures							
Affected LGUs		Total Area	Affected Area	Severity					
				% Severity	Marginally- Affected	Severely- Affected			
Misamis Oriental	30	5,710	3,550	62%	1	29			
Tagoloan	7	1,851	1,851	100%	0	7			
City of Cagayan de Oro	23	3,859	7,699	44%	1	22			
Bukidnon	109	18,486	11,117	60%	4	105			
Manolo Fortich	50	10,073	4,323	43%	3	47			



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	St. 155	Affected Other Structures						
Affected LGUs	No. of Other Structures	Total Area	Affected	Severity				
			Area	Severity	Marginally- Affected	Severely- Affected		
Sumilao	17	1,023	1,023	100%	0	17		
Impasug-ong	19	2,377	777	33%	1	18		
City of Malaybalay	23	5,013	4,995	100%	0	23		
Total	139	24,196	14,667	61%	5	134		

Majority of the structures are made up of light materials (51%) followed by concrete/permanent (38%) and semi-permanent materials (11%).

Table 4-11. Type of Structures

		Type of Structure			
Affected LGUs	Concrete/ Permanent	Semi- Permanent	Light	Total	
Misamis Oriental	15	10	38	63	
Tagoloan	6	3	7	16	
City of Cagayan de Oro	9	7.	31	47	
Bukidnon	99	22	114	235	
Manolo Fortich	51	10	41	102	
Sumilao	11	2	20	33	
Impasug-ong	17	4	30	51	
City of Malaybalay	20	6	23	49	
Total	114	32	152	298	
%	38%	11%	51%	100%	

4.3.3 Summary of Affected Crops

The project is also seen to impact livelihood as crops that provide income to affected persons will be displaced. As discussed during the public consultation meetings, production of agricultural products such as banana, corn, rice, and other crops play a vital role as sources of income of the residents and farm workers in the locality (Appendix 3 – Impacts on Crops).

The estimated number of affected agricultural crops and number of affected coconuts is shown in Table 4-12.

Table 4-12. Loss of Crops

Affected LGUs of	Total	Agricultural Crops (sq. m.)								
	Number of Coconut	Pineapple	Corn	Banana	Sugarcane	Cassava	Others*	Total Agricultural Crops (sq.m.)		
Misamis Oriental	2,143	0	9,600	7,866	3,600	21,600	16,200	58,866		
Tagolonn	1,037	0	0	4,866	3,600	0	5,400	13,866		



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	Total			Agri	cultural Crop	s (sq. m.)		
Affected LGUs of	Number	Pineapple	Corn	Banana	Sugarcane	Cassava	Others*	Total Agricultural Crops (sq.m.)
City of Cagayan de Oro	1,106	0	9,600	3,000	0	21,600	10,800	45,000
Bukidnon	409	1,434,000	453,800	215,210	168,000	121,150	120,500	2,512,660
Manolo Fortich	333	677,400	84,000	9,460	0	83,850	26,400	881,110
Sumilao	40	285,000	48,000	5,200	1,200	32,500	8,400	380,300
Impasug-ong	21	305,400	189,000	88,950	51,600	4,800	44,800	684,550
City of Malaybulay	15	166,200	132,800	111,600	115,200	0	40,900	566,700
Total	2,552	1,434,000	463,400	223,076	171,600	142,750	136,700	2,571,526

Others include squash, rice, dragon fruit, calanunsi, buguso beans, etc.

4.3.4 Summary of Affected Trees

The affected number of trees is 9,815. Data on the number, type and valuation of rubber plant, gmelina, falcata, african tulip, mango, lansones, and others are provided in Appendix 4 -Impacts on Trees.

Table 4-13, Loss of Trees (No.)

Affected LGUs	Forest / Fruit Trees / Other Forest Products (n)							
	Rubber Tree	Gmelina	Falcata	African Tulip	Mango	Larisones	Others*	Total
Misamis Oriental	0	197	12	8	195	34	683	1,129
Tagoloan	0	86	12	4	169	0	508	779
City of Cagayan de Oro	0	111	0	4.	26	34	175	350
Bukidnon	2,296	892	697	633	341	490	3,337	8,686
Manolo Fortich	635	345	53	329	302	203	7,640	3,507
Sumilao	1	103	58	110	21	91	606	980
Impasug-ong	417	250	121	87	15	118	635	1,643
City of Malaybalay	1,243	194	46.5	107	13	78	456	2,556
Total	2,296	1,089	709	641	536	524	4,020	9,815

^{*}Others include: mahugany, antipolo, agobo, marang, rangka, etc.

**One of the affected landowner (Magic Farm and Ranch) did not allow the survey team to conduct the IOL for Crops and Tries.



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5 CENSUS, ASSET INVENTORY AND SOCIOECONOMIC STUDY

5.1 Socioeconomic Profile

In determining the extent of impacts on the loss of land, structures, crops, and tress, only the households occupying the affected project areas were considered during the conduct of the socioeconomic survey (SES).

The SES includes information on gender, age, civil status, educational attainment, religion, place of origin, length of stay, primary occupation/source of income of household heads, estimated income from primary source for the last 12 months, secondary occupation/income source, total income for the last 12 months, estimated total monthly household expenditures, and average monthly expenses. The results provide the socioeconomic profiles of the directly affected families.

5.1.1 Affected Local Government Units (LGUs)

Table 5-1 shows the population of Bukidnon and Misamis Oriental in the 2020 census. For Misamis Oriental, it has a population of 1,685,302 with a density of 519 inhabitants per square kilometer. Almost half of the inhabitants in Misamis Oriental live in Cagayan de Oro City with a total of 728,402 or 43.22% of the province population while the municipality of Tagoloan has a population of 80,319 (4.77%). Both the population densities of the two LGUs are higher compared to the province as shown in Table 5-1. The City of Cagayan de Oro has 1,765 persons per km square while Tagoloan has 682 inhabitants per square kilometer. In terms of number of barangays, the province has a total of 504 barangays, 10 of which are in Tagoloan and 80 barangays are in City of Cagayan de Oro.

The other province that will be affected by the proposed project is Bukidnon with four (4) affected LGUs, namely: Manolo Fortich, Sumilao, Impasug-ong, and City of Malaybalay. Based on the 2020 PSA data, the province has a population of 1,541,308. The City of Malaybalay has the highest population of 190,712 (12.37%) followed by Manolo Fortich with population of 113,200 (7.34%) while the third is Impasug-ong having a population of 53,863 (3.49%) and lastly is Sumilao with population of 29,531 (1.92%). Manolo Fortich (274), City of Malaybalay (197), and Sumilao (150) all have higher population density as compared to Bukidnon (147) while Impasug-ong (51) has the lowest population density. The total number of barangays in Bukidon is 464, 22 of which are in Manolo Fortich, 10 barangays in Sumilao, 13 barangays in Impasug-ong, and 46 barangays are in City of Malaybalay.

Table 5-1. Provincial Statistics by Affected City/Municipality

	Popu	lation	Area	(km²)	Density	No. of	
Affected LGUs	Total	% from Province	min km² % from (Persons/ km²) 20% 3,249.25 100.00% 519 117.73 3.62% 682 22% 412.80 12.70% 1765	Barangays			
Misamis Oriental	1,685,302	100.00%	3,249.25	100.00%	519	504	
Tagoloan	80,319	4.77%	117.73	3.62%	682	10	
City of Cagayan de Oro	728,402	43.22%	412.80	12.70%	1765	80	
Bukidnon	1,541,308	100.00%	10,498.59	100.00%	147	464	



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	Popu	lation	Area	(km²)	Density	No. of	
Affected LGUs	Total	% from Province	km²	% from Province	(Persons/ km²)	Barangays	
Manolo Fortich	113,200	7.34%	413.60	3.94%	274	22	
Sumilao	29,531	1.92%	196.95	1.88%	150	10	
Impasug-ong	53,863	3.49%	1,051.17	10.01%	51	13	
City of Malaybalay	190,712	12.37%	969.19	9.23%	197	46	

Population, Land Area, Population Density, and Percent Change in Population Density of the Philippines by Region, Province/Highly Urbanized City, and City/Municipality; 2010, 2015, and 2020. PSA

Table 5-2 to Table 5-7 shows the population of affected LGUs and affected barangays.

Table 5-2, 2020 Population of Affected Barangay in Tagoloan

Location	Population				
Location	Total	% from Municipality			
Tagoloan	80,319	100%			
Casinglot	10,207	13%			
Natumolan	10,878	14%			

Total Population by Province, City, Municipality, and Barangay as of May 1, 2020. PSA

Table 5-3, 2020 Population of Affected Barangay in the City of Cagayan de Oro

	Population			
Location ty of Cagayan de Oro ugo	Total	% from City		
City of Cagayan de Oro	728,402	100%		
Bugo	31,229	4%		
Balubal	7,013	1%		
Puerto	13,174	2%		

Total Population by Province, City, Municipality, and Barangay as of May 1, 2020, PSA

Table 5-4. 2020 Population of Affected Barangay in the Manolo Fortich

Location	Population				
Location	Total	% from Municipality			
Manolo Fortich	113,200	100%			
Mambatangan	5,332	5%			
Alae	11,913	11%			
San Miguel	5,515	5%			
Damilag	16,303	14%			
Diclum	4,507	4%			
Tankulan (Pob.)	8,954	8%			
Sankanan	3,776	3%			
Ticala	1,353	1%			

Total Population by Province, City, Municipality, and Basangay as of May 1, 2000, PSA

Table 5-5. 2020 Population of Affected Barangay in the Sumilao

	Po	epulation.
Location	Total	% from Municipality
Sumilao	29,531	100%



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V (78)	Population				
Location	Total	% from Municipality			
Puntian	1,642	6%			
Villa Vista	2,669	9%			
San Roque	1,380	5%			
Culasi	617	2%			
Poblacion	4,927	17%			
Kisolon	12,306	42%			

Total Population by Province, City, Municipality, and Barangay as of May 1, 2020, PSA

Table 5-6. 2020 Population of Affected Barangay in the Impasug-ong

VV	P	opulation
Location	Total	5 from Municipality
Impasug-ong	53,863	100%
Poblacion	12,693	24%
La Fortuna	4,812	9%
Capitan Bayong	3,751	7%
Cawayan	2,315	4%
Impalutao	7,081	13%

Total Population by Province, City, Municipality, and Barangay as of May 1, 2000. PSA

Table 5-7. 2020 Population of Affected Barangay in the City of Malaybalay

I	Population			
alwangan	Total	% from City		
City of Malaybalay	190,712	100%		
Dalwangan	7,785	4%		
Patpat (Lapu-lapu)	4,366	2%		
Kalasungay	9,961	5%		

Total Population by Province, City, Municipality, and Barangay as of May 1, 2020; PSA

The male population³ of the affected LGUs is slightly higher (51.5%) than the number of females (48.5%). In terms of age, the less than 15 years old population constitutes 34%, while the productive or 15 – 64 years of age is 62%. The elderly or 65 years and above is 4%. This places the dependency ratio or the number of dependents 0-14 years and 65 years and over for every 100% in the productive age 15-64 at 60.7.

Affected LGUs regular income are derived from taxes, licenses, fees and the Internal Revenue Allotment (IRA). According to the Bureau of Local Government Finance⁴, the combined annual regular income of affected LGUs for the fiscal year of 2018 was PHP 5,452,920,235.35. Looking at the involvement of employed males and females in the area, almost half of the employed workers are those performing simple and routine tasks which may require the use of handheld tools and considerable physical effort (elementary occupation) and service and sales workers.

Total Population by Age Group, Sex. and City/Municipality, PSA (https://psa.gov.ph/population-and-biosing/statistical-tables)

^{*} Annual Regular Income, IXJF – Bureau (Local Government Finance (https://bigf.gov.ph/lgu-fiscal-data/)



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According to the Municipal and City Level Small Area Poverty Estimates⁵, the average poverty incidence in the affected LGUs is 33.7, which is 30.4 lower than the previous estimates. Majority of the gainful workers (15 years old and over) are elementary occupations and service & sales workers.

In terms of the gainful worker's occupational groups', major group occupations in the affected LGUs are elementary occupations (27.1%), service and sales workers (18.7%), managers (9.3%), craft and related trades workers (8.9%), skilled agricultural forestry and fishery workers (8.8%), plant and machine operators and assemblers (8.3%), professionals (6.7%), clerical support workers (6.6%), technicians and associate professionals (5.1%), armed forces occupations (0.4%), and those did not report any occupation(0.1%)

From the population of ten (10) years old and over, the literacy rate is 98.9%7. Highest educational attainment of five (5) years old and over by highest grade/year completed are the following: pre-school (2.91%), elementary undergraduate (21%), elementary graduate (9.39%), high school undergraduate (14.81%), high school graduate (21.41%), post-secondary undergraduate (0.04%), post-secondary graduate (1.21%), college undergraduate (12.81%), academic degree holder (13.39%), post-baccalaureate (0.20%) and those with special education, not stated/no grade completed are (2.83%).

There are also various health and wellness facilities like hospitals, medical clinics, lying-in clinics/birthing within the affected LGUs, and nearby provinces that provide essential health services to the residents that can administer first aid treatment for emergency cases and perform minor/major surgical operations.

5.1.2 Project Affected Families (PAFs)

A total of 96 PAFs were considered in the survey including 22 IP PAFs but only 71 PAFs were interviewed since the 15 PAFs were out during the survey, two (2) PAFs refused to be interviewed and eight (8) absentee house owners the average household size is 3.94. The breakdown of the PAFs and household size is shown in Table 5-8 and Table 5-8.

Table 5-8. Total Project Affected Families (PAFs)

	Misamis	Misamis Oriental			Bukidnon			
Tenurial Status	Tagoloa n	City of Cagayan de Oro	Mano lo Fortic h	Sumila o	Impasu g-ong	City of Malaybalay	No	
Interviewed	2	13	21	11	15	9	71	74%

Municipal and City Level Small Area Poverty Estimates, PSA (https://psa.gov.ph/content/psa-releases-2015-municipal-and-city-level-poverty-estimates)

Gainful Workens 15 Years Old and Over by Major Occupation Group, Age Group, Ses, and City/Municipality, PSA (https://psa.gov.ph/population-and-housing/statistical-tables)

^{*}Literacy of the Household Population 10 Years Old and Over by Age Group, Sex, and City/Municipality, PSA (https://psa.gov.ph/population-and-housing/statistical-tables)



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	Misamis	oriental		В	ukidnon		-	otal
Tenurial Status	Tagoloa n	City of Cagayan de Oro	Mano lo Fortic h	Sumila o	Impasu g-sng	City of Malaybalay	No	4
Not Interviewed	1	- 5	11	1	4	3	25	26%
Total	3	18	32	12	19	12	96	100%

Table 5-9. Household Size

	Misamis	Oriental		Bukidnon				
Household Size	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasag- ong	City of Malaybalay		
One (1)	0	0	3	0	3	0	6	8%
Two (2)	1	1	7	0	3	2	14	20%
Three (3)	0	5	3	0	1	1	10	14%
Four (4)	1	4	3	4	2	2	16	23%
Five (5)	0	1	2	3	2	2	10	14%
Six (6)	0	1	0	4	- 3	2	10	14%
Seven (7)	0	0	1	0	1	0	2	3%
Eight (8)	0	0	1	0	0	0	1	1%
Ten (10)	0	1	1	0	0	0	2	3%
Total	2	13	21	11	15	9	71	100%

5.1.2.1 Gender of Household Heads

Based on the 71 household heads that were interviewed, 61 or 86% are male-headed households while the remaining 10 or 14% are female-headed households. The households headed by women are also included in the vulnerable groups.

Table 5-10, Sex of Household Heads

	Misamis	Oriental		Bukidnon				
Sex	Tagokan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	No	
Male	2	10	19	11	12	7	61	86%
Female	.0	3	2	0	3	2	10	14%
Total	2	13	21	11	15	9	71	100%

5.1.2.2 Age of Household Heads

In terms of age, 77% of the household heads are 20-59 years old, while the remaining 23% are considered senior citizens.



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Table 5-11. Age of Household Heads

	Misami	s Oriental		В	ukidnon		ET.	otal
Age	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- eng	City of Malaybalay	No	
20 - 24	0	0	0	1	1	0	2	3%
25 - 29	0	0	1	1	1	0	3	4%
30 - 34	0	3	2	0	1	0	6	8%
35 - 39	0	1	0	1	4.	1	7	10%
40 - 44	0	1	2	5	1	1	10	14%
45 - 49	1	3	5	1	2	3	15	21%
50 - 54	0	1	0	0	2	1	4	6%
55 - 59	0	1	4	2	0	1	8	11%
60 - 64	1	2	1	0	1	0	5	7%
65 - 69	0	1	2	0	0	1	4	6%
70 - 74	0	0	2	0	0	.0	2	3%
75 - 79	0	0	2	0	2	0	4	6%
No Response	0	0	0	0	0	1	1	1%
Total	2	13	21	11	15	9	71	100%

5.1.2.3 Civil Status of Household Heads

The majority of the affected household heads are married (55%) followed by with commonlaw partner/cohabitating (21%), widow/er (15%), single (7%) and one (1) separated (1%).

Table 5-12. Civil Status of Household Heads

	Misamis	Oriental	Bukidnon					Total	
Civil Status	Tagoloa n	City of Cagayan de Oro	Mano lo Fortic h	Sumila 0	Impasu g-ong	City of Malaybalay	No		
Single	0	0	1	0	4	0	5	7%	
With Common-Law Partner/ Cohabitating	0	5	3	3	3	1	15	21%	
Married	2	- 5	12	8	5	7	39	55%	
Separated	0	0	0	0	0	1	1	1%	
Widow/er	0	- 3	5	0	3	0	11	15%	
Total	2	13	21	11	15	9	71	100%	

5.1.2.4 Educational Attainment of Household Heads

Of the 71 affected household heads, 32% are elementary graduates, 28% are high school graduates, and 1% are college graduates while some are undergraduates of elementary (17%), high school (14%), and college (1%). Among the AHs only three percent completed a



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vocation/technical course. The remaining two (2) AHs are with no education while another AH did not provide any response.

Table 5-13. Educational Attainment of Household Heads

	Misamis	s Oriental		В	ukidnon			Total
Educational Attainment	Tagoloa n	City of Cagayan de Oro	Mano lo Fortic h	Sumila o	Impasu g-ong	City of Malaybalay	Zo	
Elementary Undergraduate	10	4	3	2	1	T	12	17%
Elementary Graduate	0	4	6	2	7	4	23	32%
High School Undergraduate	0	2	2	1	3	2	10	14%
High School Graduate	1	2	7	.5	4	1	20	28%
Vocational/ Technical	0	1	1	0	0	0	2	3%
College Undergraduate	0	0	1	0	0	0	1	1%
College Graduate	0	0	0	1	0	0	1	1%
No Education	0	0	1	0	0	0	1	1%
No Response	0	0	0	0	0	1	1	1%
Total	2	13	21	11	15	9	71	100%

5.1.2.5 Religion of Household Heads

Seventy-seven percent (77%) of the affected household heads are Roman Catholic and the rest are called Protestant/Evangelical (8%), Born-again (6%), Baptist/Seventh Day Adventist (4%), Iglesia Ni Cristo (3%), and Islam (1%).

Table 5-14. Religion

	Misamis	Oriental		Bukidnon					
Religion	Tagolo an	City of Cagay an de Oro	Mano lo Fortic h	Sumil acı	Impasu g-ong	City of Malaybal ay			
Roman Catholic	0	12	16	7	13	7	55	77%	
Born-Again	1	1	0	1	0	1	4	6%	
Iglesia Ni Cristo	. 0	0	0	2	0	0	2	3%	
Protestant/Evangelical	0	0	4	1	1	0	6	8%	
Íslám	0	0	0	.0	0	1	1	1%	
Others (Baptist & Seventh Day Adventist)	1	0	1	0	1	0	3	4%	
Total	2	13	21	11	15	9	71	100	



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5.1.2.6 Place of Origin of Household Heads

Before residing in their current location, 82% of the affected families said they lived within the same LGU. Only 3% came from the other LGUs but within the province of Bukidnon and Misamis Oriental. A significant 8% resided outside the province but within Mindanao and Visayas.

Table 5-15. Place of Origin

	Misami	s Oriental			3	otal		
Place of Origin	Tagoloa n	City of Cagayan de Oro	Manol o Fortic h	Sumila 0	Impa sug- ong	City of Malaybalay		
Within LGU	2	11	14	10	-14	7	58	82%
Outside LGU, but within the Province	0	0	2	0	0	0	2	3%
Outside the Province	0	2	3	1	1	1	8	11%
Visayas	0	0	1	0	0	0	1	
Mindanao	0	2	2	1	1	1	7	
No Response	0	0	2	0	0	1	3	4%
Total	2	13	21	11	15	9	71	100%

5.1.2.7 Length of Residence of Household Heads

Survey results also indicated that 45% have lived in the area for more ta 20 years, while 21% have been in the area for 1-5 years. Thirty percent (30%) of the households have been living in their residences for 6-20 years. Only 4% of the households did not respond to the question.

Table 5-16. Length of Residence

	Misamis	Misamis Oriental		Bukidnon				
Length of Residence	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasog- ong	City of Malaybalay	No.	
1-5 years	1	4	1	2	4	3	15	21%
6-10 years	0	3	3	1	1	0	8	11%
11-15 years	0	1	2	1	3	2	9	13%
16-20 years	0	1	0	1	1	1	4	6%
More than 20 years	1	4	13	5	6	3	32	45%
No Response	0	0	2	1	0	0	3	4%
Total	2	13	21	11	15	9	71	100%

5.1.2.8 Employment Status and Occupation of Household Heads.

Out of the total 71 interviewed, 59 or 83% are employed while the remaining 12 or 17% are unemployed and the occupation of the employed household head is shown in Table 5-8.



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Table 5-17. Employment Status

	Misamis	Oriental		Bukidnon				
Employed va Unemployed	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	No	
Employed	2	13	13	11	11	9	59	83%
Unemployed	0	0	8	0	4	0	12	17%
Total	2	13	21	- 11	15	9	71	100%

Table 5-18. Occupation

	Misamis	Oriental		Bu	ikidnon		T	etal*
Occupation	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	No	
Barangay Kagawad	1	0	0	0	0	0	1	2%
Bgy. Health Worker	0	1	0	0	0	0	1	2%
Businessman	0	1	0	.0	0	0	1	2%
Caretaker	0	1	1	0	2	0	4	7%
Carpenter	0	1	0	0	0	0	1	2%
Construction Worker	0	1	-0	1	1	0	3	5%
Driver	0	0	1	2	0	2	5	8%
Electrician	0	1	0	0	0	0	1	2%
Farmer	1	4	5	2	2	3	17	29%
OFW	0.	2	4	5	6	3	20	34%
Security Guard	0	0	1	0	0	0	1	2%
Team Leader	0	0	0	1	0	0	1	2%
Vendor	0	1	0	0	0	0	1	2%
Watchman	0	0	0	0	0	1	1	2%
Welder	0	0	1	0	0	0	1	2%
Total	2	13	13	11	11	9	59	100%

^{*}based on employed howehold head

On employment status, 64% are self-employed or employees in the family business, 8% contractual, 3% are casuals or have temporary jobs while the remaining 25% are not employed.

Table 5-19. Employment Status of Household Heads

	Misamis	Oriental		Bu	kidnon		Total*	
Employment Status	Tagoloa n	City of Cagayan de Oro	Mano lo Fortic h	Sumila o	Impasu g-ong	City of Malaybul ay	No	
Permanent	1	- 5	2	2	1	0	11	19%
Temporary/Casual	0	2	3	3	5	1	14	24%
Contractual	0	3	3	3	3	2	14	24%



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	Misamis	Oriental		Bu		Total*		
Employment Status	Tagoloa n	City of Cagayan de Oro	Mano Io Fortic Is	Sumila o	Impasu g-ong	City of Malaybal ay	No	
Seasonal	1	1	5	3	1	5	16	27%
For self - employed workers/ Employee in family business	0	2	0	0	0	0	2	3%
No Response	0	0	0	0	1	1	2	3%
Total	2	13	13	11	11	9	59	100%

^{*}based on employed household head

5.1.2.9 Household Income

The survey results revealed that 70% of the AHs have monthly household incomes of PhP15,999 and below. On the other hand, about 26% of the total AHs earn PhP16,000 – PhP49,999, and the remaining 4% earn PhP50,000 and above. While for their monthly expenditures, majority (73%) have a monthly expense of below 10,000.

Table 5-20. Monthly Household Income

SEMENTARY SECONDS	Misamis	Oriental		Bı	ukidnon		T	otal
Total Monthly Household Income	Tagokian	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasag- ong	City of Malaybalay	No.	*
PhP 2,000-3,999	0	1	2	0	2	0	5	7%
PhP 4,000-5,999	0	2	4	3	.0	0	9	13%
PhP 6,000-7,999	0	1	1	1	0	2	5	7%
PhP 8,000-9,999	0	0	2	2	8	0	12	17%
PhP 10,000-11,999	0	3	3	1	1	2	10	14%
PhP 12,000-15,999	0	2.	4	0	1	2	9	13%
PhP 16,000-19,999	0	1	3	0.	0	2	6	8%
PhP 20,000-24,999	0	1	1	0	2	0	4	6%
PhP 25,000-29,999	0	0	0	1	0	0	1	1%
PhP 30,000-49,999	1	2	1	2	0	1	7	10%
PhP 50,000-above	1	0	0	1	1	0	3	4%
Total	2	13	21	11	15	9	71	100%

5.1.2.10 Household Expenditure

The monthly expenditure of the AHs are as follows: PhP10,000 and below (71%), PhP10,001 – PhP20,000 (32%), and PhP20,001 – PhP30,000 (4%).



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Table 5-21. Monthly Household Expenditure

Total Monthly	Misamis	Oriental		В	ukidnon		Total		
Household Expenditure	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay			
PhP 1,000-1,999	0	0	1.	0	1	0	2	3%	
PhP 2,000-3,999	0	1	5	3	1	1	11	15%	
PhP 4,000-5,999	0	5	3	2	4	3	17	24%	
PhP 6,000-7,999	0	2	4	2	5	2	15	21%	
PhP 8,000-9,999	0	2	2	1	1	1	7.	10%	
PhP 10,000-11,999	0	2	2	0	0	0	4	6%	
PhP 12,000-15,999	1	0	3	0	2	0	6	8%	
PhP 16,000-19,999	0	1	1	2	1	1	6	8%	
PhP 20,000-24,999	1	0	0	1	0	1	3	4%	
Total	2	13	21	11	15	9	71	100%	

5.1.2.11 Housing

Majority (92%) of the affected families used G.I. sheets while 8% used mixed materials as roofing for their houses. The various wall materials used are wood (42%), concrete (39%), bamboo (7%), and 11% of the affected families used mixed materials.

Table 5-22. Roof Material

	Misamis	Oriental		Bukidnon				
Construction Materials of the Roof	Tagoloa n	City of Cagayan de Oro	Mano Io Fortic h	Sumila 0	lmpasu g-ong	City of Malaybalay		
G.I. Sheets	2	13	21	11	12	.6	65	92%
Others (mixed)	0	0	.0	0	3	3	6	8%
Total	2	13	21	11	15	9	71	100%

Table 5-23. Wall Material

	Misamis	Oriental	Bukidnon					Total	
Construction Materials of the Outer Wall	Tagoloa n	City of Cagayan de Oro	Mano lo Fortic h	Sumila 13	Impasu g-ong	City of Malaybalay			
Concrete	1	4	11	- 5	4	3	28	39%	
Wood	1	8	8	3	6	4	30	42%	
Bamboo	0	0	1	2	2	0	5	7%	
Others (mixed)	0	1	1	1	3	2	8	11%	
Total	2	13	21	11	15	9	71	100%	



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5.1.2.12 Electricity

Most of the affected families use Electricity (66%) as their main source of light while some (6%) use mixed sources of electricity. A significant 27% do not have electricity. Only one (1%) use Coleman as their light source.

Table 5-24. Light Source

	Misamis Oriental			Total				
Source/s of Power/Lighting	Tagolo an	City of Cagaya n de Oro	Manol 0 Fortic h	Sumil ao	Impasu g-ong	City of Malayba lay	No	
Electric	1	12	15	10	3	6	47	66%
Coleman	0	0	0	0	1	0	1	1%
Others (mixed)	1	1	1	0	1	0	4	6%
None	0	0	5	1	10	3	19	27%
Total	2	13	21	11	15	9	71	100%

5.1.2.13 Water Source

Households rely on the following sources of water: piped water (56%), spring/river (23%), open well (8%), pump well (4%) and some (2%) rely on rainwater and artisan well while six percent (6%) use mixed sources of water. The survey on water sources implies an underdeveloped water service system.

Table 5-25, Water Source

		Misamis Oriental		Bul		Total		
Main Source/s of Drinking Water	Tagolo an	City of Cagaya n de Oro	Manol o Fortic h	Sumil	Impasu g-ong	City of Malayb alay	No	
Rain water	0	0	0	0	0	1	1	1%
Spring/river	.0	2	3	1	10	0	16	23%
Open well	.0	0	3	1	0	2	6	8%
Artisan well	0	0	1	0	0	0	1	1%
Pump well	0	0	1	0	. 0	2	3	4%
Piped water	2	11	13	8	4	2	40	56%
Others (mixed)	0	0	0	1	1	2	4	6%
Total	2	13	21	11	15	9	71	100%

5.1.2.14 Fuel source for cooking

Seventy-six percent (76%) of the AHs used wood as the primary means of fuel for cooking some (15%) use an LPG while 8% use a mixed fuel source for cooking.



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Table 5-26. Fuel Source for Cooking

	Mis Orie			Bu	Total			
Fuel for Cooking	Tagolou n	City of Cagaya n de Oro	Manol o Fortic h	Sumila o	Impasu g-ong	City of Malaybal ay	No	
Wood	0	11	16	-9	9	9	54	76%
LPG	1	1	4	2	3	0	11	15%
Others (combination of the above)	1	1	1	0	3	0	6	8%
Total	2	13	21	11	15	9	71	100%

5.1.2.15 Toilet

Two of every three affected families use a semi-flush as their toilet. Others use open pits (14%) and a flush (7%) in their homes, while 1% have more than one type of toilet facility. Only seven percent (7%) of the respondents do not have a toilet.

Table 5-27, Toilet

	Misamis Oriental			Total				
Kind of Toilet Facilities Onen nit	Tagoloo n	City of Cagaya n de Oro	Manol o Fortic h	Sumila o	Impasu g-ong	City of Malaybal ay	No	
Open pit	Ð	3	4	1	2	0	10	14%
Semi-flush	2	- 8	12	10	11	7	50	70%
Flush	0	2	3	0	0	0	5	7%
Others (combination of the above)	0	0	0	0	1	0	1	1%
None	0	0	2	0	1	2	5	7%
Total	2	13	21	11	15	9	71	100%

5.1.3 Vulnerable Project Affected Families/Persons

This Preliminary RAP extends the compensation and assistance to the vulnerable AHs of the project. Following the definition of the Philippine Statistics Authority (PSA) regarding vulnerable groups which includes (i) households with elderly (aged 60 years old and above); (ii) indigenous people (IP); (iii) poor households whose income fall below the poverty threshold; (iv) households with member who has disability (PWD); (v) solo parent; and (vi) women-headed households (WHH). Further, regardless of number of vulnerabilities of one household, there will be only one unit of assistance for vulnerability for that household.

As shown in Table 5-28, there are 92 instances of vulnerability affecting 53 AHs. Majority of the instances were profiled from IP (29%), Elderly, ages 60 and up (21%) and Poor households were derived from the combined monthly income of the household heads and employed

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household members (21%). This is followed by WHH (11%), Solo Parent (3%) and PWDs with 2%.

Table 5-28. Vulnerability of PAFs/PAPs

	No. of			Vulnera	bilities			
Affected LGUs	Vulnerable Households	Elderl y	IP	Poor	PWD	Solo Pare nt	WH H	Total Instance
Misamis Oriental	12	4	5	5	1	1	3	31
Tagoloan	2	1	1	0	0:	0	.0	- 4
City of Cagayan de Oro	10	3	4	5	1	1	3	27
Bukidnon	41	15	22	14	1	2	7	61
Manolo Fortich	16	9	6	4	1	0	2	38
Sumilao	9	0	7	- 6	0	0	0	22
Impasug-ong	10	4	8	- 3	0	2	3	29
City of Malaybalay	6	2	1	1	0	1	2	13
Total	53	19	27	19	2	3	10	92
%		21%	29%	21%	2%	3%	11%	100%

The Philippine Statistics Authority (PSA) said the poverty threshold per family amounted to PhP 12,082 a month. An income below this amount would categorize a family as being poor and an income above this would mean a family is nonpoor. In determining the poverty threshold, the PSA uses the formula below:

PT = FT / (FE / TBE)

Where:

PT is poverty threshold

FT is food threshold

FE is actual food expenditure families within the +/- 10 percentile of the food threshold TBE is total basic food expenditure families within the +/- 10 percentile of the food threshold

5.1.3.1 On Indigenous Peoples (IPs)

During the conduct of socioeconomic survey, the team learned from the local officials that there are Higaonon, Talaandig, and Bukidnon-Tagoloan tribes located in the project area.

The Higaonon is one of the least known ethnolinguistic groups that inhabit North-Central Mindanao. They occupy the mountainous regions of Misamis Oriental, Bukidnon plateau, the mountain borders of the provinces of Agusan and Lanao in the east and west, respectively. The word Higaonon is derived from the native words higa (living), goan (mountains), and onon (people), or literally people of the living mountains or people of the wilderness.

On the other hand, the Talaandig are one of the indigenous groups in the province of Bukidnon, Mindanao Philippines who has continued to preserve and promote its indigenous

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customs, beliefs and practices despite the strong influx of modernization and change. The members of the group are found in barangays and municipalities surrounding the mountain of Kitanglad, the historic domain of the Talaandig people.

Lastly, the Bukidnon-Tagoloan who mostly resides in Malabaybalay City, But these IP communities are not living in a declared ancestral domain/land.

The National Commission on Indigenous People (NCIP) Region X issued a Certificate of No Overlap (CNO) (Appendix 6) for both Misamis Oriental and Bukidnon. However, NCIP Region X issued Work Order No. 429-A, dated June 16, 2022, requiring the proponent to conduct a Free and Prior Informed Consent (FPIC) (Appendix 6).

There are also six (6) Lumads who are yet to be identified which IP group they belong. The term "Lumads" is a local term meaning "native" or "indigenous. It is usually used by ethnic groups in Mindanao. The breakdown of the affected IPs is shown in Table 5-29.

Table 5-29. Ethnicity/ Ethnic Group

	Misamis	Oriental		Bukidnon					
Ethnicity/ Ethnic Group	Tagoloan	City of Cagayan De Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	No		
Higaonon	0	1	-4	6	6	1	18	72%	
Lumad	0	0	4	1	1	0	6	24%	
Talaandig	0	0	1	0	0	0	1	4%	
Total	0	1	9	7.	7	1	25	100%	

5.1.3.2 On Informal Settler Families

Republic Act No. 11201 (An Act Creating the Department of Human Settlements and Urban Development) defines Informal Settler Families (ISFs) as:

- households living in a lot, whether private or public, without the consent of the property owner; or
- those without legal claim over the property they are occupying; or
- those living in danger areas such as esteros, railroad tracks, garbage dumps, riverbanks, shorelines, and waterways.

The government, through the Housing and Department of Human Settlements and Urban Development and the National Housing Authority (NHA), in coordination with the LGUs and implementing agencies concerned, shall establish and develop resettlement sites for informal settlers, including the provision of adequate basic services and community facilities, in anticipation of informal settlers that have to be removed from the right-of-way site, pursuant to the provisions of Republic Act No. 7279, otherwise known as the "Urban Development and Housing Act of 1992". Whenever applicable, the concerned LGUs shall provide and administer the resettlement sites.

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Replacement cost of structures and improvement shall also apply to all owners of structures and improvements who do not have legally recognized rights to the land, and who meet all of the following criteria:

- 1. Must be a Filipino citizen;
- Must not own any real property or any other housing facility, whether in an urban or rural area;
- Must not be a professional squatter or a member of a squatting syndicate, as defined in Republic Act No. 7279, otherwise known as the "Urban Development and Housing Act of 1992"; and
- 4. Must not occupy an existing government ROW.

Land ownership can be a form of economic security among AHs, business owners, and landowner/claimants. During the conduct of the census, the AHs stated that they have no legal ownership on the land since no documents were shown to determine the proof of ownership. Therefore, all the AHs are considered ISF.

The budget for the livelihood restoration program and relocation and resettlement are shown in Table 12-1.



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6 INDIGENOUS PEOPLES

6.1 Brief Background

The Inventory of Losses (IOL) and census were initially conducted from November 5, 2021 – February 4, 2022, based on the project design of 65.6-km and 60m road right-of-way. A supplementary survey was undertaken on June 15-18, 27-28, 2022 to gather additional information pertaining to the IPs' traditions, way of life, sacred places, etc. A total of 22 IP PAFs who occupied land inside ROW are Higaonon (15), Talaandig (6), and Bukidnon-Tagoloanon (1) with an average household size of 4.95. All of the affected IP PAFs who are considered vulnerable are entitled to compensation and inclusion in the livelihood restoration program.

6.2 IP Project Affected Families

A total of 22 IP PAFs who occupied land inside ROW were interviewed from November 5, 2021 to February 4, 2022, of which 15 are Higaonon, six (6) are Talaandig, and one (1) Bukidnon-Tagoloanon the average household size is 4.95.

The breakdown of the IP PAFs and household sizes is shown below.

	Misamis Oriental		Bukidnon					Total	
Ethnicity/ Ethnic Group	Tagedea	City of Cagaya n de Oro	Manol 0 Fortich	Sumila 0	Impasug -ong	City of Malayhala y	N	*	
Higaonon	1	2	0	7:	- 5	0	15	68%	
Talaandig	0	0	- 6	0	0	0	6	27%	
Bukidnon- Tagoloanon	0	0	0	0	0	1	1	5%	
Total	1	2	6	7	5	1	22	100	

	Misami	Oriental		Bukidnon				
Household Size	Tagoloa n	City of Cagayan de Oro	Mano lo Fortic h	Sumil	tmpasu g-ong	City of Malaybalay	No	
One (I)	0	.0	1	0	0	0	1	4.5%
Three (3)	0	0	2	0	0	0	2	9.1%
Four (4)	1	1	1	3	1	0	7	31.8%
Five (5)	0	.0	0	2	2	1	5	22.7%
Six (6)	0	1	-0	2	1	0	4	18.2%
Seven (7)	0	0	.0	0	- 1	0	1	4.5%
Eight (8)	0	0	1	0	. 0	0	1	4.5%



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Ten (10)	0	0	1	0	0	0	1	4.5%
Total	1	2	6	7	5	1	22	100%
Average Household Size	4.00	5.00	4.83	4.86	5.40	5.00	4.9	

6.2.1 Gender of Household Heads

Based on the 22 household heads that were interviewed, 21 or 95% are male-headed households while the remaining one (1) or 5% are female-headed households. The households headed by women are also included in the vulnerable groups.

Sex	Misamis	Misamis-Oriental		Bukidnon				
	Tagoloun	City of Cagayan de Oro	Manolo Forticly	Sumitao	Impasing- ong	City of Malaybalay	Ne	*
Male	1	2	6	7	4	1	21	95%
Female	0	0	0	0	1	0	1	5%
Total	1	2	6	7	5	1	22	100%

6.2.2 Age of Household Heads

In terms of age, 91% of the household heads are 20-59 years old, while the remaining 9% are considered senior citizens.

Age	Misamis Oriental		Bukidnon					Total	
	Tagolosn	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	No	*	
20 - 24	0	0	0	1	1	0	2	9.1%	
25 - 29	0	0	1	0	0	0	1	4.5%	
30 - 34	0	1	0	0	1	0	2	9.1%	
35 - 39	0	0	0	1	2	0	3	13.6%	
40 - 44	0	0	1	4	0	0	5	22.7%	
45 - 49	1	1	1	0	1	0	4	18.2%	
55 - 59	0	0	1	1	0	1	3	13.6%	
60 - 64	0	0	1	0	0	0	1	4.5%	
75 - 79	0	0	1	0	0	0	1	4.5%	
Total	1	2	6	7	5	1	22	100%	

6.2.3 Civil Status of Household Heads

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The majority of the affected household heads are married (68.2%) followed by common-law partner/cohabitating (22.8%), widow/er (4.5%), and single (4.5%).

	Misamis	Oriental.		Buk	idnon			Total
Civil Status	Tagoloan	City of Cagayan de Oro	Manol o Fortich	Sumila	Impasug -ong	City of Malayb alay	N n	186
Single	0	0	0	0	1	0	1	4.5%
With Common - Law Partner/ Cohabitating	0	2	1	2	0	0	5	22.8%
Married	1	0	4	5	4	1	1 5	68.2%
Widow/er	0	0	1	0	0	0	1	4.5%
Total	1	2	6	7	5	1	2 2	100%

6.2.4 Educational Attainment of Household Heads

Of the 22 affected household heads, 22.8% are elementary graduates, 31.8% are high school graduates, and 4.5% are college graduates while some are undergraduates of elementary (9.1%), high school (22.8%), and college (4.5%). Among the AHs only three percent completed a vocation/technical course. The remaining two (2) AHs are with no education while another AH did not provide any response.

	Misamis	Oriental		Be	kidnon		2	otal
Educational Attainment	Tagoloa n	City et Cagaya n de Ono	Manol o Fortich	Somila	Impasug -ong	City of Malaybala y	N o	*
Elementary Undergraduate	1	0	1	0	0	0	2	9.1%
Elementary Graduate	0	0	3	1	1	0	5	22.8 %
High School Undergraduate	0	1	1	1	2	0	5	22.8 %
High School Graduate	0	1	0	4	2	0	7	31.8 %
College Graduate	0	0	0	1	0	0	1	4.5%
No Education	0	0	1	0	0	0	1	4.5%
No Response	0	0	0	0	0	1	1	4.5%
Total	1	2	6	7	5	1	22	100%

6.2.5 Religion of Household Heads



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Seventy-seven percent (68%) of the affected household heads are Roman Catholic and the rest are called Protestant/Evangelical (9%), Iglesia Ni Cristo (9%), Bom-again (5%), and Others (Baptist/Seventh Day Adventist (9%).

	A CONTRACTOR OF	mis ntal	Bukidnon					otal
Religion	Tagolo an	City of Cagay an de Oro	Mano lo Fortic h	Sumil	Impasu g-ong	City of Malaybal ay	N p	76.
Roman Catholic	0	2	4	4	4	1	1 5	68%
Born-Again	0	0	0	1	0	0	1	5%
Iglesia ni Cristo	0	0	0	2	0	0	2	9%
Protestant/Evangelical	0	0	1	0	1	0	2	9%
Others (Baptist & Seventh Day Adventist)	1	0	1	0	0	Ü	2	9%
Total	1	2	6	7	5	1	2 2	100

6.2.6 Place of Origin of Household Heads

Before residing in their current location, 91% of the affected families said they lived within the same LGU. A significant 4.5% resided outside the province but within Mindanao and one (1) household head did not provide any response.

	Misamis Oriental			Bukidnon				
Place of Origin	Tagoloan	City of Cagayan de Om	Manolo Fortich	Sumilao	Impasag- ong	City of Malaybalay	No	*
Within LGU	-1	- 1	6	7	- 5	0	20	91%
Outside the Province	0	1	0	.0	0	0	1	4.5%
No Response	0	. 0	0	0	0	1	1	4.5%
Total	1	2	6	7	.5	1	22	100%

6.2.7 Length of Residence of Household Heads

Survey results also indicated that 59.1% have lived in the area for more than 20 years, while 22.8% have been in the area for 1-5 years. On the other hand, 18.1% of the households have been living in their residences for 6-20 years.

	Misamis Oriental		Bukidnon					Total		
Length of Residence	Tagotoan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	No.	%		



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Total	1	2	6	7	5	1	22	100%
More than 20 years	1	1	6	4	1	0	13	59.1%
16-20 years	0	0	0	0	1	0	1	4.5%
11-15 years	0	0	-0	1	1	0	2	9.1%
6-10 years	0	0	0	0	1	0	1	4.5%
1-5 years	0	1	0	2	1	1	5	22.8%

6.2.8 Employment Status and Occupation of Household Heads.

Out of the total 22 interviewed, 21 or 95% are employed while the remaining one (1) or 5% are unemployed and the occupation of the employed household head is shown in Table 5-8.

22 30 30	Misamis	Misamis Oriental		Bukidnon				
Employed vs Unemployed	Tagoloun	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	200	%
Employed	1	2	5	7.	5	1	21	95%
Unemployed	0	0	1	0	0	0	1	5%
Total	1	2	6	7	5	1	22	100%

	Misamis	Oriental		Bukidnon				
Occupation	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	No	*
Caretaker	0	0	0	.0	1	0.	1	4.8%
Construction Worker	0	0	0	1	0	0	1	4.8%
Driver	0	0	0	2	0	0	2	9.4%
Farmer	1	0	3	2	1.	0	7	33.3%
Laborer	0	1	1	2	3	0	7	33.3%
Security Guard	0	0	1	0	0	0	1	4.8%
Vendor	0	1	0	0	0	0	1	4.8%
Watchman	0	0	0	0	0	1	1	4.8%
Total	1	2	5	7	5	1	21	100%

^{*}based on employed household head

On employment status, 38% work on a seasonal basis, 24% contractual, 19% temporary/casual, 14% are permanent while 5% are self-employed or employees in the family business

	Misamis Oriental			Bukidnon					
Employment Status	Tagoloa n	City of Cagayan de Oro	Manol 0 Fortich	Sumila	Impasu g-ong	City of Malaybala	No	196	
Permanent	0	1	0	1	1	0	3	14%	
Temporary/Casual	0	0	1	1	2	0	4	19%	



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Total	1	2	- 5	7	5	1	21	100%
For self - employed workers/ Employee in family business	0	1	0	0	0	0	1	5%
Seasonal	1	0	3	3	1	0	8	38%
Contractual	0	0	1	2	1	1	5	24%

^{*}based on employed household head

6.2.9 PAFs Household Income & Expenditures

The survey results revealed that 68.2% of the PAFs have monthly household income of PhP20,000 and below. On the other hand, about 18.2% of the total PAFs earn PhP20,000 – PhP49,999, and the remaining 13.6% earn PhP50,000 and above. While for their monthly expenditures, the majority (68.3%) have a monthly expense of below 10,000.

	Misamis	Oriental		Bu	kidnon		1	otal
Total Monthly Household Income	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impassig- ong	City of Malaybalay	Ne	8
PhP 4,000-5,999	0	0	1	1	0	0	2	9.1%
PhP 6,000-7,999	0	.0	-0.	1	0	0	1	4.5%
PhP 8,000-9,999	0	0	0	2	2	0	4	18.2%
PhP 10,000-11,999	0	1	3	1	0	0	5	22.8%
PhP 12,000-15,999	0	0	0	0	1	0	1	4.5%
PhP 16,000-19,999	0	.0	1	0	0	1	2	9.1%
PhP 20,000-24,999	0	0	1	0	1	0	2	9.1%
PhP 30,000-49,999	0	1	0	1	0	0	2	9.1%
PhP 50,000-above	1	.0	0	1	1	0	3	13.6%
Total	1	2	6	7	5	1	22	100%

Total Monthly	Misamis	Oriental		Bukidnon				
Household Expenditure	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impanug- ong	City of Malaybalay	No	*
PhP 2,000-3,999	0	0	1	2	0	0	3	13.6%
PhP 4,000-5,999	0	0	0	1	0	0	1	4.5%
PhP 6,000-7,999	0	0	2	2	2	.0	6	27.5%
PhP 8,000-9,999	0	1	1	1	1	1	5	22.7%
PhP 10,000-11,999	0	1	0	0	0	0	1	4.5%
PhP 12,000-15,999	0	0	1	0	1	0	2	9.1%
PhP 16,000-19,999	0	0	1	1	1	0	3	13.6%
PhP 20,000-24,999	1	0	0	0	0	0	1	4.5%
Total	1	2	6	7	5	1	22	100%



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

6.2.10 Housing

Majority (95%) of the PAFs used G.I. sheets while 5% used mixed materials as roofing for their houses. Fifty percent (50%) use wood, 32% are concrete, 8% are bamboo while 9% use a combination of materials for their outer wall.

	Misamis Oriental		Bukidnon					Total	
Construction Materials of the Roof	Tagolisa n	City of Cagaya n de Oro	Manul 0 Fortic h	Sumila o	Impasu g-ong	City of Malaybal ay	N 0	%	
G.I. Sheets	1	2	6	7	5	0	2	95%	
Others (combination of materials)	0	0	0	0	0	1	1	5%	
Total	1	2	6	7	5	1	2 2	100	

	Misamis Oriental		Bukidnon					Total	
Construction Materials of the Outer Wall	Tagoloa n	City of Cagaya n de Ons	Manol D Fortic	Sumita o	Impasa g-ong	City of Malaybal ay	N a	16	
Concrete	0	0	2	3	2	0	7	32%	
Wood	1	2	3	3	2	0	1 1	50%	
Bamboo	0:	0	-11	.0	1	0	2	9%	
Others (combination of materials)	0	0	0	1	0	1	2	9%	
Total	1	2	6	7	5	1	2 2	100	

6.2.11 Electricity

Most of the PAFs use Electricity (55%) as their main source of light while some (4.5%) use coleman and (4.5%) use mixed sources of electricity. A significant 36% do not have electricity.

	Misamis Oriental		Bukidnon					Total	
Source/s of Power/Lighting	Tagolou n	City of Cagaya n de Oro	Manol o Fortic h	Sumila 0	Impaso g-ong	City of Malaybal ay	N	74.	
Electric	1	2	1	7	0	1	1 2	55%	



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Total	1	2	6	7	5	1	2 2	100
None	0	0	4	0	4	0	8	36%
Others (combination of sources)	0	0	1	0	0	0	1	4.5 %
Coleman	0	0	0	0	1	0	1	4.5 %

6.2.12 Water Source

PAFs rely on the following sources of water: piped water (50%), spring/river (27%), open well (14%), artisan well (4.5%) and some (4.5%) rely on multiple sources of water. The survey on water sources implies an underdeveloped water service system.

	Misami	s Oriental		Bi	akidnon			Fotal
Main Source/s of Drinking Water	Tagolo an	City of Cagayan de Oro	Manol 0 Fortic h	Sumil	Impasu g-ong	City of Malaybala y	N 0	90
Spring/river	0	0	3	0	3	0	6	27%
Open well	0	0	2	0	0	1	3	14%
Artisan well	0	0	1	0	0	0	1	4.5%
Piped water	1	2	0	6	2	0	1	50%
Others (combination of sources)	0	0	0	1	0	0	1	4.5%
Total	-1.	2	6	7	5	1	2	100%

6.2.13 Fuel source for cooking

Eighty-two percent (81.8%) of the PAFs used wood as the primary means of fuel for cooking some (4.5%) use an LPG while 13.7% use a mixed fuel source for cooking.

	Misamis	Oriental		Bukidnon				
Fuel for Cooking	Tagoloan	City of Cagaya n de Ozo	Mano lo Fortic h	Sumil ao	Impanu g-ong	City of Malaybal ay	No.	4
Wood	0	2	- 5	7	3	1	18	81.8%
LPG	0	0	0	0	1	0	1	4.5%
Others (combination of type)	1	0	1	0	1	0	3	13.7%
Total	1	2	- 6	7	5	1	22	100%



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6.2.14 Toilet

Two of every three PAFs use a semi-flush as their toilet. Others use open pits (9%) and a flush (5%) in their homes, while (9%) of the respondents do not have a toilet.

2000 CONTRACTOR (CO.)	Misamis	Oriental		Total				
Kind of Toilet Facilities	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impanig- ong	City of Malaytinlay	No	*
Open pit	0	0	2	0	0	0	2	9%
Semi-flush	1	1	2	7	5	1	17	77%
Flush	0	1	0	. 0	0	0	1	5%
None	0	0	2	0	0	0	2	9%
Total	1	2	6	7	5	1	22	100%

6.3 Additional Information about the IP Project Affected Families

Based on the supplementary survey which was undertaken on June 15-18, 27-28, 2022, presented below is the additional information gathered during the survey as follows:

Provide an official	Misamis	Oriental		Bukidnon				
certificate of your ethnicity and/or any organization/entity.	Tagoloan	City of Cagayan de Oro	Manoto Forticly	Sumilao	Impanug- ong	City of Malaybalay	No	¥
None	1	2	6	7	5	1	22	100%
Total	1	2	6	7	5	1	22	100%

Are there laws and policies or paid	Misamis	Oriental		Bukidnon				
special attention by NCIP or others concerning regulations in the ROW7	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	No	96
Yes	1	0	2	3	2	1	9	41%
Don't Know	0	2	4	4	3	.0	13	59%
Total	1	2	6	7	5	1	22	100%

Is there any traditional life when	Misamis Oriental		Bukidnon					Total	
you have any special event such as rituals or festivals, including daily life?	Tagolean	City of Cagayan de Oro	Manolo Fortich	Sumilao	Imposing- ong	City of Malaybalay	Ne	**	



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Yes	1	1	6	6	5	1	20	91%
None	0	1	0	1	0	0	2	9%
Total	1	2	6	7	. 5	1	22	100%

What is your	Misamis	Oriental		Bukidnon				
unique/ethnic language?	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilari	Impasug- ong	City of Malaybalay	No	156
Nitibo	1	1	- 6	. 6	5	1	20	91%
Nitibo/Binukid	0	1	0	1	0	.0	2	9%
Total	1	2	6	7	5	1	22	100%

What is your ability of unique/ethnic language?	Misamis Oriental		Bukidnon				Total	
	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	Nir	15
Conversant	1	2	5	7	5	1	21	95%
Fluent	0	0	1	. 0	. 0	0	1	5%
Total	1	2	6	7	5	1	22	100%

	Misamis Oriental		Bukidnon				Total	
How often and on which occasions do you use It?	Tagolo am	City of Cagay an de Oro	Mano lo Fortic h	Semil:	Impasu g-ong	City of Malaybal ay	N p	*
Not practicing the language	0	0	0	1	0	0	1	5%
Only with tribe gatherings/ tribe members	0	0	6	4	5	1	1 6	73%
Only with tribe members	1	2	0	2	0	0	5	23%
Total	1	2	6	7	5	1	2 2	100

Do you have special connectivity/control with natural resources and also places traditionally and/or religiously important?	Misamis Oriental		Bukidnon				Total	
	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilao	Impasug- ong	City of Malaybalay	Nic	96
Yes	0	0	5	4	3	0	12	55%
No	1	2	1	3	2	1	10	45%
Total	1	2	6	7	5	1	22	100%

1	Misamis Oriental	Bukidnon	Total
Н	Total Control of the	The state of the s	11000000

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In the ROW, do you consider important places and IP Leaders considered?	Tagoloan	City of Cagayan de Oro	Manolo Fortich	Sumilari	Imposug- ong	City of Malaybalay	No	96
None	1	2	6	7	5	1	22	100%
Total	1	2	6	7	5	1	22	100%

6.3.1 Geolocation of the 22 IP PAFs



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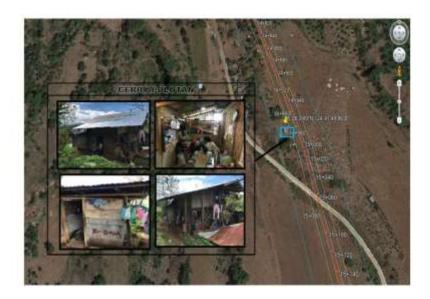


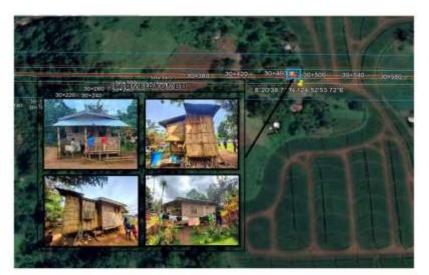


Draft Preliminary Right-of-Way Action Plan | 61



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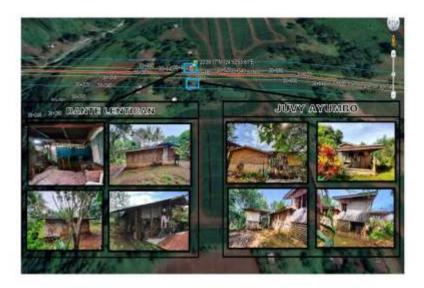




Draft Preliminary Right-of-Way Action Plan | 62



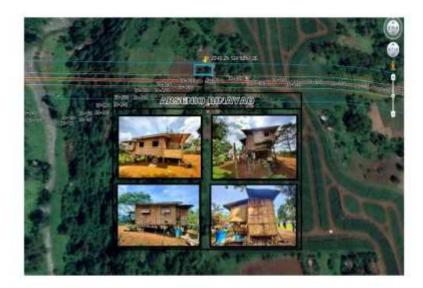
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7 COMPENSATION POLICY

Compensation and entitlements are designed to enhance or at least restore the livelihoods of all displaced persons in real terms relative to pre-project levels and to improve the standards of living of the displaced poor and other vulnerable groups.

DPWH will offer to the property owner concerned, as compensation price, the sum of:

- 1) replacement cost of land based on the current market value of land, free of taxes?;
- 2) the replacement cost of structures and improvements; and
- 3) the current market value of crops and trees.

Replacement cost refers to the cost necessary to replace the affected structure or improvement with a similar asset based on current market prices. The replacement structure must perform the same functions and meet the performance of specifications as original structure.

To determine the appropriate price offer for the acquisition of ROW through negotiated sale, DPWH will engage the services of a government financial institution (GFI) with adequate experience in property appraisal or an independent property appraiser (IPA) accredited by: (1) the Bangko Sentral ng Pilipinas (BSP) or (2) a professional association of appraisers recognized by BSP.

In terms of entitlements and compensation, these are determined according to the nature of the impacts. Compensation, transitional allowances ¹⁰, and resettlement assistance will be provided in full to affected persons prior to displacement, land clearance and commencement of works in any affected areas.

If PAPs are unable or unwilling to receive their entitlements due to contested ownership, PAPs being absent and unreachable, or PAPs contest the compensation offered, and following reasonable efforts to identify owners, and adjudicate resolution of disputes as required under RA10752, DPWH will deposit the full amount of compensation and allowances due in an escrow account until such time as the money can be released to the affected persons.

7.1 Project Affected Persons and Eligibilities

Project Affected Persons (PAPs) are those who stand to lose, as a consequence of the project, all or part of their physical and non-physical assets, including homes, communities, productive lands, and resources such as forests, range lands, fishing areas, or important cultural sites, commercial properties, tenancy, income-earning opportunities, social and

[&]quot;Vulnerable groups include (i) households with elderly (aged 80 years old and above); (ii) indigenous people (III); (iii) poor households whose income full below the poverty threshold; (iv) households with member who has disability (PWO); (v) solo purent; and (vi) women-bended bounduids (WHH).

Prev of tases, including capital gains tas, documentary slampe tax, transfer tax, and registration less, except Real Property Tax (RPT) arrears

They will also be provided with compensation for loss of bosiness incomes and transport cost during the transition period. Transitional allowance shall not exceed PhP 5,000 per household/per month for these months.

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cultural networks and activities. Such impacts may be permanent or temporary. To sum up, PAPs are:

- 1) Persons with formal legal rights to land and structures lost in its entirety or in part;
- Persons who have no formal legal rights to such land and/or structures wholly or in part but who have claims to such lands that are recognized or recognizable under national laws; and
- Persons who lost the land they occupy in entirety or in part who have neither legal rights nor recognized or recognizable claims to such land.

Specific to the project, the following types of PAPs are qualified:

1. Landowners and Land Users.

- a) Legal owners (e.g. agricultural, residential, commercial and institutional) who have full title, tax declaration, or who are covered by customary law (e.g. possessory rights, usufruct, etc.) or other acceptable proof of ownership over the affected land.
- Users or occupants that have no land title or tax declaration over the affected land.
- c) Renters of the affected land.

2. PAPs with Structures

- a) Owners of structures who have full title, tax declaration, or other acceptable proof of ownership (e.g. possessory rights, usufruct, etc.)
- Owners of structures, including sharty dwellers, who have no land title or tax declaration or other acceptable proof of ownership
- c) Renters

3. PAPs with Crops, Fruit Trees, and other Perennials

- a) Owners of affected crops, fruit trees and perennials who have full title, tax declaration, or other acceptable proof of ownership (e.g. possessory rights, usufruct, etc.)
- Owners of affected crops, fruit trees and perennials who have no land title or tax declaration or other acceptable proof of ownership.

4. PAPs Affected by the Loss of Livelihood and Sources of Income

- a) Owners of registered or unregistered shops, regardless of land tenure status, whose business operation will be disrupted temporarily or permanently due to the project.
- Hired-labor (e.g., farm worker, house help, and store helper) who will lose their job temporarily or permanently due to the project.

In this Project, the cut-off date of eligibility for structures and entitlements is the date of commencement of the census of affected families within the project boundaries which was done on November 5, 2021. Persons not covered at the time of census-taking will not be eligible for claims of compensation entitlements.

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7.2 Compensation and Entitlement Matrix

A range of entitlements is provided in Table 7-1.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro - Malaybalay Section)

Type of Loss	Entitled Person	Compensation/ Entitlements	Responsible Organization
Loss of Land	(352 PAPs)		
	PAPs with Original Certificate of Title (OCT), Transfer Certificate of Title (TCT), emancipation patents (EP), or Certificates of Land Ownership Award (CLOA) granted under Comprehensive Agrarian Reform Act. PAPs who are not original patent holders of lands granted through CA 141 (i.e. those who have bought the patent for land previously granted through CA 141 and where any previous acquisition is not through gratuitous title (e.g. donation or succession)	[Severely Affected ¹¹] Cash compensation for the loss of entire land based on the current market value free of taxes including capital gain tax (CGT), documentary stamps tax (DST), transfer tax and registration fees, AND Transaction costs (e.g. administrative charges and registration or title fees) [Marginally Affected ¹²] Cash compensation for the affected portion of the land based on the current market value free of taxes including CGT, DST, transfer tax and registration fees.	DPWH-UPMC (RMC I)
	For untitled land, PAPs with a) Tax Declaration showing 30 or more years of continuous possession; b) DENR certification showing that land is alienable and disposable; or c) other documents that show proof of ownership PAPs who were formerly ISFs but now hold title of land because of social government housing program. PAPs who were formerly ISFs and government social	Same as PAPs with OCT with less any amount still owing to the title	6
	housing program beneficiaries whose titles are still under the name of the organization PAPs whose properties are mortgaged	Same as PAPs with OCT with less any amount still owing to the title	9

¹⁰ Severely Affected - PAPs who stand to lose 20% or more of their assets, or less than 20% of their assets are lost and the remaining land/structure is no longer viable for continued use as intended.
²⁰ Mappinally Affected - PAPs who stand to lose less than 20% of their assets and the remaining land/structure is still viable for continued use as intended.



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Type of Loss	Entitled Person	Compensation/Entitlements	Responsible Organization
		or the mortgage bank or other financial institutions	
	PAPs who are original patent holders of lands granted through CA 141 which has not been subject to previous government exercise of its lien	No compensation for land up to 20 m width if patent was granted prior to 1975 or up to 60 m width for patents granted thereafter. For area more than government lien, same as PAPs with OCT	
Loss of Struct	ures and Improvements (168 I	PAPs)	
Structures (Residential, Commercial, Industrial/ Institutional)	PAPs that own affected structures including absentee owners	[Severely Affected] Cash compensation for entire structure at replacement cost including transaction costs without deduction for depreciation or salvaged materials AND In case affected structures are used as dwelling, permission to stay for one month or a longer time between delivery of compensation and other assistance, and demolition of the dwelling AND	DPWH-UPMO (RMC I)
		In case PAPs are ISFs and affected structures are used as dwelling, option of living in a resettlement site [Marginally Affected] Cash compensation for affected portion of structure at replacement cost	
	Tenants of structures	Three months or longer prior notice to the tenants before evacuation *Not applicable to lease contracts that will expire at the time of taking	
Improveme nts/ Assets	PAPs that own affected improvements/assets	Cash compensation for affected improvements/assets at replacement cost AND Transportation assistance if improvements/assets need to be	



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Type of Loss	Entitled Person	Compensation/Entitlements	Responsible Organization
Loss of Crop	s and Perennials (352 PAPs)*		
Crops, Trees and Perennials	involved in farming PAPs that are lessees directly involved in farming	Cash compensation for affected crops at replacement cost Disturbance compensation equivalent to five times the average of gross harvest over the last five years	DPWH-UPMO (RMC I) with suppor from MAO and DENR
	Displaced tenants and settlers on agricultural land	Financial assistance equivalent to the average gross harvest over the last three years and not less than PhP15,000/ha	s'
	PAPs growing crops, trees, and perennials informally	Permission to harvest crops prior to commencement of construction AND Cash compensation for affected crops at replacement cost	
Other Entitle	ments	A1 A1	40
Income Earning/ Business Activities (3 PAPs)	PAPs who own affected fixed micro businesses (e.g. small shops)	In case affected business entities move to new locations and continue with their business there, permission to continue with the business activities at the original location for a period that is sufficient to build, relocate and resume the business in the new site at a production level no less favorable than pre-project level AND Cash compensation for relocation costs and transaction costs (e.g. payment of taxes due to the government) AND Assistance in securing government soft loans that offer lower transaction costs and interest rates, and long-term and flexible payment schedule OR Income rehabilitation assistance	DPWH-UPMO (RMC I) with suppor from concerned government agencies
		Assistance in securing government soft loans that offer lower transaction costs and interest rates, and long-term and flexible payment schedule	



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Type of Loss	Entitled Person	Compensation/Entitlements	Responsible Organization
	PAPs who own affected small, medium, or large businesses	In case affected business entities move to new locations and continue with their business there, permission to continue with the business activities at the original location for a period that is sufficient to build, relocate and resume the business in the new site at a production level no less favorable than pre-project level AND Cash compensation for relocation costs and transaction costs (e.g. payment of taxes due to the government) AND Assistance in securing government soft loans that offer lower transaction costs and interest rates, and long-term and flexible	
	PAPs who are employed in displaced establishments and lose job for reasons reasonably attributable to the damages caused by the project	payment schedule Compensation equivalent to one month pay or at least one-half a month pay for every year of service, whichever is higher AND One month or longer prior notice to the establishments AND Priority in employment during construction and operation stage of the project AND Rehabilitation assistance in the form of skills training and other development activities	
Government Structure and Utilities	Government agencies that own affected structures	Compensation to the government agencies based on mutual agreement between DPWH and the government agencies	
Vulnerable Groups	Severely PAPs that are classified as any of the following groups:	Rehabilitation assistance in the form of skills training and other development activities equivalent	DPWH-UPMO (RMC I)



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Entitled Person	Compensation/Entitlements	Responsible Organization
Vulnerable groups include (i) households with elderly (aged 60 years old and above); (ii) indigenous people (IP); (iii) poor households whose income fall below the poverty threshold; (iv) households with member who has disability (PWD); (v) solo parent; and (vi) womenheaded households (WHH)	to PhP15, 000 per family will be provided in coordination with other government agencies, if the present means of livelihood is no longer viable and the AF will have to engage in a new income activity AND For PAPs that need special assistance and/or medical care, respective LGUs to provide support before and during resettlement	with support from NHA and LGUs
PAPs/Informal Settlers Families (ISFs) ¹⁵ who are relocating	Transportation Allowance to move household belongings to new site AND participation in Livelihood Restoration Program	DPWH-UPMO (RMC I) with support from NHA and
Qualified Informal Settlers Family	Provided option for relocation at a resettlement site in coordination with the LGUs. Should relocation not be possible within the said period financial assistance in the amount equivalent to the prevailing minimum daily wage multiplied by 60 days shall be extended to the affected families by LGUs concerned (RA 7279) Should relocation at the project resettlement site not be possible by the time of expiration of the 60 days financial assistance, rental assistance will be provided until such time that relocation is possible PAPs will be provided with relocation options suitable to their preference. Options are (i) self-	LGUs
	Vulnerable groups include (i) households with elderly (aged 60 years old and above); (ii) indigenous people (IP); (iii) poor households whose income fall below the poverty threshold; (iv) households with member who has disability (PWD); (v) solo parent; and (vi) women- headed households (WHH) PAPs/Informal Settlers Families (ISFs) ¹³ who are relocating Qualified Informal Settlers	Vulnerable groups include (i) households with elderly (aged 60 years old and above); (ii) indigenous people (IP); (iii) poor households whose income fall below the poverty threshold; (iv) households with member who has disability (PWD); (v) solo parent; and (vi) women- headed households (WHH) PAPs/Informal Settlers Families (ISFs) ¹⁰ who are relocating Qualified Informal Settlers Family Transportation Allowance to move household belongings to new site AND participation in Livelihood Restoration Program Provided option for relocation at a resettlement site in coordination with the LGUs. Should relocation not be possible within the said period financial assistance in the amount equivalent to the prevailing minimum daily wage multiplied by 60 days shall be extended to the affected families by LGUs concerned (RA 7279) Should relocation at the project resettlement site not be possible by the time of expiration of the 60 days financial assistance, rental assistance will be provided with relocation options suitable to their

¹³ Informal Settler Families (ISFs) are identified as poor, not owners of land they occupy and their residential and/or combined residential – commercial structures will be severely affected in terms of both area and foundation and/or structural integrity.

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Type of Loss	Entitled Person	Compensation/ Entitlements	Responsible Organization
		governments and other entities as mandated by law	

For PAPs that are willing to donate their properties, including structures, donation is the appropriate mode of acquisition. Donation, as defined under Art. 2725 of the Civil Code, "is an act of liberality whereby a person disposes gratuitously of a thing or right in favor of another who accepts it". Deed of donation should be simple and unconditional, contain clauses to the effect that:

- Donation is made by the donor not to defraud his creditors
- Donor reserved for himself enough property for his and his family's subsistence, sustenance, and support.
- Deed of donation should be registered with the Registry of Deeds.
- The implementing agency may utilize donation or similar mode of acquisition if the landowner is a government-owned or government-controlled corporation.

In the event that PAPs are unable or unwilling to receive their compensation and/or entitlements due to contested ownership, PAPs being absent and unreachable or PAPs contest the compensation offered, and following reasonable efforts to identify owners, and adjudicate resolution of disputes as required under RA10752, DPWH will deposit the full amount of compensation and allowances due in to an escrow account until such time as the money can be released to the affected persons.

Gender key considerations. Regardless as to whether the designated household head is a man or a woman, both spouses heading AHs will be invited when the compensation is disbursed. New titles at resettlement sites will be issued in the names of both spouses heading household recipients of resettlement site plots. In the long term, the road project is expected to improve women's access to social services, economic or financial resources or opportunities, and other basic infrastructure.

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8 LIVELIHOOD RESTORATION PROGRAM

The Livelihood Restoration Program (LRP) is an essential component of a RAP. It provides the PAPs assistance whose livelihoods are directly adversely affected by the Project by restoring their income generating capacity to at least pre-project levels. For vulnerable PAPs, the LRP is also aimed at improving their living standards. The livelihood restoration measures are to be planned to take account of each individual situation. Sufficient time for planning and substantial interaction with the PAPs is deemed essential requisites to developing a more robust plan that will promote both immediate and long-term self-sufficiency. As such, while this plan outlines the necessary livelihood restoration measures, further consultations with the PAPs to plan specific livelihood restoration and improvement measures.

As explained in above, the following groups of people are considered to have their livelihood hindered because of the project and hence be eligible to participating in the program.

- 1) Business entities and employees;
- 2) Displaced persons; and
- 3) Vulnerable groups

8.1 Livelihood Restoration of Business Entities and Employees

In terms of business entities and employees, the assistance and entitlements that can be provided by DPWH, with support from concerned government agencies are summarized in Table 7-1 under the "Other Entitlements". They are grouped based on the following:

- 1) PAPs who own affected fixed micro businesses (e.g. small shops)
- 2) PAPs who own affected small, medium or large businesses
- PAPs who are employed in displaced establishments and lose job for reasons reasonably attributable to the damages caused by the project

8.2 Livelihood Restoration of Displaced Persons and Vulnerable Groups

The LRP for individuals including displaced employees is designed based on the existing relevant programs at the national, regional, provincial and LGU levels. While DPWH carries the ultimate responsibility for the entitlement program, LGUs are expected to play an equally, if not more, important role in ensuring that the PAPs' livelihood is restored and/or improved in a long run and that the LRP is in line with the existing programs and institutions.

The program should start prior to implementation stage of the project and may extend as far as the end of its completion yet not less than one year after commencement of construction. To ensure social inclusion, development outcomes should pay a special attention to integrating the different needs and concerns of women and men, people with disability, and the elderly as agents and beneficiaries of the programs and services.

As part of its function in providing livelihood restoration program to its constituents, the local government will assist the PAPs in availing the following livelihood programs from TESDA and DSWD.

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8.2.1 Vocational Training offered by TESDA

Vocational training will be provided to the PAPs by the Technical Education and Skills Development Authority (TESDA). TESDA is the government agency tasked to manage and supervise technical education and skills development in the region. Training activities will be delivered through the following three modes.

- a. Training Centers operated by TESDA provides certificates of completion after each training course. The certificates of the completion are presented to would-be employers who will provide permanent employment and a regular stream of income. Trainings cost an average of Php 10,000/course but may be as high as PhP 15,000. TESDA, in collaboration with the LGUs, industries that provide funds, implement the Training for Work Scholarship Program (TWSP) where successful scholars are chosen to undergo trainings based on industry requirements. The scholars, before being chosen, undergo a rigid selection process. PAFs and/or vulnerable groups may avail of this program after they pass the tests or assessments.
- b. Private Institutions Vouchers are allocated by TESDA at least three to four times a year to accredited training centers. The number of vouchers is based on demand and is usually determined through surveys on the training courses needed in each barangay.
- c. Community-based Programs Community-based Training for Enterprise Development Program is primarily addressed to the poor and marginal groups who cannot access formal training provisions. They may have low skills, limited management abilities, and have few economic options. They may have no access to capital and hence unqualified for formal credit programs. The program goes further than just skills trainings. It is purposefully designed to help form livelihood enterprises that will be implemented by the trainees immediately after the training. Likewise, it is designed to assist partner agencies such as LGUs, NGOs, people organizations and other agencies and organizations tasked to help the poor people engage in productive activities to help themselves and their communities.
- d. Vocational Trainings those provided by TESDA in particular, should ensure women's enrolment in non-traditional skills training (e.g. welding, carpentry and plumbing) as it offers higher income compared to being engaged in traditional livelihood activities (Sec. 13, RA 9710). TESDA should ensure the full implementation of the gender sensitive TVET curriculum in all training courses regardless of the mode of delivery of these trainings.

8.2.2 Sustainable Livelihood Program offered by the Department of Social Services and Development (DSWD)

The Sustainable Livelihood Program (SLP) is a community-based capacity building program that seeks to improve the program participants' socioeconomic status.

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The program design has two tracks: the Microenterprise Development Track and the Employment Facilitation Track.

- a. Track 1: Microenterprise Development The Microenterprise Development Track is a capacity building program that focuses on micro-enterprise development, skills enhancement, networking and partnership building, and provision of capital assistance to poor families. The participants shall be organized by their economic or livelihood activity, depending on the local field implementer's assessment of the most appropriate form.
- b. Track 2: Employment Facilitation The Employment Facilitation Track provides assistance to unemployed members of poor families preferring a job rather than start an enterprise for income generation. They shall be provided with technical skills training, occupational guidance and counselling, and job referrals or placement.

Given the necessary interventions identified for both tracks, the field implementers are expected to serve as process facilitators and partnership builders to generate and bridge opportunities for the program participants.

Both tracks are executed based on the Community-Driven Enterprise Development (CDED) approach, which equips program participants to actively contribute to production and, labor markets by looking at available resources and accessible markets. The CDED approach promotes the Local Economic Development (LED) strategy and Value Chain Production of each community.

The Community-Driven Enterprise Development (CDED) is an important instrument for the realization of potential among marginal and deprived communities and is important in bringing social upliftment. It is a low cost, easy to implement training approach for helping entrepreneurs and development partners. It is one of the strategies being implemented by the national and local governments in addressing the issue of poverty.

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9 GRIEVANCE PROCEDURE

9.1 Objectives and Advantages of Developing a Grievance Redress Mechanism

A well-designed grievance redress mechanism can help ensure the sound implementation of the project. The mechanism shall provide PAPs a platform to lodge their complaints, if any, towards the project especially on matters relating to land acquisition and resettlement. It shall facilitate accessible and efficient delivery of concerns directly to the decisionmakers as compared to the formal judicial process. This mechanism shall also allow the DPWH to get hold of the concerns immediately so that corresponding response measures can be formed and implemented in a timely manner. Recognizing and addressing grievances early on makes them more manageable and resolvable and will therefore benefit both parties. A good grievance redress mechanism also helps build trust between the parties.

A raise grievance is examined in M/RIC which is composed of wide ranges of people including representatives of PAPs from each affected barangay and Peoples Organization (POs) as necessary. Thus, reliability can be secured in addition to transparency and easy access.

Thus, a proper grievance redress mechanism shall be established for this project. A person within the DWPH and/or the RIC shall be assigned to receive and process the grievances. His/her name and contact information shall be shared with all PAPs. The DPWH shall also ensure that the PAPs know and understand the mechanism including the people involved, the procedure, and the time and costs needed to be functional and effective. Special consideration shall be given to vulnerable people such as the illiterate, for which the DPWH may wish to explain the mechanism in a different manner (e.g. verbally instead of by paper). Grievances received must then be properly treated and discussed, and the resolution or conclusion delivered to the complainants within a reasonable time.

9.2 Composition of the RAP Implementation Committee

The RIC will be established where the road project will traverse. With the DPWH-UPMO-RMC1 Director his/her representative as Chairperson and Convenor, the RIC will be composed of the following:

1.	City/Municipal Mayor or his/her representative -	Co-0	Chairperson
2	DPWH National, Regional Director or his/her representative	53	Member
3.	DPWH Regional Director or his/her representative		Member
4.	NCIP Provincial and or Regional Office	20	Member
5.	Chairperson of the Barangay or his/her representative	+	Member
6.	City/Municipal Division Chiefs or his/her representative	+ 1	Members
7.	A representative of the IP/ICC	29	Member
	A representative of the PAPs in the barangay	+1	Member
9.	A representative of a city/municipal-wide		
10.	Non-government Organization (NGO), if there is any,		
	endorsed by the other members of the RIC.	- 22	Member

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The Barangay Chairperson or his/her representative and the representative of the PAP will take active part in the activities of the RIC on matters concerning their respective communities. The RIC will have the following functions:

- 1. Assist in the validation of the list of PAPs.
- Assist in the validation of assets that will be affected by the project and compute the compensation and other entitlements due to the PAPs as per RA 10752, DPWH Resettlement Policy and pertinent Department Guidelines and submit the same to the DPWH for appropriate action.
- Assist the Implementing Office in the conduct of public information campaign, public participation and consultation.
- 4. Assist the DPWH in the payment of compensation to PAPs
- 5. Receive complaints/grievance from PAPs and other stakeholders and act on the same within 15 days upon receipt thereof, except for complaints and grievances that specifically pertain to the valuation of affected assets, since such will be decided upon by the proper courts. (The PAP may refer his/her grievance to the DPWH UPMO, RMC 1 Director, or even to a court of law, if he/she is not satisfied with the action of the RIC or the DPWH.
- Maintain a record of all public meetings, complaints, and actions taken to address complaints and grievances
- Assists the DPWH and NCIP staff in identifying who among the PAP's are IPs or belong to ICCs
- In coordination with the concerned government authorities, assist in the enforcement of laws/ordinances regarding encroachment in the project site or ROW

9.3 Composition of DPWH-UPMO ROW Task Force

The DPWH Secretary issued Department Order (DO) No. 203, series of 2016 which created the UPMO-ROW Task Force (URTF) and its Technical Working Group (TWG). This Order is in line with the Department's decentralization efforts to streamline procedures for a more effective and expeditious implementation of urgent national roads, bridges and various flood control projects being implemented by the Unified Project Management Offices which are hampered by the delay in the ROW acquisition.

The URTF is composed of the Undersecretary for UPMO Operations as Chairman, the Director of the LA as Vice-Chairman, and the UPMO Cluster Directors as Members. The URTF shall be supported by a TWG composed of representatives of the URTF members.

The URTF shall perform the following functions:

- Organize a ROW Team for each UPMO Cluster that will handle the ROW acquisition of its projects, to be headed by the Project Managers assigned to the project.
- Monitor the ROW acquisition status and recommend appropriate actions on projects with problematic ROW.
- Execute and recommend appropriate resolutions pertaining to payment of ROW affected by various UPMO projects which are beyond the authority of the Project Directors.

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 Review the validation of supporting documents undertaken by its TWG and recommend payments after evaluation as to propriety of the claims.

The TWG shall exercise the following functions:

- Ensure that all relevant papers and documents in support of the ROW claim are carefully screened and verified as to their authenticity and genuineness in order to forestall fraud, pursuant to the provisions of the Simplified Guidelines for Validation and Evaluation of ROW Claims.
- Ensure that the computation of land valuations and disturbance compensation (structures and other improvements) are based on the RA 10752 and its IRR and other applicable laws, policies and department orders.

9.4 Procedures of Grievance Redress

A framework for the grievance redress mechanism for land acquisition, compensation and other concerns on the project is provided in the LARRIPP (2007) mentioned above. Grievances related to any aspect of the project will be dealt with through dialogue and negotiations with the aim of rapidly and amicably addressing the concerns in a less costly manner compared to those dealt with as legal cases.

Under this framework, a Municipal/City RAP Implementation Committee (M/CRIC), a local coordinating and consultative body organized for the implementation of RAP and established by UPMO through a Memorandum of Understanding (MOA) with concerned parties prior to commencement of the project, will play a key role. Among their responsibilities is to receive and record the voices, complaints, opinions, and suggestions provided by the PAPs, and address them as the first level of decisionmakers. If the response to the complaint is deemed inadequate in the view of the PAPs, the PAPs may elevate their grievance to the ROW Task Force that consists of higher-level officials of the DPWH CO. Should the grievance still not be settled, the PAPs may finally resort to filing a case with the court. Under this project, grievances from the PAPs shall be handled in the following manner:

- Grievance shall be filed by the PAP with the M/CRIC. The M/CRIC shall act on the grievance within 15 days upon receipt, with the exception of complaints and grievances that specifically pertain to the valuation of affected assets, since such will be decided upon by the proper courts;
- 2) If no understanding or amicable solution can be reached, or if the PAP does not receive a response from the M/CRIC within 15 days of the filing of the complaint, he or she can appeal to the ROW Task Force which should then act on the complaint or grievance within 15 days from the day of its filing;
- If the PAP is still not satisfied with the decision of ROW Task Force, he/she, as a last resort, can submit the complaint to any court of law.

PAPs shall be exempted from all administrative and legal fees incurred pursuant to the grievance redress procedures as guaranteed by the LARRIP (2007). All complaints received in writing (or written when received verbally) from PAPs will be documented and shall be acted upon immediately according to the procedures detailed above.

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In the event that the PAP/F rejects the compensation offered by the DPWH, the DPWH or the PAP/F may take the matter to court. When court cases are resorted to by either the DPWH through expropriation or by the PAP/Fs through legal complaints, the DPWH will deposit to the court the (100%) value of the land based on the current relevant BIR Zonal Value.

9.5 Formation of Municipal/City RAP Implementation Committee

The M/CRIC is the responsible body organized for the smooth implementation Right-of-Way Action Plan. In the formation of the M/CRIC, the following activities were undertaken jointly by DPWH and the concerned LGUs:

- Consultation on who will be the members of the committee and their roles and responsibilities.
- Drafting of Memorandum of Understanding (MOU) for the Creation of the M/CRIC for the Central Mindanao Highway Construction Project (Cagayan De Oro – Malaybalay Section).
- 3) Review of the draft MOU by the concerned LGUs.

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10 INSTITUTIONAL FRAMEWORK

10.1 Current DPWH Capacities on Social Safeguards

Effective resettlement depends on the capacity and commitment of the agencies responsible for resettlement planning and management. In the past few years, DPWH has improved its management processes, however, the capacity across all levels needs to be further strengthened. JICA will continue to assess the adequacy institutional capacity of DPWH, including NCIP at the National, Regional and Local levels and provide technical assistance to address the issue of institutional development and capacity building by financing the conduct of indigenous people management training seminars and workshops.

District Engineering Office, DPWH. The DEO will act as Technical Coordinator and will (i) oversee the staking-out and verification of affected properties; (ii) review, and if found correct, prepares and approves disbursement vouchers/payments; (iii) cause the prompt delivery of payments to the affected persons with the assistance of RIC (iv) submit reports on disbursements and payments to APs to the RO and the UPMO; and (v) submit monthly progress reports to ESSD, the ROs and the UPMO. The DEO will chair the RIC and will actively participate in its functions.

10.2 National Level

The DPWH will be the Executing Agency (EA) for the Project. The overall direction and leadership for implementing the RAP will be exercised by the Secretary, supported by the Undersecretary of UPMO Operations and other members of the Executive Committee (EXECOM) of the DPWH composed of the Undersecretaries and Assistant Secretaries of the Department.

The Unified Project Management Office (UPMO) shall be responsible for implementing and monitoring the Project, including land acquisition and other resettlement related activities. It will ensure that funds for the timely implementation of RAP are available and that all costs are properly accounted for.

The Roads Management Cluster I, Bilateral, Unified Project Management Office, as the overall project management unit, shall manage and supervise the implementation of the RAP. Resettlement activities and land acquisition will be carried out in close coordination with the DPWH Planning Service through its ESSD, RO, DEO, LGUs, NCIP, RIC and all other pertinent agencies and instrumentalities of the government to fully address the impacts of involuntary resettlement.

The Environmental and Social Services Division (ESSD) shall provide technical guidance and support in the implementation and monitoring of the social safeguards document/plan. They are tasked to:

a) Carry out overall preparation and planning of the RAP;

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- Submit social safeguards document/plan budget plans (to include compensation, relocation costs, operations) for approval and allocation of needed resources by the DPWH central office;
- c) In accordance with the Department's resettlement policies, guide the District Engineering Offices and the Regional Offices in their tasks, such as the verification of APs, final inventory of affected assets, consultation, and information dissemination;
- Amend or complement the RAP in case problems or potential problems are identified during the internal and/or external monitoring of its implementation;
- In collaboration with its counterpart in the Region, work closely with the DPWH RO on the processing of compensation claims of APs;
- f) In collaboration with UPMO, monitor the progress of compensation payment to APs and other resettlement-related activities stated in the RAP; and;
- g) In collaboration with its regional counterpart, prepare quarterly monitoring reports on social safeguards document/plan implementation for submission to the UPMO and IICA.
- For uploading the RAP, the DEO with assistance of the RIC shall conduct inventory of loss and socio-economic surveys validation for submission the UPMO and JICA.
- Provide RAP orientation to DPWH RO and DEO Team and RIC to strengthen the social, legal, and technical capabilities of these resettlement implementing entities.
- j) Assist the RIC in community awareness raising activities for the RAP implementation.

10.3 Site Level

The District Engineering Office (DEO) will act as Technical Coordinator and will

- a) Oversee the staking-out and verification of affected properties;
- Review, and if found correct, prepares and approves disbursement vouchers/payments;
- Cause the prompt delivery of payments to the affected persons with the assistance of RIC:
- d) Submit reports on disbursements and payments to APs to the RO and the UPMO; and
- Submit monthly progress reports to ESSD, the ROs and the UPMO. The DEO will chair the RIC and will actively participate in its functions.

The Regional Office (RO) will act as the liaison between ESSD and the DEO and will ensure that the RAP is implemented as planned. Specific activities of the RO are:

- a) Monitor the RAP implementation and fund disbursement;
- b) Submit the monthly progress reports to ESSD;
- c) Monitor payments to APs;
- d) Monitor assistance provided to the poor and vulnerable households; and
- e) Address grievances filed by the APs for speedy resolution.

The RAP Implementation Committee shall be composed of representatives from the RO and DEO, the City/Municipal, the NCIP provincial and/or regional office, affected barangays, and APs with separate representation for IP/ICC communities affected by the project. The

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Representative from NCIP is vital in this committee in case there is a possibility of impact to IPs.

Selection of these ICC/IP representatives shall follow the procedures of the NCIP. Its functions are:

- Assist the DPWH staff engaged in resettlement activities in (i) validating the list of PAPs; (ii) validating the assets of the APs that will be affected by the project (using a prepared compensation form); and (iii) monitoring and implementing the RAP;
- Assist the DPWH and NCIP staff in identifying who among the APs are IPs or belong to ICCs;
- Assist the DPWH and staff engaged in the RAP activities in the public information campaign, public participation and consultation;
- d. Assist DPWH in the payment of compensation to PAPs;
- Receive complaints and grievances from PAPs and other stakeholders and act accordingly;
- f. Maintain a record of all public meetings, complaints, and actions taken to address complaints and grievances; and
- g. In coordination with concerned government authorities, assist in the enforcement of laws/ordinances regarding encroachment into the project site or ROW.

The Municipal or City RIC shall be formed through a MOU between DPWH, the concerned local government unit, with the NCIP Provincial or Regional Office.

National Commission on Indigenous Peoples (NCIP). The NCIP is the primary government agency through which ICCs/IPs can seek government assistance. The Indigenous People's Rights Act (IPRA)vests upon the NCIP the power to issue certificate of ancestral land/domain title (CALT/CADT) (IPRA, Section 44e). It has the power to issue appropriate certification as a pre-condition to the grant of permit, lease, grant or any other similar authority for the disposition, utilization, management, and appropriation by any private individual, corporate entity or any government agency, corporation, or subdivision thereof on any part or portion of the ancestral domain taking into consideration the consensus approval of the ICCs/IPs

The Local Government Unit provide legal instruments (e.g., Executive Orders, Municipal Resolutions, Memorandum Orders, etc.) that are necessary for the implementation of the RAP. LGUs shall (i) provide the necessary land for relocation purposes, (ii) cooperate with UPMO to form and mobilize RIC to direct and oversee implementation and monitor RAP implementation, and (iii) address issues, grievances and complaints as indicated in the GRM section of this document.

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11 POSSIBLE RESETTLEMENT SITE

There are 96 households (379 persons) whose houses and houses-cum-shops will be fully affected.

If relocation is necessary to be undertaken during the implementation of the project, the Municipality of Sumilao committed to provide a land dedicated to affected families. The other LGUs are still determining the location of their relocation sites. Table 11-1 shows the proposed relocation sites with the corresponding land areas.

Table 11-1. Proposed Relocation sites of the Affected Cities and Municipalities

Municipality/City	Location	Land Area	
Tagoloan	To be determined	To be determined	
City of Cagayan de Oro	To be determined	To be determined	
Manolo Fortich	To be determined	To be determined	
Sumilao	NHA – Sumilao Resettlement Project 1 in Purok 5, Barangay San Vicente	1.58 hectares (89 units)	
	Zubiri – Villo Paglaum Village, Purok 2, Barangay Poblacion	2.05 hectares (100 units)	
	NHA – Sumilao Resettlement Project 2 in Purok 4, Barangay Kisolon	1.5 hectares (60 units)	
Impasug-ong	To be determined	To be determined	
City of Malaybalay	To be determined	To be determined	

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12 IMPLEMENTATION SCHEDULE

As shown in Figure 12-1, the DPWH is expected to initiate the process of land acquisition and compensation for structures, crops and trees starting July 2023 to secure the project's ROW prior to construction. The DPWH shall ensure that ROW acquisition proceeds in close parallel with the construction schedule, making sure that land and structure owners are adequately compensated and re- established away from the construction site months ahead of the civil works implementation.

During the preconstruction stage, DPWH will update the Preliminary RAP based on result of the Feasibility Study. Once the Preliminary RAP has been updated and validated, DPWH will disclose the validated appraised value of lands, structures/improvements, crops, and trees. In addition to this, DPWH will finalize the Compensation and Entitlements Matrix, Livelihood Restoration Program cost, and number of households affected. This task shall be undertaken by the UPMO Cluster/PPPS/RO/DEO and the ESSD. If necessary, they may seek the assistance of the M/CRIC.

12.1 Overall ROW Acquisition Workflow

The IA must observe the overall workflow for the ROW acquisition process. The significant features of the DPWH ROW process include the following:

- The process shall be applicable to both foreign-assisted and locally funded infrastructure projects.
- The principles and general rules shall apply to all scopes of work of the project whether the project involves entirely new construction or expansion/improvement of existing infrastructure.
- The IA shall ensure that adequate funds for ROW costs are provided in project budgets which are included in the DPWH infrastructure program within the budget ceilings.
 The appropriations shall preferably be made at least one year ahead of actual construction works.
- A Pre-Feasibility Study (PFS) or Feasibility Study (FS) shall generally be conducted for each project to define, among other things, the ROW requirements. The level of detail for these studies will vary, depending on the type, size, and complexity of the project.
- 5. The IA shall formulate a ROW Action Plan (RAP) based on the PFS/FS. The RAP shall contain the description and extent of the lands, structures/improvements, and crops/trees to be acquired as ROW, the estimated costs and compensation due to the property owners and PAPs, the budget for all ROW costs including provision for inflation and contingencies, and the schedule of implementation and annual funding requirements.
- If ROW costs differ from the approved ROW budget after the Detailed Engineering Design (DED) has been finalized, a budget adjustment shall be made.
- Parcellary Surveys shall be conducted for all projects in accordance with DO 187, series 2002, as amended. Parcellary Surveys, as well as the RAP preparation, shall be undertaken at least one year ahead of the scheduled construction works.
- The determination of PAPs and affected improvements shall be based on the cut-off date, which is the start of the census of PAPs and tagging for improvements.

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- Where feasible, the first mode of acquisition shall be to request donation from the property owner.
- 10. If donation is not feasible, negotiated sale for the acquisition of the property shall be pursued based on the provisions of RA 10752 and its IRR as prescribed in this Manual. Hence, the first and final price offer shall be the sum of: (i) the current market value of the land, (ii) the replacement cost for structures and improvements, and (iii) the current market value of the crops and trees.
- To determine the appropriate price offer for negotiated sale, the IA may engage a GFI or IPA.
- If, within 30 days, the owner does not accept the price offer under negotiated sale, the IA may initiate expropriation proceedings with the appropriate court.
- It is the responsibility of the IA to obtain and validate all necessary documents for ROW claims.
- Prior to payment, ROW claims shall be screened, fully verified and validated, and the supporting documents authenticated in accordance with the checklist of DPWH.
- 15. Valid claims for all lands, structures and other improvements shall be paid in full in accordance with government rules and regulations. For negotiated sale, the IA shall remit to the BIR the Capital Gains Tax (CGT), for the account of the owner, to be deducted from the Total Price or compensation indicated in the Deed of Aboslute Sale (DAS). The IA shall remit to the LGU concerned any unpaid Real Property Taxes of the owner, to be deducted from the consideration or Total Price in the DAS. The IA shall pay the Documentary Stamp Tax (DST) to the BIR, the Transfer Tax to the Provincial/City Treasurer, and the Registration Fees to the Register of Deeds, to be funded from appropriate funds of the IA outside the said compensation or Total Price in the DAS.

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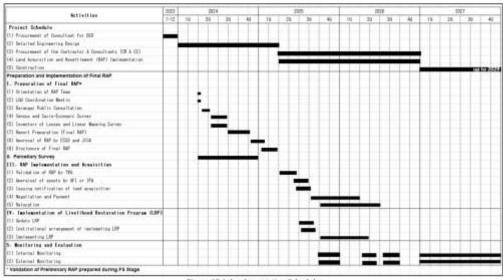


Figure 12-1. Implementation Schedule

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13 BUDGET

The total cost for the implementation of the RAP for the CMHSHCP (CDO-Malaybalay Section) is estimated at PhP 1,361,812,550 (USD 25,944,228). The budget includes costs for acquisition of land and non-land assets, relocation and resettlement assistance including livelihood programs to APs/ AHs, and utility relocation, among others.

The estimated RP Implementation Cost is provided in Table 13-1. The summary of cost budget estimate for affected lands, structures, crops, and trees is presented in Appendices 1-4.

Table 13-1. Estimated RAP Implementation Cost

Kind of affected assets		Total	Amount (PhP)	Amount (USD)	
1. Land	m ²	3,943,800	847,966,900	16,154,828	
2. Structures	#	298	53,789,139	1,024,750	
• •	m ²	2,571,526	23,072,305	439,556	
3. Crops (agricultural crops/coconut)	#	2,552	8,499,121	161,919	
4. Trees (including seedling replacement)	#.	9,815	120,051,751	2,287,136 27,434 969,785	
5. Livelihood Restoration Program	hh	96	1,440,000		
6. Relocation and Resettlement	hh	96	50,904,000		
7. Other Entitlements hh		96	5,280,000 100		
7.1 Financial Assistance	hh:	96	1,440,000		
7.2 Income Loss	hh	96	1,440,000		
7.3 Inconvenience Allowance	lols	96	960,000		
7.4 Rehabilitation Allowance	lala	96	1,440,000		
8. Other Assistance	84,158,852	1,603,331			
8.1 Capital Gains Tax (6%)			50,878,014		
8.2 Documentary Stomp Tax (1.5%)			12,719,504		
8.3 Transfer Tax (50% of 1% of the Selling Price)		4,239,835		
8.4 Cost of Registration (PhP40,000/transaction			16,200,000		
8.5 Notarial Fee (PhP300/transaction)	121,500				
Administrative Costs (5% of Direct Costs	55,550,161	1,058,300			
Cost contingencies (10% of Direct Costs: 1-7)			111,100,322	2,116,600	
TOTAL			1,361,812,550	25,944,228	

Note: 1 USD = PhP 52.49

13.1 Preliminary ROW Cost Estimates for Land

The compensation offer will be at current market value at the time of taking. DPWH will pay, for the account of the PAP, the capital gains tax, documentary stamp tax, transfer tax, and registration fee. The owner will pay any unpaid real property tax.

Other modes of compensation will be explored when feasible, such as land swap (exchange or barter) for a new parcel of land on a value-for-value basis. The owner of the

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property needed for ROW of a national government project may request the DPWH to exchange or barter an old, abandoned road or other government property near the project with his property.

Holders of Certificates of Land Award (CLOA) granted under Comprehensive Agrarian Reform Act will be compensated at current market value at the time of land acquisition. In case of lands granted through Commonwealth Act No 141, otherwise known as "The Public Land Act", the Project will:

- Follow modes of acquisition enumerated in RA 10752, if the landowner is not the original patent holder and any previous acquisition of said land is not through a gratuitous title; or
- Follow the provisions under CA No. 141, as amended, regarding the acquisition of ROW on patent lands is the original patent holder or the acquisition of the land from the original patent holder is through a gratuitous title

The cost for land compensation is computed at:

Current Fair Market Value of Land¹⁵

Based on the inventory, 3,943,800 m² of land belonging to 352 PAPs will be subject to valuation and eventual compensation. The total value therefore of is **PhP 847,966,900** for the 405 parcels of land.

Transaction costs for land acquisition, based on the Bureau of Internal Revenue (BIR) and Land Registration Authority (LRA) schedule of fees, shall be shouldered by DPWH as follow:

- 1. Capital Gains Tax15 (6%)
- 2. Documentary Stamp Tax16 (1.5%)
- 3. Transfer Tax17 (50% of 1%)
- 4. Registration Fee¹⁸

Final cost for land, therefore, is PhP 932,125,752. The owner, however, will pay any unpaid real property tax.

13.2 Preliminary ROW Cost Estimates for Structures and Improvements

The replacement cost of a structure or improvement affected by the project per IRR of RA 10752 is based on the current market prices of materials, equipment, labor, contractor's profit and overhead, and all other attendant costs associated with the acquisition and installation of a similar asset in place of the affected asset. If the affected structure has been damaged, then the Replacement Cost shall be based on the pre-damaged condition of that structure. The

⁶⁴ To be prepared by an independent property appraiser (IPA) accredited by either (1) the Bangko-Sentral ng Pilipinas (BSP) or (2) a professional association of appraisers recognized by BSP.

¹⁵ Capital Gates Tax: equivalent to 6 percent of the selling price on the Deed of Sale or the areal value, whichever is higher

³⁶ Commonly set at 15 percent of the selling price, or its annel value or fair market value, depending on which is bigines.
³⁷ Transfer Tas (Lucul Transfer or Office): this is tax is imposed on the sale, barter, or any other mode of transferring of ownership.

³⁷ Transfer Tas, (Licul Transmer's Office): this is fax is imposed on the sale, barter, or any other mode of transferring of ownership or title of real property, at the maximum rate of 50 percent of 1 percent of a property's worth.

^{**} LRA Circular No. 11-2020. Schedule of Fees.

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Replacement Cost of the structure may vary from the market value of the existing structure since the structure that would replace it may have a different cost at current market price. The replacement structure must perform the same functions and meet the performance specifications as the original structure. The following thus applies:

- Cash compensation at replacement cost for the affected structures belonging to the government or non-governmentagencies or the community.
- Cash compensation to cover the cost of reconnecting damaged facilities, such as water, power, and telephone lines.

The replacement cost shall be composed of the Estimated Direct Cost (EDC) and the Estimated Indirect Cost (EIC) of the replacement structure to be finalized by the IPA and validated by DPWH.

The EDC consists of the following:

- 1. Current market cost of materials;
- 2. Current market cost of labor; and
- 3. Rental of equipment expenses.

The EIC comprised of the following based on accepted construction industry practices:

- Overhead expenses;
- 2. Contingencies;
- 3. Miscellaneous;
- 4. Engineering and Administrative Overhead (2%)
- 5. Contractor's profit margin; and
- Value added tax (VAT) component in accordance with law, 5% in the case of a property owned by a government agency, or 12% in the case of a property owned by a private party.

The replacement cost for structures is computed at:

Estimated Direct Cost + Estimated Indirect Cost = Total Replacement Cost*

A total of 298 structures owned by 168 PAPs will be affected of which 99 are residential structures, one (1) residential-commercial, three (3) purely commercial and 195 other improvements. The total replacement cost of PhP 53,780,139.

13.3 Preliminary ROW Cost Estimates for Crops and Trees

The following applies in compensation for affected crops, fruit trees, and perennials:

¹⁹ For houses, buildings, and other structures, estimates must be based on Section 6.6 of the IRR for RA10752 (DPWH DO No. 197, series of 2016)

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- 1) Cash compensation for perennials at current market value;
- Compensation for damaged crops (e.g., rice and corn) at current-market value at the time of taking (compensation will be based on the cost of production per hectare pro-rata to the affected area); and
- 3) Cash compensation for fruit trees will be based on current market value.

PAPs will be given sufficient time to harvest crops on the subject land. The total cost for trees and crops is computed at:

Forest Charges Rates and or Schedule of Market Values²⁰

A total of 9,815 trees and 2,571,526 m² of crops will be affected with a total market value of PhP 120,051,751.

13.4 Preliminary ROW Cost Estimates for Other Entitlements

The project shall also extend assistance and other entitlements to PAPs who will experience additional hardship due to displacement are eligible for the following:

- Rehabilitation assistance shall be in the form of skills training and other development activities with the value of up to Php 15,000 will be provided in coordination with other government agencies.
- Inconvenience allowance. Inconvenience allowance in the amount equivalent to Php 10,000 per household.
- 3) Support and/or maintain access to government welfare programs.
- 4) Inclusion in the Livelihood Improvement Program.

Vendors with or without permits from the LGU concerned are provided, with due consultation, with assistance in identification of, and transportation to, an alternative site to continue economic activity, e.g. assistance in (a) shifting to areas within the same LGU where there is no construction and/or (b) identify alternative sites to sell. They will also be provided with compensation for loss of business incomes and transport cost during the transition period. Transitional allowance shall not exceed PhP 5,000 per household/per month for three months.

DPWH shall coordinate through the local governments and link PAPs with other agencies concerned about livelihood support (e.g., TESDA, DSWD, etc.) for skills training and development assistance.

13.5 Preliminary ROW Cost Estimates for Resettlement Site Development

During the conduct of public consultation and census, it was explained thoroughly and in their local language, the policy and process of the government on involuntary resettlement. As a national policy, involuntary resettlement should be avoided where feasible by the

DCurrent Market Values of the of the following entities: DA, PCA, DENR, DOF and LGU-Assessor's Office.

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government. Where population displacement is unavoidable, it should be minimized by exploring all viable project options. People unavoidably displaced should be compensated and assisted, so that their economic and social future would be generally as favorable as it would have been in the absence of the project. Lastly, the PAPs should be fully informed and consulted on resettlement and compensation options.

Based on the census, there are a total of 96 PAFs whose residential structures (99) and residential-commercial structures (1), and (3) purely commercial structures will be affected by the project.

Based on the 2020 Updated Building Cost of National Housing Authority (NHA) Standard Housing Models, the cost for the following housing units in Region X are shown below:

- Rowhouse for PWD (26 m²) = PhP 475,250
- 2) Rowhouse with storage space (26 m²) = PhP 461,000
- 3) Rowhouse Mandamus (26 m2) = PhP 438,700
- 4) Rowhouse Mandamus/Yolanda (33 m²) = PhP 470,700
- 5) Rowhouse with storage space Mandamus (33 m2) = PhP 475,200
- 6) Rowhouse (36 m2) = PhP 530,250
- 7) Rowhouse with rainwater collector (36 m²) = PhP 540,800
- 8) Single attached with loft (36 m²) = PhP 602,350
- 9) Duplex (42 m2) = PhP 769,200

The cost for rowhouses (36 m²) amounting to PhP 530,250 was used in the computation of Relocation and Resettlement budget (See Appendix 7). The selected house model was chosen since it is in between the smallest and biggest house models and can provide decent housing for the PAPs.

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14 MONITORING AND EVALUATION

The main objective of monitoring the implementation of the RAP is to determine whether these RAP is carried out in accordance with the Resettlement Policy. It involves the monitoring of land acquisition, payment of compensation for lost assets and resettlement of severely project-affected persons. The key points for monitoring are but not limited to the following:

- Payment of compensation to all PAPs in various categories, according to the compensation policy described in the RAP;
- 2) Delivery of livelihood restoration and social support entitlements;
- 3) Public information dissemination and consultation procedures;
- Adherence to grievance procedures and outstanding issues requiring management's attention;
- 5) Priority of PAPs regarding the options offered; and
- 6) The benefits provided from the project.

14.1 Supervision and Internal Monitoring

The DPWH Environmental and Social Safeguards Division (ESSD) shall conduct the supervision and in-house monitoring of RAP implementation.

The tasks of the Internal Monitoring Agency (IMA) are to:

- Regularly supervise and monitor the implementation of the RAPs in coordination with the concerned DPWH RMC1-UPMO and the Resettlement Implementation Committee. The findings will be documented in the quarterly report to be submitted to the to the IICA.
- 2) Verify that the re-inventory baseline information of all PAPs has been carried out and that the valuation of assets lost or damaged, the provision of compensation and other entitlements, and relocation if there is any has been carried out in accordance with the RAP Policy and the RAP Report.
- 3) Supervise that the RAP is implemented as designed and approved.
- Verify that funds for implementing the RAP is provided by the RMC1-UPMO in timely manner and in amounts sufficient for the purpose.
- Record all grievances and their resolution and ensure that complaints are dealt with, in timely manner.

14.2 External Monitoring and Evaluation

An External Monitoring Agent (EMA) shall do the external monitoring and evaluation. The EMA for this Projects is a consultancy firm with qualified and experienced staff with Terms of Reference acceptable to the DPWH and JICA.

The external monitoring is to provide an independent periodic review and assessment of (i) achievement of resettlement objectives; (ii) changes in income, living standards and livelihoods; (iii) restoration and/or improvement of the economic and social base of the

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affected people;(iv) effectiveness and sustainability of entitlements; and (v) the need for further mitigation measures.

The tasks of the EMA are the following:

- Verify results of internal monitoring;
- Verify and assess the results of the information campaign for PAPs rights and entitlements.
- Verify that the compensation process has been carried out with the procedures communicated with the PAPs during the consultations;
- Assess whether resettlement objectives have been met; specifically, whether livelihood and living standards have been restored or enhanced;
- Assess efficiency, effectiveness, impact and sustainability of RP implementation drawing lessons as a guide to future resettlement and indigenous people's policy making and planning;
- Ascertain whether the RAP entitlements were appropriate to meet the objectives, and whether the objectives were suited to PAPs conditions;
- Suggest modification in the implementation procedures of the RP if necessary, to achieve the principles and objectives of the RAP Policy;
- 8) Review on how compensation rates were evaluated; and
- 9) Review of the handling of compliance and grievances cases.

The services of the EMA will be procured through selection process of DPWH. Relative to compliance monitoring during resettlement implementation, the main activities of external monitoring will revolve around the following:

- Verify whether the overall project and resettlement objectives are being met in accordance with the RP, and if not, suggest corrective measures;
- Assess the extent to which implementation of the social safeguards document/plan complies with JICA's Policies;
- 3) Identify problems or potential problems;
- Identify methods of responding immediately to mitigate problems and advise the DPWH accordingly; and;
- Verify if the livelihoods and the standard of living of PAPs, including those displaced persons with no legal titles, are restored or improved.

14.3 Stages and Frequency of Monitoring

The stages and monitoring frequency of the contract packages by the IMA and EMA as follows:

14.3.1 Internal Monitoring

This is the first activity that shall be undertaken to determine whether the RAP was carried out as planned and according to Right of Way Acquisition Policy. Once the RAP has been approved by DPWH, the internal monitoring will commence and will be done on a monthly

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basis up to completion of income and livelihood restoration activities. The IMA will prepare and submit a quarterly report, 15 days after the reporting period.

14.3.2 External Monitoring

The EMA will be required to conduct a year-end monitoring of RAP implementation activities. The EMA will prepare and submit an annual report, 15 days after the reporting period.

14.3.3 Final Evaluation

Final evaluation of the implementation of the RAP will be conducted after the completion of income and livelihood restoration activities. This will be led by a third-party evaluator.

14.3.4 Post- Evaluation

This activity will be undertaken a year after the completion of the project, to determine whether the social and economic conditions of the PAPs after the implementation of the project have improved. This will be led by a third-party evaluator.

14.4 Schedule of Implementation of RAPs and Monitoring

The RMC1-UPMO in coordination with the ESSD shall establish a schedule for the implementation of RAPs and the required monitoring considering the project's implementing schedule. It is expected that one month prior to the start of the RAP implementation, all RAP-related activities have been determined by the IMA and EMA.

The internal and external monitoring will be conducted every month and end of the year, respectively.

14.5 Reporting

The EMA is accountable to the RMC1 UPMO and reports to the ESSD. The UPMO RMC1 submits copy of EMA's and IMA's Reports to JICA.

14.6 Monitoring Indicators

Table 14-1. Monitoring Indicators

Monitoring Indicators	Basis for Indicators				
For the Internal Monito	ring (IMA)				
1. Budget and timeframe	 Have all land acquisition and resettlement staff been appointed and mobilized for the field and office work on schedule? Have capacity building and training activities been completed on schedule? 				



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Monitoring Indicators	Basis for Indicators				
	 Are resettlement implementation activities being achieved against the agreed implementation plan? Are funds for resettlement being allocated to resettlement agencies on time? Have resettlement offices received the scheduled funds? 				
	Have resettlement offices received the scheduled funds? Have funds been disbursed according to the RAP? Has the social preparation phase taken place as scheduled? Has all land been acquired and occupied in time for project implementation?				
2. Delivery of Compensation and Entitlements	 Have all AFs received entitlements according to numbers and categories of loss set out in the entitlement matrix? Have AFs received payments for affected structures and lands on time? Have AFs losing from temporary land ROW been compensated? Have all received the agreed transport costs, relocation costs, income substitution support and any resettlement allowances, according to schedule? Have all replacement land plots, or contracts been provided? Was the land developed as specified? Are measures in train to provide land titles to PAFs? How many PAFs opted to donate their land to the government? How many PAFs did not receive payment because their title is covered by the provisions of Sec. 112 of CA 141? How many landholdings were subjected to quit claim? Easement? How many PAFs accepted the first offer at zonal valuation? How many PAFs rejected the first offer and accepted the 				
	second offer? How many PAFs resorted to expropriation? How many PAF households have received land titles? How many PAFs have received housing as per relocation options in the RAP? Does house quality meet the standards agreed? Have relocation sites been selected and developed as per				
	agreed standards? Are the PAFs occupying the new houses? Are assistance measures being implemented as planned for host communities? Is restoration proceeding for social infrastructure and services?				



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Monitoring Indicators	Basis for Indicators			
	 □ Are the PAFs able to access schools, health services, cultura sites, and activities at the level of accessibility prior to resettlement? □ Are income and livelihood restoration activities being implemented as set out in income restoration Plan? For example, utilizing replacement land, commencement of production, numbers of PAFs trained and provided with jobs, micro-credit disbursed, number of income generating activities assisted? □ Have affected businesses received entitlements including transfer and payments for net losses resulting from losses. 			
3. Public Participation and Consultation	business and stoppage of production? Have consultations taken place as scheduled including meetings, groups, and community activities? Have appropriate resettlement leaflets been prepared and distributed?			
	 How many PAFs know their entitlements? How many know if they have been received? Have any PAFs used the grievance redress procedures 			
	What were the outcomes? Have conflicts been resolved? Was the social preparation phase implemented?			
	 Was separate consultation done for indigenous peoples? How was the participation of IP women and children? Were they adequately represented? Were special measures for indigenous people implemented? 			
4. Benefit Monitoring	What changes have occurred in patterns of occupation production and resources use compared to the pre-projec situation?			
	What changes have occurred in income and expenditure patterns compared to pre-project situation? What have been the changes in cost of living compared to pre-project situation? Have PAFs' incomes kept pace with these changes?			
	 What changes have taken place in key social and cultura parameters relating to living standards? What changes have occurred for vulnerable groups? 			
	Has the situation of ICCs/IPs improved, or at leas maintained, because of the project?			
	 Are IP women reaping the same benefits as IP men? Are negative impacts proportionally by IP men and women 			



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Monitoring Indicators	Basis for Indicators			
1. Basic information	□ Location			
on PAP households	 Composition and structures, ages, education, and skill levels 			
	☐ Gender of household head			
	□ Ethnic group			
	 Access to health, education, utilities, and other social services 			
	□ Housing type			
	 Land use and other resource ownership patterns 			
	□ Occupation and employment patterns			
	□ Income sources and levels			
	□ Agricultural production data (for rural households)			
	Participation in neighborhood or community groups			
	Access to cultural sites and events			
	□ Value of all assets forming entitlements and resettlement			
	entitlements			
2. Restoration of	□ Were house compensation payments made free of			
living standards	depreciation, fees, or transfer costs to the PAP?			
	□ Have PAFs adopted the housing options developed?			
	□ Have perceptions of "community" been restored			
	Have PAFs achieved replacement of key social cultural elements?			
Restoration of Livelihoods	Were compensation payments free of deduction for depreciation, fees, or transfer costs to the RAP?			
Livermoods	Were compensation payments sufficient to replace lost assets?			
	Was sufficient replacement land available of suitable standard?			
	□ Did transfer and relocation payments cover these costs?			
	Did income substitution allow for re-establishment of enterprises and production?			
	Have enterprises affected received sufficient assistance to re- establish themselves?			
	Have vulnerable groups been provided income-earning opportunities? Are these effective and sustainable?			
	Do jobs provided restore pre-project income levels and living standards?			
4. Levels of PAP Satisfaction	How much do AFs know about resettlement procedures and entitlements? Do PAFs know their entitlements?			
	□ Do they know if these have been met?			
	How do PAFs assess the extent to which their own living standards and livelihood been restored?			
	 How much do PAFs know about grievance procedures and conflict resolution procedures? How satisfied are those who have used said mechanisms. 			

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Monitoring Indicators	Basis for Indicators		
5. Effectiveness of Resettlement Planning	 □ Were the PAFs and their assets correctly enumerated? □ Were any land speculators assisted? □ Was the time frame and budget sufficient to meet objectives? □ Were entitlements too generous? □ Were vulnerable groups identified and assisted? □ How did resettlement implementers deal with unforeseen problems? 		
6. Other Impacts	 □ Were there unintended environmental impacts? □ Were there unintended impacts on employment or incomes? 		
7. IP Indicators	□ Are special measures to protect IP culture, tradition resources rights, and resources in place? □ How are these being implemented? □ Are complaints and grievances of affected IPs/ICCs being documented? □ Are these being addressed? □ Did the project proponent respect customary law in dispute resolution process, in the conduct of public consultation, in IPAP and MOA implementation?		

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15 CONSULTATION

15.1 Preliminary Activities

Prior to the public consultation, an orientation meeting with the RAP Consultant Team was conducted with the representatives from the DPWH – ESSD. The consultation meeting was conducted through Zoom application which was organized by the Study Team. This is in view of the difficulty to be physically present due to the present predicament caused by this COVID 19 Pandemic.

The objective of the meeting is to orient the RAP Study Team to have a common understanding on the laws and policies of the DPWH pertaining to acquisition of right of way. The presentation was also done so that the RAP Study Team will have an idea on the salient provisions of the DPWH polices that should be presented during the local public consultation with the project stakeholders on the ground.

15.2 Review of Previous Studies, Plans and Design Standards

Initial data gathering and review of scope of services, previous studies, plans and design standards were undertaken by the Study Team. Among the initial data gathered and reviewed by the Study Team were the socioeconomic profiles of the affected cities and municipalities, Google maps of the road alignment, construction materials price data, materials source, topographic maps.

Information regarding the existing condition of the project road was gathered through initial ocular inspection. Video footage and photographs were taken on areas particularly with concerns. Coordination with LGUs was done to access to the barangay level officials for the survey activities conducted.

15.3 Public Consultation Meetings

Pursuant to the operational framework for Public Participation and Consultation, all LGUs and PAPs traversed by the road project, other stakeholders and Non-Government Organization NGOs should be fully informed and consulted on resettlement and compensation options. This is to ensure that the implementation of the RAP will be done systematically in accordance with the resettlement policy of the Department.

Using the definition of DPWH of meaningful participation, it is a process that (i) begins early in the project preparation stage and is carried out on an on-going basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

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In the conduct of public consultation, the following step-by-step progression of activities were undertaken:

- 1) When and where participation is required;
- 2) Who should be participating;
- 3) How they should participate; and
- 4) What results are expected of their participation.

In line with its continuing efforts to upgrade its operations and services. DPWH has recently formulated a new policy framework on land acquisition, compensation, and resettlement, herein after called "Resettlement Policy". Said framework aims to provide clear guidance and direction to the personnel of the Department in planning, design and implementation of the projects DPWH undertakes. Specifically, the resettlement policy underscores the importance of getting PAPs informed about the project and, more importantly, getting their actual and active involvement in the planning and implementation.

15.3.1 Objective of the Consultation

Providing adequate information to affected communities and stakeholders reduces the potential for conflicts, minimizes the risk of project on communities and enable resettlement and compensation a comprehensive development programme.

In Specific terms, public consultation sought to achieve the following objectives:

- Ensure accurate and transparent resettlement and rehabilitation process for Projectaffected Persons (PAPs);
- Inform stakeholders of the project activities and provide adequate information on the project, its components and its activities with affected communities;
- 3. Establish grievance and effective complaints mechanism on the project;
- 4. Obtain cooperation and support of the project affected persons;
- Inform the PAPs and the communities about various options of resettlement and compensation; and
- Obtain vital information about the needs and priorities of affected settlements.

15.3.2 Public Consultation Proceedings

To ensure wider participation, particularly among the LGUs and potential stakeholders, letters of invitation were sent earlier to notify the respective LGU officials. The consultation meetings were conducted in the four (4) municipalities and two (2) cities in the Provinces of Misamis Oriental and Bukidnon.

The public consultations were conducted with the LGUs, PAPs and Non-Government Organization (NGOs) as participants. The meeting was designed to present and inform the stakeholders on the Land Acquisition Resettlement Rehabilitation and Indigenous Peoples Policy (LARRIPP) of the DPWH as per RA 10752, Legal Framework for Infrastructure Rightof-Way (ROW) Acquisition and Management and other Provisions of the Road Right of Way

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Act (RA 10752). Highlighted, during the public consultation and discussed clearly are the modes and process of acquisition for affected properties. During the meeting, the team informed the stakeholders that the RAP team will be conducting socioeconomic survey and inventory of affected assets after the consultations in all municipalities traverse by the project.

Further, the team requested permission to enter their premises to conduct the survey/ assessment and informed the affected families on the cut off dates.

15.3.3 Consultation and Participation

The formulation of the RAP has been achieved through close collaboration and consultation with the LGUs of Cagayan de Oro City, Tagoloan, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay City.

The consultation meeting aimed to:

- a) Provide background on the project titled "Preparatory Survey for Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)"
- Provide background on the Road Right of Way Act (RA 10752), and the DPWH Policies and Process on Road Right of Way Acquisition.
- c) Provide an avenue to solicit inputs, comments, suggestions, and recommendations from the local stakeholders.
- d) Provide project updates to the stakeholders including the formation of the RAP Implementation Committee (RIC).

There were a series of consultation meeting conducted by the study team from March to April 2021. The first meeting was with representatives from DPWH-Central Office. The objective of the meeting was to orient the RAP Study Team to have a common understanding on the laws and policies of the DPWH pertaining to acquisition of right of way. The meeting was also done so that the RAP Study Team will have an idea on the salient provisions of the DPWH policies that should be presented during the local public consultation with the project stakeholders on the ground.

The next public consultation meetings were conducted at the municipal, barangay level, and private sector with PAPs. The letters of invitation were sent at least two (2) weeks before the conduct of the meeting. On the other hand, the LGUs also informed the PAPs through sending invitation letters.

Table 15-1 to Table 15-3 summarized the meetings undertaken by the JICA Study Team together with DPWH-CO staff. Appendix 5 shows the highlights of the series of public consultation meetings.

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Table 15-1. LGUs Coordination/ Consultation Meeting

Coordination/Consultation Meeting		Date	Venue	Remarks
1.	Orientation Meeting	09 March 2021	Via Zoom Application	RAP Team Orientation with the DPWH-ESSD and JICA Study Team
2.	Cagayan de Oro City Coordination/Consultation Meeting	22 March 2021	Face to Face and Via Zoom Application	Department heads of Cagayan de Oro City LGU, DPWH Region X Representative, and RAP Team (Face to Face) JST Consultants and DPWH, ESSD (Via Zoom Application) Total number of LGU attendees is 11 (2 females and 9 males)
3.	Tagoloan Coordination/ Consultation Meeting	23 March 2021	Face to Face	Department heads of Tagoloan LGU, DPWH Region X Representative, and RAP Team Total number of LGU attendees is 9 (3 female and 6 males)
4.	Manolo Fortich Coordination/Consultation Meeting	24 March 2021	Face to Face and Via Zoom Application	Department heads of Manolo Fortich LGU, DPWH Region X Representative, and RAP Team (Face to Face) JST Consultants and DPWH, ESSD (Via Zoom Application) Total number of LGU attendees is 12 (2 females and 10 males)



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Coordination/Consultation Meeting	Date	Venue	Remarks
 Sumilao Coordination/ Consultation Meeting 	25 March 2021	Face to Face and Via Zoom Application	Department heads of Sumilao LGU, DPWH Region X Representative, AND RAP Team JST Consultants and DPWH, ESSD (Via Zoom Application) Total number of LGU attendees is 16 (3 females and 13 males)
Malaybalay Coordination/ Consultation Meeting	26 March 2021	Face to Face	Department heads of Malaybalay LGU, DPWH Region X Representative, and RAP Team Total number of LGU attendees is 5 (1 female and 4 males)
7. Impasug-ong Coordination/ Consultation Meeting	29 March 2021	Face to Face	Department heads of Impasug-ong LGU, DPWH Region X Representative, and RAP Team Total number of LGU attendees is 10 (2 females and 8 males)

Table 15-2. Barangay Public Consultation Meeting

Barangay Public Consultation Meeting	Date	Venue	Remarks
Cagayan de Oro City, Barangay Puerto	14 April 2021	Face to Face	35 PAPs attended the Meeting (22 females and 13 males)
Barangay Bugo	24 April 2021	Face to Face	14 PAPs attended the Meeting (2 females and 12 males)



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Barangay Public Consultation Meeting	Date	Venue	Remarks
Barangay Balubal	04 May 2021	Face to Face	16 PAPs attended the Meeting (5 females and 11 males)
Barangay Bugo (2nd Meeting- requested by the Barangay Captain, exclusively intended for the landowners, whom was not able to attend las 24 April 2021.	07 May 2021	Face to Face	9 PAPs attended the Meeting (3 females and 6 males)
Municipality of Tagoloan Barangay Casinglot	15 April 2021	Face to Face	34 PAPs attended the Meeting (15 females and 19 males)
Barangay Natumolon	28 April 2021	Face to Face	26 PAPs attended the Meeting (13 females and 13 males)
3. Municipality of Manolo Fortich Barangay Sankanan	30 April 2021	Face to Face	22 PAPs attended the Meeting (8 females and 14 males)
Barangay Ticala	30 April 2021	Face to Face	23 PAPs attended the Meeting (13 females and 10 males)
Barangay San Miguel	03 May 2021	Face to Face	13 PAPs attended the Meeting (6 females and 7 males)
Barangay Alae	05 May 2021	Face to Face	17 PAPs attended the Meeting (8 females and 9 males)
Barangay Mambatangan	14 May 2021	Face to Face	12 PAPs attended the Meeting (2 females and 10 males)
Municipality of Sumilao Barangay Puntian	27 April 2021	Face to Face	25 PAPs attended the Meeting (13 females and 12 males)
Barangay San Roque	06 May 2021	Face to Face	43 PAPs attended the Meeting (30 females and 13 males)
Barangay Kisolon	10 May 2021	Face to Face	24 PAPs attended the Meeting (8 females and 16 males)
Municipality of Impasug- ong Barangay Impalutao	26 April 2021	Face to Face	19 PAPs attended the Meeting (11 females and 8 males)



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Barangay Public Consultation Meeting	Date	Venue	Remarks
Barangays Capitan Bayong and Kawayan	26 April 2021	Face to Face	12 PAPs attended the Meeting (4 females and 8 males)
Barangay Poblacion	29 April 2021	Face to Face	11 PAPs attended the Meeting (6 females and 5 males)
Barangay La Fortuna	29 April 2021	Face to Face	14 PAPs attended the Meeting (7 females and 7 males)
Malaybalay City Barangay Kalasungay	11 May 2021	Face to Face	16 PAPs attended the Meeting (7 females and 9 males)
Barangay Dalwangan	11 May 2021	Face to Face	16 PAPs attended the Meeting (7 females and 9 males)
Barangay Patpat	14 May 2021	Face to Face	9 PAPs attended the Meeting (3 females and 6 males)

A focused group discussion was conducted with representatives from the Del Monte Philippines, Inc. and DOLE Philippines, Inc. the purpose of the meeting was the same as with the public consultation.

Table 15-3. Focused Group Discussion

Focused Group Discussion	Date	Venue	Remarks
Del Monte Philippines, Inc. in Manolo Fortich	19 May 2021	Face to Face	10 PAPs attended the Meeting (10 males)
DOLE Philippines, Inc. in Malaybalay City	19 May 2021	Face to Face and Via Zoom Application	6 PAPs attended the Meeting (6 males) JICA Study Team – Via Zoom Application

15.3.4 Stakeholders Issues and Concerns



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During the open forum, the stakeholders were encouraged to raised questions, issues and concerns with regards to the RAP policy. The major issues and concerns commonly raised/asked during consultations are summarized in Table 15-4.

Table 15-4. Major Issues and Concerns Raised During Consultation

	Question	Raised by	Response
Orien	tation Meeting		
1.	During the barangay consultation meeting, we may need to explain the idea of cut-off date for the entire stretch of the road is just one date?	RAP Specialist Expert (JICA Study Team)	The Senior Environmental Management Specialist of DPWH-ESSD explained tha the cut-off-date is the start of the census survey; however, to be clarified with the Chief of ESSD.
2.	Are the Barangay adjacent to each other? For example, in Cagayan de Oro, Bugo, and Puerto. Are they connected?	Engineer III, OIC- Section Chief (DPWH)	The RAP Team Coordinator responded that Barangays Bugo and Puerto are connected, located in Cagayan de Oro City.
3.	Suppose there are areas with a minimal number of affected persons. In that case, there are five (5) or 10 affected persons in one or two barangay. Can you consider one public consultation meeting?	Senior Environm ental Managem ent Specialist (DPWH- ESSD)	The RAP Team Coordinator narrated that this is the first plan is to combine two barangays during the PCM; however, this will be confirmed during the LGU Consultation Meeting. She further explained that upon confirmation of the proximity and possible number of PAPs, the PCM schedule might be shortened or might be prolonged.
4.	ESSD suggested making arrangements before the courtesy call to ensure the availability of the LGUs Mayor concerned offices.	Senior Environm ental Managem ent Specialist (DPWH- ESSD)	The RAP Team Coordinator explained that letter prepared by the Consultant be signed at once by the Team Leader. The DPWH still has enough time to prepare an endorsement letter endorsing the RAP Team to all concerned Regional/DEO and LGUs Offices. This letter can be sent through facsimile or email before our courtesy call and LGUs Consultation Meeting.
Cagay	an de Oro City Coordination	/Consultatio	n Meeting
1.	Who will be those affected people? Who will pay for the compensation? Is it from the local or national budget?	City Engineerin g Office, CDO	The RAP Team Coordinator responded that the project affected person is the local people, whose property will be traversed within the project road right- of-way. Further answered that it's a National project and the compensation



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Question	Raised by	Response
		will be provided from the National Fund.
Is Casinglot located in the Province of Misamis Oriental?	Senior Environm ental Managem ent Specialist (DPWH- ESSD)	The RAP Team Coordinator, responded that Casinglot is located in the Province of Misamis Oriental, Municipality of Tagoloan, the starting point of the Project.
 Why is the alignment traverse in Bugo and Puerto? Why not directly go straight to Malaybalay City? 	Barangay Kagawad (Bugo)	The RAP Team Coordinator responded that the consultant alignment has to consider the cost impact, the IPs to be affected, the topography; engineering aspect was also being considered by the consultant. This alignment is still at the Feasibility Study stage and will also be finalized during the DED stage.
4. Can we have actual inspection in the two (2) Barangays Bugo and Puerto? We have experienced during post construction, that there was a landslide which affect the area of Puerto, sometimes last year. It is important to visit actual the siltation and to mitigate affecting the landslide portion during post implementation.	City Engineerin g Office, CDO	The RAP Team Coordinator responded that this landslide concern will be addressed during the conduct of the geotechnical investigation throughout the section. Representative from DPWH-ESSD informed that there will be Environmental Impact Statement, and this landslide will be considered. She mentioned that the EIS Consultant will discuss this matter with the LGUs in another forum.



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	Question	Raised by	Response
5.	Do we have another Barangay Meeting?	Barangay Kagawad (Puerto)	The RAP Team Coordinator responded that there will be a Barangay Public Consultation Meeting in Barangays Puerto and Bugo, most likely on April 6 2021. She cited that there will be a focus discussion with concerned two-barangays right after consultation meeting. The RAP Team will provide Maps for the Brgy. Captain/s concerned to identify the possible affected persons to be invited. She further explained that after the Barangay Public Consultation Meeting, census, socioeconomic survey, inventory of loss of assets, such as of structures, crops and trees will be conducted.
6.	Suggested to include the slide on the JICA General Policy in the next Consultation Meeting	Senior Environm ental Managem ent Specialist (DPWH- ESSD)	The RAP Team Coordinator responded that the slide on JICA General Outline will also be presented in the next succeeding Consultation Meeting with LGUs concerned offices.
gol	oan Coordination/ Consultat		
1. The Adri poir cons whith through the construction of the constr	The Barangay Administrator of Casinglot pointed to the reservoir constructed last 2018 of which will be passed through present road alignment within KM 0+600 and KM 0+700. He raised whether it is possible to make realignment or not. (Please	Barangay Administr ator (Casinglot)	The RAP Team Coordinator informed that the alignment is still subject for improvements to avoid and mitigate major adverse impacts of the construction project.
	It was emphasized by the other local officials that there are now some residential structures in the nearby vicinity of the		



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	Question	Raised by	Response
2.	If the affected property is untitled, will it be compensated?	Municipal Assessor (Tagoloan)	The RAP Team Leader responded that the government does not pay for the lands without transferring the ownership or title.
3.	How about if we have only a copy tax declaration, deed of sale and paying taxes, could we paid?		The RAP Team Coordinator answered, that need to approve the subdivision plan from the Mother Title, to process the land titling. Untitled land cannot be paid, only structures and improvement will be given compensation.
4.	Is there any informal settlers in barangays Casinglot and Natumolan that will be affected?	JICA Study Team	The Barangay Chairperson of Casinglot responded that there is no informal settlers in Barangay Casinglot. Most of the structures owner do not have land title. He cited that only one owner of the land has the mother title. He only sold the rights lot by lot, without giving the title, except for the rights to build the structure.
5.	Are there any structures/houses in Barangay Natumolan to be affected?	RAP Team Coordinat o, RASA Surveying	Barangay Kagawad from Natomulan responded that there might not have houses to be affected, but the lot owner is a prominent person.
6.	A property owned by Moras (a private corporation) might be affected. This is mostly planted with coconuts.	Barangay Chairpers on (Casinglot)	The RAP Team Leader verified in the maps that only a minor portion of Moras property will be affected.
1975	Can we invite representative from MORAS Coconut Farm to attend the Barangay Public Consultation Meeting?	RAP Team Coordinat o, RASA Surveying	The Barangay Chairperson of Casinglot cited that he will invite representative from MORAS to attend the said Barangay Public Consultation Meeting.
Mano	lo Fortich Coordination/Con	sultation Me	eting
1.	Do we have any IPs or Ancestral Domain traversing along the Manolo Fortich alignment?	RAP Team Coordinat or, RASA Surveying	The Barangay Chairperson of Alae responded that there is IPs to be affected in a portion traversing along the Manolo Fortich alignment. ²¹

¹¹ The National Commission on Indigenous People (NCIP) Region X issued a Certificate of Nu Overlap (CNO) for both Misamis. Oriental and Bukodnon, However, NCIP Region X issued Work Order No. 429-A, dated June 16, 2022, requiring the proponent to conduct a Free and Prior Informed Consent (FPIC). Ethnic minority groups who reside in ROW and are defined as IPs under NCIP AO No.3 2012 are being validated to be defined as IPs under JICA Guidelines.



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Question	Raised by	Response
Can you provide more maps showing the alignment where we could clearly visualize the affected properties?	Barangay Kagawad (Tankulan)	The RAP Team Coordinator responded that maps showing the alignment will be provided where the affected lots and owners could be identified and the owners of the affected structures, other improvements and crops and trees. These additional maps will be provided to identify those possible affected persons (PAPs) who could be invited for the upcoming Barangay Public Consultation Meetings. She elaborated, that after the Barangay Public Consultation Meeting, RAP Team will start the conduct of the Socioeconomic Survey including Census on the owners of the affected lots and structures, once the Consultant finalize the preliminary alignment.
nilao Coordination/ Consultati 1. Municipal Mayor cited that most of the problem arise because of misunderstanding about of the Project. He suggested and gave emphasis that on the next presentation make it something that they can understand in simple language. He suggested the Team to have people that can communicate with them. So they can understand more and implication of the Project to the people.	Local Chief Executive (Manolo Fortich)	The RAP Team Coordinator responded and explained that this upcoming Barangay Public Consultation Meetings, she already requested the representative from the DPWH Region X, to assist the RAP Team to explain in local dialect the Resettlement Action Plan and Land Acquisition Plan for the local people to understand thoroughly the presentation.
2. We have so many problems with projects being implemented by the DPWH Regional Office. What happens is that I am the one left to solve the problems. We had a case in San Roque side where problems arose due to	Local Chief Executive (Manolo Fortich)	The RAP Team Coordinator cited and informed that this Project is already discussed with the DPWH and the alignment is under Feasibility Study. She cited that FS is to determine if the project is viable and beneficial to the government. The alignment under FS still preliminary. She elaborated that a year after the FS, the detailed



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Question	Raised by	Response
road ROW where the DPWH Regional Office move the alignment 5 times and then they would say that we are delaying the projects because of so many problem. The Local Chief Executive (LCE) cited, that the alignment being presented where already identified areas that might be affected, then we have already talked with the residents, but later the alignment will be revised again. These cause problems where we had encountered so many times in the past. The ongoing projects now are having those problems. I think this is the most important aspect that we need to address because a lot of people are reluctant already to talk with the DPWH, because of the different alignment.		engineering design will be undertaken, of which a more thorough study will be done. During the detailed engineering design, the final alignment will be determined.
3. I just want to clarify. Will this project be implemented or if the Feasibility Study shows that it is not feasible, it will not push thru.	Local Chief Executive (Manolo Fortich)	The RAP Team Coordinator answered that from past experience, most of the projects being undertaken by JICA are all feasible, and about 90% are being implemented. When JICA starts to invest on projects, most of them are implemented until Civil Works. She elaborated, the FS is a Grant Project under JICA; hopefully, Detailed Engineering Design will also be a Grant so the expenses of government is less. This project is assisted by JICA, hopefully DED is also grant and Civil



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Question	Raised by	Response
		Works to be loan under JICA . The temporarily plan for Civil Works is to be started by 2023 onwards.
The LCE informed all the Barangay Captains that this is just fund for only feasibility study and not for the whole project itself.	Local Chief Executive (Manolo Fortich)	The RAP Team Coordinator responded, it's only for Feasibility Study, not for the whole project itself.
for the whole project itself. 5. That is what we want to clarify. It might be that when the Barangay Officials come back to their places, they will announce that we have a new Highway. What happens, the prices of the lands go up pointing to the new Highway. These really happen, because we have many Highways. We already have a Circumferential Highway.	The RAP Team Coordinator stated that this Feasibility Study is also to make people aware that sooner or later the government will also construct a new High Standard Highway. She narrated that final alignment are not sure yet. She cited, that alignment during the feasibility study is just a preliminary, that might change during the detailed design stage.	
This highway that we talking now will cuts thru Sumilao. It will have major effect on places such as Culasi, Vista Villa. People might be super excited about the Project. The price of the land from 200,000 thousand per hectare become 1MP per hectare.		
Let us be clear about it, this		



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Question	Raised by	Response
is just a Feasibility Study. This is not the start of the project itself.		
 I also suggest that you talk to all affected companies because big portions of where you are going thru are pineapple plantations. You need to coordinate with them because those lands are under lease including Culasi, Vista Villa, San Roque, Puntian, 	Local Chief Executive (Manolo Fortich)	The RAP Team Coordinator answered, that the Team will be coordinating with the Del Monte Philippines Inc. She is so thankful to the LCE for this information.
 We want to let the LCE know that this LGUs consultation meeting is important, because some people are asking, if the Mayor know this Project. Likewise, the Barangay and local government Officials must know about the details of the Project. 	Senior Environm ental Managem ent Specialist (DPWH- ESSD)	The RAP Team Coordinator responded and noted for this information dissemination about the Project. She is thankful with the LCE for attending the Consultation Meeting.
Another concern of the LCE based on the initial map being presented, some of the areas where the road will pass thru are mostly untitled land.	Local Chief Executive (Manolo Fortich)	The RAP Team Coordinator responded that as early at the feasibility study stage, they still have time to process the subdivision plan from the mother title, and eventually to the process the land titling. It's better for the people to be aware for future problem like this.
9. Specially the IPs, they considered the Tax Declaration as a Proof of ownership. This will be our problem, only tax declaration that they have, then they will not be the owner of the land. This is the problem that we need to address also. The Local government unit could be of helped, that we are going to process this tax declaration into title once we can see a very accurate.		The RAP Team Coordinator answered that LGUs assistance especially to the IPs to process land titling is a big help for them. She cited that CTII mentioned that the FS alignment vs. detailed design alignment will not have a big difference like one km FS alignment to detailed design alignment is just a little bit difference.



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Question	Raised by	Response
map where the alignment will pass thru. We will see first who take in position within the alignment, then will going to check if they have titled or not, so that LGUs could help in the process of land titling. Also I do not want them, specially the IPs leaving in the area even without papers, they considered the land as their owned, then we will inform them that it's not their land. This will be our problem. At least if we can identify where the road pass thru, we will talk with them, who take the position, then we will help them process their paper for them to acquire title.		
With regards to IPs to be affected, we are in coordination with NCIP for their concerns.	Senior Environm ental Managem ent Specialist (DPWH- ESSD)n	The RAP Team Coordinator responded that during actual census survey, we will also considered IPs to be affected. There will be also another process, it's an IPRA Law process to be conducted.
11. Do we have map to see the area to be affected?	Punong Barangay	The RAP Team Coordinator requested the Team to present the location Map with the area to be affected.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

	Question	Raised by	Response
1.	According to the presentation, this year is the Feasibility Study, when will get the list of names to be affected by the project.	Barangay Kagawad - Infrastruct ure Chairman, Brgy. 10	The RAP Team Coordinator responded that their will be upcoming Barangay Public Consultation Meeting after the Holy Week. She elaborated that the Team Leader will provide to each Barangay Captain Location Map showing the alignment to identify the possible affected lot owner, structures, and other improvement to be invited for the upcoming Barangay Public Consultation Meeting. She cited that the RAP Team Leader will be closely coordinated to each Barangay Captain for the venue and schedule of the Public Consultation Meeting.
2.	My concern is regarding those titled acquired 1975 onward, there will be no compensation for the land?	Barangay Kagawad - Infrastruct ure Chairman, Brgy. 10	The RAP Team Leader responded that no compensation for the land within 60m right of way, but for the structures and other improvements will be compensated by the DPWH.
3.	How about for the free patent application title acquired in 1974 below, if the government will acquire more than 20 meter, is the government will pay in excess of 20 meter acquisition?	Barangay Kagawad - Infrastruct ure Chairman, Brgy. 10	The RAP Team Leader responded that the government would pay the lot owner in excess of 20-meter acquisition.
4.	How about for the structure, are all structures affected be paid by the Government?	Barangay Kagawad - Infrastruct ure Chairman, Brgy. 10	The RAP Team Leader answered that all affected structures will be paid by the government.
5.	Another concerns is the project is proposed to be implemented by 2023, if the President is no longer President Duterte, will this project be implemented or not? Mindanao area might not be longer a priority?	Barangay Kagawad Infrastruct ure Chairman, Brgy. 10	The RAP Team Coordinator responded that this Project is not politically inclined but more on the benefits and necessity of the people.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro - Malaybalay Section)

Question	Raised by	Response
 Barangay 1 will not be affected by the Project. 	Barangay Kagawad - Infrastruct ure Chairman, Brgy. 10	The Infrastructure Chairman explained that Barangay 1 will not be affected but instead Barangay Sumpong is the one affected. Likewise, there is no need for Lapu-Lapu, but only Barangay Patpat.
7. Are their IPs to be affected?	RAP Team Coordinat o, RASA Surveying	The Infrastructure Chairman explained that in Barangay 10, there is IPs to be affected, but the land is owned by Military Service, as recorded in the DENR. However, IPs claim it's an Ancestral Domain ²² .
mpasug-ong Coordination/ Cons	ultation Meet	ing
1. He asked whether the alignment will really pass the Barangay of La Fortuna. He wanted to be sure since his constituents will be asking him questions regarding the project. He added that he wants to inform the people in his area specially those who will be affected. He wants to be sure on the alignment of the highway because he is worried that his constituents may given wrong information.	Barangay Chairpers on (La Fortuna)	The RAP Team Leader responded that the RAP Team has already prepared maps showing the preliminary alignment. Its shows that Barangay La Fortuna will be affected by the proposed preliminary alignment. He added that the RAP Team will coordinate with the Municipal Assessor and the MPDC, as well as with concerned Barangay officials to furnish maps for their reference. The Municipal Engineer then confirmed that La Fortuna will be traversed by the project. He pointed on the portions of the alignment maps indicating that then are really affected segments within Barangay La Fortuna.
Why should we avoid Ancestral Domains areas?	Barangay Chairpers on (La Fortuna)	The RAP Team replied that the DPWH does not categorically avoid Ancestral Domains. We only introduce realignments to avoid cutting thru the Ancestral Domains. As much as possible, we adjust towards the perimeter sides of the AD areas so these areas will still be conserved. We might prepare additional plan called the

The Notional Commission on Indigenous People (NCIP) Region X issued a Certificate of No Overlap (CNO) for both Misamis Oriental and Bulidono



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro - Malaybalay Section)

	Question	Raised by	Response		
			Indigenous People's Plan as required under the D.O. #152.		
Cagayan de Oro City Coordination/Consultation Meeting (Barangay Level)					
1.	She asked (in local dialect) "when will we know whether we will be affected or not by the project?"	Project Affected Person	DPWH representative responded (in local dialect) that it will be confirmed during the conduct of Socioeconomic Survey and inventory of assets.		
2.	She asked (in local dialect) "is the alignment final already?"	Project Affected Person	The RAP Team Leader replied that the alignment at this stage is not final yet, and that it will be finalized at Detailed Engineering Design stage. He added that there will not be significant or major changes unless there is critical issue in the FS alignment. (DPWH representative explained further in local dialect).		
3.	She asked (in local dialect) "is it possible to adjust to the right the alignment to avoid our group of houses in Purok 7? There are no houses at the adjacent area right of the alignment. We were not able to have enough sleep since being informed that we will be affected. We do not want to be relocated.	Project Affected Person	DPWH and RASA representatives referred to the Google Earth Map for the subject portion. RASA representatives pointed that most of the existing houses are not yet indicated. The RAP Team informed the PAPs that their case will be brought to the attention of the Japanese Consultants and will surely be given consideration.		
4.	A PAP asked when will be the start of the Survey.	Project Affected Person	RASA representative replied that the Socioeconomic Survey and Inventory of Assets will most probably start in the first week of May.		
5.	He requested to discuss more substantially how the affected properties owners will be compensated.	Barangay Chairman	The RAP Team Coordinator referred to the slides that show how PAPs will be compensated thru Negotiated Sale. The DPWH representative in local dialect, reiterated that compensation shall be the sum of the current market value of the land, the replacement cost for structures and other improvements and the current market value of the crops and trees.		



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Question	Raised by	Response
 The JICA Study Team requested the support of the Barangay Captain for the upcoming socioeconomic survey and inventory of asset, to be conducted most probably first week of June 2021. 	JICA Study Team	The Barangay chairperson cited that he will guarantee that the Barangay Council will be always ready for any assistance relative to the proposed project.
7. Sir, as caretaker what are the procedure in paying for our crops and land?	Project Affected Person	DPWH representative responded that the owner of the land will be compensated based on the current market value of land, while the owner o crops, will likewise be paid base on the current market value of crops.
Is it possible to have the alignment along the boundary lines of the lots?	Project Affected Person	DPWH representative responded that the proposed new highway is a High Standard Highway, as much as possible, curves are minimized because the design speed will be higher. We could not follow the boundaries of lots for the alignment.
 We hope that we will not encounter difficulties in securing the requirements for transfer or payments for our lands. We are happy that we will have concrete roads but the payment we receive for our lots are not high. 	Project Affected Person	The JICA Study Team responded that the DPWH requirements are mandatory He added that the DPWH and the Consultants will explore all possibilities to lessen the difficulties encountered by the PAPs in securing the mandatory required documents and payment for the land is based on current market value as well.
10. Will it be possible to have a single office for the Road Right of Way Acquisition so we will not need to secure required documents from so many offices?	Project Affected Person	The JICA Study Team mentioned that every concern raised will be forwarded or coordinated with the DPWH and the Consultants for proper actions.
11. We are concerned because we could not contact the owners of our farmlands. For the Cagayan De Oro Diversion Project, we got no payment for our affected crops. Our farmlands have been	Project Affected Person	The JICA Study Team gave assurance that for this project, they will be compensated for affected crops.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro - Malaybalay Section)

	Question	Raised by	Response
	foreclosed by the banks and there various new owners who we do not know.		
Tagol	oan Coordination/Consultati	on Meeting	(Barangay Level)
1.	He expressed his concerns on whether the PAPs who did not secure land title yet will be compensated for the land they occupied aside from their structures. He said his concerns as to the stated policy where the DPWH only pays titled lots.	Project Affected Person	The JICA Study Team responded that the DPWH always adheres to the provisions of the law as defined under RA 10752 with regards to payment of compensation for affected properties due to ROAD ROW acquisition for national government projects. He added that for PAPs who have not yet must secured titles for their lots, otherwise, expropriation would be applied and the concerned courts will be tasked to resolve the case.
2.	The PAPs suggested/requested to re- align the proposed road project so that it will directly traverse the MORAS Property instead of the reservoir area.	Project Affected Person	The JICA Study Team responded that the preliminary final alignment will be determined considering the results of the Feasibility Study and added that the Socioeconomic Survey and Inventory of Assets would most probably start in the first week of May to determine the actual PAPs. Furthered discussed that the final alignment will be done during the conduct of the detailed engineering design.
3.	How much will be paid for the land?	Project Affected Person	The JICA Study Team replied that the affected land will be appraised by a Government Finance Institution such as the Land Bank or the Development Bank of the Philippines to determine the current market value per square meter. This will be applied in the computation of the compensation for the land.
4.	Could we know the exact alignment of the project so we may know if our projects will be affected?	Project Affected Person	The JICA Study Team replied that the alignment maps will be shared upon the finalization of the selection for the route or alignment.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

	Question	Raised by	Response
5.	He expressed his acceptance for the project considering the benefits it will bring to the people.	Project Affected Person	The JICA Study Team appreciated the project acceptance of Mr. Betonio
6.	They mentioned that they attended the meeting to communicate with authorized persons and officials that they have filed a case in 1974 for a tract of land which will be traversed by the proposed road (Based on present alignment). They added that a decision was given by the court in 2000 declaring the claim of Mr. Neri as invalid considering he has no property in Natumolan.	Project Affected Person	The JICA Study Team listens and noted on their narrated story.
Mano	lo Fortich Coordination/Con	sultation Me	eting (Barangay Level)
1.	Is there already a budget for this project?	Project Affected Person	As of this stage, the Feasibility Study is under a Grant by JICA. Then after the FS, and the proposed project is to be approved by NEDA for implementation, funds will be allocated. AS of now that the FS is still on-going, there is still no funds for the actual construction.
2.	I would like to ask if that 60 meter project already has a budget for construction. Why not utilize the existing 10.00 meters Barangay Road where concreting is the only problem? It already has ROW, however it lacks budget. Your proposed project will affect many lot owners who also have future plans for their lots. Will it not be easier to follow the existing Barangay Road?	Barangay Kagawad (Ampal)	60.00 meters is the Road Right of Way limit. Our project has four (4) lanes and 3.65 m. width per lane. The 60.00 meters will not be fully-occupied by the concrete road. There are allowances for future expansions. For that Sir, we will check whether the existing road will pass for the High Standard Highway where we limit curves. Can you please point the location of the existing 10.00 meters Barangay Road so we could refer to the Designers?



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

	Question	Raised by	Response
3.	If ever the 60.00 meters wide project pushes thru, since only four (4) lanes are for concreting, can we prepare a Memorandum of Agreement that while the government is still not using, the owners may utilize the vacant areas as a favor to prevent the illegal settlers.	Project Affected Person	JICA is strict in monitoring the DPWH on the maintenance of Road Right of Way. DPWH District Engineering Offices are responsible in the clearing and private purposes are strictly not allowed.
4.	Our property was traversed by the national highway and the easements were occupied by squatters. What actions can we do to remove the squatters at the frontage of our property?	Project Affected Person	DPWH Regional and District Engineering Offices are responsible for the clearing and maintenance of the ROAD ROW including the road easements.
5.	Have you presented the project to the LGUs? How many percent already is the FS? How many affected property owners?	Project Affected Person	Yes Mam, we have already presented the proposed project to the LGUs. This meeting is still part of the FS which is about 20% completed. We still do not have the final data on the final affected property owners.
6.	How long will be the construction of this project? We are concerned that this project will be started but could not be completed for lack of funds.	Project Affected Person	JICA Projects are funded up to completion.
7.	Regarding the compensation for the affected property owners, do you have initial negotiation with them?	Project Affected Person	The DPWH will have different teams under the Road Right of Way who will be in-charge with the negotiations.
8.	Sir, from creek how many meter is the clearance?	Project Affected Person	DPWH representative responded that regarding the distance from the creek, we could not determine yet as of now. However, design clearance from the creek will be determined during the actual survey and the design alignmen of the Japanese Consultants.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Question	Raised by	Response
 Will there be compensation for the affected lots? How much is the exact prevailing price? 	Project Affected Person	DPWH representative responded in local dialect that the land titles will be checked if qualified for compensation in accordance with the applicable laws specifically RA 10752. However, for land titles acquired under CA 141, twenty (20) meters is reserved by the government for public use. CA No. 141 was amended by Presidential Decree (PD) No. 635, dated Jan. 07, 1975, which increased the ROW strip reserved for public use sixty (60) meters. However, any improvements will be paid by the government.
10. What if in the affected areas there are few holders of land titles and the others only hold Tax Declarations?	Project Affected Person	The JICA Study Team responded with an advice that since there are still several years prior to actual construction, the best recourse is to seek assistance from concerned LGU officials in securing land titles, specially upon confirmation that the said lots will be affected by the ROAD ROW for this project.
 Upon realization of this proposed project, will there be Toll Fees like in Manila or the SLEX and NLEX? 	Project Affected Person	The JICA Study Team responded that there will be no Toll Fees for this High Standard Highway considering that as indicated in the Typical Cross-Section.
12. We are tenants and according to the landwners, they will not allow the project to pass thru the middle of their lands.	Project Affected Person	The JICA Study Team explained that the purposed of the Public Consultation Meeting is to present and discuss to all Project Affected Person(s) PAPs the Objectives of the Project and explain with them, how the government, thru the DPWH the process in acquiring and mode of payment for all affected lots, structures, trees and crops to be affected and for the smooth implementation of the Project.
13. How about the access roads, will they be preserved for the local residents' use? She pointed to the access road between Salvador Home	Project Affected Person	The JICA Study Team cited, that they will inform the Japanese Consultants on this existing access road almost parallel to the proposed alignment, for further study and consideration. (Please see attached location map of the existing access road).



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Question	Raised by	Response
Goods Store and Dodong Iligan Lodging.		
14. He is concerned because their land which will be affected by the proposed new Highway has no title. They are five (5) siblings in the family and they have lived in that property since their childhood. They only have a Tax Declaration.	Project Affected Person	The JICA Study Team responded that only titled lot will be compensated. However, the crops and trees and other improvement will be compensated based on the current market value of crops and trees and current price of construction materials for the affected structures and other improvements.
15. She informed that their lot is rented by Del Monte for 10 years, and the payment has been given in advance. Are we going to repay back Del Monte in the advance payment given to us?	Project Affected Person	This was noted by the JICA Study Team. However, regarding the repaying back the advance payment, it's up to Del Monte to decide.
16. He cited that their house was constructed for about Three Hundred Thousand Pesos (Php 300,000) before. He asked how much they will receive now if their house will be affected.	Project Affected Person	The JICA Study Team and DPWH representative responded that as explained during the Presentation, the compensation for structure or the house will be computed based on the current prices of materials and current rate for labor, equipment, contractor's profit (if applicable), overhead and all other expenses associated with the structure.
17. Will there be Toll Fees for the proposed new Highway?	Project Affected Person	The CMHSHCP project is not a Toll Fee road project.
18. He raised his concern on what will happen to him if the whole 60.00 meters ROW will come from his lot which is only about 2 hectares. He added that he will be left with no land. He also informed that his title is still on process.	Project Affected Person	The JICA Study Team relied with an advice that it will be much better if he could secure the title prior to acquisition if ever the project will push thru. He added that there are unavoidable situations where people, including farmers, will be losing valuable properties due to construction of major



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro - Malaybalay Section)

Question	Raised by	Response
		roads which are highly necessary for national or regional development.
 He inquired if they could be provided with copies of the updated alignment maps. 	Project Affected Person	The JICA Study Team informed him that copy of the alignment maps have been provided to the Office of the Barangay Chairman for reference in determining the potential PAPs. The JICA Study Team added that updated alignment maps will be provided also thru the concerned LGU officials in proper time.
Sumilao Coordination/Consultation	on Meeting (
 What is the assurance that we will be relocated? How much is the percentage of assurance that there will be an area for our relocation as affected persons? 	Project Affected Person	The JICA Study Team responded that Relocation Site will be provided to Informal Settlers only in pursuant to the provisions of Republic Act No. 7279.
2. If my child has an existing land title, is it possible that we will not be provided relocation lot? What if the payment for the affected lot is not enough to buy another lot for our house?		The JICA Study Team replied that the price or value of affected lots will be based on appraisals to be undertaken by GFIs such as Land Bank and DBP base on the current market value. Affected lots will be appraised according to classification, so we presume payment for residential lots will be sufficient to buy another lot where to build your new houses. He added that since the compensation for the houses will be based on current market value of materials, the affected owners will surely be able to re-construct the same house.
3. There are lots that are rented by Del Monte and Dole for twenty-five (25) years and there are already advanced payments for five years rental. How will be the compensation for the lot owners whose titles are	Project Affected Person	Regarding the advanced payment for five years (5), we still have at least three (3) years prior to target (tentative) actual construction schedule. Also, additional compensation for future harvests is added for the damaged or affected crops. So, we foresee no big problem with regards to the advanced payment.

Central Mindanao Standard Highway Construction Project

Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Executive Summary

The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

	Question	Raised by	Response
	given (surrendered) to the companies?		
4.	Our Council would like to request that, if really possible, your Team should buy a land where affected families could transfer or relocation site which will be near the location of their old houses. There are land owners here who are prepared to sell their lots so the affected families could transfer near their present occupation or sources of living.	Project Affected Person	The JICA Study Team responded that their concern will be forwarded to the DPWH for consideration.
5.	It is really our request that, if we will be relocated to a location near our livelihood because we will really have difficulties if we will be relocated to other Barangays. We are working in a farm and is a potential area where we could transfer residence and we hope you could negotiate for it. We hope assessment for our affected areas will be pushed thru so it will be not hard for us to start our lives again.	Project Affected Person	The JICA Study Team assured that this concern will be given proper attention.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

	Question	Raised by	Response
6.	What will be the indication that the alignment is already final?	Project Affected Person	Based on the results of the Barangay Public Consultation Meetings, there are areas that have been considered for realignment including along a relocation site in Basag, Vista Villa. After these adjustments, by June 2021, prior to the start of Census and Assets Inventory, wwill already have a semi-final alignment for FS level or stage. By first or second week of June, we will know who will be affected and we will inform the PAPs thru the Barangay Chairmen. However, the final alignment for project implementation/construction will be determined during the conduct of the detailed design stage.
7.	How many meters will be the distance between the Sayre Highway and the proposed JICA Project?	Barangay Chairpers on	DPWH representative responded that the Sayre Highway and the proposed project of JICA will be near to each other. (please see attached map)
8.	Many lots located in our place are rented by Del Monte in the past years, and we only have Tax Declarations. After several years, we were able to secure titles and the lots were sub-divided thru the assistance of Del Monte. Who will receive the payment now, the original owners of the land or Del Monte?	Project Affected Person	The JICA Study Team and the DPWJH representative both responded that the registered owners of the lots will receive the compensation for the affected lots while Del Monte will be compensated for the crops.
9.	There is a parcel of land which was already sold, however, they only have Deeds of Sale. Are they going to be paid?	Project Affected Person	The JICA Study Team responded that since, as per tentative implementation schedule, the construction project will start by 2023, it will be better to process the transferring of the title now.
10.	How about the timberland where there is a claimant, does he has rights?	Project Affected Person	The JICA Study Team responded that there will be no compensation for the timberland, however, if there will be affected crops or structures, the claiman will be compensated.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Question	Raised by	Response
11. He raised his concern on the present alignment which will traverse directly the Relocation Site in Purok Basag, Vista Villa, Sumilao, Bukidnon near the boundary with Ticala, Manolo Fortich, Bukidnon. He informed that the Relocation Site was initiated by the Municipal Government for those who previously resided in accident and landslide prone areas. He added that the Municipal Government will have difficulty putting-up another Relocation Site. Further, he requested to re-align the project towards the open areas right side of the alignment so as to avoid also the farmlands of the relocated families whose livelihood will be affected heavily if they lose their farmlands located in San Roque, Sumilao, Bukidnon.	Municipal Vice- Mayor	The JICA Study Team responded that their concerns will be brought to the attention of the Japanese Consultants. (please see attached location map) for consideration.
12. He mentioned that the Municipal Mayor has instructed him to talk with the RAP Team to convince the Designers that the Relocation Site in Basag must be avoided.	Barangay Chairman (Vista Villa)	The JICA Study Team cited that the relocation site will surely be avoided by the consultant.
 Relayed the request of the whole community of the Relocated Families for the re-alignment to avoid disrupting their settlement which is very valuable to their lives. 	Barangay Kagawad (Vista Villa)	The JICA Study Team and DPWH representative assured that the request for the realignment to avoid the Relocation Site in Sitio Basag, Sumilao, will be forwarded to the Japanese Consultant.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Question	Raised by	Response
 He raised his concern regarding the fruit- bearing trees such as lanzones which might be affected. 	Barangay Kagawad (Vista Villa)	It was informed by the JICA Study Team that in case there will be affected fruit-bearing trees, the future harvests of the fruit-bearing trees will be considered in the computation of compensation.
 He voiced his request to avoid the water sources within the relocation site in Sitio Basag. 	Project Affected Person	The JICA Study Team cited that this will surely be address by the Consultant.
Malaybalay Coordination/Consul	tation Meetin	ng (Barangay Level)
In case, the affected persons do not participate in the consultation meetings, what will happen?	Barangay Chairpers on	Upon finalization of the alignment, we have what we call the Parcellary Survey. If the affected persons or the owners still do not want to cooperate, they will be sent notices that their properties will be affected. If the owners still do not want to cooperate, the government thru the DPWH may apply expropriation as the mode of acquisition in order to avoid/minimize delay on the project.
2. If the affected lots do not have title, will they not be paid?	Project Affected Person	The JICA Study Team responded that only titled lot will be compensated. So, since we have still at least three (3) years before the actual construction, we suggest that you process the land titling.
3. How could the titles be processed, the owners have not paid taxes for a long time?	Project Affected Person	The JICA Study Team responded that unpaid property tax, must be paid now, so that you can process for the titling of the land.
Is this project the same as NLEX and SLEX that we have to pay toll fees?	Barangay Chairpers on	The JICA Study Team responded that the proposed CMHSHCP is not a toll fee expressway. It's almost the same like existing Sayre Highway, except, the CMHSHCP road right-of-way limit is 60meter and the proposed alignment is more wider that the existing Sayre Highway.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

	Question	Raised by	Response
5.	My question is: Is there an assurance that before the construction in 2023, the affected owners will be compensated? There are instances the affected owners are not paid so the project could not be continued and there are cases the affected persons are already paid but they remain in their properties.	Project Affected Person	The DPWH will start Road ROW Acquisition at least one year prior to the start of actual construction works. Houses and other structures will not be demolished or removed unless paid while lots with complete requirements will be processed before being occupied.
6.	There are titled lots here and there are owners who only hold Tax Declarations. Are owners with Tax Declarations only going to be paid also?		Our tentative schedule for the project's construction works is 2023 and we will have the semi-final alignment for the FS Stage by June this year, so it is our advice to secure the title if your lots will be affected.
7.	For example, we still have no title for the lots when construction comes, what will you do?		This subject will be discussed again with the DPWH. However, as per RA 10752, the mode of acquisition applicable is expropriation.
8.	What is the probability that this project has funds?		We are still at the Feasibility Study Stage. The Feasibility Study Stage is being undertaken thru a Grant by JICA.
9.	What is also the probability that this project will be implemented?		We are still at the Feasibility Stage, so we are not sure of its implementation. However, most proposed DPWH projects considered for FS by JICA are implemented. After the FS, NEDA will decide on approval for its implementation. So, after one year, we will know whether it will be implemented or not.
10.	Why are you going to have a new highway while we have a good existing highway?		DPWH, JICA and other concerned officials are looking on positive economic activities for the future, hence, this project is being considered.
11.	Can we get a copy of the Minutes of the Meeting? If you are going to look at the project, it traverses right at the center of a	Project Affected Person	The minutes of the meeting will be provided thru the Office of the Barangay Chairman. May we respectfully ask for a copy of the plan so we can justify your request for consideration in order not to divide your farm which bio- security



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Question	Raised by	Response
farm establishment. You can not divide a poultry like that technically, due to biosecurity. Can we have a better option that could not severely affect other farms?		will not allow. We will notify you if it is possible to re-align.
 He suggested to utilize the existing access road which is 6.00 meters wide for the proposed project. 	Project Affected Person	The JICA Study Team responded that the proposed project is a High Standard Highway with 60.00 meters ROAD ROW. There will be more structures particularly residential houses if the access road will be utilized. He added that the access road also serve a different purpose for the local residents.
13. Our farm lot has a Tax Declaration under a mother title. The title is still for application since the survey has just been undertaken. How will it be?	Project Affected Person	The JICA Study Team responded that we still have at least three (3) years prior to target construction works schedule so, we advise that you try to secure the title so the processing of payment will be simpler or easier.
14. He asked: With regards to the lots rented by Del Monte, who will have the claims for the affected portion of the lots, the company or the owners?	Project Affected Person	Thank you Sir. The land owners will receive the payment for the affected portion of the lots while Del Monte will receive the payments for the crops.
Impasug-ong Coordination/Consu	Itation Meet	ing (Barangay Level)
Where will be the alignment of the proposed Highway	Project Affected Person	The JICA Study Team showed the Detailed Alignment Maps to the PAPs. The PAPs were given the chance and time to scrutinize the maps and inspect the areas that will be affected.
If we will be affected by the project, could we be prioritized in the hiring of workers?	Project Affected Person	The JICA Study Team responded that the PAPs will be given priority in the hiring of workers. In coordination with the LGUs, the full implementation of Local Hiring requirements of at least 50% for un-skilled workers and at least 30% for skilled workers will be ensured.



The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

	Question	Raised by	Response
3.	How about the lands that were rented by Del Monte and DOLE?	Project Affected Person	The JICA Study Team responded that if the project will push thru, it may take about at least 3 years from now before the actual construction, so the contracts could be finished by then. Whatever the case may be, the registered owners of the lands will be compensated for the lots while Del Monte and DOLE will be compensated for the crops.
4.	Will the existing access roads be preserved upon the construction of the proposed Highway? The existing access roads are be able to accommodate trucks such as those used in transporting sugar canes.	Project Affected Person	The JICA Study Team responded that the existing access roads will be considered in the design of the proposed High Standard Highway. He informed that their concerns of preserving their existing access roads will be brought to the attention of the Japanese Consultants who are responsible for the Design. (please see attached location of the existing access road).
5.	Will there be toll payments for the Highway?	Project Affected Person	The query regarding the toll payments will be referred to the Japanese Consultants also.
6.	He raised his concerns that their lot is being rented by DOLE Philippine Inc.	Project Affected Person	The JICA Study Teamresponded that the registered owners of the lots being rented by DOLE Philippine Inc. will receive the compensation for the affected crops, while the land owners will receive compensation for the affected lots.
7-	She raised her concern on what will happen to them if they will be affected considering that their land is under Agrarian Reform.	Project Affected Person	The PAP in local dialect, responded in behalf of the RAP Team Leader that land under Agrarian Reform Title still need to be studied how they will acquire the Title prior to address the compensation for their land.
8.	He raised his concern regarding their land because their lots Title is under the name of his mother.	Project Affected Person	The JICA Study Team replied that their case will be resolved by the DPWH in accordance with RA 10752.

Central Mindanao Standard Highway Construction Project

Cagayan de Oro - Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Executive Summary

The JICA Preparatory Survey on Central Mindanao High Standard Highway Construction Project (Cagayan De Oro – Malaybalay Section)

Question	Raised by	Response
 He asked why they were informed/requested to attend the meeting while they have already sold the subject lot. 	Project Affected Person	The JICA Study Team replied that the of lot owners given by the Municipal Assessor was based on the current Tax Declarations. It means that the new owners have not yet applied for Tax Declarations and that may have no Title/s yet.
10. Our lots are under contract with Del Monte, how shall we be paid or compensated?	Project Affected Person	The JICA Study Team also responded that the registered owners of the land will receive the compensation for the land while Del Monte will be compensated for the crops (pineapple plants).

The above-mentioned problems of the PAPs were tackled and settled. Other issues and concerns discussed during the consultation have been taken into consideration as well. After the meeting, stakeholders expressed strong support with the proposed project. All the consultations were properly documented.



Annex 15. Public Consultations (Pre-Scoping Information, Education and Communication)

Information Education Campaign



Central Mindanao High Standard Highway Construction Project (Cagayan de Oro – Malaybalay Section)

PRE-SCOPING INFORMATION, EDUCATION AND COMMUNICATION REPORT

Draft Report

AMET Asia, Inc.

April 2021



Central Mindanao Standard Highway Construction Project

Cagayan de Oro – Malaybalay Section

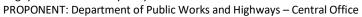


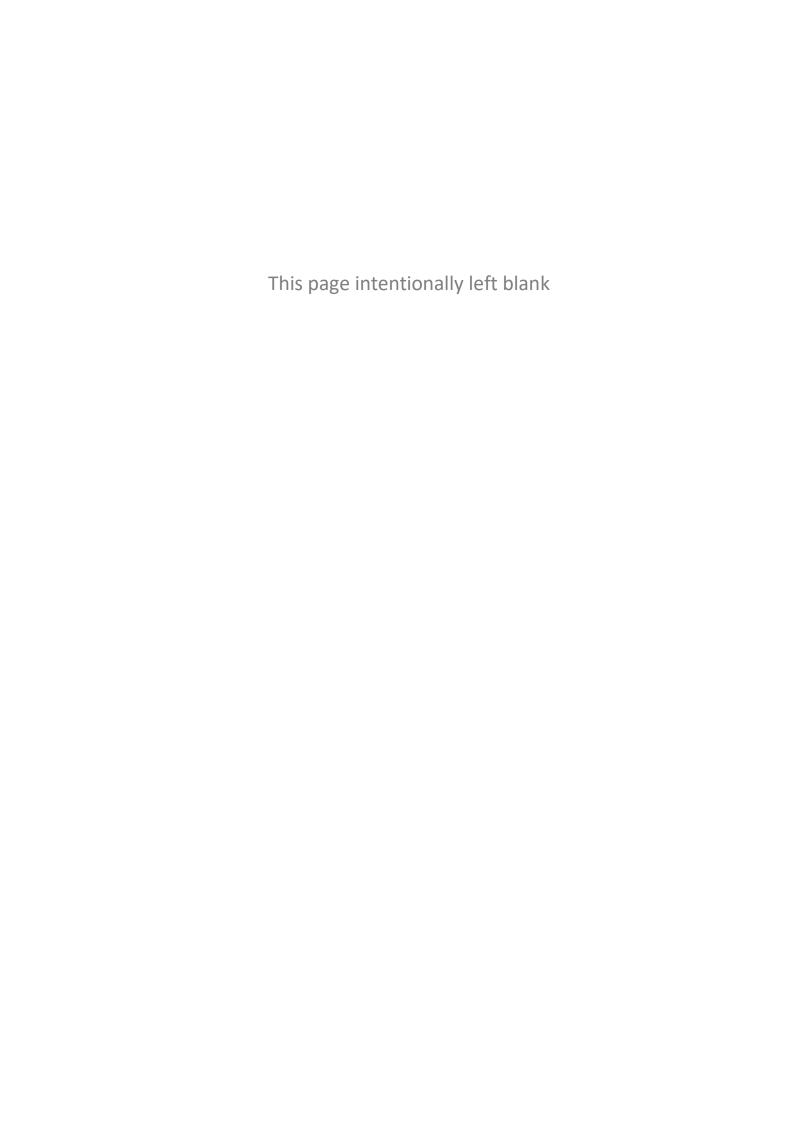


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Central Mindanao Standard Highway Construction Project

Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Pre-scoping IEC Report

EXECUTIVE SUMMARY

In accordance with the guidelines on public participation under the Philippine Environmental Impact Statement (EIS) system, DAO 2017 – 15, the stakeholders shall be involved in various stages of the EIA process and must be introduced early through Information, Education, and Communication (IEC). IEC were conducted last March 22 to 24, 2021 in the municipalities of Tagoloan and Cagayan de Oro City, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong and Malaybalay City, Bukidnon. Local Government Units, barangay officials of the affected barangays and representative from various sectors were invited. The road alignment and the components of the Project were presented along with the process of Environmental Impact Assessment (EIA). Stakeholders' issues and concerns about the project, as well as their suggestions and other inputs were discussed in the open forum. Initial Perception Survey, that covers the identification, perception, and attitudes of the respondents from the direct impact barangays towards the project was conducted afterwards.

The IEC were considered to be conducted successfully and no conflict has been arisen between the attendees and the IEC Team. Based on the open forum and from the Initial Perception Survey conducted, majority of the stakeholders appreciated the project as it will provide easement in their transportation and will provide accessibility of transporting farm products to the market. Major concerns of the stakeholders addressed were the issues on just compensation for the affected titled/untitled land and properties, detailed project design in preparation of the affected property owners, presence of CADC/CADT and sacred places in the area, issuance of toll fee, inclusion of hinterlands in the road alignment. The stakeholders suggested to conduct a massive information dissemination about the Project and all the issues and concerns must be addressed and consensus on the affected property owners must be sought.





1. Preparation for IEC

Courtesy calls were conducted on March 11-12, 2021 to the Municipal Mayors and Administrators in preparation for the IEC and also to determine the schedules, venues and list of stakeholders to be invited. Invitation letters were distributed to the stakeholders prior to the scheduled IEC. **Table 1** shows the schedules and venues of the IEC meetings.

Table 1. IEC Meetings Venues and Schedules

Province	City/Municipality	Date and Time	Venue
Misamis Oriental	Tagaloan	March 24, 2021, 2:00 pm	Tagoloan Central Elementary School, Tagoloan
	Cagayan De Oro	March 24, 2021, 10:00 am	Puerto Barangay Hall, Cagayan De Oro
Bukidnon	Manolo Fortich	March 22, 2021, 2:00 pm	BRCI Bldg., Diclum, Manolo Fortich
	am	March 24, 2021, 10:00 am	Conference Hall, 2 nd Floor, New Building, Sumilao
		March 23, 2021, 2:00 pm	Conference Hall, Municipal Hall, Impasug-ong
	Malaybalay	March 23, 2021, 10:00 am	Casisang Covered Court, Malaybalay City

The required IEC documents reviewed and approved by the JICA Study Team are enumerated below.

- 1. Preliminary list of stakeholders (Attachement 1)
- 2. Invitation letters to the stakeholders (Attachment 2)
- 3. IEC program (Attachment3)
- 4. IEC presentation material (Attachment 4)
- 5. IEC brochure (Attachment 5)

2. IEC Meetings

2.1 Municipality Tagoloan

The project fliers were given to the participants during registration. The program started at 2:00 PM and ended at 3:30 PM. The opening prayer given by Mr. Benecio Naduma, Purok Leader of Baluarte followed by the singing of the National Anthem led by Ms. Lucila Sabio, Office for the Senior Citizen's Affairs President. The opening remarks was given by Sharon Sabio, Chief Executive Officer of the Mayor. This was followed by the presentation of the participants and the Research Team along with two representatives (Ms. Jeannie Marban and Ms. Catherine Salingay) from the Planning Office of DPWH Region 10 office.

The presentation of the important features of the project was given by Dr. Nimfa L. Bracamonte and then the open forum followed. After the open forum that was facilitated by Dr. Bracamonte with the assistance of Dr. Maranda. The closing remarks given by Eng. Gene Baculpo from Municipal Planning and Development Office.



Central Mindanao Standard Highway Construction Project

Cagayan de Oro – Malaybalay Section

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Pre-scoping IEC Report

2.2 Cagayan de Oro City

The brochures were given to each of the participants during registration. The program started at 10:00 AM and ended at 11:40 AM. The opening prayer was given by Julie Pearl Curilan, a City Local Environment and Natural Resources Office (CLENRO) staff. This was followed by the singing of the National Anthem led by Ms. Shara Angelie (CLENRO staff). The opening remarks was given by Engr. Armen A. Cuenca (CLENRO, Head).

The presentation of the participants and the Research Team along with two representatives (Ms. Jeannie Marban and Ms. Catherine Salingay) from the Planning Office of DPWH Regional office followed. The presentation of the important features of the Project was given by Dr. Nimfa L. Bracamonte followed by open forum that was facilitated by Dr. Bracamonte with the assistance of Dr. Alma Maranda. Closing remarks was given by Mr. Ramir M. Balgwin from City Planning and Development Office.

2.3 Municipality of Manolo Fortich

The fliers were given to the participants during registration. The program started at 2: 00 PM and ended at 4:30 PM. The opening prayer was given by Datu Macabulig followed by the singing of the national anthem led by Ms. Jessica Anlagan. The opening remarks was given by Brgy. Councilor Warleo A. Goayon. The presentation of the participants and the Research Team along with two representatives (Ms. Jeannie Marban and Ms. Catherine Salingay) from the Planning Office of DPWH Regional office followed. The presentation of the important features of the Project by Dr. Nimfa L. Bracamonte ensued. Manolo Fortich Mayor Hon. Clive D. Quino accompanied by the Municipal Planning gave a brief message and appreciated the project as this will help ease the movement of people and goods. After the open forum that was facilitated by Dr. Bracamonte with the assistance of Dr. Maranda, the closing remarks was given by Municipal Environment and Natural Resources (MENRO) head, Ms. Sharon Tacbobo.

2.4 Municipality of Sumilao

The program started with registration and distribution of Project brochure. The program started at 10:00 AM with a prayer from Ms. Bae Ruti Toreno and the national anthem by Ms. Marife Modrangko. This was followed by the opening remarks by Barangay Captain of Poblacion Mr. Julius Cesar Tan. Prof. Embornas presented the Project information and then followed by the open forum where participants asked questions and provided suggestions for the Project. The closing remarks was given by the Barangay Captain Jose T. Curay from Barangay San Roque.

2.5 Municipality of Impasug-ong

Fliers were distributed to each of the participants during registration. The program started at 2:30 PM with the prayer led by Brgy. Councilor Abner Garcia from Brgy. Poblacion and national anthem conducted by Brgy. Councilor Ikee Quines. The opening remarks was given by Municipal Administrator, Mr. Ben Gabriel Uy. The project presentation was given by Prof. Embornas and the open forum followed with some questions and suggestions from the participants. The closing remarks was given by Barangay Captain Josefino Manalo of Brgy. Cawayan. The program ended at 4:00 PM.

2.6 Malaybalay City

The fliers were distributed to each of the participants during registration. The program started at 10:15 AM with the invocation led by Brgy. Councilor Francis Eddie Dagang from Brgy. 10 (Poblacion) followed by the





national anthem led by Ms. Rita Gumita. The opening remarks was given by the Barangay Captain of Casisang Capt. Bonifacio Valiente who was positive about the project. Afterwards Prof. Embornas presented the project and the flow of the EIA. The open forum followed and then the closing remarks by the CENRO Valencia Representative Mr. Ferdie Sususco.

3. Comments, issues, and suggestion raised

The highlights of the issues and concerns raised are presented in Table 2 to Table 7

Table 2. Summary of Issues and Responses in Municipality of Tagoloan

LGU'S Covered	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response
Municipality of Tagoloan Barangay - Casinglot - Natumolan	Project Design - Is this Project an elevated road? - There might be informal settlers who will inhabit the area down.	Engr. Gene Baculpo – Municipal Planning and Development Office	Dr. Nimfa Bracamonte (Amet-Asia) The Project is still in the feasibility stage and at this time.
	Necessity of the Project - Is it necessary to build another road and not contrary to other roads that are already congested? - Would it be recommendable that this be continuous to the existing road since once constructed there will be those who will be affected?	Mr. Rogelio – Casinglot Brgy. Councilor	 Ms. Catherine Salingay (DPWH R10) CMH is a high standard highway. There is a high-speed movement of vehicles with speed reaching 200 kph. This will be useful as the existing road is not good for fast moving vehicles and there will be interchanges and connection of the roads.
	 Project Timeline and Relocation Where does the Project start? If our house will be affected and we are not prepared, where should we go? 	Mr. Nestor Baltazar - President of KASINLOP)	 Ms. Catherine Salingay (DPWH R10) There is no final engineering design yet. There will be another team that will go and explain regarding the relocation.
	Presence of IP sacred places - Will there be royal grounds and sacred places that will be affected? - If yes, how can you prevent the impacts and what will be the last option?	Mr. Wendell - IP secretary	 Dr. Nimfa Bracamonte (Amet-Asia) The Project is still in the feasibility stage and at this time. The issues and concerns will be addressed in the public scoping The proponent is aware of the IPRA Law, RA 7381 and FPIC. In case that there will be affected IPs, the proponent will apply for FPIC. This project is not only culture-sensitive but also gender-sensitive.
	Compensation to the affected properties - What are the benefits that will be provided to those who are affected by loss of houses and	OSCA Senior Citizen	 Dr. Nimfa Bracamonte (Amet-Asia) Any properties that will be affected by a development Project, they should be duly compensated based on current



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



LGU'S Covered	Issues/Suggestions Raised by	Sector or	Response
	Stakeholder lands?	Representative	fair market value as embodied in
	- Will you provide a relocation area?		the Philippine Constitution Article III, Section 9 - Another team will be sent to the barangay and will determine the affected properties.
	Untitled Lands Compensation Most of those from the area does not possess a title to their respective properties.	Mr. Rogelio – Casinglot Brgy. Councilor	 Prof. Amabelle Embornas (Amet-Asia) There will be a team that will be sent to the area and negotiate regarding affected properties. There is a memorandum order that even those without titles to their properties will still be compensated. The proponent will assure you that they will follow the right process.
	Safety Most of us reside near traffic lights which is accident prone area. We have problems with precautions, it would be a prominent zone.	Mr. Rogelio – Casinglot Brgy. Councilor	Engr. Angelita Balid (JICA Study Team) Team) The proponent is proposing CMH because Sayre is an accident-prone highway with steep slopes CMH will be designed with a gradient of 4-5% compared to Sayre with about 15% gradient which is more dangerous
	MMT and EGF - Is MMT part of the EIA? We are looking forward for the monitoring and evaluation. - The EGF will be coming from the DPWH?	Mr. Jeffrey – Sanguniang Kabataan Member	 Dr. Nimfa Bracamonte (Amet-Asia) MMT is part of the process. There is MMT not only from the public officials/ LGUs, but also with the stakeholders' participation. DPWH will also be part of the monitoring team The proponent of the project is the DPWH in assistance with JICA.
	 Comment We are thankful with this project as this will have a big impact to Barangay Casinglot. We have a plan identifying this as a growth area in the upper part. This road will have big impact as this invites the investors 	Engr. Gene Baculpo – Municipal Planning and Development Office	
	Others There is the road Malaiba, is it not part of DPWH?	Mr. Rogelio – Casinglot Brgy. Councilor	Dr. Nimfa Bracamonte (Amet-Asia) CMH is another highway, parallel to Sayre





Table 3. Summary of Issues and Responses in Cagayan de Oro City

LGU'S Covered	Issues/Suggestions Raised by	Sector or	Response
by the IEC	Stakeholder	Representative	
Cagayan de Oro City Barangay - Bugo - Puerto - Balubal	Compensation of Affected Properties Is there a payment for the land, house and trees that will be affected by the Project?	Mr. Presley C. Emano – Brgy. Councilor, Bugo	Dr. Nimfa Bracamonte (Amet-Asia) Private properties that will be taken for public use should be done upon payment of just compensation (power of eminent domain) Engr. Armen Cuenca (CLENRO) There are 3 modes: through donation, negotiation or expropriation.
	Payment for Compensation of Properties Can compensation payment be done before the start of the Project?	Mr. Renante Rosalo – Brgy. Balubal Resident	 Mr. Armen Cuenca (CLENRO) Before the project implementation, the owner of the affected properties should already demand for payment. The DPWH Contractors would not start the project unless there is consent from the owner of the properties Based on experience, 50% would be paid in advance, and the remaining 50% would be paid after the property would be demolished. For the plants /trees affected, 30% would be paid in advance and the remaining 70% would be paid after the plants/trees will be cut.
	Duration of Payment for Compensation If ever the owner of the land/house/plants /trees will not be paid before the project will be implemented, how long will they be paid?	Mr. Renante Rosalo – Brgy. Balubal Resident	Ms. Catherine Salingay (DPWH R10) We are not really sure as to how long will the owner of the land/house/plants will be paid, but in our experience, I think it would be 5 years
	Benefits from the affected properties If ever even after the implementation of this project, the owner of the land/house/plants/ trees will suffer from flood, mud or watersoaked soil due to Project, what benefits would they receive?	Mr. Venido Payana- Barangay Puerto Staff	Ms. Jan Bautista (Amet-Asia) The ROW Team will make a report and based from their report will know the number of affected persons and how much will be paid for the damages incurred.





LGU'S Covered by the IEC	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response
			 Mr. Armen Cuenca (CLENRO) EIA will include in the report the needed actions if ever the owner of the land will suffer from flood, mud or water-soaked soil after the project implementation MMT will be responsible in monitoring the project implementation to avoid this occurrence to happen. Even after due monitoring by the MMT, this still happens, Government Compensation Fund will be used to pay the affected owners.

Table 4. Summary of Issues and Responses in the Municipality of Manolo Fortich

LGU'S Covered by the IEC	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response
Municipality of Manolo fortich Barangays: - Alae - San Miguel, Damilag - Diclum	Project Design Difference between the proposed highway and the 'Build, Build, Build' project of the government?	Mr. Warleo A. Goayon – Brgy. Councilor, Diclum	Engr. Greg Dablo (DPWH R10) - 'Build Build Build' is focused on construction of not just roads but also other buildings and more on civil works and structural. - It is the same because it is an implementing government projects
Sankanan,TankulanTicala,Mambatangan	Detailed Engineering Design Can we ask for specifics of the Project?	Mr. Chris Loren - Public Information Officer of Manolo Fortich	Dr. Nimfa Bracamonte (Amet-Asia) - There is still no detailed design. The Project is still in the feasibility study phase, and the impact will be learned once the EIA is conducted.
	Ground Work/Soil Testing Why is soil testing commencing without properly informing the lot owners?	Mr. Joaquin L. Fudolin – Brgy. Councilor of San Miguel	 Mr. Paul Paraguya (EB Soil Testing Inc.) The soil testing group was granted permission by the father of the owner of the land. However, they are not aware that the land was already subdivided. The purpose of the group is to identify the coordination grid points for the design/plan. Mayor Quiňo and Brgy. Joaquin acknowledged the apology of Mr. Paraguya
	Oppositions of the Project What if there are oppositions in the specifics of the road like conflict in boundary and right of way?	Mr. Chris Loren - Public Information Officer of Manolo Fortich	 Dr. Nimfa Bracamonte (Amet-Asia) The proponent will look at your issues and suggestions. If there are issues that remain unresolved, there will be a public hearing which is a part of the whole process





Pre-scoping IEC Report **LGU'S Covered** Issues/Suggestions Raised by Sector or Response by the IEC Stakeholder Representative Presence of conflict/opposition Dr. Nimfa Bracamonte (Amet-Asia) Mr. Chris Loren -- Will this project still be **Public Information** This project will follow the Officer of Manolo guidelines set by DAO 2017-15 implemented if there are oppositions from the Fortich and the PEISS. unconcerned people? If there are oppositions raised by - Will the issues/concerns of concerned people, a public the affected people be hearing will be conducted in the considered? presence of appropriate government agencies. Datu of Sankanan **Compensation of Properties to** Dr. Nimfa Bracamonte (Amet-Asia) be affected According to 1987 Philippine What will be done to the Constitution, particularly in affected houses and trees? Section 7 of Article III, private properties that will be taken for public use should be done only upon payment of just compensation (power of eminent domain) **FPIC Application** Dr. Nimfa Bracamonte (Amet-Asia) Mr. Datu Macabulig Will this project procure the If the detailed design will affect needed FPIC? the CADT/CADC of the cultural communities, definitely yes. This is still the initial phase of the feasibility study Political change of Damulag Public Dr. Nimfa Bracamonte (Amet-Asia) administration **Information Officer** The Project will go through proper There should be proper procedures where transparency and communication channel during due courtesy will be conducted in transition if case there is a coordination with the LGU political change of admin for concerned during project the proper project implementation. implementation. Ms. Elyiza Orap, SEA Dr. Nimfa Bracamonte (Amet-Asia) **Existing government projects** There should be due courtesy with that might be affected **Irrigators** If the irrigation project will be DPWH to the municipality regarding affected, what should be done? the plans of the project. Dr. Nimfa Bracamonte (Amet-Asia) **Construction waste** Ms. Sharon Tacbol, - Problem with hired **MENRO Staff** Hired contractors will coordinate contractors whose diggings with LGU in terms of proper waste and excavations of soil are disposal, spoil area, and taking care carelessly thrown elsewhere. of environment. - Arbitrarily throwing of cut/fallen trees - a behavior problem





LGU'S Covered by the IEC	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response
	 Suggestion The project is good and we need to go through the process. If the project is good, we support it. If there are areas which will be affected with CADT or CADC we should respect them. The public should be made to understand about the processes involved in this project 	Hon. Mayo Clive Quiňo – Manolo Fortich Mayor	 Dr. Nimfa Bracamonte (Amet-Asia) If the cultural communities will be affected the FPIC will be undertaken. There will be a public scoping which will present the EIA process in detail and the impacts of the Project. The IEC is to inform the public about the plan of the Central Mindanao High Standard Highway project and gather various issues/concerns.

Table 5. Summary of Issues and Concerns in the Municipality of Sumilao

LGU'S Covered	Issues/Suggestions Raised by	Sector or	Response
by the IEC	Stakeholder	Representative	
Municipality of Sumilao Barangays: - Culasi	Project purpose What is the main objective of this project since there is already an existing road from Cagayan de Oro to Malaybalay?	Mr. Gemmo Olana – Brgy. Councilor, Kisolon	Prof. Amabelle Embornas (Amet-Asia, Inc.) The Project aims to increase the speed of travel from Cagayan de Oro to Malaybalay.
KisolonPoblacionPuntianSan Roque	Issuance of toll fee Will there be a toll fee for this road?	Mr. Daloais Silvestre – Brgy. Captain, Kulasi	 Prof. Amabelle Embornas (Amet-Asia, Inc.) The project is still in the feasibility stage. The establishment of toll fee will still be studied.
	Suggestion - There is a circumferential road to Dahilayan, why not connect these roads? So the roads are connected and it will not be cut since some barangays are not included in the project. - Why not connect the road from Mutia to Likuan?	Mr. Gemmo Olana – Brgy. Councilor, Kisolon	Engr. Greg Dablo (DPWH R10) Based on the alignment, the Sayre Highway Parallel Road 1 will be the one connected to Dahilayan.
	 Environmental considerations Can the project consider the landslide prone areas such as in San Vicente in Maluko? They built a road but there is always landslide. Why don't they build a tunnel under the mountains to make the road straight instead of curved? 	Mr. Jerome Cagawas – Brgy. Councilor, Poblacion	 Prof. Amabelle Embornas (Amet-Asia, Inc.) The project is still in the feasibility stage. The suggestion is duly noted.





LGU'S Covered by the IEC	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response
	Consent to the IPs - Before anyone from the Proponent will go to the area, they should contact the IPs and seek consent to enter the area especially the Chieftain and Municipal IPMR. - The proponent should also ask for local IP guides in the area so to avoid the sacred places and other dangerous areas	Mr. Anliston Rosaliad – Tribal Secretary, Cultural Sector	 Engr. Greg Dablo (DPWH R10) The team will follow the protocol in informing the LGU and Barangay Captains before entering the area. Prof. Amabelle Embornas (Amet-Asia, Inc.) The team will also seek the consent of the IPs/ tribal sector before entering the area.
	Participation in the project We are in San Vicente and far from the project. What is our participation in this project?	Paterno Tuminlag – Brgy. Captain, San Vicente	 Prof. Amabelle Embornas (Amet-Asia, Inc.) We are informing the public about the new project. We are making the IPs and everyone aware of this project in Sumilao.
	Informing affected landowners and compensation - How will you inform the affected landowners/ people? - Will they be receiving compensation?	Nolandf Caramonte, Brgy. Councilor, San Roque	 Prof. Amabelle Embornas (Amet-Asia, Inc.) The scheme about the land affected will be attended by another team the Right-of-Way Action Plan team. There will be another consultation/negotiation about this.

Table 6. Summary of Issues and Concerns in the Municipality of Impasug-ong

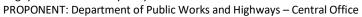
Table 6. Summary of Issues and Concerns in the Municipality of Impasug-ong				
LGU'S Covered by the IEC	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response	
Municipality of Impasug-ong Barangays: Capitan Bayong Cawayan Impalutao La Fortuna Poblacion	Rationale of the Project - Why is the project established in Bukidnon? What are the reasons? - There many roads established here	Mr. Romeo Abunda Sr Brgy. Councilor, Impalutao	 Engr. Greg Dablo (DPWH R10) There are existing roads in Bukidnon but they are not high standard highways. A high standard highway can make travelling faster since the roads allow for faster movement of vehicles. Bukidnon is seen as an area for economic growth and there is a need to improve the connectivity of Bukidnon and Cagayan de Oro. 	
			Ms. Jan Bautista (Amet-Asia) - There is an existing road (Sayre) but not a high standard highway Engr. Angelita Balid (JICA Study Team) - Malaybalay has a high potential of attracting traffic	





LGU'S Covered	Issues/Suggestions Raised by	Sector or	Response
by the IEC	Stakeholder	Representative	
			- The existing roads are designed with slow mobility
	Inclusion of hinterlands in road alignment - Can other barangays be included in the highway project. - The proposed Project is near the national highway but those in the hinterland do not have roads?	Mr. Nicasio Llamoso – Brgy. Councilor, Impalutao	Engr. Maria Victoria Lofamia (DPWH ESSD) - There were several considerations – social, environmental, and economic. - The project will still undergo further study for the final alignment.
	Road alignment - Will this road connect to other existing roads or is this different?	Mr. Emmanuel Lumayod – MENRO Staff	 Engr. Greg Dablo (DPWH R10) This Project is different. There will be interchanges in the project which will allow connection of the different roads.
	Changes of Alignment There were projects in the past which the alignment presented is different to the one that is implemented and we are not informed in the re-alignment. We want a clear alignment so people will know who will be affected.	Mr. Nicasio Llamoso – Brgy. Councilor, Impalutao	 Prof. Amabelle Embornas (Amet-Asia, Inc.) This is still the FS stage and finalization of the detailed design will still undergo more studies and discussion. If there will be changes in the alignment it will not be very far from what is presented here. Right of Way Action Plan team will present the scheme for land acquisition compensation.
	LGU Resolutions for the request of re-alignment The municipality have a resolution (Resolution No. 2121-381 (A) and Municipal Development Council Resolution No. 005 S. 2021) for the road to traverse other barangays and include other barangays in the topographic survey (Attachment 9. Impasugong Resolution No. 2121-381 (A) and Municipal Development Council Resolution No. 005 S. 2021 The is requested for the need of roads and also for the peace and order situation in the area.	Municipal LGUs	Prof. Amabelle Embornas (Amet-Asia, Inc.) This is duly noted and will inform the proponent about this.
	Toll fee Issuance Will this project also require the users to pay toll fee?	Mr. Arnel Garcia – Brgy. Councilor Poblacion	Engr. Angelita Balid (JICA Study Team) - This is still the Feasibility Study stage.







LGU'S Covered by the IEC	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response
		•	- Toll or Non-toll will still be studied during the detailed design stage
	Measurement of highway What is the measurement of the highway, so the people will know especially those who will be affected?	Mr. Diomedes Tunasan – Brgy/ Kagawad Poblacion	Engr. Maria Victoria Lofamia (DPWH ESSD) - The road alignment is still in FS stage - There will be a detailed design in which analytical study has been conducted for the finality of the road alignment. Engr. Greg Dablo (DPWH R10) - The road will be 65.6 km and 60 meters wide including the canal and shoulder. - The details are not yet final and would still undergo further studies.
	Presence of sacred lands There might be sacred land affected by the project.	Mr. Arnel Garcia – Brgy. Councilor Poblacion	Prof. Amabelle Embornas (Amet-Asia, Inc.) - The Project is still in the feasibility stage - In case that there will be CADT/CADC affected, FPIC process will be undertaken. This is a separate process.
	Compensation for affected properties - If the house or lot is affected by the Project, will there be payment? - What is the process of just compensation to those affected?	Mr. Nicasio Llamoso – Brgy. Councilor, Impalutao	Engr. Greg Dablo (DPWH R10) and Prof. Amabelle Embornas (Amet-Asia, Inc.) RAP team will assess the affected property and there will be a consultation/ negotiation about this. RAP is a separate process and another team will come for this activity. There will be just compensation to those properties that will be affected This is the next process if the alignment is finalized during the detailed engineering design.



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



LGU'S Covered by the IEC	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response
	Compensation to untitled lands - Impasug-ong is 82% timberland and people do not have land titles or there is no proof of ownership. What will happen to them? - What will happen to those who have planted trees and have made improvements?	Mr. Arnel Garcia – Brgy. Councilor, Poblacion	 Engr. Greg Dablo (DPWH R10) There will be a RAP team that will coordinate to the affected owners There will be negotiation on just compensation for the affected areas.

Table 7. Summary of Issues and Concerns in Malaybalay City

Table 7. Summary of Issues and Concerns in Malaybalay City				
LGU'S Covered by the IEC	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response	
Malaybalay City Barangay 10, Dalwangan, Kalasungay, Patpat, Sumpong	Project Fund What is this project, grant or loan from JICA?	Mr. Rodrigo O. Niere, Brgy. Captain, Kalasungay	 Engr. Angelita Balid (JICA Study Team) This is an assistance from JICA in the FS part. But the project construction will be discussed further whether it will be a grant or a loan. Detailed design and Feasibility study would depend on the study result if it is going to be a loan project 	
	Issue of Eminent Domain - What is the process of just compensation? - We experienced before where the owners were not paid. They had to file a case or file a legal action before they were paid.	Mr. Nilo Salga, Brgy. Captain, Patpat	 Ms. Michiko Quiachon (DPWH-ESSD) There will be a report called Right of Way Action Plan which will cover the affected persons, what properties will be affected and the payment scheme for their compensation. The RAP team is currently coordinating with the LGUs and the Mayors and explain about these things. There will be a survey to know about the details of the properties which will be affected. This is the next process if the alignment is finalized during the detailed engineering design. There is discussion/consultation between the landowners and the proponent before the project starts. We will comply with the provisions of RA 10752 	



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



LGU'S Covered by the IEC	Issues/Suggestions Raised by Stakeholder	Sector or Representative	Response
			Engr. Angelita Balid (JICA Study Team) There is a separate group for RAP Engr. Maria Victoria Lofamia (DPWH ESSD) The Project is still in the feasibility stage.
	Property demolition and payment - Will DPWH help to demolish the people's houses as these are mostly poor people who cannot afford to do so? - The affected people should be relocated or paid first before the demolition.	Mr. Nilo Salga, Brgy. Captain, Patpat	Engr. Greg Dablo (DPWH R10) The suggested guidelines for the contractor include coordinating with the affected house owners in the demolition. This can also be discussed in the Right of Way Action Plan between the landowners/house owners and the proponent.
	Informing affected property owners - You should inform affected land owners, especially those with conflict regarding ownership. - During this stage, the property owners should already know.	Mr. Rodrigo O. Niere, Brgy. Captain, Kalasungay	Engr. Greg Dablo (DPWH R10) The project is still in the feasibility stage there is a possibility of the change of alignment Prof. Amabelle Embornas (Amet-Asia, Inc.) - A separate team will come in. They will be the one who will inform the affected lands and houses - There should be just compensation based on RA 10752
	FPIC Issue The FPIC should be followed for those with CADT or CADC areas.	Mr. Rodrigo O. Niere, Brgy. Captain, Kalasungay	Prof. Amabelle Embornas (Amet-Asia, Inc.) - Those with CADT and CADC lands that will be affected will be consulted and this process will also be followed by DPWH and JICA. - This is a separate study from the EIS
	Coordination between Regional and District DPWH There should be coordination of the regional and district DPWH about the projects they are implementing.	Mr. Adiran Gamboa - City Planning and Development Coordinator	Engr. Greg Dablo (DPWH R10) This is noted and will be reported to DPWH.





Pre-scoping IEC Report

LGU'S Covered	Issues/Suggestions Raised by	Sector or	Response
by the IEC	Stakeholder	Representative	
	- Local planning councils should be informed before the project begins - We are updating our CLUP and we want to know about the projects so we can incorporate this.	Mr. Adiran Gamboa - City Planning and Development Coordinator	 Prof. Amabelle Embornas (Amet-Asia, Inc.) We will take note of all the suggestions and recommendations from the LGU and submit a report to the proponent
	Affected Trees - To consider the areas where the protected trees can be avoided - Previous projects have disregarded and did not consider first with the local government. There is no coordination between the agencies. - Request for inventory before the project - There is also a need to clarify the cut and field. DENR clearance before the start of the project.	Mr. Ferdie Sususco – DENR PENRO	Prof. Amabelle Embornas (Amet-Asia, Inc.) We will take note of the concerns and make a report to the proponent
	Endorsement Endorsement by the concerned barangays and LGU needs to be acquired.	Mr. Nilo Salga- Brgy. Captain, Patpat	Prof. Amabelle Embornas (Amet-Asia, Inc.) - This is noted as part of the process.
	Change of the name of Barangay Lapu-lapu to Patpat - Please change the barangay name of Lapu-Lapu to Patpat - Lapu-Lapu is not yet recognized as a barangay	Mr. Nilo Salga- Brgy. Captain, Patpat	Prof. Amabelle Embornas (Amet-Asia, Inc.) - We will edit the powerpoint presentation. - The invitation letters were addressed to Brgy. Patpat

4. Initial Perception Survey Results

Subsequent to the Information Education and Information (IEC) efforts an Initial Perception Survey (IPS) was conducted in in the 30 affected barangays of the 6 cities and municipalities. The survey instrument was patterned from the Environmental Management Bureau Guidelines and covers the identification, perception, and attitudes of the respondents from the DIA towards the project that includes project awareness of the respondent regarding the project, preference to be informed of the Project, perceived positive and negative impacts of the Project and whether or not they would approve the establishment of the Project. The conducted to IPS included a total of 175 respondents. From the table presented below, 20% or 35 respondents came from Sumilao, followed by 18.9% of respondents from Malaybalay, and 17.7% or 31





respondents from Manolo Fortich, followed by 17% or 30 respondents form Cagayan de Oro, 14.3% from Impasug-ong and 12% from Tagoloan.

Table 8. Respondents' city/municipality

City/Municipality	Frequency	Percent
Sumilao	35	20.0
Malaybalay	33	18.9
Manolo Fortich	31	17.7
Cagayan de Oro	30	17.1
Impasug-ong	25	14.3
Tagoloan	21	12.0
Total	175	100.0

Source: EIA Initial Perception Survey

4.1 Demography and Social Profile

Gender and Civil Status - In terms of gender, more than half of the respondents or 54.3% were male and 45.7% were female. Majority or 78% are married followed by 11% or 18 respondents who are single.

Table 9. Gender and civil status of the respondents

Gender	Frequency	Percent
Male	94	54.3
Female	79	45.7
Total	173	100.0
Civil Status		
Single	18	11.0
Married	128	78.0
Widow	15	9.1
Separated	2	1.2
Annulled	1	0.6
Total	164	100.0

Source: EIA Initial Perception Survey

Age Distribution - Based on age, 27.7% or 48 of the respondents were between the ages 55 to 64 years old. This was followed by those between 33 to 43 years old. The youngest respondent was 22 and the oldest was 82 years old.

Table 10. Age distribution of the respondents

Age	Frequency	Percent
22 to 32 years old	18	10.4
33 to 43 years old	41	23.7
44 to 54 years old	37	21.4





Age	Frequency	Percent
55 to 64 years old	48	27.7
65 to 74 years old	25	14.5
75 and above	4	2.3
Total	173	100.0

Source: EIA Initial Perception Survey

Educational Attainment - For their educational attainment, 44.67% are college graduates followed by 22.67% who were college level. There was 3.33% who had post graduate studies.

Table 11. Educational attainment of the respondents

Educational Attainment	Frequency	Percent
Elementary level	1	0.6
Elementary Graduate	4	2.67
High School level	4	2.67
High School Graduate	33	22.0
College level	34	22.67
College Graduate	69	44.67
Post Grad	5	3.33
Total	150	100.0

Source: EIA Initial Perception Survey

Occupation - In terms of occupation, 51.35% of the survey respondents were Barangay Officials followed by 11.49% who were government employees from the LGU. There were also barangay workers, farmers, barangay health workers, teachers/ principal, IP Mandatory Representatives, Women's Organization members and chairpersons, banana plantation workers, transportation people's organization leader, driver, business owner, and retired employees (Table 12). For the positions held by the survey respondents, 40% are Barangay Kagawad, 8.15% are Barangay Captains, and 7.41% are Indigenous People's/ Tribal Leaders. There are also teachers, Barangay Secretary, Women's Organization President, Purok Leaders, SK Chairpersons, Transportation Organization President, Senior Citizen, Farmer's Organization Leader, Principal, Religious Leader, Barangay Treasurer, Irrigators Association President, Fisherfolks President and other stakeholders in the community.





Table 12. Occupation of the respondents

Occupation	Frequency	Percent
Barangay Official	76	51.35
Government Employee	17	11.49
Barangay Worker	10	6.76
Farmer	8	5.41
Barangay Health Worker	7	4.73
Teacher	7	4.73
IP Mandatory Representative	6	4.05
Women's Organization	3	2.03
Principal	2	1.35
Banana Plantation Worker	1	0.68
Barangay Field Officer	1	0.68
Board member FBWDC	1	0.68
BOD Transportation Coop	1	0.68
Business	1	0.68
Driver	1	0.68
House keeper	1	0.68
Landscaper	1	0.68
LGU Official	1	0.68
LGU Executive Assistant	1	0.68
MENRO	1	0.68
Retired	1	0.68
Total	148	100.0

Source: EIA Initial Perception Survey

Table 13. Position of the respondents

Position	Frequency	Percent
Barangay Kagawad	54	40.00
Barangay Captain	11	8.15
IP/ Tribal Leader	10	7.41
Teacher	7	5.19
Barangay Secretary	6	4.44
Women's President	6	4.44
Purok leader	5	3.70
SK Chairman	4	2.96
Transportation Organization		
President	4	2.96
Senior Citizen	3	2.22
Farmer's Organization Leader	2	1.48
Principal	2	1.48
Religious Leader	2	1.48
Barangay Treasurer	2	1.48
Administrative/ Clerk	2	1.48
Barangay Agricultural and Fisheries	1	0.74





Position	Frequency	Percent
Council Member		
Business	1	0.74
Department Head	1	0.74
Engineer	1	0.74
Farmer's Organization Member	1	0.74
Fisher Folks President	1	0.74
MAAMA Organization Coordinator	1	0.74
Market Supervisor of Market	1	0.74
MPDO	1	0.74
Municipal Information Officer	1	0.74
NGO President	1	0.74
OSCA head	1	0.74
People's Organization President	1	0.74
President of Irrigators Association	1	0.74
SB Representative	1	0.74
Total	135	100.0

Source: EIA Initial Perception Survey

4.2 Perception and Attitude towards the Project

Awareness and knowledge of the Project - A great majority of 91.4% of the respondents are aware of the Central Mindanao High Standard Highway Construction Project. Nine persons register without any knowledge of the project. And 6 respondents did not answer the question.

Table 14. Respondent's Awareness about the Project

Awareness	Frequency	Percent
Yes	160	91.4
No	9	5.1
No answer	6	3.4
Total	175	100.0

Source: EIA Initial Perception Survey

Perception towards the Project - When asked what the respondents know about the project, 30.6% said it is a good project that is for progress and needed by the people. This was followed by those who said that this project can bring development to everyone, especially the farmers for their farm-to-market road. Another perception about the project refer to the benefits to the community – the barangay, and municipality/city. Some of the respondents also said that it is a great opportunity for economic growth and will boost the economy of Central Mindanao. Around 7.6% of the respondents also believe that it will ease traffic congestion and will answer the traffic problem and 5.1% also said it will build roads and highways in constructing a high standard highway along Sayre Highway. There are other perceptions about the project presented in the table below.





Table 15. Respondent's Perception towards the Project

Perception about the project	Frequency	Percent
It is a good project; progressive; needed; good for the people	48	30.6
Can bring development to all; help farmers for farm-to-market	24	15.3
road		
It is beneficial to the community; benefits the barangay/	22	14.0
municipality/ city		
Great opportunity for economic growth; boost the economy of	14	8.9
Central Mindanao		
Ease traffic congestion; for traffic problem	12	7.6
It will build roads and highways; construction project; high	8	5.1
standard road along Sayre highway		
To improve access and connectivity; less travel time	8	5.1
Can give standard highway project especially the IPs and those	5	3.2
living in the hinterlands		
It is good for the next generation	4	2.5
It is good if it will be implemented; if possible to work 24/7 to	4	2.5
avoid delay		
It is ok provided the process is followed	4	2.5
Proponent should consider the suggested roads in Guihean to	2	1.3
Mamalog		
IPRA law must be followed in the project	2	1.3
Total	157	100.0

Source: EIA Initial Perception Survey

Perceived positive effects from the Project – With regards to the perceived benefits from the establishment of the project, 46.5% see the project as providing accessibility of transporting farm products to the market. This is followed by 22.6% who said that the right road will invite more investors to their town and increase the people's employment opportunities. Some of the respondents also said that this is an alternative route to Malaybalay which makes shorter travel time and increase transportation efficiency. Other comments about the benefits of the project include: agricultural and eco-tourism, easier travel; for future generation's development and they believe the project can increase the market value of the land.

Table 16. Respondent's Perceived benefits from the Project

Perceived benefits to community	Frequency	Percent
Accessibility of our farm products to the market; ease of	74	46.5
transporting products		
To have the right road, more investors will come to our town	36	22.6
and increase people's employment opportunities		
Alternative route to Malaybalay; shorter travel time; more	25	15.7
convenient for travelers; improve transport efficiency		
Agricultural reason and for eco-tourism	10	6.3
Easier travel thanks to DPWH, JICA and AMET ASIA	8	5.0
For future generation's development	4	2.5
The project can increase the market value of the land	2	1.3
Total	159	100.0





Source: EIA Initial Perception Survey

Perceived negative effects from the project In regards to the perceived disadvantages of the project, they said that the location of the proposed road is far from their area and that the government agencies might be looking at the project for their own benefit.

Table 17. Respondent's perceived disadvantage from the Project

Perceived disadvantage to community	Frequency	Percent
Location is too far	2	66.6
If the concerned agencies involve is looking forward for	1	33.3
their own benefit		
Total	3	100.0

Source: EIA Initial Perception Survey

Issues and Concerns - In regard to the issues raised by the respondents, 64.5% emphasized just compensation of affected houses, agricultural development, Right of Way (ROW) payment, having no land title and those with land disputes. Similarly, 10.7% raised the issue on environmental issues, flooding and landslide prone areas and stressing that the vegetation should not be damaged. Some of the respondents also said that they are happy about the project while 5.8% stressed the importance of prioritizing the ancestral domain claims and CADT/CADC areas following the FPIC process. There were also concerns about the accidents and possible traffic and inconvenience during construction. The respondents were also happy about the possible benefits of the project to the community. The respondents were also asking for more information campaign activities to inform the people about the project. They were also concerned about the possible delays in the project and the relocation of affected families. It appears that the issues/concerns raised during the open forum are reiterated in the initial perception survey.

Table 18. Issues and concerns by the respondents

Issues and Concerns	Frequency	Percent
Just compensation of affected houses, agricultural	78	64.5
development, Right of Way (ROW) payment, no land title,		
land dispute		
Environmental issues; flooding and landslide prone areas; do	13	10.7
not damage vegetation		
I am happy about the road; no more muddy roads	10	8.3
Ancestral domain claims must be prioritized; FPIC process;	7	5.8
CADT issues		
Accidents; traffic and inconvenience during construction	5	4.1
There are always issues about land but the bottom line is the	3	2.5
project can give more profit/benefits to the community		
More information drive/campaign to let the people know	3	2.5
about the project		
Long delays in finishing the DPWH projects	1	0.8
Relocation of affected families	1	0.8
Total	121	100.0
Source: FIA Initial Percention Survey	L	.

Source: EIA Initial Perception Survey





Central Mindanao High Standard Highway Construction Project. The top 5 suggestions and comments include: all concerns must be addressed and follow the process to have consensus (18.8%), massive information dissemination about the project and more consultations (18.8%), the project is good for the people for easy transport of goods and products (15.9%), implementation of the project as soon as possible (11.6%), and coordination with the Barangay Captain, Mayor and the IPMR to inform the IPs about the project (10.1%). Other comments/suggestions take account the relocation of affected people before starting the construction (4.3%), mitigation to protect the environment throughout the project implementation (4.3%), consider the request for the alignment of the project along Guihea to Manalog (4.3%), to take care of the environmental biodiversity (2.9%), prioritize local hiring (2.9%), early payment of the affected areas, safety in crossing the road, and if there will be toll fee during the operation period (1.4%).

Table 19. Comments and suggestions from the respondents

Table 151 comments and 5456cstrons from the	-	
Comments/ Suggestions	Frequency	Percent
All concerns must be addressed; follow the process; there	13	18.8
should be consensus		
Massive information dissemination about the project; more	13	18.8
consultations		
Implement the project as soon as possible	8	11.6
Aside from the Mayor and Brgy Captain, coordinate with the	7	10.1
Municipal IPMR as respect. The IPs should be informed		
Affected residents transferred to relocation area. Secure	3	4.3
affected people before starting construction.		
All mitigations to protect the environment and the people	3	4.3
should be considered throughout the project implementation		
Consider our request that the road will traverse Guihea to	3	4.3
Manalog in Malaybalay		
Take care of environmental biodiversity	2	2.9
Local workers or laborers to be hired during the construction	2	2.9
of the project		
Can create good and bad issues	1	1.4
Early payment of the affected areas	1	1.4
If the road will be fenced, how to cross to the other side?	1	1.4
Will there be toll fee like the NLEX?	1	1.4
Total	69	100.0

Source: EIA Initial Perception Survey

5. Conclusion

The activity was professed to be conducted successfully and peacefully. Based on the open forum and from the Initial Perception Survey, majority of the stakeholders appreciated the Project as it will provide easement in their transportation and will provide accessibility of transporting farm products to the market. Major concerns of the stakeholders were the issues on just compensation for the affected titled/untitled land and properties, Project rationale, detailed project design in preparation of the affected property owners, presence of CADC/CADT and sacred places in the area, issuance of toll fee, inclusion of hinterlands in the road alignment. The stakeholders suggested to conduct a massive information dissemination about the Project and



all the issues and concerns must be addressed and consensus on the affected property owners must be sought.



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Cagayan de Oro - Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

ATTACHMENTS

Attachment 1. Preliminary List of Stakeholders

Attachment 2. Receiving copy of the Invitation letters

Attachment 3. IEC Program

Attachment 4. IEC Presentation Material

Attachment 5. IEC Brochure

Attachment 6. Initial Perception Survey

Attachment 7. Attendance Sheet

Attachment 8. Photodocumentation





Attachment 1. Preliminary List of Invitees

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

List of Invitees
March 23, 2020, 10:00-12:00 PM
Tagoloan Municipal Hall

Tagoloan Municipal Council Members and LGU Heads*

Name	Position	
Mayor Gomer A. Sabio	Municipal Mayor	
Roger Achas	Municipal Councilor	
Cathlyn Alfante	Municipal Councilor	
Ignacio Factura III	Municipal Councilor	
Arturo Casino	Municipal Councilor	
Armando Pomar	Municipal Councilor	
Audie Paduganan	Municipal Councilor	
Felipe Valdehuesa	Municipal Councilor	
Engr. Jeffrey Elogsong	Municipal Local Environment and Natural Resources Officer	
Engr. Eric Ragadang	Municipal Planning & Development Coordinator	
Engr. Gene Baculpo	Office of the Municipal Engineer	
Romeo Sister	Tagoloan Tricycle Operator Drivers Association	
Ferdinand Tormis	Poblacion Natumolan Mootorcycle Association	
Dindo Arnan	Tagoloan Center Car Association	
Ben Naduma	United Tagoloan Trisikad Association	
Rainfredo Sabejon	Tagoloan Market Habal-habal Operators/Drivers	
	Multi-purpose Cooperative	
Benjamin Ellarina	Municipal Senior Citizen Federation of the Philippines	
	Tagoloan Chapter	
Melden Saguilayan	Tagoloan Federation Differently Able Person	
	Organization	
Gleandel Arajuez	Tago-Ulohan Higaonon Tribe	
Rose Jean Labajo	Talogan Ta Balatukan ancestral Domain Tagoloan	
	Higaonon Tribal	
Matilde Gamba	Philippine Tribal Governance Administration	
Ms. Linda F. Libres	Sinag Tagoloan	
Carlito Quilang	Tagoloan River Concessionaires Association	
Nole Che Guevarra	Tagoloan Sand and Gravel	
Client Ray Cosin	Green Heads	
Maricor Torres	Save Tagoloan River and its Estuaries and Aquatlife	
	Movement	

Brgy. Natumolan, Tagoloan, Misamis Oriental

Name	Position
Rafael P. Vidal	Brgy. Captain
Elma C. Paderna	Sangguniang Barangay Member
Eugene A. Palapo	Sangguniang Barangay Member
Jocelyn A. Lim	Sangguniang Barangay Member
Marivic B. Ajon	Sangguniang Barangay Member
Segundino Q. Galorio	Sangguniang Barangay Member



Cagayan de Oro - Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Lenie E. Adame	Sangguniang Barangay Member
Janea Maura M. Mencias	Sk Chairperson
Ivy L. Asiñero	Barangay Secretary
Representative from Natumolan Elementary School	
Representative from Driver's and Operators Association	5
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Casinglot, Tagoloan, Misamis Oriental

Name	Position	
Marlon J. Bolanio	Brgy. Captain	
Julian M. Hernan	Sangguniang Barangay Member	
Richard P. Pelin	Sangguniang Barangay Member	
Oona Karen L. Emano	Sangguniang Barangay Member	
Teodoro N. Ociones	Sangguniang Barangay Member	
Vivian V. De Los Santos	Sangguniang Barangay Member	
Alrie J. Allones	Sangguniang Barangay Member	
Joseph R. Sereño	Sk Chairperson	
Doris O. Maghanoy	Barangay Secretary	
Representative from Casinglot Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION

List of Invitees March 24, 2020, 10:00-12:00 AM Puerto Gym, Puerto, Cagayan de Oro City

Cagayan de Oro City Council Members and LGU Heads*

Name	Position
Mayor Oscar S. Moreno	City Mayor
Hon. Teodolfo Lao	City Councilor
Hon. Enrico Salcedo	City Councilor
Hon. Zaldy Ocon	City Councilor
Hon. Lordan Suan	City Councilor
Hon. Jocelyn Rodriguez	City Councilor
Hon. Maria Lourdes Gaane	City Councilor
Hon. Romeo Calizo	City Councilor
Hon. George Gualberto Goking	City Councilor
Hon. Joyleen Mercedes Balaba	City Councilor
Hon. Jay Pascual	City Councilor
Hon. Ian Mark Nacaya	City Councilor



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Hon. Edna Dahino	City Councilor
Hon. Suzette Daba	City Councilor
Hon. Reuben Daba	City Councilor
Hon. Edgar Cabanlas	City Councilor
Hon. Roger Abaday	City Councilor
Hon. Teodolfo Lao	City Councilor
Engr. Armen A. Cuenca	City Local Environment and Natural Resources Officer
Mr. Ramir M. Balquin, EnP	City Planning & Development Coordinator
Engr. Rolando M. Pacuribot	Office of the City Engineer

^{*}At least 4 representatives from the City Council Members

Brgy. Bugo, Cagayan de Oro

Name	Position		
Ho. Vic Talingting	Brgy. Captain		
Hon. Presley C. Emano	Sangguniang Barangay Member		
Hon. Ronald Rey S. Cabana	Sangguniang Barangay Member		
Hon. Marie Anne G. Gironella	Sangguniang Barangay Member		
Hon. Ariel Igot	Sangguniang Barangay Member		
Hon. Alan D. Igot	Sangguniang Barangay Member		
Hon. Ricarte V. Codilla	Sangguniang Barangay Member		
Hon. Ponciano J. Dawal	Sangguniang Barangay Member		
Mr. Noel Nober O. Perpetua	Sk Chairperson		
Mr. Paul Jordan S. Morial	Barangay Secretary		
	Federation of Zone Five Bugo Neighborhood		
Ms. Anita B. Yaeso	Incorporated (FEZOFIBUNI)		
Mr. Avelino M. Sario, Sr.	Federation of Bugo Zone 6 Association, Incorporated		
	Villa Trinitas Phase 2, Homeowner's Association,		
Ms. Venus H. Galdo	Incorporated		
Sitio/Purok Leaders			
Representative from Upper Puerto Carp Beneficiary Association, Inc.			
Representative from Bugo - Puerto - Cogon Operators & Drivers Association (Bpcoda), Inc.			
Representative from Cugman - Bugo Tricycle Operators and Drivers Association, Inc.			
Representative from Bugo Motorized Operators and Drivers Association (Bumotoda), Inc			
Representative from Bugo Central School			
Representative from Bugo Christian School	Representative from Bugo Christian School		
Representative from Bugo National High School			
Representative from Women's Group			
Representative from Senior Citizen's Group			
Representative from Religious Groups			
Representative from Agriculture/Fishermen's Association			
Representative from Cultural Sector			
Representative from Environmental Sector			

Brgy. Puerto, Cagayan de Oro City, Misamis Oriental

Name	Position
Hon. Christian Rustico M. Achas	Brgy. Captain
Hon. Presley C. Emano	Sangguniang Barangay Member
Hon. Ronald Rey S. Cabana	Sangguniang Barangay Member
Hon. Marie Anne G. Gironella	Sangguniang Barangay Member



Cagayan de Oro - Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Hon. Ariel Igot	Sangguniang Barangay Member
Hon. Alan D. Igot	Sangguniang Barangay Member
Hon. Ricarte V. Codilla	Sangguniang Barangay Member
Hon. Ponciano J. Dawal	Sangguniang Barangay Member
Mr. Noel Nober O. Perpetua	Sk Chairperson
Mr. Paul Jordan S. Morial	Barangay Secretary
Representative from Puerto Elementary School	
Representative from Puerto National High School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Balubal, Cagayan de Oro City, Misamis Oriental

Name	Position
Hon. Bactong Pablo	Brgy. Captain
Hon. Ervic Bade	Sangguniang Barangay Member
Reynante Razalo	Sangguniang Barangay Member
Renato Agabalog	Sangguniang Barangay Member
Patrina Malingin	Sangguniang Barangay Member
Richard Razalo	Sangguniang Barangay Member
Dionedes Rosel	Sangguniang Barangay Member
Larry Pajo	Sangguniang Barangay Member
Mary Nel Saguban	Sk Chairperson
Mirasol Yutuc	Barangay Secretary
Representative from Balubal Elementary School	
Representative from Balubal National High School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	





Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

List of Invitees March 22, 2020, 2:00-4:00 PM Manolo Fortich Municipal Hall

Manolo Fortich City Council Members and LGU Heads*

Name	Position
Mayor Clive D. Quino	Municipal Mayor
Christy L. Sabale	Municipal Councilor – Committee on Livelihood,
	Women and family relations, Child care and nutrition
Alberto B. Tinoy	Municipal Councilor – Human rights, trade and
	commerce/ cooperative
Warleo A. Goayan	Municipal Councilor – Peace and order, public safety,
	senior citizen/ PWD
Alex D. Payangga	Municipal Councilor – Indigenous cultural communities
Nelson S. Binayao	Municipal Councilor – Barangay affairs
John Anthony G. Leyson	Municipal Councilor – Sports, youth development
Sharon Tacbobo – 0915-365 4649	Municipal Local Environment and Natural Resources
	Officer
Cherry Fe Amor Q. Magallones	Municipal Planning & Development Coordinator
Engr. Bernabe Auxtero – 0936-195 5285	Office of the Municipal Engineer
Carlos A. Dumas	CENRO Manolo Fortich
Marie Superales	NCIP Manolo Fortich Community Service Center
Judith Dinsag	Representative from Cultural Sector
	Representative from Environmental Sector
Luigi Amoin	Representative from Driver's and Operators
	Associations
Ceceil Sajonia	Representative from Women's Group
Phoebe Cau	Representative from Senior Citizen's Group

Brgy. Alae, Manolo Fortich, Bukidnon

Name	Position	
Hon. Erasmo Ceasar A. Ramirez	Brgy. Captain	
Hon. Jocelyn A. Legaspi	Sangguniang Barangay Member	
Hon. John Marvin C. Namocatcat Sr.	Sangguniang Barangay Member	
Hon. Roy L. Ganas	Sangguniang Barangay Member	
Hon. Deborah Y. Marinay	Sangguniang Barangay Member	
Hon. Junidini J. Artajo	Sangguniang Barangay Member	
Hon. Teogenes R. Abarabar Sr.	Sangguniang Barangay Member	
Hon. Deogracias O. Piosca	Sangguniang Barangay Member	
Hon. Keith Emilian C. Melendez	SK Chairperson	
Nelfa R. Tero	Barangay Secretary	
Representative from Alae Elementary School		
Representative from Alae National High School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		





Brgy. San Miguel, Manolo Fortich, Bukidnon

Name	Position
Hon. Benjamin S. Miṅoza	Brgy. Captain
Hon. Joaquin L. Fudolin	Sangguniang Barangay Member
Hon. John Windel J. Gallenero	Sangguniang Barangay Member
Hon. Mary Ann D. Edusma	Sangguniang Barangay Member
Hon. Jesus M. Galagar	Sangguniang Barangay Member
Hon. Sabina E. Babion	Sangguniang Barangay Member
Hon. Sanny D. Badelic	Sangguniang Barangay Member
Hon. Arsenio T. Mondilla	Sangguniang Barangay Member
Hon. Pauline Grace B. Gonzaga	SK Chairperson
Orlando S. Sarabia	Barangay Secretary
Representative from San Miguel Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Damilag, Manolo Fortich, Bukidnon

Name	Position
Hon. Allan G. Torres Jr.	Brgy. Captain
Hon. Allan E. Cahoy	Sangguniang Barangay Member
Hon. Anthony G. Inihao	Sangguniang Barangay Member
Hon. Jonathan S. Demata	Sangguniang Barangay Member
Hon. Lorenza I. Madjus	Sangguniang Barangay Member
Hon. Roberto S. Madula	Sangguniang Barangay Member
Hon. Eduardo Ralph S. Bagayas	Sangguniang Barangay Member
Hon. Edmond A. Licuanan	Sangguniang Barangay Member
Alejandro B. Arenal	SK Chairperson
Arlene B. Arenal	Barangay Secretary
Representative from Damilag Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Diclum, Manolo Fortich, Bukidnon

Name	Position
Hon. Nelson S. Binayao	Brgy. Captain
Hon. Tomasito A. Coquilla	Sangguniang Barangay Member
Hon. Pablo A. Jimenez Jr.	Sangguniang Barangay Member



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Hon. Ildefonso O. Pablo Jr.	Sangguniang Barangay Member
Hon. Shirley L. Tagapulot	Sangguniang Barangay Member
Hon. Brian T. Lozada	Sangguniang Barangay Member
Hon. Benito V. Bantilan	Sangguniang Barangay Member
Hon. Roque A. Balcos	Sangguniang Barangay Member
Hon. Ethel Jean Q. Emata	SK Chairperson
Charito A. Villegas	Barangay Secretary
Representative from Diclum Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Sankanan, Manolo Fortich, Bukidnon

Name	Position	
Hon. Dennis G. Salvo	Brgy. Captain	
Hon. Ariel L. Jenisan	Sangguniang Barangay Member	
Hon. Genevieve M. Monopollo	Sangguniang Barangay Member	
Hon. Julieto A. Baliguat	Sangguniang Barangay Member	
Hon. Alfonso L. Dahe	Sangguniang Barangay Member	
Hon. Bernie D. Guinayao	Sangguniang Barangay Member	
Hon. Jesus M. Vitor	Sangguniang Barangay Member	
Hon. Alberto B. Buynay	Sangguniang Barangay Member	
Hon. Kyrr Heinritz N. Quiray	SK Chairperson	
Hon. Charity D. Cajilla	Barangay Secretary	
Representative from Sankanan Elementary School		
Representative from Sankanan National High School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Brgy. Tankulan (Pob.), Manolo Fortich, Bukidnon

Name	Position
Hon. Romeo P. Dagunlay	Brgy. Captain
Hon. Lemuel Rey L. Arana	Sangguniang Barangay Member
Hon. Rene G. Abarquez	Sangguniang Barangay Member
Hon. Lee A. Albarece	Sangguniang Barangay Member
Hon. Daniel V. Onahon Jr	Sangguniang Barangay Member
Hon. Dominador L. Domo	Sangguniang Barangay Member
Hon. Alan A. Improgo	Sangguniang Barangay Member
Hon. Leopoldo S. Balanay	Sangguniang Barangay Member
Hon. Kristian Niko P. Tapales	SK Chairperson
Hon. Leonora S. Ugat	Barangay Secretary
Representative from Tankulan Elementary School	



Cagayan de Oro - Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Representative from Driver's and Operators Associations
Representative from Women's Group
Representative from Senior Citizen's Group
Representatives from Religious Groups
Representative from Agriculture/Fishermen's Association
Representative from Cultural Sector
Representative from Environmental Sector

Brgy. Ticala, Manolo Fortich, Bukidnon

Name	Position
Hon. Virgie Y. Payanan	Brgy. Captain
Hon. Kineth G. Tanto	Sangguniang Barangay Member
Hon. Telesforo P. Dawat	Sangguniang Barangay Member
Hon. Dumaquito D. Lentican	Sangguniang Barangay Member
Hon. Julito S. Tanto	Sangguniang Barangay Member
Hon. Nancita G. Yompoca	Sangguniang Barangay Member
Hon. Rufino S. Bulanta Jr.	Sangguniang Barangay Member
Hon. Ronald R. Magdalino Sr.	Sangguniang Barangay Member
Hon. Dievra Jay S. Payanan	SK Chairperson
Renato S. Coguihan Jr.	Barangay Secretary
Representative from Ticala Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	

Brgy. Mambatangan Manolo Fortich, Bukidnon

Name	Position
Hon. Angelie S. Roa	Brgy. Captain
Hon. Edward D. Dampal	Sangguniang Barangay Member
Hon. Allan T. Tinay	Sangguniang Barangay Member
Hon. Junrey P. Lagat	Sangguniang Barangay Member
Hon. Jerry R. Balaba	Sangguniang Barangay Member
Hon. Hanie P. Abris	Sangguniang Barangay Member
Hon. Evangeline T. Amansec	Sangguniang Barangay Member
Hon. Melan Dave C. Lalucan	Sangguniang Barangay Member
Hon. Neil Christian G. Tilap	SK Chairperson
Roberto A. Santiago Jr	Barangay Secretary
Representative from Mambatangan Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN
List of Invitees
March 24, 2020, 10:00-12:00 PM





2nd Floor, New Building

Municipal Hall, Sumilao

Sumilao Municipal Council Members and LGU Heads*

Name	Position
Mayor Jose Antonio A. Villo	Municipal Mayor
Hon. George Jeremy Baula	Municipal Councilor
Hon. Benjamin A. Baluma	Municipal Councilor
Hon. Gary A. Del Rosario	Municipal Councilor
Hon. Nissabel T. Caṅada	Municipal Councilor
Hon. Cresanto J. Apiag	Municipal Councilor
Hon. Leandro C. Bade	Municipal Councilor
Hon. Romeo B. Anoba	Municipal Councilor
Hon. Vernie N. Castillo	Municipal Councilor
Engr. Armen A. Cuenca	Municipal Local Environment and Natural Resources
	Officer
Engr. Isidro G. Borja	Municipal Planning & Development Coordinator
Engr. Rolando M. Pacuribot	Office of the Municipal Engineer
Representative from Cultural Sector	
Representative from Environmental Sector	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representative from Agriculture/Fishermen's Association	

Brgy. Puntian, Sumilao, Bukidnon

Name	Position
Hon. Tirso B. Amistoso	Brgy. Captain
Hon. Joann B. Gaid	Sangguniang Barangay Member
Hon. Jumandy T. Salise	Sangguniang Barangay Member
Hon. Evangeline R. Cabarles	Sangguniang Barangay Member
Hon. Apolinario C. Lumaghan	Sangguniang Barangay Member
Hon. Fegie D. Nacasabog	Sangguniang Barangay Member
Hon. Felicito H. Boncait	Sangguniang Barangay Member
Hon. Gavino C. Bantog	Sangguniang Barangay Member
Hon. Rustom B. Milla	SK Chairperson
Hon. Joela D. Golosinda	Barangay Secretary
Representative from Puntian Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Villa Vista, Sumilao, Bukidnon

Name	Position
Hon. Reymar T. Gaguan	Brgy. Captain
Hon. Noland M. Caramonte	Sangguniang Barangay Member



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Hon. Ernesto G. Bargo	Sangguniang Barangay Member
Hon. Jomie S. Cabactulan	Sangguniang Barangay Member
Hon. Maridel A. Goay	Sangguniang Barangay Member
Hon. Unifren B. Dahinao	Sangguniang Barangay Member
Hon. Geno O. Daluan	Sangguniang Barangay Member
Hon. Jean Sigrid S. Mat-Ao	SK Chairperson
Florence Joy S. Carbajal	Barangay Secretary
Representative from Villa Vista Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Culasi, Sumilao, Bukidnon

Name	Position
Hon. Gilbert T. Mamatan	Brgy. Captain
Hon. Deve D. Dalahigon	Sangguniang Barangay Member
Hon. Silvestre S. Dalo-An	Sangguniang Barangay Member
Hon. Lito E. Santaan	Sangguniang Barangay Member
Hon. Alberto S. Dalahigon	Sangguniang Barangay Member
Hon. Wenefredo Y. Mamatan	Sangguniang Barangay Member
Hon. Georgina D. Daganloy	Sangguniang Barangay Member
Hon. Randy I. Maata	SK Chairperson
Hezeil Ann M. Daluan	Barangay Secretary
Representative from Culasi Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Poblacion, Sumilao, Bukidnon

Name	Position
Hon. Julius Cesar A. Tan	Brgy. Captain
Hon. Nova H. Sumbalan	Sangguniang Barangay Member
Hon. Esterlita D. Cahiles	Sangguniang Barangay Member
Hon. Reynaldo C. Ducala	Sangguniang Barangay Member
Hon. Kent A. Elore	Sangguniang Barangay Member
Hon. Jimmar C. Han-Awon	Sangguniang Barangay Member
Hon. Dulce S. Doydora	Sangguniang Barangay Member
Hon. Jerome S. Cagadas	Sangguniang Barangay Member
Hon. Jarfie O. Acedilla	SK Chairperson
Louela G. De La Cerna	Barangay Secretary
Representative from Poblacion Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	



Cagayan de Oro - Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Representative from Senior Citizen's Group
Representatives from Religious Groups
Representative from Agriculture/Fishermen's Association
Representative from Cultural Sector
Representative from Environmental Sector

Brgy. Kisolon, Sumilao, Bukidnon

Name	Position
Hon. Albert Gabriel B. De Mesa	Brgy. Captain
Hon. Dominador A. Del Rosario	Sangguniang Barangay Member
Hon. Vicenta C. Manginsay	Sangguniang Barangay Member
Hon. Sherly T. Inojaldo	Sangguniang Barangay Member
Hon. Andres P. De La Cerna	Sangguniang Barangay Member
Hon. Gemmo C. Olana	Sangguniang Barangay Member
Hon. Diosdado C. Doyola	Sangguniang Barangay Member
Hon. Mark John Y. Opecio	Sangguniang Barangay Member
Hon. Vanessa Lynne D. Soliva	SK Chairperson
Alma Y. Daigon	Barangay Secretary
Representative from Kisolon Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. San Roque, Sumilao, Bukidnon

Name	Position	
Hon. Jake T. Curay	Brgy. Captain	
Hon. Hentherjo L. Dalit	Sangguniang Barangay Member	
Hon. Ace L. Francisco	Sangguniang Barangay Member	
Hon. Myrna B. Pinote	Sangguniang Barangay Member	
Hon. Rodelita P. Sasusam	Sangguniang Barangay Member	
Hon. Maribeth D. Suminao	Sangguniang Barangay Member	
Hon. John Mark C. Sabanal	Sangguniang Barangay Member	
Hon. George B. Paca Sr	Sangguniang Barangay Member	
Hon. Ariel S. Torayno	SK Chairperson	
Alma O. Landuay	Barangay Secretary	
Representative from San Roque Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN List of Invitees





March 23, 2020, 2:00-4:00 PM Dome, Poblacion, Impasug-ong

Impasug-ong Municipal Council Members and LGU Heads*

Name	Position
Hon. Anthony Uy	Municipal Mayor
Hon. John A. Alvarez	Municipal Councilor
Hon. Hon. Christopher T. Beltran	Municipal Councilor
Hon. Melvin B. Santos	Municipal Councilor
Hon. Gerome DC. Reyes	Municipal Councilor
Hon. Emmanuel DC. Magtalas	Municipal Councilor
Hon. Richard P. Dela Cruz	Municipal Councilor
Hon. Jayvee C. Lacsina	Municipal Councilor
Mark David C. Maon	Municipal Local Environment and Natural Resources
	Officer
Nika Corinne S. Tan	Municipal Planning & Development Coordinator
Marivee M. Coronel	Office of the Municipal Engineer
Representative from Cultural Sector	
Representative from Environmental Sector	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	

Brgy. Poblacion, Impasug-ong, Bukidnon

Name	Position
Von Omar P. Lagayan	Brgy. Captain
Hon. Ayagil Kilah C. Delarmente	Sangguniang Barangay Member
Hon. Clemencia M. Denzo	Sangguniang Barangay Member
Hon. Reina O. Paluga	Sangguniang Barangay Member
Hon. Diomedes D. Tulusan	Sangguniang Barangay Member
Hon. Abner L. Garcia	Sangguniang Barangay Member
Hon. Rolando E. Eguia	Sangguniang Barangay Member
Hon. Laurence Aldwin O. Olana	Sangguniang Barangay Member
Hon. Irene Kristine C. Delarmente	SK Chairperson
Shirley A. Curiba	Barangay Secretary
Representative from Poblacion Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. La Fortuna, Impasug-ong, Bukidnon

Name	Position
Hon. Nilo C. Iba	Brgy Captain
Hon. Walter B. Galasanay	Sangguniang Barangay Member
Hon. Narcisa D. Igloria	Sangguniang Barangay Member



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Hon. Livelyn G. Dubongco	Sangguniang Barangay Member
Hon. Editha D. Gayonan	Sangguniang Barangay Member
Hon. Jheran P. Go	Sangguniang Barangay Member
Hon. Corazon S. Toring	Sangguniang Barangay Member
Hon. Eleonor B. Tañedo	Sangguniang Barangay Member
Hon. Lloyd Matty L. Inta	SK Chairperson
Hon. Evelyn A. Montaño	Barangay Secretary
Representative from La Fortuna Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Cawayan, Impasug-ong, Bukidnon

Name	Position	
Hon. Josefino B. Manalo	Brgy. Captain	
Hon. Carmelino L. Campol	Sangguniang Barangay Member	
Hon. Greggy D. Labra	Sangguniang Barangay Member	
Hon. Angelito D. Cawasan	Sangguniang Barangay Member	
Hon. Policarpio P. Dacillo Jr	Sangguniang Barangay Member	
Hon. Anie L. Tabian	Sangguniang Barangay Member	
Hon. Jerry O. Avila	Sangguniang Barangay Member	
Hon. Grace I. Timo	Sangguniang Barangay Member	
Hon. Shiela Mae C. Urgel	SK Chairperson	
Ma. Chenita T. Miras	Barangay Secretary	
Representative from Cawayan Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Brgy. Capitan Bayong Impasug-ong, Bukidnon

Name	Position
Hon. Dawn M. Roque	Brgy. Captain
Hon. Raul D. Felicio	Sangguniang Barangay Member
Hon. Rodrigo G. Antivo	Sangguniang Barangay Member
Hon. Marven C. Mandong	Sangguniang Barangay Member
Hon. Enrique Y. Gayon	Sangguniang Barangay Member
Hon. Evangeline A. Yomonda	Sangguniang Barangay Member
Hon. Rhoda A. Napuran	Sangguniang Barangay Member
Hon. Generaldo N. Galambao	Sangguniang Barangay Member
Hon. Princess Grace L. Gayon	SK Chairperson
Hon. Bernandeth Y. Dela Peña	Barangay Secretary
Representative from Capitan Bayong Elementary School	
Representative from Driver's and Operators Associations	



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Representative from Women's Group
Representative from Senior Citizen's Group
Representatives from Religious Groups
Representative from Agriculture/Fishermen's Association
Representative from Cultural Sector
Representative from Environmental Sector

Brgy. Impalutao, Impasug-ong, Bukidnon

Name	Position
Hon. Antonio O. Dominao	Brgy. Captain
Hon. Jerly D. Pacatang	Sangguniang Barangay Member
Hon. Romeo R. Abunda Sr.	Sangguniang Barangay Member
Hon. Martha G. Bustamante	Sangguniang Barangay Member
Hon. Danilo N. Micabalo	Sangguniang Barangay Member
Hon. Nicasio P. Llamoso	Sangguniang Barangay Member
Hon. Esteban G. Macapaz	Sangguniang Barangay Member
Hon. Raquel L. Buco	Sangguniang Barangay Member
Hon. Mayflor P. Paquiao	SK Chairperson
Hon. Analou L. Paul	Barangay Secretary
Representative from Impalutao Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Brgy. Kibenton, Impasug-ong, Bukidnon

Name	Position	
Hon.	Brgy Captain	
Hon. Richard J. Pad-Ay	Sangguniang Barangay Member	
Hon. Merlie G. Carlos	Sangguniang Barangay Member	
Hon. Mary Ann D. Minardo	Sangguniang Barangay Member	
Hon. Margie L. De Leon	Sangguniang Barangay Member	
Hon. Rickie G. Silmahan	Sangguniang Barangay Member	
Hon. Isidro A. Okit	Sangguniang Barangay Member	
Hon. Venerando S. Balunsay	Sangguniang Barangay Member	
Hon. Krizel Jane I. Lamparas	SK Chairperson	
Sherlita D. Lamparas	Barangay Secretary	
Representative from Kibenton Elementary School		
Representative from Driver's and Operators		
Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN List of Invitees



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

March 23, 2020, 10:00-12:00 PM People's Hall, 2nd Floor Malaybalay City Hall

Malaybalay City Council Members and LGU Heads*

Name	Position
Mayor Florencio T. Flores Jr.	City Mayor
Hon. Estelito Marabe	City Councilor
Hon. Niko Aldeguer	City Councilor
Hon. Louel Tortola	City Councilor
Hon. Rendon Sangalang	City Councilor
Hon. Victor Barroso	City Councilor
Hon. Hollis Monsanto	City Councilor
Hon. Christopher Soria	City Councilor
Hon. Erwin Damasco	City Councilor
Hon. Kathleen Cecille Pagaling	City Councilor
Hon. Cromwell Kiril Dinlayan	City Councilor
Hon. Ma. Anita L. Fernandez	City Local Environment and Natural Resources Officer
Engr. Adrian R. Gamboa	City Planning & Development Coordinator
Engr. Roy A. Lapuz	Office of the City Engineer
Crispulo L. Libertad	Northern Bukidnon Free Farmer's Cooperative
Gregorio S. Tatoy	New Ilocos Irrigators Ass., Inc.
Bienvinido Landasan, Jr	Abag Kalambuan, Inc.
Representative from Cultural Sector	
Representative from Environmental Sector	
Representative from Driver's and Operators Association	S
Representative from Women's Group	
Representative from Senior Citizen's Group	

Brgy. Patpat (Lapu-lapu), Malaybalay, Bukidnon

Name	Position
Hon. Renante M. Okit	Brgy. Captain
Hon. Lito G. Maruhom	Sangguniang Barangay Member
Hon. Ruben D. Meliston	Sangguniang Barangay Member
Hon. Freddie S. Okit	Sangguniang Barangay Member
Hon. Norien B. Meliston	Sangguniang Barangay Member
Hon. Dante L. Dumagpi	Sangguniang Barangay Member
Hon. Bles G. Gumindan	Sangguniang Barangay Member
Hon. Edwin G. Meliston	Sangguniang Barangay Member
Hon. Sharam D. Dahuloran	SK Chairperson
Liezel Joy A. Gabule	Barangay Secretary
Representative from Patpat Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	
Danie Kalassanas Malaskalas Deldikasa	

Brgy. Kalasungay, Malaybalay, Bukidnon

Name	Position
Hon. Rodrigo O. Niere	Brgy. Captain



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Hon. Ersie C. Paano	Sangguniang Barangay Member	
Hon. Joemar M. Sario	Sangguniang Barangay Member	
Hon. Anthony Julian G. Rubio	Sangguniang Barangay Member	
Hon. Gene M. Rojas	Sangguniang Barangay Member	
Hon. Constantino T. Mendoza Jr	Sangguniang Barangay Member	
Hon. Emilie R. Okit	Sangguniang Barangay Member	
Hon. Essner G. Binayao	Sangguniang Barangay Member	
Hon. Karl Marlone C. Manahan	SK Chairperson	
Kesha Dawn M. Sewala	Barangay Secretary	
Representative from Kalasungay Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Brgy. Dalwangan, Malaybalay, Bukidnon

Name	Position	
Hon. Raul B. Pandong	Brgy. Captain	
Hon. Wilson A. Sogocio	Sangguniang Barangay Member	
Hon. Jose E. Ronolo	Sangguniang Barangay Member	
Hon. Primo Jack D. Omarol	Sangguniang Barangay Member	
Hon. Nieley Joy P. Martinez	Sangguniang Barangay Member	
Hon. Carmelino T. Melliza Jr	Sangguniang Barangay Member	
Hon. Jan Kayzer O. Lino-Ay	Sangguniang Barangay Member	
Hon. Judito S. Pagaling	Sangguniang Barangay Member	
Hon. Anthon Son R. Morento	SK Chairperson	
Hon. Junel C. Lamadora	Barangay Secretary	
Representative from Dalwangan Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Brgy. 10, Malaybalay, Bukidnon

Name	Position
Hon. Nilo Q. Salga	Brgy. Captain
Hon. Herculano O. Lupiba	Sangguniang Barangay Member
Hon. Alex P. Agustin	Sangguniang Barangay Member
Hon. Armando P. Blanco	Sangguniang Barangay Member
Hon. Alejandro P. Ferrer Jr	Sangguniang Barangay Member
Hon. Francis Eddie C. Dagang	Sangguniang Barangay Member
Hon. Michael Joseph C. Galindo	Sangguniang Barangay Member
Hon. Isidro T. Desabille	Sangguniang Barangay Member
Hon. Gio Paul Z. Agustin	SK Chairperson
Hon. Tiffany C. Galindo	Barangay Secretary



Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments

Representative from Brgy. 10 Elementary School
Representative from Driver's and Operators Associations
Representative from Women's Group
Representative from Senior Citizen's Group
Representatives from Religious Groups
Representative from Agriculture/Fishermen's Association
Representative from Cultural Sector
Representative from Environmental Sector

Attachment 2. Invitation Letters to the Stakeholders

Tagaloan LGU







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON. GOMER A. SABIO Municipal Mayor Tagoloan, Misamis Oriental

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO – MALAYBALAY SECTION)

Dear Mayor Sabio:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

The Environmental Management Bureau of the Department of Environment and Natural Resources (EMB-DENR) requires that the proposed project undergoes an Environmental Impact Assessment (EIA) for its Environmental Compliance Certificate (ECC) application prior to project implementation. In line with this, CTII Engineering commissioned Amet-Asia Inc., the third-party local environmental consultancy firm, to undertake the EIA. The first step in the EIA process is the Information, Education and Communication, i.e. an activity which informs the stakeholders about the project through the process of education using communication mediums.

In this regard, we are inviting you or your representative to attend the IEC meeting on **Tuesday, March 24**, **2021** at the **Tagoloan Dome**. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 1:30 P.M. with the program promptly starting at 2:00 P.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader RECEIVEL Date: 9/3/21

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Tel. No. (02)8527-15551

Brgy. Natumolan, Tagoloan







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON. RAFAEL P. VIDAL

Brgy, Captain

Natumolan, Tagoloan, Misamis Oriental

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Brgy, Captain Vidal:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader LOAN, MISAMIS ORIENTAL STREAMOR'S Date: 3 23 21

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Tel. No. (02)8527-15551

Brgy. Casinglot, Tagaloan







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON. MARLON J. BOLANIO

Brgy, Captain

Casinglot, Tagoloan, Misamis Oriental

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Bolanio:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader RECEIVEL 2 2 21

HCA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines





Cagayan De Oro City LGU



JICA Survey Team for the Preparatory Study for Central Mindanao
High Standard Highway Construction Project (CDO-Malaybalay Section)



18 March 2021

HON. OSCAR S. MORENO

City Mayor

Cagayan de Oro, Misamis Oriental

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Mayor Moreno:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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In this regard, we are inviting you or your representative to attend the IEC meeting on Wednesday, March 24, 2021 at Brgy. Puerto Gymnasium. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 9:30 A.M. with the program promptly starting at 10:00 A.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

Sulestan

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines





DENR Region 10



JICA Survey Team for the Preparatory Study for Central Mindanao
High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

ARLEIGH JUMALON ADORABLE, CESO III Regional Executive Director, DENR-X Cagayan de Oro, Misamis Oriental

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO – MALAYBALAY SECTION)

Dear Dir. Adorable:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

The Environmental Management Bureau of the Department of Environment and Natural Resources (EMB-DENR) requires that the proposed project undergoes an Environmental Impact Assessment (EIA) for its Environmental Compliance Certificate (ECC) application prior to project Implementation. In line with this, CTII Engineering commissioned Amet-Asia Inc., the third-party local environmental consultancy firm, to undertake the EIA. The first step in the EIA process is the <u>Information</u>, Education and <u>Communication</u>, i.e. an activity which informs the stakeholders about the project through the process of education using communication mediums.

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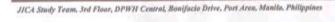
Registration starts at 9:30 A.M. with the program promptly starting at 10:00 A.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader AFOLIVED:







Brgy. Bugo, Cagayan de Oro



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



18 March 2021

HON. VIC TALINGTING

Brgy. Captain

Brgy. Bugo, Cagayan de Oro City, Misamis Oriental

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Talingting:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon, JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

The Environmental Management Bureau of the Department of Environment and Natural Resources (EMB-DENR) requires that the proposed project undergoes an Environmental Impact Assessment (EIA) for its Environmental Compliance Certificate (ECC) application prior to project implementation. In line with this, CTII Engineering commissioned Amet-Asia Inc., the third-party local environmental consultancy firm, to undertake the EIA. The first step in the EIA process is the <u>Information</u>, <u>Education</u> and Communication, i.e. an activity which informs the stakeholders about the project through the process of education using communication mediums.

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Thank you for your cooperation in this endeavor.

Truly yours,

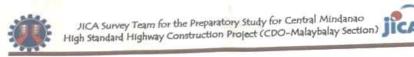
MR. RYUICHI UENO JICA Study Team Leader

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines





Brgy. Balubal, Cagayan de Oro



18 March 2021

HON. PABLO M. BACTONG

Brgv. Captain

Brgy. Balubal, Cagayan de Oro City, Misamis Oriental

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Bactong:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

JICA Study Team Leader

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines





Brgy. Puerto, Cagayan de Oro



JICA Survey Team for the Preparatory Study for Central Mindanao
High Standard Highway Construction Project (CDO-Malaybalay Section)



18 March 2021

HON. CHRISTIAN RUSTICO M. ACHAS

Brgy, Captain

Brgy. Puerto, Cagayan de Oro City, Misamis Oriental

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO – MALAYBALAY SECTION)

Dear Brgy. Captain Achas:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

RECEIVED: 3-23-24

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manilo, Philippines







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON. CLIVE D. QUIÑO Municipal Mayor Manolo Fortich, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Mayor Quiño:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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In this regard, we are inviting you or your representative to attend the IEC meeting on Monday, March 22, 2021 at BRCI Diclum, Manolo Fortich. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 1:30 P.M. with the program promptly starting at 2:00 P.M. Also attached is the program of the IEC meeting

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Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines





Brgy. Damilag, Manolo Fortich



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON, ALLAN G. TORRES JR.

Brgy. Captain

Damilag, Manolo Fortich, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear: Brgy. Captain Torres:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO

JICA Study Team Leader

Received by:

Tel. No. (02)8527-15551

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON, DENNIS G. SALVO

Brgy. Captain

Sankanan, Manolo Fortich, Bukidnon

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Salvo:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Thank you for your cooperation in this endeavor,

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON, BENJAMIN S. MINOZA

Brgy. Captain

San Miguel, Manolo Fortich, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Minoza:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (IICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

The Environmental Management Bureau of the Department of Environment and Natural Resources (EMB-DENR) requires that the proposed project undergoes an Environmental Impact Assessment (EIA) for its Environmental Compliance Certificate (ECC) application prior to project implementation. In line with this, CTII Engineering commissioned Amet-Asia Inc., the third-party local environmental consultancy firm, to undertake the EIA. The first step in the EIA process is the <u>Information</u>, <u>Education</u> and Communication, i.e. an activity which informs the stakeholders about the project through the process of education using communication mediums.

In this regard, we are inviting you or your representative to attend the IEC meeting on Monday, March 22, 2021 at BRCI Diclum, Manolo Fortich. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 1:30 P.M. with the program promptly starting at 2:00 P.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

IICA Study Team, 3rd Floor, DPWH Central, Banifacia Drive, Part Area, Manifa, Philippines

Tel. No. (82)8527-13551

Brgy. Ticala, Manolo Fortich







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON. VIRGIE Y. PAYANAN Brgy. Captain Ticala, Manolo Fortich, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Payanan:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Tel. No. (02)8527-15531

Brgy. Diclum, Manolo Fortich







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON. NELSON 5. BINAYAO

Brgy. Captain

Diclum, Manolo Fortich, Bukidnon

SUBJECT:

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Binayao:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Registration starts at 1:30 P.M. with the program promptly starting at 2:00 P.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader Received by: Magate
Dulce Amor Magate
2/22/202

HCA Study Team, 3rd Floor, DPWH Central, Bonifucio Drive, Port Area, Manila, Philippines

Tel. No. (02)8527-15551

Brgy. Tankulan, Manolo Fortich







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON. ROMEO P. DAGUNLAY

Brgy, Captain

Tankulan (Pob.), Manolo Fortich, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Dagunlay:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

The Environmental Management Bureau of the Department of Environment and Natural Resources (EMB-DENR) requires that the proposed project undergoes an Environmental Impact Assessment (EIA) for its Environmental Compliance Certificate (ECC) application prior to project implementation. In line with this, CTII Engineering commissioned Amet-Asia Inc., the third-party local environmental consultancy firm, to undertake the EIA. The first step in the EIA process is the Information, Education and Communication, i.e. an activity which informs the stakeholders about the project through the process of education using communication mediums.

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

HCA Study Teum, 3rd Floor, DPWH Central, Bonifacio Drive, Part Area, Manila, Philippines

Tel. No. (02)8527-15551

Brgy. Aale, Manolo Fortich







SUBJECT:

JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON, ERASMO CEASAR A. RAMIREZ Brgy, Captain

Alae, Manolo Fortich, Bukidnon

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION)

Dear Brgy, Captain Ramirez:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Tel. No. (82)8527-15551

Brgy. Mambatangan, Manolo Fortich







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON. ANGELIE S. ROA

Brgy. Captain

Mambatangan, Manolo Fortich, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Roa:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

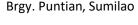
Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Tel. No. (02)8527-15551









JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malayhalay Section)



19 March 2021

HON, TIRSO B. AMISTOSO

Brgy. Captain

Puntian Sumilao, Bukidnon

SUBJECT:

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO – MALAYBALAY SECTION)

Dear Brgy. Captain Amistoso:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon, JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

The Environmental Management Bureau of the Department of Environment and Natural Resources (EMB-DENR) requires that the proposed project undergoes an Environmental Impact Assessment (EIA) for its Environmental Compliance Certificate (ECC) application prior to project implementation. In line with this, CTII Engineering commissioned Amet-Asia Inc., the third-party local environmental consultancy firm, to undertake the EIA. The first step in the EIA process is the information, Education and Communication, i.e. an activity which informs the stakeholders about the project through the process of education using communication mediums.

In this regard, we are inviting you or your representative to attend the IEC meeting on Wednesday, March 24, 2021 at 2nd Floor, New Building, Sumilao Municipal Hall. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 9:30 A.M. with the program promptly starting at 10:00 A.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

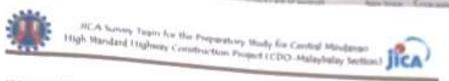
HCA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Pari Area, Manila, Philippines

Fpt. No. 102/0527-15351

Brgy. San Roque, Sumilao







19 March 2021

HON, JAKE T. CURAY Brgy. Captain San Roque, Sumitan, Bulddoon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAG HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT [CAGATAN DE DRO - MALAVBALAY SECTION)

Dear Brgy, Captain Curay

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (BCA) is proposing to construct and operate the Cantral Mindanae High Standard Highway Construction Project which will traverse the Municipalities of Tagolises. Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumitao, Impassayong, and Idelayteday Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII)

The Environmental Menagement Bureau of the Department of Environment and Patieral Resources (EMS-DENR) requires that the proposed project undergoes an Environmental Impact Assessment (EIA) for its Environmental Compliance Certificate (ECC) application prior to project implementation In line with this, CTII Engineering commissioned Amet-Asia Inc., the third-party local anytromental consultancy firm, to undertake the EIA. The first step in the EIA process is the information. Education and Communication, i.e. an activity which informs the stakeholders about the project through the process of education using communication mediums.

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracumonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

201 sellion

HCA Study Team, And Floor, DPWH Central, Benifician Brins, Part Arms, Abunda, Philippines

Brgy. Villa Vista, Sumilao







HCA Survey Team for the Preparatory Study for Central Mondanao High Standard Highway Construction Project (CDO-Malaybulay Section)



19 March 2021

HON. NOLAND M. CARAMONTE

Brgy. Captain

Villa Vista, Sumileo, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION)

Dear Brgy, Captain Caramonte:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (IICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. IICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

HCA Study Team, 3rd Fluit, BPWH Central, Bonifacio Debia, Port Aven, Manifa, Philippines

THE NW HEARTS AND





Brgy. Poblacion, Sumilao



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON, JULIUS CESAR A. TAN

Brgy Captain

Poblacion, Sumilao, Bukidnon

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Brgy, Captain Tan:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanau High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay. Buildings. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII)

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Thank you for your cooperation in this endeavor.

Truly yours,

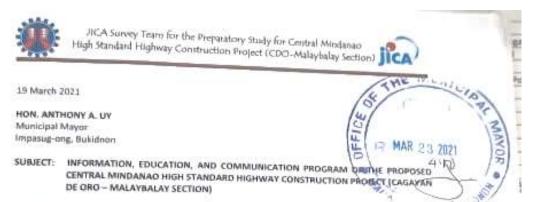
MR. RYUICHI UENO JICA Study Team Leader

JICA Study Team, Jed Floor, DPWH Central, Bonifacio Drive, Port Area, Manilo, Philippines

THE No. PRINCET / COST







Dear Mayor Uy:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JBCA) is proposing to construct and operate the Central Mindanau High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay. Bukidnon JBCA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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In this regard, we are inviting you or your representative to attend the IEC meeting on Tuesday, March 23, 2021 at Impasug-ong Municipal Conference Half. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 1:30 P.M. with the program promptly starting at 2:00 P.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

JIC 4 Stork: From 3rd Floor, DPH II Central Bunifacto Benry, Part Area, Minila, Philippines.

Tel. 50 (#2)#125-19101

Brgy. Poblacion, Impasug-ong







JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON, VON OMAR P. LAGAYAN

Brgy. Captain

Poblacion, Impasug-ong, Bukidnon

SUBJECT:

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION)

Dear Brgy, Captain Lagayan:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

Tel. No. 107/8577-15321







Brgy. Impalutao, Impasug-ong



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON. ANTONIO O. DOMINAO

Brgy, Captain

Impalutao, Impasug-ong, Bukidnon

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Dominao:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UFNO JICA Study Team Leader

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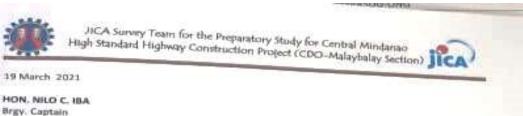
JICA Study Teum, 3rd Floor, DPWH Central, Bonifacio Drive, Part Arca, Manila, Philippines

Tel. No. (02)8327-15381





Brgy. La Fortuna, Impasug-ong



La Fortuna, Impassig-ong, Bukidnon SUBJECT: INFORMATION EDUCA

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO — MALAYBALAY SECTION)

Dear Brgy, Captain Iba:

The Department of Public Works and Highways [DPWH] with the assistance of Japan international Cooperation Agency [JICA] is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon, JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII)

The Environmental Management Bureau of the Department of Environment and Natural Resources (EMB-DENR) requires that the proposed project undergoes an Environmental Impact Assessment (EIA) for its Environmental Compliance Certificate (ECC) application prior to project implementation. In line with this, CTII Engineering commissioned Amet-Asia Inc., the third-party local environmental consultancy firm, to undertake the EIA. The first step in the EIA process is the <u>information</u>, Education and Communication, i.e. an activity which informs the stakeholders about the project through the process of education using communication mediums.

In this regard, we are inviting you or your representative to attend the IEC meeting on Tuesday, March 23, 2021 at Impasug-ong Municipal Conference Hall. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 1:30 P.M. with the program promptly starting at 2:00 P.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

IICA Study Texas, Sed Floor, DPWH Central, Bonifacio Drive, Port 3104, Mantin, Philippines

Tel. No. 10238327-15551





Brgy. Kibenton, Impasug-ong



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON, NOEL R. ROJAS

Brgy. Captain

Kibenton, Impasug-ong, Bukidnon

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

Dear Brgy. Captain Rojas:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon, JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII)

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI LIENO JICA Study Team Leader Received by possegues. 3/29/21

36C's Smale From 3rd Floor, BPWH Control, Banaparta Urice, Part Aren, Masella, Philippines

Fed. Nic. 18218527 FESTA





Brgy. Cawayan, Impasug-ong



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON JOSEFINO B. MANALO

Brgy. Captain

Cawayan, Impasug-ong, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION)

Dear Brgy. Captain Manalo:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon, JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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In this regard, we are inviting you or your representative to attend the IEC meeting on Tuesday, March 23, 2021 at Impasug-ong Municipal Conference Hall. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 1:30 P.M. with the program promptly starting at 2:00 P.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

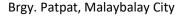
Truly yours,

MR. RYUICHI UENO

JICA Study Team Leader

HCA Study Team, Jed Floor, DPWH Central, Bontfacto Drive, Port Area, Manila, Philippines

Tel. No. 10218527-15551







La Fo

Attachments



JICA Survey Team for the Preparatory Study for Central Mindanaci High Standard Highway Construction Project (CDO: Malaybulay Section)



18 March 2021

HON, RENANTE M. OKIT

Brgy, Captain

Patpat (Lapu-lapu), Malaybalay, Bukidnon

SUBJECT.

INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO – MALAYBALAY SECTION)

Dear Brgy Captain Okit:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bulddoon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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In this regard, we are inviting you or your representative to attend the IEC meeting on Tuesday, March 23, 2021 at Barangay Casisang Covered Court, Casisang, Malaybalay City. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 9:30 A.M. with the program promptly starting at 10:00 A.M. Also attached is the program of the IEC meeting.

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

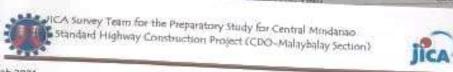
HCA Study Team, 3rd Finne, DPWH Central, Bomifucia Drive, Part Aren, Manila, Philippines.

Tel. No. 1620032 2 15331





Brgy. Kalasungay, Malaybalay City



18 March 2021

HON, RODRIGO O. NIERE

Brgy. Captain

Kalasungay, Malaybalay, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE DRO - MALAYBALAY SECTION)

Dear Brgy Captain Niere:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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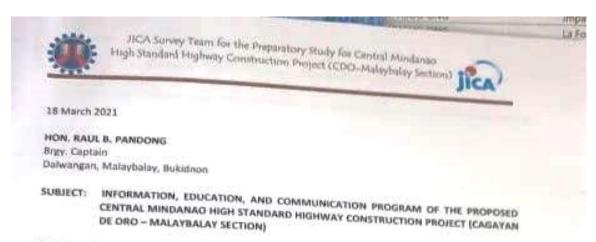
R. RYUICHI DENO 'A Study Team Leader 1 Main Team Ant Finne, DPWH Central, Randaria Delot, Part Aris, Maplin, Philippines

Tel No. (02)8577-11511





Brgy. Dalwangan, Malaybalay City



Dear Brgy Captain Pandong:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon-JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader

HC4 Snoly Feam, 3rd Floor, DPWH Central, Banifacia Drive, Pari Area, Manifa, Philippines

Tel. No. (82)8527-15351





Brgy. 10, Malaybalay City



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO+Malaybalay Section)



18 March 2021

HON, NILO Q. SALGA

Brey, Captain

Brgy. 10 (Poblacion) Malaybalay, Bukidnon

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Brilly Captain Salga:

The Department of Public Works and Highways (OPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

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Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO

JH '4 Smidy Team, 3rd Floor, DPWH Central, Routfacia Drive, Port Area, Monita, Philipptites

Tel. No. 18218377-15331





Attachment 3. IEC Program

Tagoloan, Misamis Oriental



INFORMATION, EDUCATION AND COMMUNICATION PROGRAM March 23, 2021 10:00 AM – 12:00 PM

Invocation

National Anthem

Opening Remarks Hon. Mayor Gomer A. Sabio

Tagoloan Municipal Mayor

Presentation of the Proposed Project Dr. Nimfa L. Bracamonte

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks Engr. Eric Ragadang

Municipal Planning and Development Officer

Photo documentation

Dr. Nimfa L. Bracamonte Emcee/Facilitator

IICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Tel No. (02)8527-15551







INFORMATION, EDUCATION AND COMMUNICATION PROGRAM Puerto Brgy. Hall, Puerto, Cagayan de Oro March 24, 2021 10:00 AM – 12:00 PM

Invocation

National Anthem

Opening Remarks Hon. Mayor Oscar S. Moreno

Cagayan de Oro City Mayor

Presentation of the Proposed Project Dr. Nimfa L. Bracamonte

Amet-Asia, Inc. - People Consultant

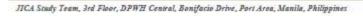
Open Forum

Closing Remarks Ramir M. Balquin

City Planning and Development Officer

Photo documentation

Dr. Nimfa L. Bracamonte Emcee/Facilitator



Tel. No. (02)8527-15551







INFORMATION, EDUCATION AND COMMUNICATION PROGRAM BRCI Diclum, Manolo Fortich March 22, 2021 2:00 PM – 4:00 PM

Invocation

National Anthem

Opening Remarks Hon. Mayor Clive D. Quiño

Manolo Fortich Municipal Mayor

Presentation of the Proposed Project Dr. Nimfa L. Bracamonte

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks Ms. Cherry Fe Amor Q. Magallones

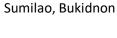
Municipal Planning and Development Officer

Photo documentation

Dr. Nimfa L. Bracamonte Emcee/Facilitator

IICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Tel No. (02)8527-25552





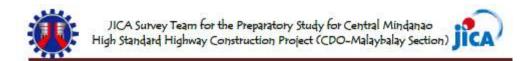
Central Mindanao Standard Highway Construction Project

Cagayan de Oro - Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Attachments



CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION PROGRAM List of Invitees March 24, 2020, 10:00-12:00 PM 2nd Floor, New Building, Municipal Hall, Sumilao

INFORMATION, EDUCATION AND COMMUNICATION PROGRAM
Sumilao Municipal Hall
March 24, 2021
10:00 AM – 12:00 PM

Invocation

National Anthem

Opening Remarks

Hon. Jose Antonio Villo Sumilao Municipal Mayor

Presentation of the Proposed Project

Ms. Amabelle A. Embornas

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks

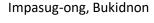
Albert Gabriel De Mesa Brgy. Captain, Barangay Kisolon

Photo documentation

Ms. Amabelle A. Embornas Emcee/Facilitator

IICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Tel No. (02)8527-25552









JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION PROGRAM List of Invitees March 23, 2020, 2:00-4:00 PM Impasug-ong Municipal Conference Hall

Invocation

National Anthem

Opening Remarks Hon. Mayor Anthony A. Uy

Impasug-ong Municipal Mayor

Presentation of the Proposed Project Ms. Amabelle A. Embornas

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks Josefino B. Manalo

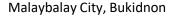
Brgy. Captain, Barangay Cawayan

Photo documentation

Ms. Amabelle A. Embornas Emcee/Facilitator

JICA Study Team, 3rd Floor, DPWH Central, Bonifocio Drive, Port Area, Manila, Philippines

Tel. No. (02)8527-15551









CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION PROGRAM List of Invitees

March 23, 2020, 10:00-12:00 PM People's Hall, 2nd Floor Malaybalay City Hall

Invocation

National Anthem

Opening Remarks Hon. Mayor Florencio T. Flores Jr.

Malaybalay City Mayor

Presentation of the Proposed Project Ms. Amabelle A. Embornas

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks Adrian R. Gamboa

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

City Planning and Development Officer

Photo documentation

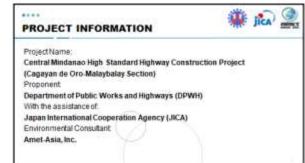
Ms. Amabelle A. Embornas Emcee/Facilitator

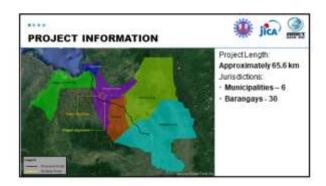


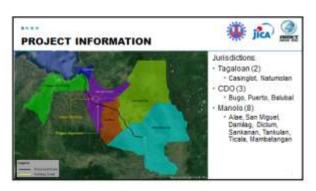


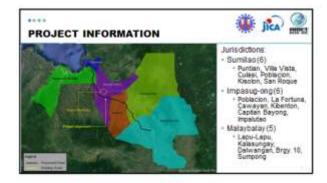
Attachment 4. IEC Presentation Material





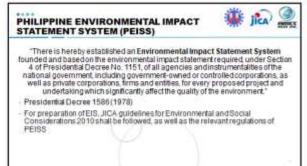






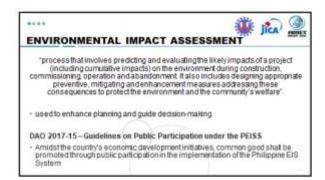


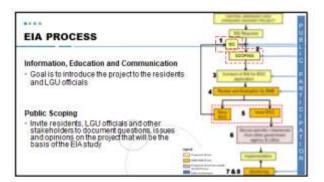


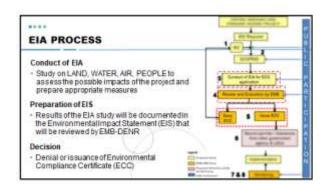


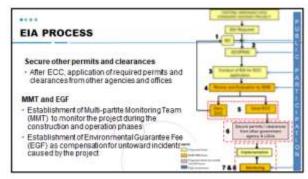


















CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Attachment 5. IEC Brochure

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT



CAGAYAN DE ORO - MALAYBALAY SECTION INFORMATION, EDUCATION AND COMMUNICATION (IEC)

March 2021



Proponent: Department of Public Works and Highways (Central Office)



With the assistance of: Japan International Cooperation Agency (JICA)

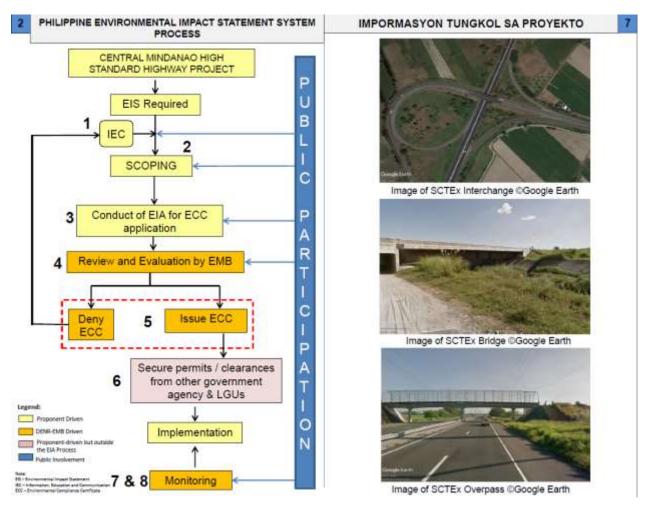


Environment Consultant: Amet-Asia Inc. #7 Pioneer St. Brgy Highway Hills, Mandaluyong City 02 254 0421/0906 012 6913



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)

Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

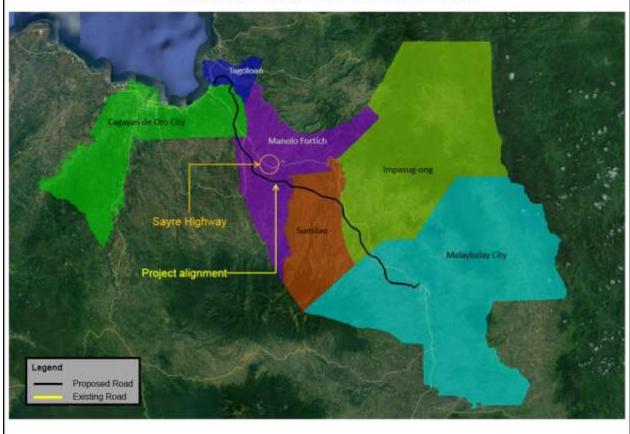
6 IMPOR	RMASYON T	UNGKOL SA PROYEKTO	ENVIRONMENTAL IMPACT ASSESSMENT PROCESS 3					
Jurisdictions	Tagaloan	Casinglot, Naturnolan						
(Municipalities,	CDO	Bugo, Puerto, Balubal	1. Ang Information, Education and Communication (IEC) ay ang					
Cities, and Barangays)	Manolo	Alae, San Miguel, Damilag, Diclum, Sankanan, Tankulan, Ticala, Mambatangan	 unang hakbang ng Department of Public Works and Highway (DPWH) upang maipaalam ang proyekto sa mga residente at opisy ng bayan at barangay. 					
(Municipalities, Cities, and Barangays) Project type Initial specifications Project components	Sumilao	Puntian, Villa Vista, Culasi, Poblacion, Kisolon, San Roque	residente, mga opisyal ng munisipyo, at iba pang stakeholders, ito a upang matukoy ang mga katanungan, isyu, opinyon, at saloobin ukol si proyekto na siyang isa sa magiging basehan ng pag-aaral. 3. Ang Amet-Asia Inc. ay ikinomisyon ng DPWH upang magsagawa ng Environmental Impact Assessment (EIA). Ang EIA ay isang pag					
	Impasug-ong	Poblacion, La Fortuna, Cawayan, Kibenton, Capitan Bayong, Impalutao						
	Malaybalay	Lapu-Lapu, Kalasungay, Dalwangan, Brgy. 10, Sumpong						
Project type	Road Proje	ct	 aaral sa kasalukuyang kondisyong ng kapaligiran (lupa, hangin, tubig, halaman, hayop at mga tao) upang matukoy ang posibleng maging epekto ng proyekto at makapag-handa ng kaukulang solusyon. 					
Initial specifications	# of lanes =	oproximately 65.6 km = 2 or 4 ad Right of Way = 60 m	Ang resulta ng EIA ay idodokumento sa Environmental Impact Statement (EIS), ito ay susuriin ng mga eksperto ng EMB-DENR. Base sa pagsusuri a naisagawa, ang EMB-DENR ay magdedesisyon kung ang proyekto ay bibigyan ng Environmental Compliance Certificate (ECC).					
Project components	Interchange Bridges Overpass Underpass		 Kapag ang proyekto ay nabigyan ng ECC, ang DPWH magpapatuloy ng pag-apply ng iba pang permit at lisensiya mula ibang kawani at opisina ng DENR, ahensiya ng gobyerno, at lokal pamahalaan. 					
Project components	1990 O C C C C C C C C C C C C C C C C C C		 Magbubuo ng Multi-partite Monitoring Team (MMT) u mabantayan ang konstruksyun at operasyon ng proyekto at masig ang kaligtasan sa kapaligiran at sa pamayanan. Ang MMT ay bu ng mga representante mula sa kumpanya. LGU, NGO, PO at DENR. 					
Indicative draft	Feasibility Stu	idy 2021	DENK					
project timeline	Detailed Desig	The state of the s	8. Ang DPWH ay magdedeposito sa bangko ng Environmental					
3000	ROW Acquisiti	on 2023 H1	Guarantee Fund (EGF) para sumagot sa anumang aksidente o					
	Construction P	eriod 2023 H2 to 2025	perwisyo sa pag-aari na direktang maidudulot ng Proyekto.					
	Operation	2026	1					



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Proposed Project Alignment "Iminumungkahing Alignment ng Proyekto"





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Attachment 6. Initial Perception Survey Questionnaire

INITIAL PERCEPTION SURVEY (AFTER IEC)	
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A. Sociodemographic Profile	
Name: www.o c- Hopkourko	
Sex: \$ Age 26 Civil Status Markers	
Education: College Primary Work Lou Employee	
Community Position Municipal Incommon Officers	
B. AWARENESS ABOUT THE PROMECT	
Are you aware of the plan to establish the Central Mindanao High Standard Highway project in your area? Yes No	
2. What do you think about the project? Dis settles wou too first beer Transforteness Discoursers	
De Periodetto Unitor-er	
3. Do you think your community will benefit from the project: Why or why not?	
If Yes, please state the reasons: Yes , Breaute Its in uppy or more/o	
HUGHTANIAN TO BITC TRAINING IN DOU-THU HOW PROPURTS LOCAL	
If No. please state the reasons:	
What do you think are the issues to be encountered if the project is established in your	6
area?: his au owner environment enoughous	
Other comments and suggestions	
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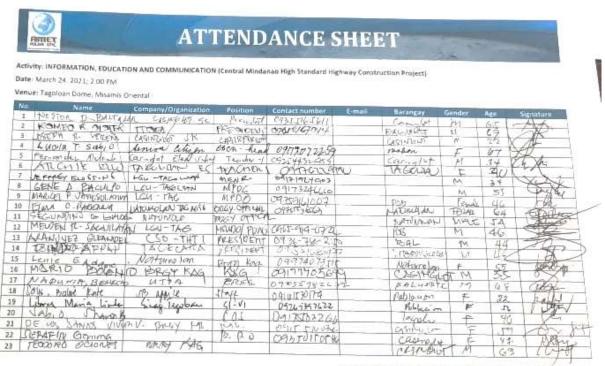




Executive Summary

Attachment 7. Attendance Sheet

Tagoloan, Misamis Oriental



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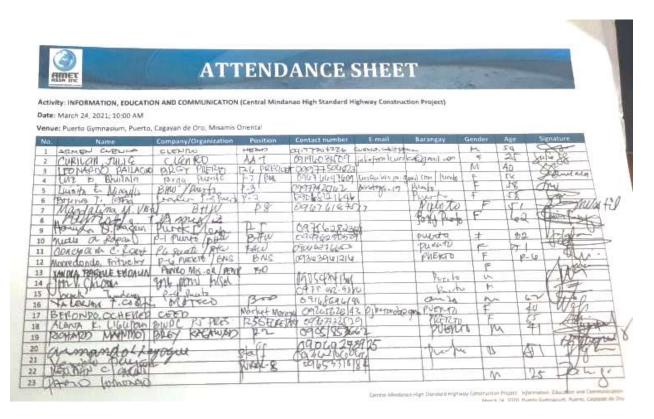




CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Cagayan de Oro City, Misamis Orie



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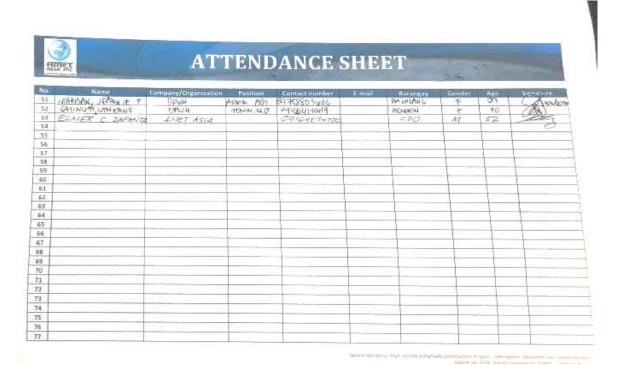






CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Manolo Fortich, Bukidnon



No.	Name	Company/Organization	Position	Contact number	E-mail	Barangay	Gender	Age	Signature
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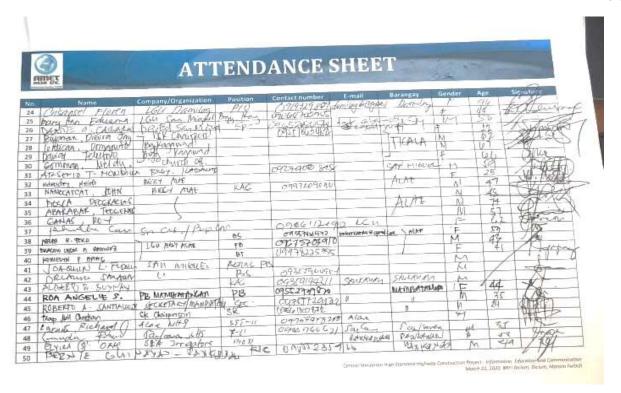


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ENVIRONMENTAL IMPACT STATEMENT REPORT – Preparatory Survey

CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Sumilao, Bukidnon



ATTENDANCE SHEET

Activity: INFORMATION, EDUCATION AND COMMUNICATION (Central Mindanao High Standard Highway Construction Project)

Date: March 24, 2021; 10:00 AM

Venue: 2nd Fir., New Building, Sumilao Municipal Hall, Sumilao, Bukidnon

No.	Name	Company/Organization	Position	Contact number	E-mail	Barangay	Gender	Age	Scovature
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Impasug-ong, Bukidnon



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Malaybalay City, Bukidnon

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Attachment 8. Photodocumentation

Tagoloan, Misamis Oriental



Registration and receiving fliers of the attendees



During the open forum





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Group picture of the participants and facilitators

Cagayan de Oro City







CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Receiving the project flier during registration



During the open forum



EIA Presentation by Dr. Nimfa Bracamonte from Amet-Asia, Inc.





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Closing remarks by Mr. Ramir M. Balqwin (CPDO)

Manolo Fortich, Bukidnon



Receiving the project flier during registration





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



The participants during the presentation of the project



Dr. Nimfa Bracamonte from Amet-Asia, Inc. presenting the Project





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Open forum with Mayor Clive D. Quiño



A participant asking a question during the open forum





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Group photo with the participants, facilitators, and Mayor Clive Quiňo

Sumilao, Bukidnon





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Registration and distribution of Project fliers



During the open forum





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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A participant asking question about the Project



Photo opportunity with the participants





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Impasug-ong, Bukidnon



Receiving the project flier during registration



During the open forum





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
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A participant asking question about the alignment





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

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Malaybalay City Bukidnon



Registration and distribution of fliers



Participants listening to the Project presentation





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Mr. Alvin from CPDO addressing his question about the Project



Prof. Amabelle Embornas andressing the questions of the participants





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Attachment 9. Impasugong Resolution No. 2121-381 (A) and Municipal Development Council Resolution No. 005 S. 2021



Republic of the Philippines Province of Bukidnon MUNICIPALITY OF IMPASUGONG

SANGGUNIANG BAYAN

EXCERPTS FROM THE MINUTES OF THE 81ST REGULAR SESSION OF THE 14TH SANGGUNIANG BAYAN OF IMPASUGONG, BUKIDNON HELD AT THE SANGGUNIANG BAYAN SESSION HALL ON FEBRUARY 8, 2021.

PRESENT:

Hon. Maria Norly T. Pepito Hon. Johnny A. Chavez Hon. Jonathan C. Olana Hon. Eutropio S. Jamilo Hon. Xenia Jane O. Echeminada Hon. Jesse Jose O. Uy Hon. Meriel A. Almeda Hon. Maxuel D. Antivo Hon, Jetaime O. Gumban Hon. Noel R. Rojas Hon. Shiela Mac C. Urgel Hon. Benny D. Cumatang

Municipal Vice Mayor, Presiding Municipal Councilor Liga ng mga Barangay President

Municipal SK Federation Representative IP Mandatory Representative

ABSENT: None.

RESOLUTION NO. 2021-381(A) (81" Regular Session)

RESOLUTION ENDORSING TO THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH) - REGION X, RESOLUTION NO. 005, SERIES OF 2021 OF THE MUNICIPAL DEVELOPMENT COUNCIL, ENTITLED: RESOLUTION REQUESTING THE DPWH REGION X, THAT THE TOPOGRAPHIC SURVEY FOR THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CAGAYAN DE ORO MALAYBALAY) BE CONDUCTED ALONG THESE ROUTE; FROM TAGOLOAN CAGAYAN DE ORO, TO TRAVERSE SITIO ABYAWAN AND SITIO SANTIAGO, DALIRIG, MANOLO FORTICH, BUKIDNON TO GUIHEAN, SAYAWAN, SITIO KALIPAYAN AND SITIO BUNDAAN, DUMALAGUING, BONTONGON, ALL OF IMPASUGONG, BUKIDNON AND MANALOG, MALAYBALAY CITY.

PRESENTED for consideration of this body is the Committee Report of the Committee on Public Works, Infrastructure, Communication and Transportation dealing on Resolution No. 005, Series of 2021 of the Municipal Development Council, entitled: RESOLUTION REQUESTING THE DPWH REGION X, THAT THE TOPOGRAPHIC SURVEY FOR THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CAGAYAN DE ORO - MALAYBALAY) BE CONDUCTED ALONG THESE ROUTE; FROM TAGOLOAN CAGAYAN DE ORO, TO TRAVERSE SITIO ABYAWAN AND SITIO SANTIAGO, DALIRIG, MANOLO FORTICH, BUKIDNON TO GUIHEAN, SAYAWAN, SITIO KALIPAYAN AND SITIO BUNDAAN, DUMALAGUING, BONTONGON, ALL OF IMPASUGONG, BUKIDNON AND MANALOG, MALAYBALAY CITY.

After due deliberation, the Committee hereby recommends to endorse Resolution No. 005, Series of 2021 of the Municipal Development Council to the Department of Public Works and Highways (DPWH) - Region X for appropriate action





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Resolution No. 2021-381(A) 81st Regular Session February 8, 2021 Page 2

WHEREFORE, on motion of Councilor Maxuel D. Antivo and all Sangguniang Bayan Members present in unanimous accord,

BE IT RESOLVED, that the committee report herein presented be adopted by this body and that Resolution No. 005, Series of 2021 of the Municipal Development Council is hereby endorsed to the Department of Public Works and Highways (DPWH) – Region X for appropriate action.

RESOLVED FURTHER, that copy of this resolution be furnished to the Department of Public Works and Highways (DPWH) - Region X for their information and appropriate action.

APPROVED.

CERTIFIED ADOPTED by the Sangguniang Bayan:

MARIA VORLY T. PEPITO Municipal Vice Mayor Presiding Officer

ATTESTED:

TERESA COMINGUIS
Secretary to the Sangguniang Bayan





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Republic of the Philippines Province of Bukidnon MUNICIPALITY OF IMPASUGONG

OFFICE OF THE MAYOR

February 5, 2021

THE HONORABLE MEMBERS

Sangguniang Bayan This Municipality

Your Honors:

Respectfully submitting herewith Resolution No. 005 series of 2021 dated February 3, 2021 of the Municipal Development Council entitled: RESOLUTION REQUESTING THE DPWH REGION X, THAT THE TOPOGRAPHIC SURVEY FOR THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CAGAYAN DE ORO -MALAYBALAY) BE CONDUCTED ALONG THESE ROUTE; FROM TAGOLOAN CAGAYAN DE ORO, TO TRAVERSE SITIO ABYAWAN AND SITIO SANTIAGO, DALIRIG, MANOLO FORTICH, BUKIDNON TO GUIHEAN, SAYAWAN, SITIO KALIPAYAN AND SITIO BUNDAAN, DUMALAGUING, BONTONGON, ALL OF IMPASUGONG, BUKIDNON AND MANALOG, MALAYBALAY CITY.

May I request urgent favorable action to this resolution.

Please acknowledge receipt hereof.

Very truly yours,

Mayor

MDC Chairman



CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO - MALAYBALAY SECTION) Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes



Republic of the Philippines Province of Bukidnon MUNICIPALITY OF IMPASUGONG

MUNICIPAL DEVELOPMENT COUNCIL

EXCERPTS FROM THE MINUTES OF THE REGULAR MEETING OF THE MUNICIPAL DEVELOPMENT COUNCIL HELD AT THE MUNICIPAL CONFERENCE HALL ON FEBRUARY 3, 2021.

Hon. Anthony A. Uy
Hon. Remalyn D. Lagunday
Hon. Celestino T. Sante, Jr.
Hon. Dawn M. Roque
Hon. Josefino B. Manalo
Hon. Raquel S. Lunda
Hon. Jesson Y. Litohon
Hon. Eber H. Suday
Hon. Antonio O. Dominao
Hon. Citto S. Mediante
Hon. Noel L. Rojas
Hon. Nilo C. Iba

- Municipal Mayor-Presiding Officer
- PB-Boltongon
- PB-Bulonay
- PB-Capitan Bayong
- PB-Cawayan
- Barangay Kagawad - Dumalaguing
- Barangay Kagawad - Guihean
- PB-Hagpa
- PB-Impalutao
- Barangay Kagawad - Kalabugao
- PB-Kibenton/ABC President
- PB-La Fortuna

Hon. Noel L. Rojas

Hon. Nilo C. Iba

Hon. Von Omar P. Lagayan

Hon. Omico B. Sumente

Ms. Annalou A. Dagangan

Dr. Amelia T. Bermejo

Mr. Frederick Nacaytuna

Ms. Antonette P. Dagawasan

Pastor Julito de Gracia

Hon. Eleonor B. Tañedo

Mr. Rodel Aninloy

Mr. Sunny Echavia

Mr. Windyl V. Cañete

Mr. Alberto O. Clarito

EnP. Eutiquia A. Bato-on

Ms Heldi M. Suyat, CPA

PB-Kibenton/ABC President

PB-Poblacion

PB Sayawan

- Legislative Staff-(Hon. J.C. Olana Rep.)

- CSO Representative – ANLAG ta TWO

- CSO Representative – Balagon WO

- CSO Representative – MAAU

- CSO Representative – MAAU

- CSO Representative – MABONG-WO

- Coop Representative – KSMPC

- MAFC Chairman

- Supply Officer II – Municipal Budget - ICO

- LRCO J/Acting Asst. Municipal Treasurer

- Municipal Accountant

OTHERS PRESENT:

Mr. Ben Gabriel O. Uy

Engr. Francisco D. Guinayon

- Municipal Administrator
- Municipal Engineer

Mr. Jairus Ferrer - IFarms, Inc.
- Hineleban Foundation Inc.
- SSM Applicant

Ms. Maribeth B. Sia

Administrative Aide I - MMO Staff

ABSENT:

Hon. Jonathan Keith T. Flores - Congressman

Ms. Charlotte O. Chavez - CSO Representative - BUO WO

Mr. Florentino Mangga - CSO Representative - Asso. of S

Ms. Erlinda T. Sayago Ms. Abegail Faith C. Noval - BukSU Satellite Campus Faculty

CSO Representative – Asso. of Senior Citizen

Ms. Norie Jean Lomanoy - CSO Representative - Ang Bag-ong Paglaom sa Kababayen-an sa Guihean

NGO Representative – KFI

RESOLUTION NO. 005 Series of 2021

RESOLUTION REQUESTING THE DPWH REGION X, THAT THE TOPOGRAPHIC SURVEY FOR THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CAGAYAN DE ORO -MALAYBALAY) BE CONDUCTED ALONG THESE ROUTE; FROM TAGOLOAN CAGAYAN DE ORO, TO TRAVERSE SITIO ABYAWAN AND SITIO SANTIAGO. DALIRIG. MANOLO FORTICH. BUKIDNON





CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

Annexes

Annex 16 Public Scoping





Central Mindanao Standard Highway Construction Project

Cagayan de Oro – Malaybalay Section

PROPONENT: Department of Public Works and Highways – Central Office



Executive Summary

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CDO – MALAYBALAY SECTION)
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong

PROPONENT: Department of Public Works and Highways in cooperation with JICA

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

1 BASIC PROJECT INFORMATION

1.1 Basic Project Information

PROJECT DETAILS				
Name of project	Central Mindanao High Standar	d Highway Project (C	CDO - Malaybalay Sec	ction)
Project location	Barangay	Municipality/City	Province	Region
	Bugo, Puerto, Balubal	Cagayan de Oro	Misamis Oriental	X (Northern Mindanao)
	Casinglot, Natumolan	Tagoloan	Misamis Oriental	X (Northern Mindanao)
	Alae, San Miguel, Damilag, Diclum, Sankanan, Tankulan, Ticala, Mambatangan	Manolo Fortich	Bukidnon	X (Northern Mindanao)
	Puntian, Vista Villa, Culasi, Poblacion, Kisolon, San Roque	Sumilao	Bukidnon	X (Northern Mindanao)
	Poblacion, La Fortuna, Cawayan, Kibenton, Capitan, Bayong, Impalutao	Impasug-ong	Bukidnon	X (Northern Mindanao)
	Patpat, Kalasungay, Dalwangan, Barangay 10, Sumpong	Malaybalay	Bukidnon	X (Northern Mindanao)
Project length	65.6 km			
Project status	Proposed			
Type of project	Roads and Bridges			
Project category*	Category A:ECP (3.4.1 Roads, no no critical slope) OR ≥10.0 km (I	•		km (length with
Project cost	Approximately PhP70,000,000,0	00.00		
Construction period	2.5 years			
Manpower	Construction: 50,000			

^{*}Revised Guidelines for Coverage Screening and Standardized Requirements under the Philippine EIS System (EMB Memorandum Circular 005 July 2014)





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

1.2 Proponent Profile

PROPONENT DETAILS								
Name	Department of Public Works and Highways Central O	Department of Public Works and Highways Central Office						
Authorized representative	Constante A. Llanes, Jr. Director IV, Planning Service							
Address and contact details	Bonifacio Drive Port Area, 652 Zone 068, Manila, Metro Manila +632-5304-3195							
EIA PREPARER	Amet-Asia, Inc.							
Contact person	Jan Heidel Bautista	Jethro Alden C. Hipe						
Position	General Manager	EIA Technical Team Leader						
Address	Unit 303 One Corporate Center, J. Vargas Ave., cor M Metro Manila	leralco Ave., Ortigas, Pasig City,						
Contact details	+63 932 587 0440 email: info.ametasia@gmail.com	+63 947 556 7276 email: jethrohipe@gmail.com						





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

2 PROJECT DESCRIPTION

The proposed Central Mindanao High Standard Highway Project (Cagayan de Oro - Malaybalay Section) ("Project", "alignment") is part of the Phase II of the Master Plan on High Standard Highway Network Development. The objectives of the plan were to improve the transport efficiency in the region and contribute to enhancing the connectivity between the cities of Cagayan de Oro and Malaybalay as well as the economic development of the surrounding area.

The proposed Project will be spearheaded by the Department of Public Works and Highways (DPWH) with the assistance of the Japan International Cooperation Agency (JICA).

2.1 Project Location and Area

The Project with a length of 65.6 kilometers will traverse 30 barangays of four municipalities and two cities in the Provinces of Misamis Oriental and Bukidnon in Region X -Northern Mindanao (Table 1). The general location and jurisdiction maps and the host barangays are shown in **Figure 1**, **Figure 2**, and **Table 1** respectively.

The Direct Impact Area (DIA) is the 65.6-kilometer alignment following Annex 2-2 of the Revised Procedural Manual of DAO 2003-30. The barangays listed in **Table 1** are the Direct Impact Barangays (DIB).

The Indirect Impact Area (IIA) was initially assumed as areas within one kilometer (1km) from the center of the alignment. In addition, barangays adjacent to the DIB will be considered as Indirect Impact Barangays. The initial impact areas are shown in **Figure 3**.

Table 1. Jurisdictions of the Project alignment

Province	City/Municipality	Barangay	Province	City/Municipality	Barangay		
Misamis	Cagayan de Oro City	Bugo		Impasug-ong	Poblacion		
Oriental		Puerto		1 0 0	La Fortuna		
		Balubal			Cawayan		
	Tagoloan	Casinglot			Kibenton		
		Natumolan			Capitan Bayong		
	Manolo Fortich	Alae	Bukidnon		Impalutao		
		San Miguel		Malaybalay	Patpat		
		Damilag			Kalasungay		
		Diclum			Dalwangan		
		Sankanan			Brgy. 10		
		Tankulan			Sumpong		
Bukidnon		Ticala	Total: 2	Total: 6	Total: 30		
BURIUIIOII		Mambatangan	Source: JIC	A Study Team			
	Sumilao	Puntian					
		Vista Villa					
		Culasi					
		Poblacion					
		Kisolon					
		San Roque					



Figure 1. General location of the proposed Project

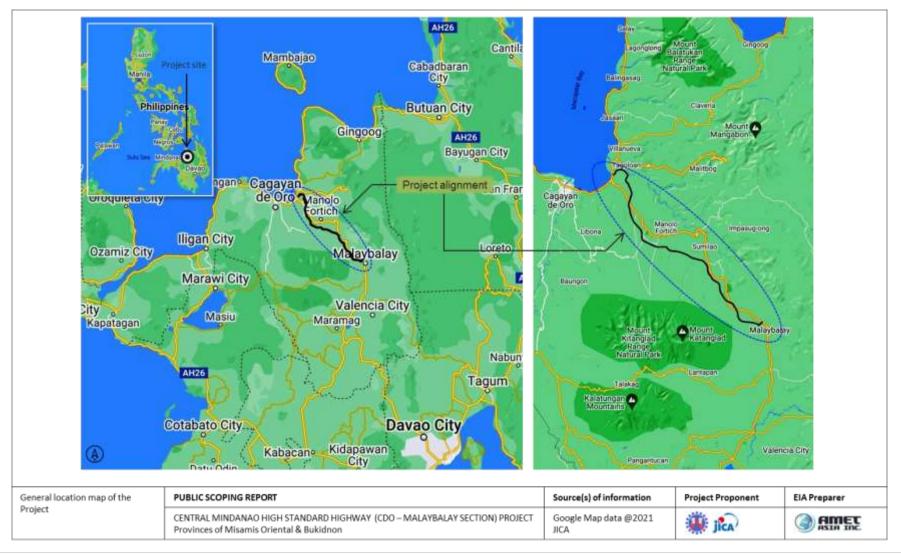




Figure 2. Jurisdiction map the Project

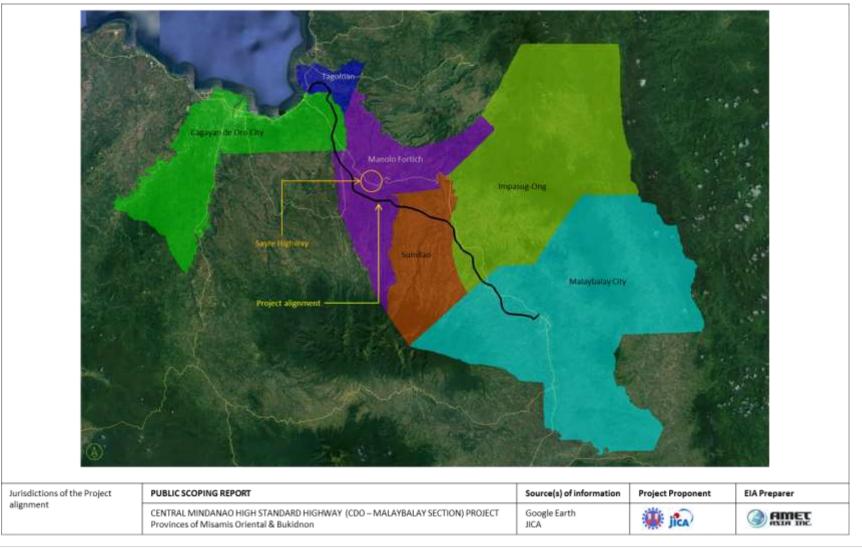




Figure 3. Initial impact area map







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

2.2 Project Rationale

Mindanao has lagged in terms of economic and infrastructure development and had the highest poverty incidence compared to the rest of the Philippines because of a long-standing conflict. After a comprehensive peace agreement between the Philippine government and the Moro-Islamic Liberation Front (MILF), it is expected that the economic development of Mindanao will be accelerated.

Connectivity, mobility, and safety were the three elements identified in the Northern Mindanao Regional Development Plan 2017-2022 in developing the transport infrastructure in the region. The national highways connect the various regional growth centers and four strategic development areas (SDAs) in the region. The region's connectivity resulted to increased gains in the trade and services sectors and in intra-and interregional efficiency of the movement of people, goods, and services.

The region however faces major challenges in the transport sector which primarily result to traffic congestion in key cities and poor connectivity in rural production and lagging areas. Traffic congestion is a primary problem in main thoroughfares in urban areas due to concentration of motor vehicles and narrow road network. Unpaved local roads cause slow growth of rural areas due to poor linkage of production areas to market centers.

In 2010, the DPWH and JICA formulated a Master Plan on High Standard Highway (HSH) Network Development Phase I to formulate various measures to address traffic congestion particularly in highly urbanized areas. Examples of these measures were development of expressway network, construction of bypasses and ring roads at regional cities, and widening of existing roads.

The Master Plan covered areas within a 200-kilometer radius from Metro Manila, Metro Cebu, and the Tagum-Davao-General Santos Corridor that has only 3,460 kilometers of HSH. In 2019, DPWH and JICA discussed the proposed second phase of the road master plan focusing on the Central Mindanao HSH as one of the high priority projects.

The proposed Project is expected to improve the road transport network in Mindanao through the improvement of its national roads and provide linkages between the cities of Cagayan de Oro in Misamis Oriental and Malaybalay in Bukidnon. The Project is also seen to improve the economic situation of the surrounding municipalities.

2.3 Project Components

The alignment will have a 60-meter road right of way (RROW) with five interchanges constructed near urban centers (**Figure 4**). Other components of the Project are shown in **Table 2**.

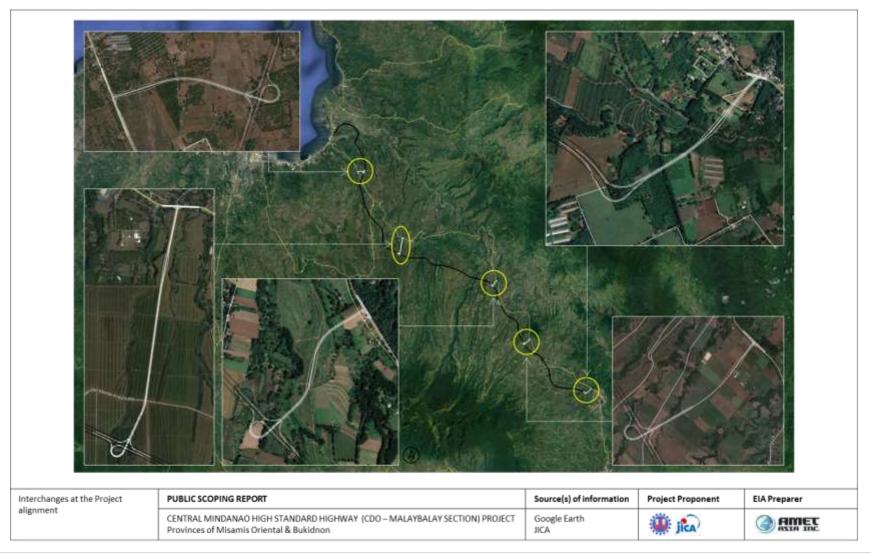
Table 2. Major and number of Project components

Component	Number	Component	Number
AASHTO Girder	32	Underpass	13
Steel Bridge	3	Overpass	14
Steel Box Girder	6	Interchange	5

Source: JICA Study Team



Figure 4. Interchanges of the Project alignment





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2.4 Project Phases, Key Environmental Aspects, Wastes, Issues, Built-In Measures

The potential key impacts and options for mitigation or enhancement during the Pre-construction, Construction, and Operation and Maintenance phases are shown in **Table 3** to **Table 5**. The key impacts were based on Impact Management Plan Template in Annex 2-17 and Annex 2-7a Technical Scoping Checklist of the Revised Procedural Manual (DAO 2003-30).

Table 3. Potential impacts and options for mitigation or enhancement (Pre-construction phase)

Environmental component likely to be affected	Potential Impact	Options for Prevention or Mitigation or Enhancement
LAND COMPONENT		
Land Use and Classification	Compatibility with existing land use	Secure zoning clearances from LGUs
	Compatibility with classification as an ECA	Consider ECAs in the Detailed Engineering Design (DED) phase
	Land tenure issue/s	- Conduct parcellary survey
		- Prepare a Property Compensation Plan (PCP)
	Impairment of visual aesthetics	Prepare a Buffer Zone Plan (BZP)
	Devaluation of land value due to improper solid waste	Prepare the following:
	management	- Spoils Management Plan (SMP)
		- Construction Waste Management Plan (CWMP)
		- Road Debris and Waste Removal Plan (RDWRP)
		- Road Maintenance Waste Management Plan (RMWMP)
Geology/Geomorphology	Change in surface landform and geomorphology	Consider smallest landform changes possible during the DED
		Prepare a Slope Protection Plan (SPP)
	Change in sub-surface geomorphology	Conduct Geotechnical Investigation and consider its recommendations
	Inducement of geo-hazards	during the DED
	Geo-, hydrological, and meteorological hazards	Include susceptibility of the Project site to geo- and hydrological hazards at the DED
Pedology	Soil erosion	Prepare a Soil Erosion Management Plan (SEMP)
Terrestrial ecology	Vegetation removal and loss of habitat	- Complete census of flora and fauna at the RROW
	Threat to existence and loss of important local species	- Consider locations of significant vegetation types and populations
	Threat to abundance, frequency and distribution of	during DED
	important species	 Secure a Tree Cutting Permit from the DENR
	Hindrance to wildlife access	- Prepare the following:
		 Construction Vegetation Removal Plan (VRP)





Environmental component likely to be affected	Potential Impact	Options for Prevention or Mitigation or Enhancement
		 Construction Vegetation and Tree Planting Program (CVTPP) Tree Transfer and Balling Plan (TTBP) for affected mature trees Tree Survival and Monitoring Plan (TSMP) Vegetation and Tree Planting Program during Operations (VTPPO) Biodiversity Conservation Plan (BCP) Prepare a Wildlife Monitoring Plan (WMP)
PEOPLE COMPONENT		
Displacement of settlers, property, and access	 Displacement or disturbance of properties Change/conflict in land ownership Change/conflict Right of way Impact on public access 	 Prepare a Property Compensation Plan (PCP) Prepare Resettlement Action Plan (RAP)
In-migration	Proliferation of informal settlers	Prepare an Informal Settler Monitoring and Management Plan (ISMMP)
Physical cultural resources	Impacts on physical cultural resources	Prepare a Chance Find Management Plan (CFMP)
Public health and safety	Threat to public health and safety	Prepare a Construction Health and Safety Plan (CHSP) and Road Safety Plan (RSP)
Benefits from the project	Enhancement of employment and livelihood opportunities	Prepare a Local Community Hiring Plan for (LCHP)
Traffic	Traffic congestion	Prepare a Traffic Management Plan (TMP)





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Table 4. Potential impacts and options for mitigation or enhancement (Construction phase)

Environmental Component Likely to be Affected	Potential Impact	Options for Prevention or Mitigation or Enhancement
LAND COMPONENT		
Land Use and Classification	Impairment of visual aesthetics Devaluation of land value due to improper solid waste management	Proper implementation of the Construction Plan and BZP Proper implementation of the Construction Plan and CWMP
Geology/Geomorphology	 Change in surface landform and geomorphology Change in sub-surface geology Inducement of subsidence, liquefaction, landslides, mud/debris flow, etc. Effects of geo- and hydrological hazards Soil erosion 	 Proper implementation of the Construction Plan Proper implementation of the Construction Plan, SEMP, SMP, and SPP
Pedology	Change in soil quality or fertility	 Proper implementation of the Construction Plan, SEMP, SMP, and CWMP Provide oil sumps in staging areas Proper storage and disposal of used oil and other hazardous wastes in staging areas and active construction sites
Terrestrial ecology	 Vegetation removal and loss of habitat Threat to existence and loss of important local species Threat to abundance, frequency and distribution of important species Hindrance to wildlife access 	 Proper implementation of the Construction Plan, CVRP, CVTPP, BZP, and TTBP Proper compliance to Tree Cutting Permit conditions Strict implementation of a "No Hunting and No Collecting" policy Limit the development activities within the RROW.
WATER COMPONENT		
Hydrology/Hydrogeology	 Change in drainage morphology Inducement of flooding Depletion of water resources Water use competition 	 Proper implementation of the Construction Plan Provide temporary drainage system Provide detention ponds in the immediate drainage Formulate a Flood Management Plan (FMP) for the operation phase Implement water conservation measures
Water quality	Degradation of surface water quality	 Proper implementation of the Construction Plan Housekeeping practices Provide onsite sanitary facilities at the staging areas Provide adequate drainage leading to siltation ponds
Freshwater ecology	- Threat to existence and loss of important local species	- Proper implementation of the Construction Plan, CWMP, SMP, and SEMP





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Environmental Component Likely to be Affected	Potential Impact	Options for Prevention or Mitigation or Enhancement
	- Threat to abundance, frequency and distribution of important species	 Provide cover, bunds, and drainage canal leading to silt ponds for stockpiles Provide onsite sanitation facilities at the staging areas Provide cover on vehicles carrying construction materials Provide oil sumps in staging areas Proper storage and disposal of used oil and other hazardous wastes in staging areas and active construction sites
AIR COMPONENT		
Meteorology/Climatology	Change in micro climate due to greenhouse gas emissions	 Proper implementation of the Construction Plan Regular and proper maintenance of motor vehicles and heavy equipment Optimize schedule of vehicle use Regular and proper maintenance of onsite power generators
Air Quality (& Noise) Degradation of air quality		 Proper implementation of the Construction Plan Implement dust suppression methods, e.g., water application and vehicle speed restriction Optimize the use of heavy equipment and motor vehicles Compacting of exposed soil surfaces Provide tarpaulin cover on trucks loaded with construction materials Regular maintenance of heavy equipment and motor vehicles Regular maintenance of standby generator Prohibit engine idling in parking areas
	Increase in ambient sound levels	 Proper implementation of the Construction Plan Provide and maintain mufflers of gasoline or diesel engines powered equipment Establish barriers and shielding stationary vibrating equipment
PEOPLE COMPONENT		
Displacement of settlers, property, and access	 Displacement or disturbance of properties Change/conflict in land ownership Change/conflict Right of way Impact on public access 	Proper implementation of the RAP and PCP
In-migration	Proliferation of informal settlers	Proper implementation of the Informal Settler Monitoring and Management Plan





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Environmental Component Likely to be Affected	Potential Impact	Options for Prevention or Mitigation or Enhancement
Cultural/Lifestyle	Cultural or lifestyle changes (especially on Indigenous People)	Proper orientation of migrant workers on IP culture and lifestyle
Physical cultural resources	Impacts on physical cultural resources	Proper implementation of the Chance Find Management Plan
Delivery of basic services	Threat to delivery of basic services /resource competition	Proper implementation of the Informal Settler Monitoring and Management Plan
Public health and safety	Threat to public health and safety	Proper implementation of the Construction Plan, CWMP, CHSP, and RSP - Regular and proper maintenance of heavy equipment and vehicles
Benefits from the project	Enhancement of employment and livelihood opportunities	Proper implementation of the Local Community Hiring Plan
	 Increased business opportunities and associated economic activities Increased revenue of LGUs 	 Proper implementation of the Local Community Hiring Plan Purchase supplies from local sources Provide livelihood opportunities if possible Prompt payment of taxes and other legal fees
Traffic	Traffic congestion	Proper implementation of the Traffic Management Plan





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Table 5. Potential impacts and options for mitigation or enhancement (Operation and Maintenance phases)

Environmental Component Likely to be Affected	Potential Impact	Options for Prevention or Mitigation or Enhancement		
LAND COMPONENT				
Land Use and Classification	Impairment of visual aesthetics	Sustained implementation of the Buffer Zone Plan		
	Devaluation of land value due to improper solid waste management	Proper implementation of the RMWMP Sustained implementation of RDWRP		
Geology/Geomorphology	 Change in surface landform and geomorphology Inducement of subsidence, liquefaction, landslides, mud/debris flow, etc. 	Sustained implementation of the SPP and SEMP		
	Effects of geo- and hydrological hazards	 Undertake assessment of slope protection measures after heavy rain or seismic events Maintain drainage system Regular inspection of road and structure integrity 		
Pedology	Soil erosion	Sustained implementation of the SPP and SEMP		
Terrestrial ecology	 Loss of habitat Threat to existence and loss of important local species Threat to abundance, frequency and distribution of important species Hindrance to wildlife access 	Proper implementation of the TSMP, VTPPO, BCP and WMP		
WATER COMPONENT				
Hydrology/Hydrogeology	Change in drainage morphology	Sustained implementation of the Slope Protection Plan Regular inspection and maintenance of alignment drainage		
	Inducement of flooding	Proper implementation of the Flood Management Plan		
Water Quality	Degradation of surface water quality	 Regular inspection and maintenance of alignment drainage Adequate drainage system Permanent storm water detention ponds Slope protection or grass strips Erosion Control Plan Wastewater treatment (underpasses) 		
Freshwater ecology	 Threat to existence and loss of important local species and habitat Threat to abundance, frequency and distribution of 	 Regular inspection and maintenance of alignment drainage Adequate drainage system Permanent storm water detention ponds 		





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Environmental Component Likely to be Affected	Potential Impact	Options for Prevention or Mitigation or Enhancement		
	species	Slope protection or grass stripsErosion Control PlanWastewater treatment (underpasses)		
AIR COMPONENT				
Meteorology/Climatology	Change in micro climate due to greenhouse gas emissions	Proper implementation of the Vegetation and Tree Planting Program during Operations		
Air Quality (& Noise)	Degradation of air quality	Proper implementation of the Vegetation and Tree Planting Program during Operations and Vehicle Emission Testing Program		
	Increase in ambient sound levels	Install barriers in built-up areas of the alignment (structural or vegetative)		
PEOPLE COMPONENT				
In-migration	Proliferation of informal settlers	Proper implementation of the Informal Settler Monitoring and Manageme Plan		
Public health and safety	Threat to public health and safety	Proper implementation of the Road Safety Plan		
Benefits from the project	 Enhancement of employment and livelihood opportunities Increased business opportunities and associated economic activities Increased revenue of LGUs 	Proper maintenance of the alignment		
Traffic	Traffic congestion	Sustained implementation of the Traffic Management Plan		



PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

2.5 Project Cost and Duration

The Feasibility Study is currently being undertaken and planned to be finished before the end of 2021. The alignment will be opened to the public by 2026 after 2.5 years of construction (Figure 5). The indicative Project cost is 70 billion pesos (PhP70,000,000,000.00).

Figure 5. Indicative Project implementation schedule



Source: JICA Study Team





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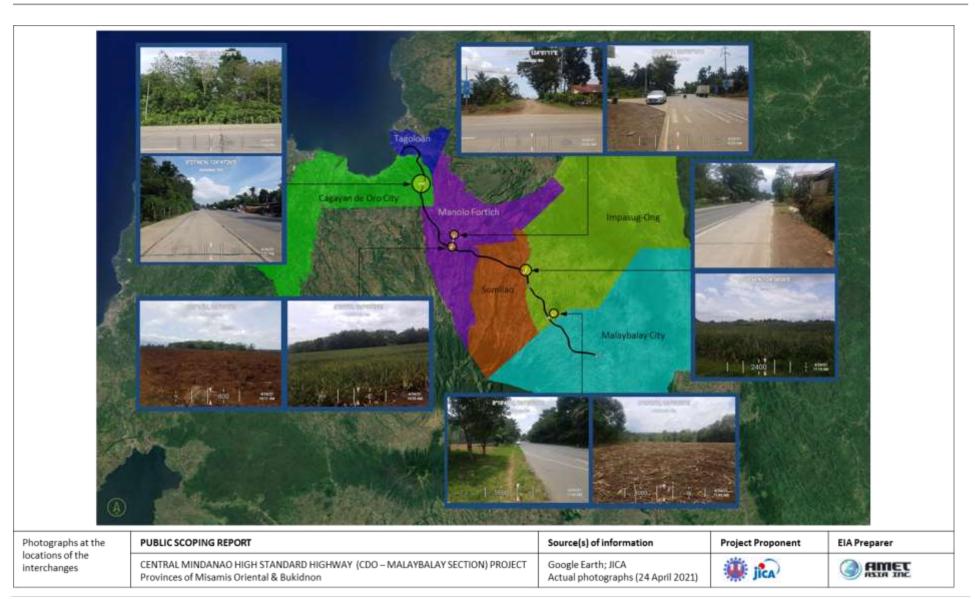
3 PHOTOGRAPHS OF THE PROJECT SITE







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4 PRE-SCOPING INFORMATION AND EDUCATION AND COMMUNICATION

One of the public participation requirements under the Philippine Environmental Impact Statement (PEIS) system and DAO 2017-15 is the early engagement of stakeholders in the stages of the EIA process through the pre-scoping Information, Education, and Communication (IEC).

The IEC for the Project was conducted last March 22 to 24, 2021 in Cagayan de Oro City, Malaybalay City, and municipalities of Tagoloan, Manolo Fortich, Sumilao, and Impasug-ong in the provinces of Misamis Oriental and Bukidnon.

Participants included officials and representatives of the Local Government Units (province, municipality, city, barangays), and various sectors.

The road alignment and the components of the Project were presented along with the process of the Environmental Impact Assessment (EIA). Stakeholders' issues and concerns as well as their suggestions and other inputs were discussed in the open forum.

The IEC open forum and the Initial Perception Survey revealed that majority of the stakeholders perceived the Project will improve transporting farm products to the market, mobility, and accessibility residents. The major concerns and issues were on just compensation for the affected lands and properties, detailed project design in preparation of the affected property owners, presence of CADC/CADT and sacred places in the area, toll fees, and inclusion of hinterlands in the alignment. The stakeholders suggested conducting massive information dissemination about the Project, resolution of all issues and concerns, and consensus of the owners of affected properties.

4.1 Stakeholder Identification

The initial stakeholders at the host LGUs are shown in **Table 6** using the identification matrix in Annex 2-3 of the RPM DAO2003-03. The detailed preliminary list of stakeholders is presented in **Attachment**





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Table 6. Stakeholder identification matrix for the pre-scoping IEC

Potential impact area		Basis for selection of sector as a stakeholder of the project	Sectors/Sub-sectors Identified by Proponent to be Likely Stakeholders of the Project	Specific Organizations/Entities Likely to be Invited to IEC/Site Scoping as Representing the Sectoral Stakeholders		
А	Direct Impact Area					
1	Barangay: Tagoloan Natumolan Casinglot Cagayan de Oro Bugo Purto Balubal Manolo Fortich Alae San Miguel Damilag Dicklum Sankana Tankulan Ticala Mambatangan Sumilao Puntian Vista Villa Culasi Poblacion Kisolon San Roque	Local government of the barangay has direct political jurisdiction over the area	 Local Government Unit of the Direct impact Barangays Residents of Direct Impact Barangays 	 Barangay officials/ Barangay Council Representative of Senior Citizen Organizations Representative of Youth Organizations Representative of Farmer Associations Representative of PWD Organizations Representative of local shopping organizations Representative of religious organizations Representative from Indigenous People's organization Representative from Women's Organizations Representative of Transportation Organization Representative of Ecological Preservation Organizations 		





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Potential impact area		Basis for selection of sector sectors Identified by as a stakeholder of the project Project Basis for selection of sector Sectors/Sub-sectors Identified by Proponent to be Likely Stakeholders of the Project		Specific Organizations/Entities Likely to be Invited to IEC/Site Scoping as Representing the Sectoral Stakeholders		
	Impasug-ong Poblacion La Fortuna Cawayan Capitan Bayong Impalutao Kibenton Malaybalay Patpat Kalasungay Sumpong Dalwangan Brgy. 10					
B 1	LGUs with political jurisdict Misamis Oriental Tagoloan Cagayan de Oro City Bukidnon Manolo Fortich Sumilao Impasug-ong Malaybalay City	The barangays are located within their respective cities and municipalities	 Municipal/City Office Municipal/City Administrator Office Municipal/City Disaster Risk and Management Office Municipal/City Social Welfare Development Office Municipal/City Environmental and Natural Resources Office Municipal/City Health Office Municipal/City Planning and Development Office Municipal/City Engineering Office Municipal/City Agricultural Office Municipal/City Assessor Office Municipal/City Indigenous People 	 Mayor / Representative Municipal/City Administrator Officer/representative Municipal/City Disaster Risk and Management Officer/representative Municipal/City Social Welfare Development Officer/representative Municipal/City Environmental and Natural Resources Officer/representative Municipal/City Health Officer/representative Municipal/City Planning and Development Officer/representative Municipal/City Engineering Officer/representative Municipal/City Agricultural 		





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Potential impact area		impact area	Basis for selection of sector as a stakeholder of the project	Sectors/Sub-sectors Identified by Proponent to be Likely Stakeholders of the Project	Specific Organizations/Entities Likely to be Invited to IEC/Site Scoping as Representing the Sectoral Stakeholders	
				Mandatory Representative	Officer/representative Municipal/City Assessor Officer/representative Municipal/City Indigenous People Mandatory Representative head/member	
	2	Province of Misamis Oriental and Bukidnon	The cities and municipalities are within the province of Misamis Oriental and Bukidnon	 Provincial Office Provincial Administrator's Office (PAO) Provincial Environmental and Natural Resources Office (PENRO) Provincial Planning and Development Office (PPDO) Provincial Engineering's Office (PEO) National Commission of Indigenous People Provincial Office (NCIP-PO) 	 Governor/ Vice Governor / Representative PAO Offiver/representative PENRO Officer/representative PPDO Officer/representative PEO Officer/representative NCIP Provincial Officer/representative 	
С		Other evident pre-identified	d areas of potential impact (may b	pe candidates for Indirect Impact Areas, subject t	to EIA Findings)	





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4.2 IEC Meetings

Courtesy calls to the Municipal Mayors and Administrators were conducted prior to the IEC activities (March 11 and 12, 2021) to determine the schedules, venues, and list of stakeholders to be invited. Invitation letters were also distributed to the stakeholders prior to each scheduled IEC shown in **Table 1**. The required IEC documents reviewed and approved by the JICA Study Team are enumerated below. The brief summaries of the IEC proceedings are shown in **Attachment 6**.

- a) Invitation letters to the stakeholders (Attachment 2)
- b) Program (Attachment 3)
- c) Presentation material (Attachment 4)
- d) Brochure (Attachment 5)

Table 7. IEC meeting venues and schedules

Province	City/Municipality	Date and Time	Venue
Misamis	Tagaloan	March 24, 2021	Tagoloan Central Elementary
Oriental		2:00 pm	School, Tagoloan
	Cagayan De Oro	March 24, 2021	Puerto Barangay Hall,
		10:00 am	Cagayan De Oro
Bukidnon	Manolo Fortich	March 22, 2021	BRCI Bldg., Diclum, Manolo
		2:00 pm	Fortich
	Sumilao	March 24, 2021	Conference Hall, 2 nd Floor,
		10:00 am	New Building, Sumilao
	Impasug-ong	March 23, 2021	Conference Hall, Municipal
		2:00 pm	Hall, Impasug-ong
	Malaybalay	March 23, 2021	Casisang Covered Court,
		10:00 am	Malaybalay City

4.3 Summary of Issues

The major issues gathered during the IEC activities are shown below with the detailed issues and response matrices shown in **Attachment 7**.

1. Municipality of Tagoloan

- Major issues
- Project design (whether or not the road is elevated)
- Presence of informal settlers
- Necessity of the Project
- Project timeline
- Resettlement
- Presence of IP sacred places
- Compensation of the affected properties and untitled lands
- Safety
- Formulation of the MMT and source of the EGF

2. Cagayan de Oro City





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- Issues/Suggestions raised by stakeholder
- Compensation of affected properties
- Duration of compensation payment
- Compensation for environmental damages

3. Municipality of Manolo Fortich

- Difference between the proposed highway and the 'Build, Build, Build' project of the government
- Conflicts in boundary and right of way
- Managing opposition to the Project
- Compensation of affected properties
- FPIC application
- Political change of administration
- Existing government projects that might be affected (e.g. irrigation)
- Construction waste

4. Municipality of Sumilao

- Rationale of the Project in the presence of the existing road from Cagayan de Oro to Malaybalay
- Toll fee
- Environmental considerations in the design (e.g. landslide prone areas in San Vicente in Maluko)
- IP consent
- Public participation in the project
- Compensation of affected landowners

5. Municipality of Impasug-ong

- Reason why the Project is located in Bukidnon despite the presence of roads
- Inclusion of hinterlands in road alignment
- Connection of the road alignment to existing roads
- Alignment changes
- Request of LGU for re-alignment The municipality have a resolution (Resolution No. 2121-381 (A) and Municipal Development Council Resolution No. 005 S. 2021) for the road to traverse other barangays and include other barangays in the topographic survey.
- Toll fees
- Measurement of highway
- Presence of sacred lands that might be affected
- Compensation of affected properties and untitled lands

6. Malaybalay City

- Issues/Suggestions raised by stakeholder
- Source of Project funding
- Issue of eminent domain
- Property demolition and payment
- Informing affected property owners
- Compliance to FPIC
- Coordination between Regional and District DPWH
- Coordination with LGU





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- Affected trees
- Secure LGU endorsement
- Change of the name of Barangay Lapu-lapu to Barangay Patpat

5 PUBLIC SCOPING

Scoping is another activity where the public can participate in the Philippine EIA process. The Public Scoping was conducted following the EMB Memorandum Circular No. 2020-30 "Interim Guidelines on Public Participation in the Implementation of the Philippine Environmental Impact Statement System (PD 1586) During the State of National Public Health Emergency". Participants of face-to-face meetings were according to local ordinances and the Inter-Agency Task Force (IATF) directives. The Public Scoping meetings were conducted for six days (one day for each host city/municipality). Virtual meeting rooms via ZoomTM were provided to accommodate stakeholders where internet connections are available.

Issues that caused delays of some scoping meetings were poor internet connectivity and typhoon Dante (Tropical Cyclone Choi-Wan) during the scheduled meeting on June 1, 2021 in Dicklum, Manolo Fortich which caused heavy winds and rain in the area. This delayed the start of the program and limited the number of participants in the municipality.

5.1 Schedule of the Public Scoping

The Public Scoping conducted from May 28 to June 4, 2021 at each host LGU is summarized in **Table 8**. The sample invitation letters, program, presentation, attendance sheets, and photo-documentation are presented in **Attachment 8** to **Attachment 12**. The summaries of the Public Scoping proceedings are shown in **Attachment 13**.

Table 8. Summary of the Public Scoping schedule

City/Municipality	Date & Time
Tagoloan, Misamis Oriental	May 28, 2021 10:00-12:00
Cagayan de Oro City, Misamis Oriental	May 31, 2021 10:00-12:00
Manolo Fortich, Bukidnon	June 1, 2021 10:00-12:00
Sumilao, Bukidnon	June 2, 2021 10:00-12:00
Malaybalay City, Bukidnon	June 3, 2021 10:00-12:00
Impasug-ong, Bukidnon	June 4, 2021 10:00-12:00

5.2 Public Scoping Participants

The series of Public Scoping meetings were attended by representatives of the stakeholders from the host LGUs initially identified during the pre-scoping IEC (**Table 9**).





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Table 9. Summary of the public scoping participants

	Municipality											
Stakeholder sector	Cagayan	de Oro	Tago	loan	Manolo	Fortich	Sum	ilao	Malay	balay	Impas	ug-ong
	OS	OL	OS	OL	OS	OL	OS	OL	OS	OL	OS	OL
LGU	20	6	18	7	16	18	12		15	14	12	26
SK			2			1				2		3
BHW			5									
BSWDV			1									
Midwife	2											
IPs					2	2	2		2	2		
NGO		2		1			1		2			
Education			1	1	1		1		1	1		
PWD						1			1			
Youth	3											
LGBT	2											
Women's Association												
Cooperative					2							
Farmer's Association							1					
Driver's Association	2	1				1	1		1		1	
DENR – EMB R10		2		2		2		2		2		2
DENR - CENRO/PENRO		2			2				1			
DPWH CO		1		1		2		2		2		2
DPWH R10		1			1					1		
DPWH Buk. 3rd District					4							
JICA Study Team		3		4		2		4		3		2
CTI	1		1		1		1					
Amet Asia	7	4	7	3	5	8	6	6	4	3	6	5
Subtotal	37	22	35	19	34	37	25	14	27	30	19	40
Total	5	9	5	4	7	1	39	9	57	7	5	9

NOTES: OS – Onsite; OL – virtual via Zoom





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

5.3 Issues & Concerns

The open forum provided the avenue for the participant stakeholders to express their opinions and comments or ask questions and clarifications about the project and its potential impacts. The salient issues and concerns raised by city and municipality are summarized below with the detailed matrices shown in





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Attachment 14.

Issues raised in Tagoloan, Misamis Oriental

- a) Road alignment traversing the water reservoir that the community uses as a water source.
- b) Water reservoir should be avoided and not be damaged during construction.
- c) Compensation for affected lands and houses
- d) Aggravation of flooding along the national highway in Barangay Casinglot
- e) In Casinglot, our water reservoir will be affected. What will happen to our water reservoir?
- f) Projects or programs for women

<u>Issues raised in Cagayan de Oro</u> City

- a) Compensation of affected landowners
- b) Compensation for the affected animals
- c) Road amenities and local permits
- d) Flooding due to overflowing of the canal on the hillside part of Bugo
- e) Measures during construction to prevent debris to lower portions
- f) Measures for rain induced landslide.

Issues raised in Manolo Fortich, Bukidnon

- a) Compensation for affected residential areas and trees
- b) Abiding with IP process during the detailed design
- c) Mitigation for affected flora and fauna in forested areas
- d) Assessment of cultural impacts

Issues raised in Sumilao, Bukidnon

- a) Livelihood opportunities
- b) Compensation for affected farms
- c) Compliance with Free and Prior Informed Consent requirements
- d) Relocation

Issues raised in Malaybalay, Bukidnon

- a) Compensation of affected lands
- b) Compliance with FPIC requirements
- c) Identification of the affected roads
- d) Classification of the High Standard Highway
- e) Tool fee





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Issues raised in Impasug-ong, Bukidnon

- a) Noise impacts on poultry farms especially from Manolo to Malaybalay
- b) Possible access hindrance along the Atugan river
- c) Compensation and relocation for affected households Possible re-alignment to avoid infrastructure
- d) Impact of the alignment to two irrigation canal structures in San Juan and La Fortuna proper
- e) Impact on banana and pineapple plantations
- f) Mitigation of impact on the main water line and reservoir
- g) Compensation for affected agricultural land
- h) Conduct of IP rituals prior to any Project activity



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PUBLIC SCOPING REPORT

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Annex 17 Public Hearing





PUBLIC SCOPING REPORT

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EXECUTIVE SUMMARY

The Public Hearing conducted in the affected City of Cagayan de Oro, Municipalities of Tagoloan, Manolo Fortich, Sumilao, and Impasug-ong, and City of Malaybalay achieved the following objectives: presentation of the results of the environmental impact assessment done by sector: Land, Water, Air, and People; and documentation of issues and concerns of the stakeholders on the results of the studies conducted on the proposed project. The aspects that were identified and suggested by the stakeholders during the meeting were documented.

The series of Public Hearing meetings were attended by representatives of the stakeholders from the host LGUs initially identified during the Public Scoping. A total of 175 representatives participated in the meeting. Some of the general issues and concerns raised in the form were:

- Impact to traffic congestion
- Aggravation of flooding and landslides in some areas
- Measures for identifying the properties and families to be affected by flooding and landslide
- Multipartite Monitoring Team (MMT) purpose and function
- Compensation for the affected of untitled lands and landowners. Necessary documents and papers to be prepared for land negotiation for those to be affected
- Measures to consider for planning of drainage system: climate projection, history and amount of rainfall volume and the sea level rise.
- Suggestion to include planting strips for green spaces in highway design
- IPs' lump-sum payments should be different for several barangays and holding of rituals are believed to be protection for untoward incidents
- Request for the file of the proposed road alignment for planning purposes of LGU





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

1 Introduction

1.1 Public Participation in the PEISS

Public Participation is part of the Environmental Impact Assessment (EIA) process. *The Revised Procedural Manual for Department Administrative Order (DAO) 2003-30* describes the process of public participation in every stage of the EIA process (**Figure 1**). In the Pre-Scoping stage and the Information, Education and Communication (IEC), the stakeholders of the proposed project, together with the related issues in preparation for the Scoping proper, are identified. During the Scoping stage, the stakeholders are involved through Public Scoping wherein community inputs are noted and included in the Technical Scoping Checklist. During the conduct of the EIA study, local stakeholders are included and may serve as local expert sources, aides/guides and resource persons in primary data collection to optimize access to indigenous knowledge of the environment, or as interviewers/ interviewees in the socio-economic/perception surveys which shall be used as the basis for the subsequent formulation of social development plans, IEC, monitoring plans and other components of the environmental management plans. LGUs and government agencies shall specifically be consulted and involved in the drafting of the project's Social Development Plan (SDP) Framework. The stakeholders will also be part of the Public Hearing as a form of disclosure of the EIA findings. Once the ECC is issued, multi-sectoral validation of a Proponent's self-monitoring results.

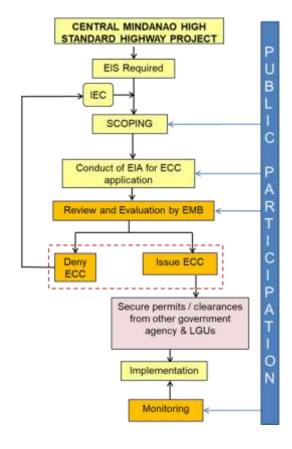


Figure 1. Summary Flowchart of the EIA Process

The new guidelines pursuant to the Department Administrative Order (DAO) 2017-15 or the "Guidelines on Public Participation Under the Philippine Environmental Impact Statement (EIS) System" entail projects under the Philippine Environmental Impact Statement System (PEISS) to conduct meaningful public participation in





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the various stages of the EIA process. As required by the guidelines, the proposed Central Mindanao High Standard Highway Construction (Cagayan de Oro-Malaybalay Section) Project was required to undertake a Public Hearing participated by various stakeholders from the impact barangays.

Representatives from the following groups were invited:

- Local government units in areas where all project facilities are proposed to be constructed/situated and where all operations are proposed to be undertaken
- Government agencies with related mandate on the type of project and its impacts
- Interest groups preferably those with mission/s specifically related to the type and impacts of the proposed undertaking/project
- Households, business activities, and industries that will be displaced
- People whose socio-economic welfare and cultural heritage are projected to be affected by the project especially vulnerable sectors and indigenous populations
- Local institutions (schools, churches, hospital)

1.2 Objective/s

The Public Hearing meeting intends to a) present the results of the environmental impact assessment done by sector: Land, Water, Air, and People; and b.) document issues and concerns of the stakeholders on the results of the studies conducted on the proposed project. The aspects that will be identified and suggested by the stakeholders during the meeting were documented and if deemed critical, will be part of the Environmental Impact Assessment (EIA).

2 Documentation of the Public Hearing

2.1 Dissemination of the Notice of Public Hearing

On September 22, 2023, the Notice of Public Hearing and the copy of the Environmental Impact Assessment (EIA) and Executive Summary for Public (ESP) in two (2) languages, Filipino and English were posted on the EMB website. The notice indicated October 11 to 13, 2023 at 9 o'clock in the morning as the date and time of the hearing to be conducted onsite and online via Zoom. It also included a brief description of the project and information on where to get a copy of the project's EIS which was made available at the EMB website. **Table 1** shows the summary of the public hearing meetings conducted.

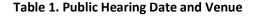
A copy of the Notice of Public Hearing and ESPs in English and Filipino are provided as **Annex 1**.

In addition to the website posting, the notice of hearing was published in the national newspaper Daily Tribune on **September 25 and October 2, 2023.** This was done in accordance with DAO 2017-05, Guidelines on Public Participation under the Philippine Environmental Impact Statement (EIS) System. Copy of the Affidavit of Publication from Daily Tribune is provided as **Annex** 2.

Letters of invitation were also sent to the following offices/groups/organizations:

- Municipal and City Local Government Units and concerned departments
- Affected barangay LGUs
- Non-Government Organizations
- Local Groups/Organizations

Copy of the invitation letters, as well as the acknowledgements, are provided as Annex 4





PUBLIC SCOPING REPORT

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Date	Time	Venue	Participants
October 11, 2023	9:00 am to 5:00 pm	Congressional office - Balay Ninotchka Tagoloan, Misamis Oriental	Tagoloan and Cagayan De Oro Representatives and Stakeholders
October 12, 2023	9:00 am to 5:00 pm	2nd Flr., New Bldg., Sumilao Municipal Hall	Sumilao and Malaybalay Representatives and Stakeholders
October 13, 2023	9:00 am to 5:00 pm	Kaamulan Folk Arts Theatre Kaamulan	Impasug-ong and Malaybalay Representatives and Stakeholders

2.2 Public Hearing Participants

The series of Public Hearing meetings were attended by representatives of the stakeholders from the host LGUs initially identified during the Public Scoping. A total of 178 representatives participated in the meeting. The summary of the attendees is shown in the succeeding tables.

The compiled list of attendees is presented below,

Table 10. Cagayan De Oro and Tagoloan Participants

Central Mindanao High Standard Highway Construction Project		
Date: October 11, 2023		
Venue: Congressional Office – Balay Ninotchka Tagoloan, Misamis Oriental	1	
	Male	Femal
		е
ONSITE: CDO (N=34)		
Government Agencies		
Department of Environment and Natural Resources Central/Regional	5	1
Department of Public Works and Highways Central/Regional	3	3
City Disaster Risk Reduction Management Office	-	1
Department of Agrarian Reform RFO 10	-	2
Department of Education	2	-
National Commission on Indigenous Peoples		1
Local Government Unit		2
Bugo		
Private Institution and Organizations	6	=
Local Government Unit	2	-
Private Organizations 1		-
Balubal	•	•
Local Government Unit	1	1
Private Institution and Organizations 1		-
ONSITE: Tagoloan (N=17)		
Government Agencies		
Department of Education	2	-
Municipal Environment and Natural Resources Office	2	1





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Central Mindanao High Standard Highway Construction Project Date: October 11, 2023 Venue: Congressional Office – Balay Ninotchka Tagoloan, Misamis Oriental **Femal** Male е Municipal Disaster Risk Reduction Management Office 1 Local Government Unit 3 1 Natumolan **Private Organizations** Casinglot Local Government Unit 1 **Misamis Oriental** Local Government Unit 1 1 Provincial Environment and Natural Resources Office 1 1 **Private Institution and Organizations** 1 ONSITE: N=7 AMET Asia Inc. JICA Study Team 1 VIRTUAL (N=2) AMET Asia Inc. 1 1 JICA Study Team 40 Total 21

Table 11. Malaybalay and Sumilao Participants

Central Mindanao High Standard Highway Construction Project		
Public Hearing		
Date: October 12, 2023		
Venue: 2 nd Flr., New Bldg., Sumilao Municipal Hall		
	Male	Female
ONSITE: Malaybalay (N=25)		•
Department of Environment and Natural Resources Central/Regional	3	1
Department of Public Works and Highways Central/Regional	4	2
City Disaster Risk Reduction Management Office	3	-
Environment and Natural Resources Officer	1	-
National Commission on Indigenous Peoples	1	-
Local Government Unit	6	-
Private Institution and Organizations	1	-
Barangay 10 (Poblacion)		
Government Agencies	-	-
Department of Education	1	2
Indigenous Peoples' Mandatory Representations	4	1
Local Government Unit	4	2
Kisolon		•



Grand Total

61



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Central Mindanao High Standard Highway Construction Project Public Hearing Date: October 12, 2023 Venue: 2nd Flr., New Bldg., Sumilao Municipal Hall ONSITE: Malaybalay (N=25) Local Government Unit Barangay Agricultural and Fishery Council

Male **Female** 1 Barangay Agricultural and Fishery Council **Private Institution and Organizations** 1 3 Culasi Local Government Unit 1 San Roque Local Government Unit 1 **Puntian** Local Government Unit 1 **Puntian Waterworks and Sanitation Association** 1 Indigenous Peoples' Mandatory Representations 1 Vista Villa Local Government Unit 1 **Poblacion** Local Government Unit 1 **Private Institution and Organizations** 1 3 Others ONSITE (N=7) AMET Asia Inc. 1 4 JICA Study Team 1 VIRTUAL (N=3) AMET Asia Inc. 2 1 JICA Study Team 1 Total 46 20 **Grand Total**

Table 12. Impasug-ong and Manolo Fortich Participants

Central Mindanao High Standard Highway Construction Project Public Hearing Date: October 13, 2023 Venue: Provincial Environment and Natural Resources (Malaybalay, Bukidnon)		
Male Female		Female
ONSITE: Impasug-ong (N=17)		
Government Agencies		
Department of Environment and Natural Resources Central/Regional	3	1
Department of Public Works and Highways Central/Regional	5	2





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Central Mindanao High Standard Highway Construction Project Public Hearing

Date: October 13, 2023

Venue: Provincial Environment and Natural Resources (Malayba	lay, Bukidnon)		
	Male	Female	
Department of Education	1	-	
National Commission on Indigenous Peoples	1	-	
Indigenous Peoples' Mandatory Representations	-	1	
Local Government Unit	1	1	
Impalutao	<u> </u>		
Local Government Unit	-	1	
ONSITE: Manolo Fortich (N=27)	<u>.</u>		
Local Government Unit	4	3	
Government Agencies	•	1	
Department of Education	-	1	
Indigenous Peoples' Mandatory Representations	-	1	
Alae	,	1	
Local Government Unit	1	-	
Damilag	'		
Local Government Unit	2	1	
Diclum	<u> </u>		
Private Institution and Organizations	1	2	
San Miguel	•	1	
Private Institution and Organizations	-	1	
Sankanan			
Local Government Unit 3		-	
Tangkulan (Poblacion)			
Local Government Unit	2	-	
Ticala	•	•	
Local Government Unit	2	1	
Others	-	1	
Bukidnon	•	•	
Provincial Environment and Natural Resources Office	1		
ONSITE (N=7)		•	
AMET Asia Inc.	1	4	
JICA Study Team	-	1	
VIRTUAL (N=3)	•		
AMET Asia Inc		-	
JICA Study Team			
Total	29	22	
Grand Total		52	





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2.3 Public Hearing Program

The participants were asked to register by signing the provided attendance sheet. The meetings officially started generally around 9:00 AM. The program was moderated by name of Mr. Joel Polintan and Mr. Jes Roland Camayo of the EMB Central Office, the casehandlers of the proposed project.

The details of the proposed project were presented by Ms. Mary Joyce Manuel, Engineer II of Roads Management Cluster I (Bilateral), Unified Project Management Office .The results of the Environmental Impact Assessment (EIA) were presented by Ms. Francine Balido, Environmental Specialist of AMET Asia Inc., the project's EIA Preparer. EMB Region X Regional Director Reynaldo S. Digamo moderated the open forum as the Public Hearing Officer.

A video documentation of the entire proceedings is submitted together with this report. A copy of the program is provided as **Annex 5**. The photodocumentation for the conducted meetings are provided as **Annex** 7.

3 Analysis of Issues and Concerns

Overall, the public hearing at the three clusters proceeded smoothly with the participation of EMB Region X Regional Director Reynaldo S. Digamo as the public hearing officer. There was active participation of the stakeholders and the discussion proceeded with questions and clarifications. In fact, even issues not directly related to the Central Mindanao High Standard Highway Project were freely raised in the open forum and duly responded to by the concerned experts and consultants.

Annex 3 shows the copy of the presentations during the public hearing. A transcript of the entire open forum is provided as **Annex**

3.1 Cagayan de Oro and Tagoloan Cluster

Participated in by a total of 61 stakeholders (40 males & 21 females) from pertinent government agencies, local government units, civil society organizations in the locality, the following are the general issues and concerns raised during the forum:

- a. Road alignment impact to the traffic congestion in Tagoloan, Misamis Oriental
- b. Aggravation of flooding and landslides along Brgy. Bugo, Cagayan De Oro
- c. Measures for identifying the properties and families to be affected by flooding and landslide
- d. Multipartite Monitoring Team (MMT) purpose and function
- e. Necessary documents and papers to be prepared for land negotiation for those to be affected
- f. Measures to consider for planning of drainage system: climate projection, history and amount of rainfall volume and the sea level rise.
- g. Measures on monitoring of the sand/gravel quarrying by the provincial government to safeguard the river in compliance with the standards set by MGB and EMB.
- h. Suggestion to include planting strips for green spaces in highway design considering that Cagayan De Oro is one of the green cities in the country.
- i. Inquiry on whether the feasibility study includes specific designated places for the electrical posts and drainage.
- j. Highway structures caused also accidents since there are roads that have too many curves or zigzags
- k. Incorporation of the 4 lanes to avoid posts and plants that remain as observed in the past with road widening.
- I. Inquiry if this project will affect the Metro Rail Project for Mindanao
- m. Other Matters: These need to be brought to the attention of the DPWH District Office.
 - There are other existing JICA projects that have caused environmental damage such as the perennial flooding problem in Bugo, CDO.





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• In Bugo National High School, there is an existing pipe from which mud flows thereby filling the ground floor of the school.

In the case of the predominant flooding concern, it was underscored by DPWH Central Office and JICA consultant that while there are proposed flood mitigating plans, the specific areas and properties can only be identified once the detailed engineering design is finalized along with the parcellary survey. It was reiterated that the Feasibility Study is underway and the conduct of RAP along the RROW is on-going. The high standard highway is an expressway like NLEX /SCLEX where the user can travel 80 km/hour with comfort and the gradient is at 6%. There is 60 meters right-of-way with 4 meters to the left and 4 meters to the right dedicated to utilities such as for PLDT and electrical poles.

It is worthy to note that during the public hearing, some DPWH projects bearing negative environmental impact were inevitably raised, necessitating urgent action by the DPWH District Office.

3.2 Sumilao and Malaybalay Cluster

Participated by a total of 66 stakeholders (46 males & 20 females) coming from government agencies, local government units, civil society organizations in the locality, the following are the general issues and concerns raised during the forum:

- a. Road alignment traversing the specific barangays and schools
- b. Compensation on affected of untitled lands and landowners
- c. Issue of genuine claimant of real property
- d. Request of tax declaration documents
- e. Holding of rituals are believed to be protection for untoward incidents
- f. Toll fee
- g. Safety features of a high standard highway with 80 kilometers per hour emergency safety area
- h. Other Matters
 - Mt Kitanglad circumferential road: Observed to have environmental damage and should be monitoring of TSS in the rivers.
 - Another project near the Atugan River regarding the New Sayre highway project where private properties were included: no consultations and corresponding payments to owners have not been done

It is noteworthy that the issue of detailed engineering design has been reiterated. While there are proposed flood mitigating plans, the specific areas and properties can only be identified once the detailed engineering plan is finalized along with the parcellary survey. The Feasibility Study is underway and the conduct of RAP along the RROW is on-going. There will be another set of public hearings for this purpose.

3.3 Manolo Fortich and Impasug-ong Cluster

Participated in by a total of 51 stakeholders (29 males & 22 females) coming from government agencies, local government units, civil society organizations in the locality, the following are the general issues and concerns raised during the forum:

- a. Road alignment traversing the specific barangays and houses
- b. Conduct of IP rituals prior to any Project activity
- c. Compensation to affected land and crops of IPs
- d. Design for relocation and specific area for the relocation site of affected people
- e. Clarification on the role of the DPWH District





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- f. Request for the file of the proposed road alignment for planning purposes of LGU
- g. Basis and standard payment for land and crops.
- h. Land ownership status and documents of the affected lands
- i. Other Matters
 - Issue of unpaid affected lands until the present citing the case of a bridge whose landowner is demanding for a toll fee

4 PUBLIC PARTICIPATION DESIGN AND ANALYSIS OF ISSUES AND CONCERNS

Questions were raised during the open forums regarding the Project description and impacts on the environment. Some barangays raised the same concern while majority of the concerns were focused on resettlement and compensation. The issues and concerns were responded by representatives from the DPWH as the proponent, JICA Study Team, Amet Asia Inc., and DENR-EMB. The issues and concerns are enumerated below:

Project Description - With regards to the project specifications, one of the concerns is payment for the use of the highway, particularly whether there will be an imposition of toll fee. Another important concern is the alignment. The affected areas are still tentative because the project is still in the feasibility stage.

Land - The concern was on the identification of the disposal site for construction wastes. There is also a concern raised on the change of natural feature — from a lake, the area in Sumbalan, Sumilao, Bukidnon became a plantation. Another concern is the debris overflow during construction which the low elevation areas usually experience especially if there are construction activities during the rainy season.

Water - A common concern among the barangays is flooding once the project construction and operation starts. There are areas in the alignment (e.g., Tagoloan and Impasug-ong) that have flooding problems because of road projects. There are also concerns on water reservoir or water lines that might be affected because the alignment will pass through these.

People - Across the affected cities and municipalities, the primary concern of the stakeholders is compensation for the affected family, houses, lands, plantations, and animals. There were also concerns on the land rental by a private corporation once the project commences. Particularly in Impasug-ong, the stakeholders are requesting that the alignment be changed or moved to accommodate the poultry farms along the proposed alignment. The stakeholders are also requesting for the profile of the affected which, at this stage, is still unavailable.

The barangays assured that they are in full support of the Project but issues on compensation and IPs must be addressed. They want assurances of just compensation because of experiences of barangays and IP members experience with previous DPWH projects. Past experiences included improper compensation or not fully paid. Since the project will pass through IP areas, some of them with CADT, small farmers with lands along the alignment do not have proof of ownership and worry about the process.



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Other issues raised were on livelihood and development for women and importance of observing IP rituals prior to doing Project activities. They emphasized that the concerns of IPs must be considered and that the FPIC process must be observed.

The municipal LGUs and its departments also expressed their concerns regarding the Project particularly on permits and policies and traffic management requirements. There was also an issue regarding sharing mitigation plans with the LGUs and public. Lastly, the LGUs expressed that there are several currently constructed and planned road projects that might conflict with the Project or make it redundant.

5 NEXT STEP

The Public Hearing accomplished its goal of documenting the issues, concerns, and suggestions from the stakeholders regarding the proposed Project. The key issues were mainly on socio-economic impacts of the project, specifically on resettlement and compensation.

The next step is the Review of the EIS meeting between the EMB Central Office, Review Committee, Proponent to finalize the EIA study. The output of the meeting will be the EIS report



PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

ATTACHMENTS

- Attachment 1. Initial list of pre-scoping IEC stakeholders
- Attachment 2. Sample IEC invitation letter to the stakeholders
- Attachment 3. Pre-scoping IEC program
- Attachment 4. IEC presentation material
- Attachment 5. IEC brochure distributed to the stakeholders
- Attachment 6. Summaries of the IEC proceedings
- Attachment 7. Summary of issues and responses during the IEC
- Attachment 8. Public scoping program
- Attachment 9. Public scoping presentation
- Attachment 10. Sample public scoping invitation letters and notices
- Attachment 11. Public scoping attendance sheets (onsite and virtual via Zoom)
- Attachment 12. Public scoping photo documentation
- Attachment 13. Summaries of the Public Scoping proceedings
- Attachment 14. Issues raised during the Public Scoping and responses
- Attachment 15. Public Disclosure
- Attachment 16. Affidavit of Public Disclosure
- Attachment 17. Public Hearing Program
- Attachment 18. Public Hearing Presentation
- Attachment 19. Public Hearing Invitation Letters
- Attachment 20. Public Hearing Attendance
- Attachment 21. Public Hearing Photodocumentation
- Attachment 22. Public Hearing Proceedings



PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 1. Initial list of pre-scoping IEC stakeholders

Tagoloan, Misamis Oriental

Municipal Council Members and LGU Heads

Name	Position
Mayor Gomer A. Sabio	Municipal Mayor
Roger Achas	Municipal Councilor
Cathlyn Alfante	Municipal Councilor
Ignacio Factura III	Municipal Councilor
Arturo Casino	Municipal Councilor
Armando Pomar	Municipal Councilor
Audie Paduganan	Municipal Councilor
Felipe Valdehuesa	Municipal Councilor
Engr. Jeffrey Elogsong	Municipal Local Environment and Natural Resources Officer
Engr. Eric Ragadang	Municipal Planning & Development Coordinator
Engr. Gene Baculpo	Office of the Municipal Engineer
Romeo Sister	Tagoloan Tricycle Operator Drivers Association
Ferdinand Tormis	Poblacion Natumolan Mootorcycle Association
Dindo Arnan	Tagoloan Center Car Association
Ben Naduma	United Tagoloan Trisikad Association
Rainfredo Sabejon	Tagoloan Market Habal-habal Operators/Drivers Multi-purpose Cooperative
Benjamin Ellarina	Municipal Senior Citizen Federation of the Philippines Tagoloan Chapter
Melden Saguilayan	Tagoloan Federation Differently Able Person Organization
Gleandel Arajuez	Tago-Ulohan Higaonon Tribe
Rose Jean Labajo	Talogan Ta Balatukan ancestral Domain Tagoloan Higaonon Tribal
Matilde Gamba	Philippine Tribal Governance Administration
Ms. Linda F. Libres	Sinag Tagoloan
Carlito Quilang	Tagoloan River Concessionaires Association
Nole Che Guevarra	Tagoloan Sand and Gravel
Client Ray Cosin	Green Heads
Maricor Torres	Save Tagoloan River and its Estuaries and Aquatlife Movement

Barangay Natumolan

Name	Position	
Rafael P. Vidal	Brgy. Captain	
Elma C. Paderna	Sangguniang Barangay Member	
Eugene A. Palapo	Sangguniang Barangay Member	
Jocelyn A. Lim	Sangguniang Barangay Member	
Marivic B. Ajon	Sangguniang Barangay Member	
Segundino Q. Galorio	Sangguniang Barangay Member	
Lenie E. Adame	Sangguniang Barangay Member	
Janea Maura M. Mencias	Sk Chairperson	
Ivy L. Asiñero	Barangay Secretary	
Representative from Natumolan Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		





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Barangay Casinglot

Name	Position	
Marlon J. Bolanio	Brgy. Captain	
Julian M. Hernan	Sangguniang Barangay Member	
Richard P. Pelin	Sangguniang Barangay Member	
Oona Karen L. Emano	Sangguniang Barangay Member	
Teodoro N. Ociones	Sangguniang Barangay Member	
Vivian V. De Los Santos	Sangguniang Barangay Member	
Alrie J. Allones	Sangguniang Barangay Member	
Joseph R. Sereño	Sk Chairperson	
Doris O. Maghanoy	Barangay Secretary	
Representative from Casinglot Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Cagayan de Oro City, Misamis Oriental

City Council Members and LGU Heads (at least four representatives from the City Council Members)

Name	Position
Mayor Oscar S. Moreno	City Mayor
Hon. Teodolfo Lao	City Councilor
Hon. Enrico Salcedo	City Councilor
Hon. Zaldy Ocon	City Councilor
Hon. Lordan Suan	City Councilor
Hon. Jocelyn Rodriguez	City Councilor
Hon. Maria Lourdes Gaane	City Councilor
Hon. Romeo Calizo	City Councilor
Hon. George Gualberto Goking	City Councilor
Hon. Joyleen Mercedes Balaba	City Councilor
Hon. Jay Pascual	City Councilor
Hon. lan Mark Nacaya	City Councilor
Hon. Edna Dahino	City Councilor
Hon. Suzette Daba	City Councilor
Hon. Reuben Daba	City Councilor
Hon. Edgar Cabanlas	City Councilor
Hon. Roger Abaday	City Councilor
Hon. Teodolfo Lao	City Councilor
Engr. Armen A. Cuenca	City Local Environment and Natural Resources Officer
Mr. Ramir M. Balquin, EnP	City Planning & Development Coordinator
Engr. Rolando M. Pacuribot	Office of the City Engineer



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Barangay Bugo

Name	Position	
Ho. Vic Talingting	Brgy. Captain	
Hon. Presley C. Emano	Sangguniang Barangay Member	
Hon. Ronald Rey S. Cabana	Sangguniang Barangay Member	
Hon. Marie Anne G. Gironella	Sangguniang Barangay Member	
Hon. Ariel Igot	Sangguniang Barangay Member	
Hon. Alan D. Igot	Sangguniang Barangay Member	
Hon. Ricarte V. Codilla	Sangguniang Barangay Member	
Hon. Ponciano J. Dawal	Sangguniang Barangay Member	
Mr. Noel Nober O. Perpetua Sk Chairperson		
Mr. Paul Jordan S. Morial	Barangay Secretary	
Ms. Anita B. Yaeso	Federation of Zone Five Bugo Neighborhood Incorporated (FEZOFIBUNI)	
Mr. Avelino M. Sario, Sr.	Federation of Bugo Zone 6 Association, Incorporated	
Ms. Venus H. Galdo	Villa Trinitas Phase 2, Homeowner's Association, Incorporated	
Sitio/Purok Leaders		
Representative from Upper Puerto Carp Beneficiary Association, Inc.		
Representative from Bugo - Puerto - Cogon Operators & Drivers Association (Bpcoda), Inc.		
Representative from Cugman - Bugo Tricycle Operators and Drivers Association, Inc.		
Representative from Bugo Motorized Operators and Drivers Association (Bumotoda), Inc		
Representative from Bugo Central School		
Representative from Bugo Christian		
Representative from Bugo National High School		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representative from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Barangay Puerto

Name	Position	
Hon. Christian Rustico M. Achas	Brgy. Captain	
Hon. Presley C. Emano	Sangguniang Barangay Member	
Hon. Ronald Rey S. Cabana	Sangguniang Barangay Member	
Hon. Marie Anne G. Gironella	Sangguniang Barangay Member	
Hon. Ariel Igot	Sangguniang Barangay Member	
Hon. Alan D. Igot	Sangguniang Barangay Member	
Hon. Ricarte V. Codilla	Sangguniang Barangay Member	
Hon. Ponciano J. Dawal	Sangguniang Barangay Member	
Mr. Noel Nober O. Perpetua	Sk Chairperson	
Mr. Paul Jordan S. Morial	Barangay Secretary	
Representative from Puerto Elementary School		
Representative from Puerto National High School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		





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Barangay Balubal

Name	Position	
Hon. Bactong Pablo	Brgy. Captain	
Hon. Ervic Bade	Sangguniang Barangay Member	
Reynante Razalo	Sangguniang Barangay Member	
Renato Agabalog	Sangguniang Barangay Member	
Patrina Malingin	Sangguniang Barangay Member	
Richard Razalo	Sangguniang Barangay Member	
Dionedes Rosel	Sangguniang Barangay Member	
Larry Pajo	Sangguniang Barangay Member	
Mary Nel Saguban	Sk Chairperson	
Mirasol Yutuc	Barangay Secretary	
Representative from Balubal Elementary School		
Representative from Balubal National High School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Manolo Fortich, Bukidnon

Municipal Council Members and LGU Heads

Name	Position
Mayor Clive D. Quino	Municipal Mayor
Christy L. Sabale	Municipal Councilor – Committee on Livelihood, Women
	and family relations, Child care and nutrition
Alberto B. Tinoy	Municipal Councilor – Human rights, trade and commerce/
	cooperative
Warleo A. Goayan	Municipal Councilor – Peace and order, public safety, senior
	citizen/ PWD
Alex D. Payangga	Municipal Councilor – Indigenous cultural communities
Nelson S. Binayao	Municipal Councilor – Barangay affairs
John Anthony G. Leyson	Municipal Councilor – Sports, youth development
Sharon Tacbobo – 0915-365 4649	Municipal Local Environment and Natural Resources
	Officer
Cherry Fe Amor Q. Magallones	Municipal Planning & Development Coordinator
Engr. Bernabe Auxtero – 0936-195 5285	Office of the Municipal Engineer
Carlos A. Dumas	CENRO Manolo Fortich
Marie Superales	NCIP Manolo Fortich Community Service Center
Judith Dinsag	Representative from Cultural Sector
	Representative from Environmental Sector
Luigi Amoin	Representative from Driver's and Operators Associations
Ceceil Sajonia	Representative from Women's Group
Phoebe Cau	Representative from Senior Citizen's Group



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Barangay Alae

Name	Position	
Hon. Erasmo Ceasar A. Ramirez	Brgy. Captain	
Hon. Jocelyn A. Legaspi	Sangguniang Barangay Member	
Hon. John Marvin C. Namocatcat Sr.	Sangguniang Barangay Member	
Hon. Roy L. Ganas	Sangguniang Barangay Member	
Hon. Deborah Y. Marinay	Sangguniang Barangay Member	
Hon. Junidini J. Artajo	Sangguniang Barangay Member	
Hon. Teogenes R. Abarabar Sr.	Sangguniang Barangay Member	
Hon. Deogracias O. Piosca	Sangguniang Barangay Member	
Hon. Keith Emilian C. Melendez	SK Chairperson	
Nelfa R. Tero	Barangay Secretary	
Representative from Alae Elementary School		
Representative from Alae National High School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Barangay San Miguel, Manolo Fortich, Bukidnon

Name	Position
Hon. Benjamin S. Mińoza	Brgy. Captain
Hon. Joaquin L. Fudolin	Sangguniang Barangay Member
Hon. John Windel J. Gallenero	Sangguniang Barangay Member
Hon. Mary Ann D. Edusma	Sangguniang Barangay Member
Hon. Jesus M. Galagar	Sangguniang Barangay Member
Hon. Sabina E. Babion	Sangguniang Barangay Member
Hon. Sanny D. Badelic	Sangguniang Barangay Member
Hon. Arsenio T. Mondilla	Sangguniang Barangay Member
Hon. Pauline Grace B. Gonzaga	SK Chairperson
Orlando S. Sarabia	Barangay Secretary
Representative from San Miguel Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Damilag, Manolo Fortich, Bukidnon

Name	Position
Hon. Allan G. Torres Jr.	Brgy. Captain
Hon. Allan E. Cahoy	Sangguniang Barangay Member
Hon. Anthony G. Inihao	Sangguniang Barangay Member
Hon. Jonathan S. Demata	Sangguniang Barangay Member
Hon. Lorenza I. Madjus	Sangguniang Barangay Member
Hon. Roberto S. Madula	Sangguniang Barangay Member
Hon. Eduardo Ralph S. Bagayas	Sangguniang Barangay Member





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Name	Position
Hon. Edmond A. Licuanan	Sangguniang Barangay Member
Alejandro B. Arenal	SK Chairperson
Arlene B. Arenal	Barangay Secretary
Representative from Damilag Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Diclum

Name	Position
Hon. Nelson S. Blnayao	Brgy. Captain Captain
Hon. Tomasito A. Coquilla	Sangguniang Barangay Member
Hon. Pablo A. Jimenez Jr.	Sangguniang Barangay Member
Hon. Ildefonso O. Pablo Jr.	Sangguniang Barangay Member
Hon. Shirley L. Tagapulot	Sangguniang Barangay Member
Hon. Brian T. Lozada	Sangguniang Barangay Member
Hon. Benito V. Bantilan	Sangguniang Barangay Member
Hon. Roque A. Balcos	Sangguniang Barangay Member
Hon. Ethel Jean Q. Emata	SK Chairperson
Charito A. Villegas	Barangay Secretary
Representative from Diclum Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Sankanan, Manolo Fortich, Bukidnon

Name	Position	
Hon. Dennis G. Salvo	Brgy. Captain	
Hon. Ariel L. Jenisan	Sangguniang Barangay Member	
Hon. Genevieve M. Monopollo	Sangguniang Barangay Member	
Hon. Julieto A. Baliguat	Sangguniang Barangay Member	
Hon. Alfonso L. Dahe	Sangguniang Barangay Member	
Hon. Bernie D. Guinayao	Sangguniang Barangay Member	
Hon. Jesus M. Vitor	Sangguniang Barangay Member	
Hon. Alberto B. Buynay	Sangguniang Barangay Member	
Hon. Kyrr Heinritz N. Quiray	SK Chairperson	
Hon. Charity D. Cajilla	Barangay Secretary	
Representative from Sankanan Elementary School		
Representative from Sankanan National High School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		





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Name	Position
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Tankulan (Pob.)

Name	Position
Hon. Romeo P. Dagunlay	Brgy. Captain
Hon. Lemuel Rey L. Arana	Sangguniang Barangay Member
Hon. Rene G. Abarquez	Sangguniang Barangay Member
Hon. Lee A. Albarece	Sangguniang Barangay Member
Hon. Daniel V. Onahon Jr	Sangguniang Barangay Member
Hon. Dominador L. Domo	Sangguniang Barangay Member
Hon. Alan A. Improgo	Sangguniang Barangay Member
Hon. Leopoldo S. Balanay	Sangguniang Barangay Member
Hon. Kristian Niko P. Tapales	SK Chairperson
Hon. Leonora S. Ugat	Barangay Secretary
Representative from Tankulan Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Ticala

Name	Position
Hon. Virgie Y. Payanan	Brgy. Captain
Hon. Kineth G. Tanto	Sangguniang Barangay Member
Hon. Telesforo P. Dawat	Sangguniang Barangay Member
Hon. Dumaquito D. Lentican	Sangguniang Barangay Member
Hon. Julito S. Tanto	Sangguniang Barangay Member
Hon. Nancita G. Yompoca	Sangguniang Barangay Member
Hon. Rufino S. Bulanta Jr.	Sangguniang Barangay Member
Hon. Ronald R. Magdalino Sr.	Sangguniang Barangay Member
Hon. Dievra Jay S. Payanan	SK Chairperson
Renato S. Coguihan Jr.	Barangay Secretary
Representative from Ticala Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	

Barangay Mambatangan

Name	Position
Hon. Angelie S. Roa	Brgy. Captain
Hon. Edward D. Dampal	Sangguniang Barangay Member
Hon. Allan T. Tinay	Sangguniang Barangay Member
Hon. Junrey P. Lagat	Sangguniang Barangay Member
Hon. Jerry R. Balaba	Sangguniang Barangay Member
Hon. Hanie P. Abris	Sangguniang Barangay Member
Hon. Evangeline T. Amansec	Sangguniang Barangay Member





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Name	Position
Hon. Melan Dave C. Lalucan	Sangguniang Barangay Member
Hon. Neil Christian G. Tilap	SK Chairperson
Roberto A. Santiago Jr	Barangay Secretary
Representative from Mambatangan Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	

Sumilao, Bukidnon

Municipal Council Members and LGU Heads

Name	Position
Mayor Jose Antonio A. Villo	Municipal Mayor
Hon. George Jeremy Baula	Municipal Councilor
Hon. Benjamin A. Baluma	Municipal Councilor
Hon. Gary A. Del Rosario	Municipal Councilor
Hon. Nissabel T. Canada	Municipal Councilor
Hon. Cresanto J. Apiag	Municipal Councilor
Hon. Leandro C. Bade	Municipal Councilor
Hon. Romeo B. Anoba	Municipal Councilor
Hon. Vernie N. Castillo	Municipal Councilor
Engr. Armen A. Cuenca	Municipal Local Environment and Natural Resources Officer
Engr. Isidro G. Borja	Municipal Planning & Development Coordinator
Engr. Rolando M. Pacuribot	Office of the Municipal Engineer
Representative from Cultural Sector	
Representative from Environmental Sector	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representative from Agriculture/Fishermen's Association	

Barangay Puntian

Name	Position	
Hon. Tirso B. Amistoso	Brgy. Captain	
Hon. Joann B. Gaid	Sangguniang Barangay Member	
Hon. Jumandy T. Salise	Sangguniang Barangay Member	
Hon. Evangeline R. Cabarles	Sangguniang Barangay Member	
Hon. Apolinario C. Lumaghan	Sangguniang Barangay Member	
Hon. Fegie D. Nacasabog	Sangguniang Barangay Member	
Hon. Felicito H. Boncait	Sangguniang Barangay Member	
Hon. Gavino C. Bantog	Sangguniang Barangay Member	
Hon. Rustom B. Milla	SK Chairperson	
Hon. Joela D. Golosinda	Barangay Secretary	
Representative from Puntian Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		



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PUBLIC SCOPING REPORT

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Barangay Vista Villa

Name	Position
Hon. Reymar T. Gaguan	Brgy. Captain
Hon. Noland M. Caramonte	Sangguniang Barangay Member
Hon. Ernesto G. Bargo	Sangguniang Barangay Member
Hon. Jomie S. Cabactulan	Sangguniang Barangay Member
Hon. Maridel A. Goay	Sangguniang Barangay Member
Hon. Unifren B. Dahinao	Sangguniang Barangay Member
Hon. Geno O. Daluan	Sangguniang Barangay Member
Hon. Jean Sigrid S. Mat-Ao	SK Chairperson
Florence Joy S. Carbajal	Barangay Secretary
Representative from Vista Villa Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Culasi

Name	Position
Hon. Gilbert T. Mamatan	Brgy. Captain
Hon. Deve D. Dalahigon	Sangguniang Barangay Member
Hon. Silvestre S. Dalo-An	Sangguniang Barangay Member
Hon. Lito E. Santaan	Sangguniang Barangay Member
Hon. Alberto S. Dalahigon	Sangguniang Barangay Member
Hon. Wenefredo Y. Mamatan	Sangguniang Barangay Member
Hon. Georgina D. Daganloy	Sangguniang Barangay Member
Hon. Randy I. Maata	SK Chairperson
Hezeil Ann M. Daluan	Barangay Secretary
Representative from Culasi Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Poblacion

Name	Position
Hon. Julius Cesar A. Tan	Brgy. Captain
Hon. Nova H. Sumbalan	Sangguniang Barangay Member
Hon. Esterlita D. Cahiles	Sangguniang Barangay Member
Hon. Reynaldo C. Ducala	Sangguniang Barangay Member
Hon. Kent A. Elore	Sangguniang Barangay Member
Hon. Jimmar C. Han-Awon	Sangguniang Barangay Member
Hon. Dulce S. Doydora	Sangguniang Barangay Member
Hon. Jerome S. Cagadas	Sangguniang Barangay Member
Hon. Jarfie O. Acedilla	SK Chairperson





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Name	Position
Louela G. De La Cerna	Barangay Secretary
Representative from Poblacion Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Kisolon

Name	Position	
Hon. Albert Gabriel B. De Mesa	Brgy. Captain	
Hon. Dominador A. Del Rosario	Sangguniang Barangay Member	
Hon. Vicenta C. Manginsay	Sangguniang Barangay Member	
Hon. Sherly T. Inojaldo	Sangguniang Barangay Member	
Hon. Andres P. De La Cerna	Sangguniang Barangay Member	
Hon. Gemmo C. Olana	Sangguniang Barangay Member	
Hon. Diosdado C. Doyola	Sangguniang Barangay Member	
Hon. Mark John Y. Opecio	Sangguniang Barangay Member	
Hon. Vanessa Lynne D. Soliva	SK Chairperson	
Alma Y. Daigon	Barangay Secretary	
Representative from Kisolon Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Barangay San Roque

Name	Position	
Hon. Jake T. Curay	Brgy. Captain	
Hon. Hentherjo L. Dalit	Sangguniang Barangay Member	
Hon. Ace L. Francisco	Sangguniang Barangay Member	
Hon. Myrna B. Pinote	Sangguniang Barangay Member	
Hon. Rodelita P. Sasusam	Sangguniang Barangay Member	
Hon. Maribeth D. Suminao	Sangguniang Barangay Member	
Hon. John Mark C. Sabanal	Sangguniang Barangay Member	
Hon. George B. Paca Sr	Sangguniang Barangay Member	
Hon. Ariel S. Torayno	SK Chairperson	
Alma O. Landuay	Barangay Secretary	
Representative from San Roque Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		



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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Impasug-ong, Bukidnon

Municipal Council Members and LGU Heads

Name	Position
Hon. Anthony Uy	Municipal Mayor
Hon. John A. Alvarez	Municipal Councilor
Hon. Hon. Christopher T. Beltran	Municipal Councilor
Hon. Melvin B. Santos	Municipal Councilor
Hon. Gerome DC. Reyes	Municipal Councilor
Hon. Emmanuel DC. Magtalas	Municipal Councilor
Hon. Richard P. Dela Cruz	Municipal Councilor
Hon. Jayvee C. Lacsina	Municipal Councilor
Mark David C. Maon	Municipal Local Environment and Natural Resources Officer
Nika Corinne S. Tan	Municipal Planning & Development Coordinator
Marivee M. Coronel	Office of the Municipal Engineer
Representative from Cultural Sector	
Representative from Environmental Sector	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	

Barangay Poblacion

Name	Position
Von Omar P. Lagayan	Brgy. Captain
Hon. Ayagil Kilah C. Delarmente	Sangguniang Barangay Member
Hon. Clemencia M. Denzo	Sangguniang Barangay Member
Hon. Reina O. Paluga	Sangguniang Barangay Member
Hon. Diomedes D. Tulusan	Sangguniang Barangay Member
Hon. Abner L. Garcia	Sangguniang Barangay Member
Hon. Rolando E. Eguia	Sangguniang Barangay Member
Hon. Laurence Aldwin O. Olana	Sangguniang Barangay Member
Hon. Irene Kristine C. Delarmente	SK Chairperson
Shirley A. Curiba	Barangay Secretary
Representative from Poblacion Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay La Fortuna

Name	Position
Hon. Nilo C. Iba	Brgy Captain
Hon. Walter B. Galasanay	Sangguniang Barangay Member
Hon. Narcisa D. Igloria	Sangguniang Barangay Member
Hon. Livelyn G. Dubongco	Sangguniang Barangay Member
Hon. Editha D. Gayonan	Sangguniang Barangay Member
Hon. Jheran P. Go	Sangguniang Barangay Member
Hon. Corazon S. Toring	Sangguniang Barangay Member





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Name	Position
Hon. Eleonor B. Tañedo	Sangguniang Barangay Member
Hon. Lloyd Matty L. Inta	SK Chairperson
Hon. Evelyn A. Montaño	Barangay Secretary
Representative from La Fortuna Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Cawayan

Name	Position
Hon. Josefino B. Manalo	Brgy. Captain
Hon. Carmelino L. Campol	Sangguniang Barangay Member
Hon. Greggy D. Labra	Sangguniang Barangay Member
Hon. Angelito D. Cawasan	Sangguniang Barangay Member
Hon. Policarpio P. Dacillo Jr	Sangguniang Barangay Member
Hon. Anie L. Tabian	Sangguniang Barangay Member
Hon. Jerry O. Avila	Sangguniang Barangay Member
Hon. Grace I. Timo	Sangguniang Barangay Member
Hon. Shiela Mae C. Urgel	SK Chairperson
Ma. Chenita T. Miras	Barangay Secretary
Representative from Cawayan Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Capitan Bayong

Name	Position	
Hon. Dawn M. Roque	Brgy. Captain	
Hon. Raul D. Felicio	Sangguniang Barangay Member	
Hon. Rodrigo G. Antivo	Sangguniang Barangay Member	
Hon. Marven C. Mandong	Sangguniang Barangay Member	
Hon. Enrique Y. Gayon	Sangguniang Barangay Member	
Hon. Evangeline A. Yomonda	Sangguniang Barangay Member	
Hon. Rhoda A. Napuran	Sangguniang Barangay Member	
Hon. Generaldo N. Galambao	Sangguniang Barangay Member	
Hon. Princess Grace L. Gayon	SK Chairperson	
Hon. Bernandeth Y. Dela Peña	Barangay Secretary	
Representative from Capitan Bayong Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Name	Position
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Impalutao

Name	Position	
Hon. Antonio O. Dominao	Brgy. Captain	
Hon. Jerly D. Pacatang	Sangguniang Barangay Member	
Hon. Romeo R. Abunda Sr.	Sangguniang Barangay Member	
Hon. Martha G. Bustamante	Sangguniang Barangay Member	
Hon. Danilo N. Micabalo	Sangguniang Barangay Member	
Hon. Nicasio P. Llamoso	Sangguniang Barangay Member	
Hon. Esteban G. Macapaz	Sangguniang Barangay Member	
Hon. Raquel L. Buco	Sangguniang Barangay Member	
Hon. Mayflor P. Paquiao	SK Chairperson	
Hon. Analou L. Paul	Barangay Secretary	
Representative from Impalutao Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Barangay Kibenton

Brgy Captain		
Sangguniang Barangay Member		
SK Chairperson		
Barangay Secretary		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Malaybalay City, Bukidnon

City Council Members and LGU Heads

Name	Position	
Mayor Florencio T. Flores Jr.	City Mayor	
Hon. Estelito Marabe	City Councilor	
Hon. Niko Aldeguer	City Councilor	
Hon. Louel Tortola	City Councilor	
Hon. Rendon Sangalang	City Councilor	
Hon. Victor Barroso	City Councilor	
Hon. Hollis Monsanto	City Councilor	
Hon. Christopher Soria	City Councilor	
Hon. Erwin Damasco	City Councilor	
Hon. Kathleen Cecille Pagaling	City Councilor	
Hon. Cromwell Kiril Dinlayan	City Councilor	
Hon. Ma. Anita L. Fernandez	City Local Environment and Natural Resources Officer	
Engr. Adrian R. Gamboa	City Planning & Development Coordinator	
Engr. Roy A. Lapuz	Office of the City Engineer	
Crispulo L. Libertad	Northern Bukidnon Free Farmer's Cooperative	
Gregorio S. Tatoy	New Ilocos Irrigators Ass., Inc.	
Bienvinido Landasan, Jr	Abag Kalambuan, Inc.	
Representative from Cultural Sector		
Representative from Environmental Sector		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		

Barangay Patpat

Name	Position
Hon. Renante M. Okit	Brgy. Captain
Hon. Lito G. Maruhom	Sangguniang Barangay Member
Hon. Ruben D. Meliston	Sangguniang Barangay Member
Hon. Freddie S. Okit	Sangguniang Barangay Member
Hon. Norien B. Meliston	Sangguniang Barangay Member
Hon. Dante L. Dumagpi	Sangguniang Barangay Member
Hon. Bles G. Gumindan	Sangguniang Barangay Member
Hon. Edwin G. Meliston	Sangguniang Barangay Member
Hon. Sharam D. Dahuloran	SK Chairperson
Liezel Joy A. Gabule	Barangay Secretary
Representative from Patpat Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	



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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Barangay Kalasungay

Name	Position
Hon. Rodrigo O. Niere	Brgy. Captain
Hon. Ersie C. Paano	Sangguniang Barangay Member
Hon. Joemar M. Sario	Sangguniang Barangay Member
Hon. Anthony Julian G. Rubio	Sangguniang Barangay Member
Hon. Gene M. Rojas	Sangguniang Barangay Member
Hon. Constantino T. Mendoza Jr	Sangguniang Barangay Member
Hon. Emilie R. Okit	Sangguniang Barangay Member
Hon. Essner G. Binayao	Sangguniang Barangay Member
Hon. Karl Marlone C. Manahan	SK Chairperson
Kesha Dawn M. Sewala	Barangay Secretary
Representative from Kalasungay Elementary School	
Representative from Driver's and Operators Associations	
Representative from Women's Group	
Representative from Senior Citizen's Group	
Representatives from Religious Groups	
Representative from Agriculture/Fishermen's Association	
Representative from Cultural Sector	
Representative from Environmental Sector	

Barangay Dalwangan

Name	Position	
Hon. Raul B. Pandong	Brgy. Captain	
Hon. Wilson A. Sogocio	Sangguniang Barangay Member	
Hon. Jose E. Ronolo	Sangguniang Barangay Member	
Hon. Primo Jack D. Omarol	Sangguniang Barangay Member	
Hon. Nieley Joy P. Martinez	Sangguniang Barangay Member	
Hon. Carmelino T. Melliza Jr	Sangguniang Barangay Member	
Hon. Jan Kayzer O. Lino-Ay	Sangguniang Barangay Member	
Hon. Judito S. Pagaling	Sangguniang Barangay Member	
Hon. Anthon Son R. Morento	SK Chairperson	
Hon. Junel C. Lamadora	Barangay Secretary	
Representative from Dalwangan Elementary School		
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		

Barangay 10

Name	Position
Hon. Nilo Q. Salga	Brgy. Captain
Hon. Herculano O. Lupiba	Sangguniang Barangay Member
Hon. Alex P. Agustin	Sangguniang Barangay Member
Hon. Armando P. Blanco	Sangguniang Barangay Member
Hon. Alejandro P. Ferrer Jr	Sangguniang Barangay Member
Hon. Francis Eddie C. Dagang	Sangguniang Barangay Member
Hon. Michael Joseph C. Galindo	Sangguniang Barangay Member
Hon. Isidro T. Desabille	Sangguniang Barangay Member





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Name	Position	
Hon. Gio Paul Z. Agustin	SK Chairperson	
Hon. Tiffany C. Galindo	Barangay Secretary	
Representative from Brgy. 10 Elementary School	•	
Representative from Driver's and Operators Associations		
Representative from Women's Group		
Representative from Senior Citizen's Group		
Representatives from Religious Groups		
Representative from Agriculture/Fishermen's Association		
Representative from Cultural Sector		
Representative from Environmental Sector		





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 2. Sample IEC invitation letter to the stakeholders



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



19 March 2021

HON, GOMER A. SABIO

Municipal Mayor Tagoloan, Misamis Oriental

SUBJECT: INFORMATION, EDUCATION, AND COMMUNICATION PROGRAM OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN

DE ORO - MALAYBALAY SECTION)

Dear Mayor Sabio:

The Department of Public Works and Highways (DPWH) with the assistance of Japan International Cooperation Agency (JICA) is proposing to construct and operate the Central Mindanao High Standard Highway Construction Project which will traverse the Municipalities of Tagoloan, Cagayan de Oro, Misamis Oriental, Manolo Fortich, Sumilao, Impasug-ong, and Malaybalay, Bukidnon. JICA entrusted the conduct of this study to CTI Engineering International Co., Ltd. (CTII).

The Environmental Management Bureau of the Department of Environment and Natural Resources (EMB-DENR) requires that the proposed project undergoes an Environmental Impact Assessment (EIA) for its Environmental Compliance Certificate (ECC) application prior to project implementation. In line with this, CTII Engineering commissioned Amet-Asia Inc., the third-party local environmental consultancy firm, to undertake the EIA. The first step in the EIA process is the Information, Education and Communication, i.e. an activity which informs the stakeholders about the project through the process of education using communication mediums.

In this regard, we are inviting you or your representative to attend the IEC meeting on **Tuesday, March 24**, **2021** at the **Tagoloan Dome**. We are also requesting the presence of the people (or their representatives) in the attached list. The purpose of the activity is to give information about the project and understanding of the EIA process.

Registration starts at 1:30 P.M. with the program promptly starting at 2:00 P.M. Also attached is the program of the IEC meeting

Kindly contact us for questions and clarifications through Dr. Nimfa L. Bracamonte at 09171351584 or Prof. Amabelle A. Embornas at 09750438488.

Thank you for your cooperation in this endeavor.

Truly yours,

MR. RYUICHI UENO JICA Study Team Leader RECEIVEL Date: 9/2/21

JICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Tel. No. (02)8527-15551



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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 3. Pre-scoping IEC att



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



INFORMATION, EDUCATION AND COMMUNICATION PROGRAM March 23, 2021 10:00 AM – 12:00 PM

Invocation

National Anthem

Opening Remarks Hon. Mayor Gomer A. Sabio

Tagoloan Municipal Mayor

Presentation of the Proposed Project Dr. Nimfa L. Bracamonte

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks Engr. Eric Ragadang

IICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

Municipal Planning and Development Officer

Photo documentation

Dr. Nimfa L. Bracamonte Emcee/Facilitator



Tel No. (02)8527-25551



CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



INFORMATION, EDUCATION AND COMMUNICATION PROGRAM Puerto Brgy. Hall, Puerto, Cagayan de Oro March 24, 2021 10:00 AM – 12:00 PM

Invocation

National Anthem

Opening Remarks Hon. Mayor Oscar S. Moreno

Cagayan de Oro City Mayor

Presentation of the Proposed Project Dr. Nimfa L. Bracamonte

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks Ramir M. Balquin

IICA Study Team, 3rd Floor, DPWH Central, Bonifacio Drive, Port Area, Manila, Philippines

City Planning and Development Officer

Photo documentation

Dr. Nimfa L. Bracamonte Emcee/Facilitator



Tel No. (02)8527-25552



CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA



JICA Survey Team for the Preparatory Study for Central Mindanao High Standard Highway Construction Project (CDO-Malaybalay Section)



INFORMATION, EDUCATION AND COMMUNICATION PROGRAM BRCI Diclum, Manolo Fortich March 22, 2021 2:00 PM – 4:00 PM

Invocation

National Anthem

Opening Remarks Hon. Mayor Clive D. Quiño

Manolo Fortich Municipal Mayor

Presentation of the Proposed Project Dr. Nimfa L. Bracamonte

JICA Study Team, 3rd Floor, DPWH Central, Benifacio Drive, Port Area, Manila, Philippines

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks Ms. Cherry Fe Amor Q. Magallones

Municipal Planning and Development Officer

Photo documentation

Dr. Nimfa L. Bracamonte Emcee/Facilitator



Tel. No. (02)8527-25552

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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA



CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION PROGRAM List of Invitees March 24, 2020, 10:00-12:00 PM 2nd Floor, New Building, Municipal Hall, Sumilao

INFORMATION, EDUCATION AND COMMUNICATION PROGRAM
Sumilao Municipal Hall
March 24, 2021
10:00 AM – 12:00 PM

Invocation

National Anthem

Opening Remarks Hon. Jose Antonio Villo

Sumilao Municipal Mayor

Presentation of the Proposed Project Ms. Amabelle A. Embornas

Amet-Asia, Inc. – People Consultant

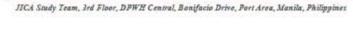
Open Forum

Closing Remarks Albert Gabriel De Mesa

Brgy. Captain, Barangay Kisolon

Photo documentation

Ms. Amabelle A. Embornas Emcee/Facilitator









CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA



JICA Survey Team for the Preparatory Study for Central Mindanao
High Standard Highway Construction Project (CDO-Malaybalay Section)



CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION PROGRAM List of Invitees March 23, 2020, 2:00-4:00 PM Impasug-ong Municipal Conference Hall

Invocation

National Anthem

Opening Remarks Hon. Mayor Anthony A. Uy

Impasug-ong Municipal Mayor

Presentation of the Proposed Project Ms. Amabelle A. Embornas

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks Josefino B. Manalo

IICA Study Team, 3rd Floor, DPWH Central, Bonifocio Drive, Port Area, Manila, Philippines

Brgy. Captain, Barangay Cawayan

Photo documentation

Ms. Amabelle A. Embornas Emcee/Facilitator



Tel. No. (02)8527-15551

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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA



JICA Survey Team for the Preparatory Study for Central Mindanao
High Standard Highway Construction Project (CDO-Malaybalay Section)



CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT INFORMATION, EDUCATION AND COMMUNICATION PROGRAM List of Invitees March 23, 2020, 10:00-12:00 PM People's Hall, 2nd Floor Malaybalay City Hall

Invocation

National Anthem

Opening Remarks Hon. Mayor Florencio T. Flores Jr.

Malaybalay City Mayor

Presentation of the Proposed Project Ms. Amabelle A. Embornas

Amet-Asia, Inc. - People Consultant

Open Forum

Closing Remarks Adrian R. Gamboa

City Planning and Development Officer

Photo documentation

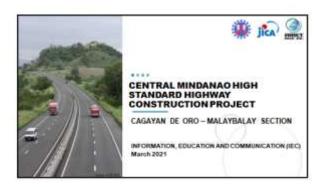
Ms. Amabelle A. Embornas Emcee/Facilitator

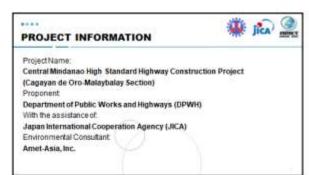


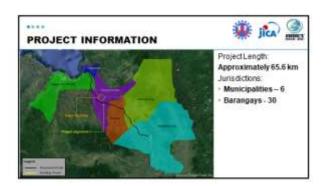


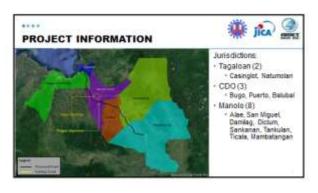
CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

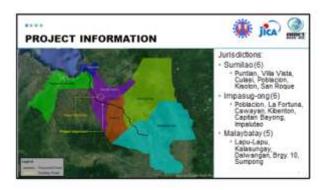
Attachment 4. IEC presentation material





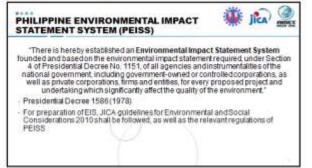








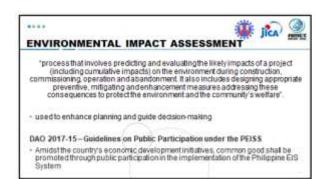


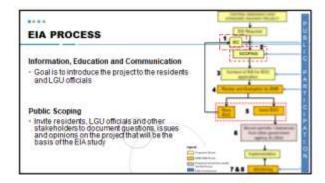


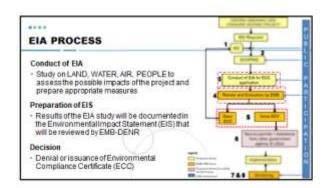


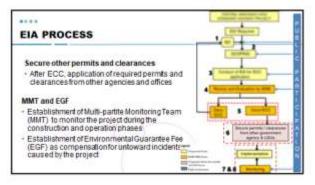


CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA















CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 5. IEC brochure distributed to the stakeholders

CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT



CAGAYAN DE ORO - MALAYBALAY SECTION INFORMATION, EDUCATION AND COMMUNICATION (IEC) March 2021



Proponent : Department of Public Works and Highways (Central Office)



With the assistance of: Japan International Cooperation Agency (JICA)

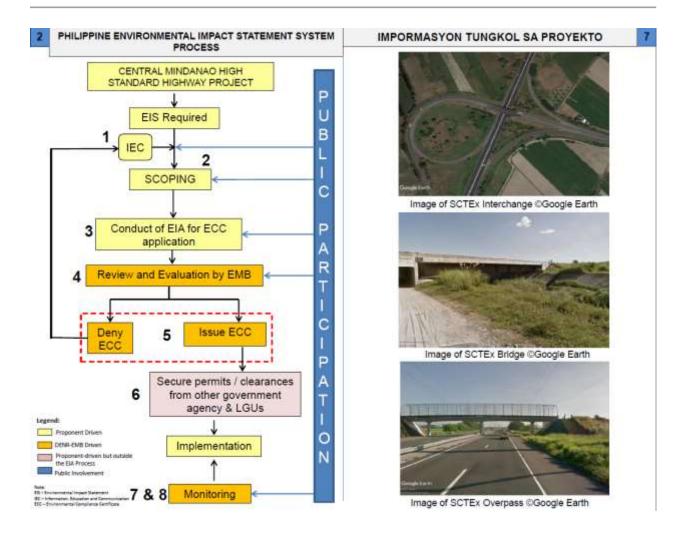


Environment Consultant: Amet-Asia Inc. #7 Pioneer St. Brgy Highway Hills, Mandaluyong City 02 254 0421/0906 012 6913





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

11111 011		JNGKOL SA PROYEKTO	ENVIRONMENTAL IMPACT ASSESSMENT PROCESS	
Jurisdictions	Tagaloan	Casinglot, Naturnolan		
(Municipalities, Cities, and Barangays)	CDO	Bugo, Puerto, Balubal	1. Ang Information, Education and Communication (IEC) ay ang	
	Manolo	Alae, San Miguel, Damilag, Diclum, Sankanan, Tankulan, Ticala, Mambatangan	unang hakbang ng Department of Public Works and Highways (DPWH) upang maipaalam ang proyekto sa mga residente at opisyal ng bayan at barangay.	
	Sumilao	Puntian, Villa Vista, Culasi, Poblacion, Kisolon, San Roque	Magtatakda ng isang Public Scoping na iimbitahan ang mga residente, mga opisyal ng munisipyo, at iba pang stakeholders, ito ay	
	Impasug-ong	Poblacion, La Fortuna, Cawayan, Kibenton, Capitan Bayong, Impalutao	upang matukoy ang mga katanungan, isyu, opinyon, at saloobin ukol sa proyekto na siyang isa sa magiging basehan ng pag-aaral.	
	Malaybalay	Lapu-Lapu, Kalasungay, Dalwangan, Brgy. 10, Sumpong	Ang Amet-Asia Inc. ay ikinomisyon ng DPWH upang magsagawa ng Environmental Impact Assessment (EIA). Ang EIA ay isang pagaaral sa kasalukuyang kondisyong ng kapaligiran (lupa, hangin, tubig.	
Project type	Road Proje	ct	halaman, hayop at mga tao) upang matukoy ang posibleng magir epekto ng proyekto at makapag-handa ng kaukulang solusyon.	
Initial specifications	Length = Approximately 65.6 km # of lanes = 2 or 4 Typical Road Right of Way = 60 m (minimum)		Ang resulta ng EIA ay idodokumento sa Environmental Impac Statement (EIS), ito ay susuriin ng mga eksperto ng EMB-DENR. Base sa pagsusuri a naisagawa, ang EMB-DENR ay magdedesisyo kung ang proyekto ay bibigyan ng Environmental Compliano Certificate (ECC).	
Project components	Interchanges Bridges Overpass Underpass		 Kapag ang proyekto ay nabigyan ng ECC, ang DPWH ay magpapatuloy ng pag-apply ng iba pang permit at lisensiya mula sa ibang kawani at opisina ng DENR, ahensiya ng gobyerno, at lokal na pamahalaan. 	
			 Magbubuo ng Multi-partite Monitoring Team (MMT) upang mabantayan ang konstruksyun at operasyon ng proyekto at masigurado ang kaligtasan sa kapaligiran at sa pamayanan. Ang MMT ay bubuuin ng mga representante mula sa kumpanya, LGU, NGO, PO at EMB- DENR. 	
Indicative draft	Feasibility Stu	dy 2021	GAN 38 1-2-17-07-1 0 0000 78 PG 381 MG 86 HG	
project timeline	Detailed Design	2022	8. Ang DPWH ay magdedeposito sa bangko ng Environmental	
	ROW Acquisition	on 2023 H1	Guarantee Fund (EGF) para sumagot sa anumang aksidente o	
	Construction P	eriod 2023 H2 to 2025	perwisyo sa pag-aari na direktang maidudulot ng Proyekto.	
1	Operation	2026	1	





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Proposed Project Alignment "Iminumungkahing Alignment ng Proyekto" Caryyan de Cro Ctr Manolo Fortich Sayre Highway Project alignment Proposed Road Existing Road





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Attachment 6. Summaries of the IEC proceedings

Municipality of Tagoloan

The Project brochures were given to the participants during registration. The program started at 2:00 PM and ended at 3:30 PM. The opening prayer given by Mr. Benecio Naduma, Purok Leader of Baluarte followed by the singing of the National Anthem led by Ms. Lucila Sabio, Office for the Senior Citizen's Affairs President. The opening remarks was given by Sharon Sabio, Chief Executive Officer of the Mayor. This was followed by the presentation of the participants and the Research Team along with two representatives (Ms. Jeannie Marban and Ms. Catherine Salingay) from the Planning Office of DPWH Region 10 office.

The presentation of the important features of the project was given by Dr. Nimfa L. Bracamonte and then the open forum followed. After the open forum that was facilitated by Dr. Bracamonte with the assistance of Dr. Maranda. The closing remarks given by Eng. Gene Baculpo from Municipal Planning and Development Office.

Cagayan de Oro City

The brochures were given to each of the participants during registration. The program started at 10:00 AM and ended at 11:40 AM. The opening prayer was given by Julie Pearl Curilan, a City Local Environment and Natural Resources Office (CLENRO) staff. This was followed by the singing of the National Anthem led by Ms. Shara Angelie (CLENRO staff). The opening remarks was given by Engr. Armen A. Cuenca (CLENRO, Head).

The presentation of the participants and the Research Team along with two representatives (Ms. Jeannie Marban and Ms. Catherine Salingay) from the Planning Office of DPWH Regional office followed. The presentation of the important features of the Project was given by Dr. Nimfa L. Bracamonte followed by open forum that was facilitated by Dr. Bracamonte with the assistance of Dr. Alma Maranda. Closing remarks was given by Mr. Ramir M. Balqwin from City Planning and Development Office.

Municipality of Manolo Fortich

The fliers were given to the participants during registration. The program started at 2: 00 PM and ended at 4:30 PM. The opening prayer was given by Datu Macabulig followed by the singing of the national anthem led by Ms. Jessica Anlagan. The opening remarks was given by Brgy. Councilor Warleo A. Goayon. The presentation of the participants and the Research Team along with two representatives (Ms. Jeannie Marban and Ms. Catherine Salingay) from the Planning Office of DPWH Regional office followed. The presentation of the important features of the Project by Dr. Nimfa L. Bracamonte ensued. Manolo Fortich Mayor Hon. Clive D. Quino accompanied by the Municipal Planning gave a brief message and appreciated the project as this will help ease the movement of people and goods. After the open forum that was facilitated by Dr. Bracamonte with the assistance of Dr. Maranda, the closing remarks was given by Municipal Environment and Natural Resources (MENRO) head, Ms. Sharon Tacbobo.

Municipality of Sumilao

The program started with registration and distribution of Project brochure. The program started at 10:00 AM with a prayer from Ms. Bae Ruti Toreno and the national anthem by Ms. Marife Modrangko. This was followed by the opening remarks by Barangay Captain of Poblacion Mr. Julius Cesar Tan. Prof. Embornas presented the Project information and then followed by the open forum where participants asked questions and provided suggestions for the Project. The closing remarks was given by the Barangay Captain Jose T. Curay from Barangay San Roque.



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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Municipality of Impasug-ong

Fliers were distributed to each of the participants during registration. The program started at 2:30 PM with the prayer led by Brgy. Councilor Abner Garcia from Brgy. Poblacion and national anthem conducted by Brgy. Councilor Ikee Quines. The opening remarks was given by Municipal Administrator, Mr. Ben Gabriel Uy. The project presentation was given by Prof. Embornas and the open forum followed with some questions and suggestions from the participants. The closing remarks was given by Barangay Captain Josefino Manalo of Brgy. Cawayan. The program ended at 4:00 PM.

Malaybalay City

The fliers were distributed to each of the participants during registration. The program started at 10:15 AM with the invocation led by Brgy. Councilor Francis Eddie Dagang from Brgy. 10 (Poblacion) followed by the national anthem led by Ms. Rita Gumita. The opening remarks was given by the Barangay Captain of Casisang Capt. Bonifacio Valiente who was positive about the project. Afterwards Prof. Embornas presented the project and the flow of the EIA. The open forum followed and then the closing remarks by the CENRO Valencia Representative Mr. Ferdie Sususco.





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Attachment 7. Summary of issues and responses during the IEC

Municipality of Tagoloan

LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
Municipality of Tagoloan Barangay - Casinglot - Natumolan	Project Design - Is this Project an elevated road? - There might be informal settlers who will inhabit the area down.	Engr. Gene Baculpo – Municipal Planning and Development Office	Dr. Nimfa Bracamonte (Amet-Asia) The Project is still in the feasibility stage and at this time.
	Necessity of the Project - Is it necessary to build another road and not contrary to other roads that are already congested? - Would it be recommendable that this be continuous to the existing road since once constructed there will be those who will be affected?	Mr. Rogelio – Casinglot Brgy. Councilor	 Ms. Catherine Salingay (DPWH R10) CMH is a high standard highway. There is a high-speed movement of vehicles with speed reaching 200 kph. This will be useful as the existing road is not good for fast moving vehicles and there will be interchanges and connection of the roads.
	Project Timeline and Relocation - Where does the Project start? - If our house will be affected and we are not prepared, where should we go?	Mr. Nestor Baltazar - President of KASINLOP)	 Ms. Catherine Salingay (DPWH R10) There is no final engineering design yet. There will be another team that will go and explain regarding the relocation.
	Presence of IP sacred places - Will there be royal grounds and sacred places that will be affected? - If yes, how can you prevent the impacts and what will be the last option?	Mr. Wendell - IP secretary	 Dr. Nimfa Bracamonte (Amet-Asia) The Project is still in the feasibility stage and at this time. The issues and concerns will be addressed in the public scoping The proponent is aware of the IPRA Law, RA 7381 and FPIC. In case that there will be affected IPs, the proponent will apply for FPIC. This project is not only culture- sensitive but also gender- sensitive.
	 Compensation to the affected properties What are the benefits that will be provided to those who are affected by loss of houses and lands? Will you provide a relocation area? 	OSCA Senior Citizen	Dr. Nimfa Bracamonte (Amet-Asia) - Any properties that will be affected by a development Project, they should be duly compensated based on current fair market value as embodied in the Philippine Constitution Article III, Section 9





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LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
			 Another team will be sent to the barangay and will determine the affected properties.
	Untitled Lands Compensation Most of those from the area does not possess a title to their respective properties.	Mr. Rogelio – Casinglot Brgy. Councilor	 Prof. Amabelle Embornas (Amet-Asia) There will be a team that will be sent to the area and negotiate regarding affected properties. There is a memorandum order that even those without titles to their properties will still be compensated. The proponent will assure you that they will follow the right process.
	Safety Most of us reside near traffic lights which is accident prone area. We have problems with precautions, it would be a prominent zone.	Mr. Rogelio – Casinglot Brgy. Councilor	 Engr. Angelita Balid (JICA Study Team) The proponent is proposing CMH because Sayre is an accident-prone highway with steep slopes CMH will be designed with a gradient of 4-5% compared to Sayre with about 15% gradient which is more dangerous
	MMT and EGFIs MMT part of the EIA? We are looking forward for the monitoring and evaluation.The EGF will be coming from the DPWH?	Mr. Jeffrey – Sanguniang Kabataan Member	 Dr. Nimfa Bracamonte (Amet-Asia) MMT is part of the process. There is MMT not only from the public officials/ LGUs, but also with the stakeholders' participation. DPWH will also be part of the monitoring team The proponent of the project is the DPWH in assistance with JICA.
	 Comment We are thankful with this project as this will have a big impact to Barangay Casinglot. We have a plan identifying this as a growth area in the upper part. This road will have big impact as this invites the investors 	Engr. Gene Baculpo – Municipal Planning and Development Office	
	Others There is the road Malaiba, is it not part of DPWH?	Mr. Rogelio – Casinglot Brgy. Councilor	Dr. Nimfa Bracamonte (Amet-Asia) CMH is another highway, parallel to Sayre





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Cagayan de Oro City

LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
Cagayan de Oro City Barangay - Bugo - Puerto - Balubal	Compensation of Affected Properties Is there a payment for the land, house and trees that will be affected by the Project?	Mr. Presley C. Emano – Brgy. Councilor, Bugo	Dr. Nimfa Bracamonte (Amet-Asia) Private properties that will be taken for public use should be done upon payment of just compensation (power of eminent domain) Engr. Armen Cuenca (CLENRO) There are 3 modes: through donation, negotiation or expropriation.
	Payment for Compensation of Properties Can compensation payment be done before the start of the Project?	Mr. Renante Rosalo – Brgy. Balubal Resident	 Mr. Armen Cuenca (CLENRO) Before the project implementation, the owner of the affected properties should already demand for payment. The DPWH Contractors would not start the project unless there is consent from the owner of the properties Based on experience, 50% would be paid in advance, and the remaining 50% would be paid after the property would be demolished. For the plants /trees affected, 30% would be paid in advance and the remaining 70% would be paid after the plants/trees will be cut.
	Duration of Payment for Compensation If ever the owner of the land/house/plants /trees will not be paid before the project will be implemented, how long will they be paid?	Mr. Renante Rosalo – Brgy. Balubal Resident	Ms. Catherine Salingay (DPWH R10) We are not really sure as to how long will the owner of the land/house/plants will be paid, but in our experience, I think it would be 5 years
	Benefits from the affected properties If ever even after the implementation of this project, the owner of the land/house/plants/ trees will suffer from flood, mud or water-soaked soil due to Project, what benefits would they receive?	Mr. Venido Payana- Barangay Puerto Staff	Ms. Jan Bautista (Amet-Asia) The ROW Team will make a report and based from their report will know the number of affected persons and how much will be paid for the damages incurred.





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LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
			Mr. Armen Cuenca (CLENRO)
			- EIA will include in the report the needed actions if ever
			the owner of the land will suffer from flood, mud or
			water-soaked soil after the project implementation
			- MMT will be responsible in monitoring the project
			implementation to avoid this occurrence to happen.
			- Even after due monitoring by the MMT, this still
			happens, Government Compensation Fund will be used
			to pay the affected owners.





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Municipality of Manolo Fortich

LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
Municipality of Manolo Fortich Barangays: - Alae - San Miguel, Damilag	Project Design Difference between the proposed highway and the 'Build, Build, Build' project of the government?	Mr. Warleo A. Goayon – Brgy. Councilor, Diclum	 Engr. Greg Dablo (DPWH R10) 'Build Build' is focused on construction of not just roads but also other buildings and more on civil works and structural. It is the same because it is an implementing government projects
- Diclum - Sankanan, Tankulan - Ticala, Mambatangan	Detailed Engineering Design Can we ask for specifics of the Project?	Mr. Chris Loren -Public Information Officer of Manolo Fortich	 Dr. Nimfa Bracamonte (Amet-Asia) There is still no detailed design. The Project is still in the feasibility study phase, and the impact will be learned once the EIA is conducted.
	Ground Work/Soil Testing Why is soil testing commencing without properly informing the lot owners?	Mr. Joaquin L. Fudolin – Brgy. Councilor of San Miguel	 Mr. Paul Paraguya (EB Soil Testing Inc.) The soil testing group was granted permission by the father of the owner of the land. However, they are not aware that the land was already subdivided. The purpose of the group is to identify the coordination grid points for the design/plan. Mayor Quiňo and Brgy. Joaquin acknowledged the apology of Mr. Paraguya
	Oppositions of the Project What if there are oppositions in the specifics of the road like conflict in boundary and right of way?	Mr. Chris Loren -Public Information Officer of Manolo Fortich	 Dr. Nimfa Bracamonte (Amet-Asia) The proponent will look at your issues and suggestions. If there are issues that remain unresolved, there will be a public hearing which is a part of the whole process
	 Presence of conflict/opposition Will this project still be implemented if there are oppositions from the unconcerned people? Will the issues/concerns of the affected people be considered? 	Mr. Chris Loren -Public Information Officer of Manolo Fortich	 Dr. Nimfa Bracamonte (Amet-Asia) This project will follow the guidelines set by DAO 2017-15 and the PEISS. If there are oppositions raised by concerned people, a public hearing will be conducted in the presence of appropriate government agencies.





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LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
	Compensation of Properties to be affected What will be done to the affected houses and trees?	Datu of Sankanan	 Dr. Nimfa Bracamonte (Amet-Asia) According to 1987 Philippine Constitution, particularly in Section 7 of Article III, private properties that will be taken for public use should be done only upon payment of just compensation (power of eminent domain)
	FPIC Application Will this project procure the needed FPIC?	Mr. Datu Macabulig	 Dr. Nimfa Bracamonte (Amet-Asia) If the detailed design will affect the CADT/CADC of the cultural communities, definitely yes. This is still the initial phase of the feasibility study
	Political change of administration There should be proper communication channel during transition if case there is a political change of admin for the proper project implementation.	Damulag Public Information Officer	Dr. Nimfa Bracamonte (Amet-Asia) The Project will go through proper procedures where transparency and due courtesy will be conducted in coordination with the LGU concerned during project implementation.
	Existing government projects that might be affected If the irrigation project will be affected, what should be done?	Ms. Elyiza Orap, SEA Irrigators	Dr. Nimfa Bracamonte (Amet-Asia) There should be due courtesy with DPWH to the municipality regarding the plans of the project.
	Construction waste - Problem with hired contractors whose diggings and excavations of soil are carelessly thrown elsewhere. - Arbitrarily throwing of cut/fallen trees - a behavior problem	Ms. Sharon Tacbol, MENRO Staff	Dr. Nimfa Bracamonte (Amet-Asia) Hired contractors will coordinate with LGU in terms of proper waste disposal, spoil area, and taking care of environment.
	 Suggestion The project is good and we need to go through the process. If the project is good, we support it. If there are areas which will be affected with CADT or CADC we should respect them. The public should be made to understand about the processes involved in this project 	Hon. Mayo Clive Quiňo – Manolo Fortich Mayor	 Dr. Nimfa Bracamonte (Amet-Asia) If the cultural communities will be affected the FPIC will be undertaken. There will be a public scoping which will present the EIA process in detail and the impacts of the Project. The IEC is to inform the public about the plan of the Central Mindanao High Standard Highway project and gather various issues/concerns.





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Municipality of Sumilao

LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
Municipality of Sumilao Barangays: - Culasi	Project purpose What is the main objective of this project since there is already an existing road from Cagayan de Oro to Malaybalay?	Mr. Gemmo Olana – Brgy. Councilor, Kisolon	Prof. Amabelle Embornas (Amet-Asia, Inc.) The Project aims to increase the speed of travel from Cagayan de Oro to Malaybalay.
Kisolon PoblacionPuntianSan Roque	Issuance of toll fee Will there be a toll fee for this road?	Mr. Daloais Silvestre – Brgy. Captain, Kulasi	Prof. Amabelle Embornas (Amet-Asia, Inc.) - The project is still in the feasibility stage. - The establishment of toll fee will still be studied.
	 Suggestion There is a circumferential road to Dahilayan, why not connect these roads? So the roads are connected and it will not be cut since some barangays are not included in the project. Why not connect the road from Mutia to Likuan? 	Mr. Gemmo Olana – Brgy. Councilor, Kisolon	Engr. Greg Dablo (DPWH R10) Based on the alignment, the Sayre Highway Parallel Road 1 will be the one connected to Dahilayan.
	 Environmental considerations Can the project consider the landslide prone areas such as in San Vicente in Maluko? They built a road but there is always landslide. Why don't they build a tunnel under the mountains to make the road straight instead of curved? 	Mr. Jerome Cagawas – Brgy. Councilor, Poblacion	Prof. Amabelle Embornas (Amet-Asia, Inc.) - The project is still in the feasibility stage. - The suggestion is duly noted.
	 Consent to the IPs Before anyone from the Proponent will go to the area, they should contact the IPs and seek consent to enter the area especially the Chieftain and Municipal IPMR. The proponent should also ask for local IP guides in the area so to avoid the sacred places and other dangerous areas 	Mr. Anliston Rosaliad – Tribal Secretary, Cultural Sector	 Engr. Greg Dablo (DPWH R10) The team will follow the protocol in informing the LGU and Barangay Captains before entering the area. Prof. Amabelle Embornas (Amet-Asia, Inc.) The team will also seek the consent of the IPs/ tribal sector before entering the area.





LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
	Participation in the project We are in San Vicente and far from the project. What is our participation in this project?	Paterno Tuminlag – Brgy. Captain, San Vicente	Prof. Amabelle Embornas (Amet-Asia, Inc.) - We are informing the public about the new project. - We are making the IPs and everyone aware of this project in Sumilao.
	Informing affected landowners and compensationHow will you inform the affected landowners/ people?Will they be receiving compensation?	Nolandf Caramonte, Brgy. Councilor, San Roque	Prof. Amabelle Embornas (Amet-Asia, Inc.) - The scheme about the land affected will be attended by another team the Right-of-Way Action Plan team. - There will be another consultation/ negotiation about this.





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Municipality of Impasug-ong

LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
Municipality of Impasug- ong	Rationale of the Project - Why is the project established in Bukidnon? What are the reasons?	Mr. Romeo Abunda Sr Brgy. Councilor, Impalutao	Engr. Greg Dablo (DPWH R10)There are existing roads in Bukidnon but they are not high standard highways.
Barangays: Capitan Bayong Cawayan Impalutao La Fortuna Poblacion	- There many roads established here		 A high standard highway can make travelling faster since the roads allow for faster movement of vehicles. Bukidnon is seen as an area for economic growth and there is a need to improve the connectivity of Bukidnon and Cagayan de Oro.
Toblacion			Ms. Jan Bautista (Amet-Asia)
			There is an existing road (Sayre) but not a high standard highway
			Engr. Angelita Balid (JICA Study Team)
			- Malaybalay has a high potential of attracting traffic
			- The existing roads are designed with slow mobility
	 Inclusion of hinterlands in road alignment Can other barangays be included in the highway project. The proposed Project is near the national highway but those in the hinterland do not have roads? 	Mr. Nicasio Llamoso – Brgy. Councilor, Impalutao	 Engr. Maria Victoria Lofamia (DPWH ESSD) There were several considerations – social, environmental, and economic. The project will still undergo further study for the final alignment.
	Road alignment	Mr. Emmanuel Lumayod –	Engr. Greg Dablo (DPWH R10)
	- Will this road connect to other existing roads or is this different?	MENRO Staff	 This Project is different. There will be interchanges in the project which will allow connection of the different roads.
	Changes of Alignment	Mr. Nicasio Llamoso – Brgy.	Prof. Amabelle Embornas (Amet-Asia, Inc.)
	- There were projects in the past which the	Councilor, Impalutao	- This is still the FS stage and finalization of the detailed
	alignment presented is different to the one		design will still undergo more studies and discussion.
	that is implemented and we are not informed		- If there will be changes in the alignment it will not be
	in the re-alignment.		very far from what is presented here.
	- We want a clear alignment so people will know		- Right of Way Action Plan team will present the scheme
	who will be affected.		for land acquisition compensation.





LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
	LGU Resolutions for the request of re-alignment - The municipality have a resolution (Resolution No. 2121-381 (A) and Municipal Development Council Resolution No. 005 S. 2021) for the road to traverse other barangays and include other barangays in the topographic survey (Attachment 9. Impasugong Resolution No. 2121-381 (A) and Municipal Development Council Resolution No. 005 S. 2021 - The is requested for the need of roads and also for the peace and order situation in the area.	Municipal LGUs	Prof. Amabelle Embornas (Amet-Asia, Inc.) This is duly noted and will inform the proponent about this.
	Toll fee Issuance Will this project also require the users to pay toll fee?	Mr. Arnel Garcia – Brgy. Councilor Poblacion	 Engr. Angelita Balid (JICA Study Team) This is still the Feasibility Study stage. Toll or Non-toll will still be studied during the detailed design stage
	Measurement of highway What is the measurement of the highway, so the people will know especially those who will be affected?	Mr. Diomedes Tunasan – Brgy/ Kagawad Poblacion	 Engr. Maria Victoria Lofamia (DPWH ESSD) The road alignment is still in FS stage There will be a detailed design in which analytical study has been conducted for the finality of the road alignment. Engr. Greg Dablo (DPWH R10) The road will be 65.6 km and 60 meters wide including
			the canal and shoulder.The details are not yet final and would still undergo further studies.
	Presence of sacred lands There might be sacred land affected by the project.	Mr. Arnel Garcia – Brgy. Councilor Poblacion	 Prof. Amabelle Embornas (Amet-Asia, Inc.) The Project is still in the feasibility stage In case that there will be CADT/CADC affected, FPIC process will be undertaken. This is a separate process.





LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
	Compensation for affected properties - If the house or lot is affected by the Project, will there be payment? - What is the process of just compensation to those affected?	Mr. Nicasio Llamoso – Brgy. Councilor, Impalutao	 Engr. Greg Dablo (DPWH R10) and Prof. Amabelle Embornas (Amet-Asia, Inc.) RAP team will assess the affected property and there will be a consultation/ negotiation about this. RAP is a separate process and another team will come for this activity. There will be just compensation to those properties that will be affected This is the next process if the alignment is finalized during the detailed engineering design.
	 Compensation to untitled lands Impasug-ong is 82% timberland and people do not have land titles or there is no proof of ownership. What will happen to them? What will happen to those who have planted trees and have made improvements? 	Mr. Arnel Garcia – Brgy. Councilor, Poblacion	Engr. Greg Dablo (DPWH R10) - There will be a RAP team that will coordinate to the affected owners - There will be negotiation on just compensation for the affected areas.





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Malaybalay City

Issues/Suggestions raised by stakeholder	Sector or Representative	Response
Project Fund What is this project, grant or loan from JICA? Issue of Eminent Domain - What is the process of just compensation? - We experienced before where the owners were not paid. They had to file a case or file a legal action before they were paid.	Mr. Rodrigo O. Niere, Brgy. Captain, Kalasungay Mr. Nilo Salga, Brgy. Captain, Patpat	 Engr. Angelita Balid (JICA Study Team) This is an assistance from JICA in the FS part. But the project construction will be discussed further whether it will be a grant or a loan. Detailed design and Feasibility study would depend on the study result if it is going to be a loan project Ms. Michiko Quiachon (DPWH-ESSD) There will be a report called Right of Way Action Plan which will cover the affected persons, what properties will be affected and the payment scheme for their compensation. The RAP team is currently coordinating with the LGUs and the Mayors and explain about these things. There will be a survey to know about the details of the properties which will be affected. This is the next process if the alignment is finalized during the detailed engineering design. There is discussion/ consultation between the landowners and the proponent before the project starts. We will comply with the provisions of RA 10752 Engr. Angelita Balid (JICA Study Team) There is a separate group for RAP
		Engr. Maria Victoria Lofamia (DPWH ESSD) The Project is still in the feasibility stage.
 Will DPWH help to demolish the people's houses as these are mostly poor people who cannot afford to do so? The affected people should be relocated or paid first before the demolition. 	Patpat	 Engr. Greg Dablo (DPWH R10) The suggested guidelines for the contractor include coordinating with the affected house owners in the demolition. This can also be discussed in the Right of Way Action Plan between the landowners/house owners and the proponent. Engr. Greg Dablo (DPWH R10)
	Project Fund What is this project, grant or loan from JICA? Issue of Eminent Domain - What is the process of just compensation? - We experienced before where the owners were not paid. They had to file a case or file a legal action before they were paid. Property demolition and payment - Will DPWH help to demolish the people's houses as these are mostly poor people who cannot afford to do so? - The affected people should be relocated	Project Fund What is this project, grant or loan from JICA? Issue of Eminent Domain - What is the process of just compensation? - We experienced before where the owners were not paid. They had to file a case or file a legal action before they were paid. Property demolition and payment - Will DPWH help to demolish the people's houses as these are mostly poor people who cannot afford to do so? - The affected people should be relocated or paid first before the demolition. Mr. Nilo Salga, Brgy. Captain, Patpat Mr. Nilo Salga, Brgy. Captain, Patpat





LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
	 You should inform affected land owners, especially those with conflict regarding ownership. During this stage, the property owners should already know. 	Captain, Kalasungay	The project is still in the feasibility stage there is a possibility of the change of alignment Prof. Amabelle Embornas (Amet-Asia, Inc.) - A separate team will come in. They will be the one who will inform the affected lands and houses - There should be just compensation based on RA 10752
	FPIC Issue The FPIC should be followed for those with CADT or CADC areas.	Mr. Rodrigo O. Niere, Brgy. Captain, Kalasungay	Prof. Amabelle Embornas (Amet-Asia, Inc.) - Those with CADT and CADC lands that will be affected will be consulted and this process will also be followed by DPWH and JICA. - This is a separate study from the EIS
	Coordination between Regional and District DPWH There should be coordination of the regional and district DPWH about the projects they are implementing.	Mr. Adiran Gamboa - City Planning and Development Coordinator	Engr. Greg Dablo (DPWH R10) This is noted and will be reported to DPWH.
	 Coordination with LGU Local planning councils should be informed before the project begins We are updating our CLUP and we want to know about the projects so we can incorporate this. 	Mr. Adiran Gamboa - City Planning and Development Coordinator	Prof. Amabelle Embornas (Amet-Asia, Inc.) - We will take note of all the suggestions and recommendations from the LGU and submit a report to the proponent
	Affected Trees - To consider the areas where the protected trees can be avoided - Previous projects have disregarded and did not consider first with the local government. There is no coordination between the agencies. - Request for inventory before the project - There is also a need to clarify the cut and field. DENR clearance before the start of	Mr. Ferdie Sususco – DENR PENRO	Prof. Amabelle Embornas (Amet-Asia, Inc.) We will take note of the concerns and make a report to the proponent





LGU covered	Issues/Suggestions raised by stakeholder	Sector or Representative	Response
	the project.		
	LGU Endorsement	Mr. Nilo Salga - Brgy. Captain,	Prof. Amabelle Embornas (Amet-Asia, Inc.)
	Endorsement by the concerned barangays	Patpat	- This is noted as part of the process.
	and LGU needs to be acquired.		
	Change of the name of Barangay Lapu-	Mr. Nilo Salga - Brgy. Captain,	Prof. Amabelle Embornas (Amet-Asia, Inc.)
	lapu to Patpat	Patpat	- We will edit the powerpoint presentation.
	- Please change the barangay name of		- The invitation letters were addressed to Brgy. Patpat
	Lapu-Lapu to Patpat		
	- Lapu-Lapu is not yet recognized as a		
	barangay		





Date and Time:

PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 8. Public scoping program

Tagoloan, Misamis Oriental

Project Title: Proposed Central Mindanao High Standard Highway

Project (Cagayan de Oro-Malaybalay Section)

Project Location: Provinces of Misamis Oriental & Bukidnon

Project Proponent: Department of Public Works and Highways (Central

Office) through the assistance of Japan International

Cooperation Agency (JICA) May 28, 2021, 10:00 AM

Casinglot Barangay Hall Multipurpose Hall and Natumolan Barangay

Venue/Address: Multipurpose Hall, Tagoloan, Misamis Oriental

Time	Program of Activities	Person Responsible
9:30 am-10:00 am	Regis	tration
		Brgy. Kag. Richard Pilin
	Invocation	Brgy. Casinglot
10:00 – 10:10 am	National Anthem	Video presentation
		Dr. Nimfa Bracamonte
10:10 – 10:15 am	Acknowledgement of Participants	Amet-Asia, Inc.
		Brgy. Capt. Marlo Bolanio
10:15 – 10:20 am	Welcome Remarks and Message	Brgy. Casinglot
	Overview of EIA and Scoping; Mechanics	Engr. Nonette Atasan
10:20 – 10:30 am	of Scoping for the Project	EMB Region 10
		Engr. Angelita Balid
10:30 – 10:40 am	Brief Presentation of the Proposed Project	JICA Study Team
	Presentation of Potential Impacts and	Ms. Patricia Erika Marie Lim, En.P
10:40 – 10:50 am	Measures	Amet-Asia, Inc.
		Engr. Rowena Dorato
10:50 – 11:50 am	Open Forum	EMB Region 10
		Brgy. Kag. Marivic Ajon
11:50 am - 12:00 pm	Closing Remarks	Brgy. Casinglot

Cagayan de Oro City, Misamis Oriental

Project Title:		Proposed Central Mindanao High Standard Highway	
	Project (Cagayan de Oro-Mal		aybalay Section)
Project Location:		Provinces of Misamis Orienta	al & Bukidnon
Project Proponent:		Department of Public Works	and Highways (Central
		Office) through the assistance	e of Japan International
		Cooperation Agency (JICA)	
Date and Time:		May 31, 2021, 10:00 AM	
Venue/Address:		Bugo Covered Court, Bugo, Cagayan de Oro, Misamis Oriental	
Time	Program of Activities		Person Responsible
9:30 am-10:00 am		Regis	stration
			Mr. Charlo Badal
	Invocation		Brgy. Bugo
10:00 - 10:10 am	National Ant	hem	Video presentation
			Dr. Nimfa Bracamonte
10:10 – 10:15 am	Acknowledgement of Participants		Amet-Asia, Inc.
		·	Brgy. Kag. Presly Emano
10:15 – 10:20 am	Welcome Remarks and Message		Brgy. Bugo





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

	Overview of EIA and Scoping; Mechanics	Engr. Nonette Atasan
10:20 – 10:30 am	of Scoping for the Project	EMB Region 10
		Engr. Angelita Balid
10:30 – 10:40 am	Brief Presentation of the Proposed Project	JICA Study Team
	Presentation of Potential Impacts and	Ms. Patricia Erika Marie Lim, En.P
10:40 – 10:50 am	Measures	Amet-Asia, Inc.
		Atty. Abbas I. Lao
10:50 – 11:50 am	Open Forum	EMB Region 10
		Brgy. Kag. Ariel Igot
11:50 am - 12:00 pm	Closing Remarks	Brgy. Bugo

Manolo Fortich, Bukidnon

Project Title: Proposed Central Mindanao High Standard Highway

Project (Cagayan de Oro-Malaybalay Section)

Project Location: Provinces of Misamis Oriental & Bukidnon

Project Proponent: Department of Public Works and Highways (Central

Office) through the assistance of Japan International

Cooperation Agency (JICA)

Date and Time: June 1, 2021, 10:00 AM

Venue/Address: BRFI Dicklum, Manolo Fortich, Bukidnon

Time	Program of Activities	Person Responsible
9:30 am-10:00 am	Registration	
		Datu Cresinod Guhaynon
	Invocation	Brgy. Tankulan, IPMR
10:00 – 10:10 am	National Anthem	Video presentation
		Dr. Nimfa Bracamonte
10:10 – 10:15 am	Acknowledgement of Participants	Amet-Asia, Inc.
		Mr. Danny Salvador
10:15 – 10:20 am	Welcome Remarks and Message	Head, Municipal Assessor Office
	Overview of EIA and Scoping; Mechanics	Engr. Nonette Atasan
10:20 – 10:30 am	of Scoping for the Project	EMB Region 10
		Engr. Angelita Balid
10:30 – 10:40 am	Brief Presentation of the Proposed Project	JICA Study Team
	Presentation of Potential Impacts and	Ms. Patricia Erika Marie Lim, En.P
10:40 – 10:50 am	Measures	Amet-Asia, Inc.
		Atty. Abbas I. Lao
10:50 – 11:50 am	Open Forum	EMB Region 10
		Mr. Danny Salvador
11:50 am - 12:00 pm	Closing Remarks	Head, Municipal Assessor Office

Sumilao, Bukidnon

Project Title: Proposed Central Mindanao High Standard Highway

Project (Cagayan de Oro-Malaybalay Section)

Project Location: Provinces of Misamis Oriental & Bukidnon

Project Proponent: Department of Public Works and Highways (Central

Office) through the assistance of Japan International

Cooperation Agency (JICA)

Date and Time: June 2, 2021, 10:00 AM

Venue/Address: 2nd Fl., New Bldg., Sumilao Municipal Hall, Bukidnon





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Time	Program of Activities	Person Responsible
9:30 am-10:00 am	Registration	
		Brgy. Capt. Roanld Caramonte
	Invocation	Brgy. Vista Villa
10:00 – 10:10 am	National Anthem	Video presentation
		Dr. Nimfa Bracamonte
10:10 – 10:15 am	Acknowledgement of Participants	Amet-Asia, Inc.
		Brgy. Kag. Dominador Del Rosario
10:15 – 10:20 am	Welcome Remarks and Message	Brgy. Kisolon
	Overview of EIA and Scoping; Mechanics	Engr. Nonette Atasan
10:20 – 10:30 am	of Scoping for the Project	EMB Region 10
		Engr. Angelita Balid
10:30 – 10:40 am	Brief Presentation of the Proposed Project	JICA Study Team
	Presentation of Potential Impacts and	Ms. Patricia Erika Marie Lim, En.P
10:40 – 10:50 am	Measures	Amet-Asia, Inc.
		Atty. Abbas I. Lao
10:50 – 11:50 am	Open Forum	EMB Region 10
		Brgy. Capt. Gilbert Mamatan
11:50 am - 12:00 pm	Closing Remarks	Brgy. Culasi

Malaybalay, Bukidnon

Project Title: Proposed Central Mindanao High Standard Highway

Project (Cagayan de Oro-Malaybalay Section)

Project Location: Provinces of Misamis Oriental & Bukidnon

Project Proponent: Department of Public Works and Highways (Central

Office) through the assistance of Japan International

Cooperation Agency (JICA)

Date and Time: June 3, 2021, 10:00 AM

Venue/Address: People's Hall, 2nd Floor, New City Hall, Malaybalay City, Bukidnon

Time	Program of Activities	Person Responsible
9:30 am-10:00 am	Regis	tration
	Invocation	Video Presentation
10:00 - 10:10 am	National Anthem	Video presentation
		Dr. Nimfa Bracamonte
10:10 - 10:15 am	Acknowledgement of Participants	Amet-Asia, Inc.
		Vice Mayor Atty. Warren Pabillaran
10:15 – 10:20 am	Welcome Remarks and Message	LGU Malaybalay
	Overview of EIA and Scoping; Mechanics	Engr. Nonette Atasan
10:20 – 10:30 am	of Scoping for the Project	EMB Region 10
		Engr. Angelita Balid
10:30 – 10:40 am	Brief Presentation of the Proposed Project	JICA Study Team
	Presentation of Potential Impacts and	Ms. Patricia Erika Marie Lim, En.P
10:40 – 10:50 am	Measures	Amet-Asia, Inc.
		Atty. Abbas I. Lao
10:50 - 11:50 am	Open Forum	EMB Region 10
		Ms. Arbel Sulinay
11:50 am - 12:00 pm	Closing Remarks	KADIMA Kalasungay





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Impasug-ong, Bukidnon

Project Title: Proposed Central Mindanao High Standard Highway

Project (Cagayan de Oro-Malaybalay Section)

Project Location: Provinces of Misamis Oriental & Bukidnon

Project Proponent: Department of Public Works and Highways (Central

Office) through the assistance of Japan International

Cooperation Agency (JICA)

Date and Time: June 1, 2021, 10:00 AM

Venue/Address: Function Hall, Capitan Bayong, Impasug-ong, Bukidnon

Time	Program of Activities	Person Responsible			
9:30 am-10:00 am	Regis	stration			
	Invocation	Video Presentation			
10:00 – 10:10 am	National Anthem	Video presentation			
		Dr. Nimfa Bracamonte			
10:10 – 10:15 am	Acknowledgement of Participants	Amet-Asia, Inc.			
		Brgy. Kap. Dawn Roque			
10:15 – 10:20 am	Welcome Remarks and Message	Brgy. Capitan Bayong			
	Overview of EIA and Scoping; Mechanics	Engr. Nonette Atasan			
10:20 – 10:30 am	of Scoping for the Project	EMB Region 10			
		Engr. Angelita Balid			
10:30 – 10:40 am	Brief Presentation of the Proposed Project	JICA Study Team			
	Presentation of Potential Impacts and	Ms. Patricia Erika Marie Lim, En.P			
10:40 – 10:50 am	Measures	Amet-Asia, Inc.			
		Atty. Abbas I. Lao			
10:50 – 11:50 am	Open Forum	EMB Region 10			
		Brgy. Capt. Generaldo Galambo			
11:50 am - 12:00 pm	Closing Remarks	Brgy. Capitan Bayong			





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 9. Public scoping presentation





















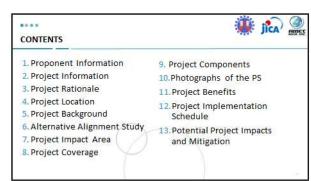
CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

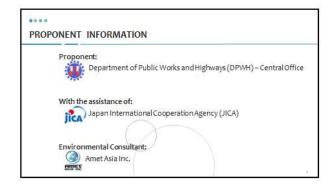
Overview of the Scoping Guidelines;
Mechanics of the Scoping for the project

EMB Region 10

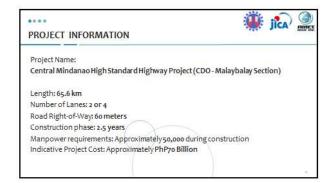


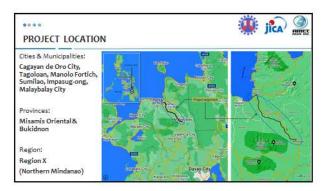






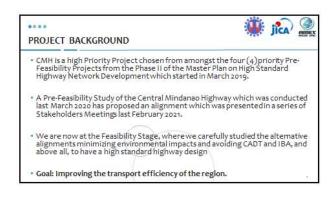


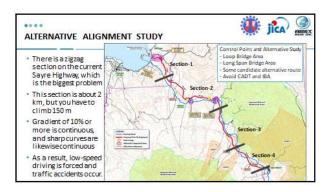


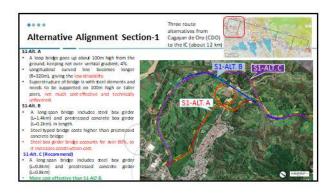


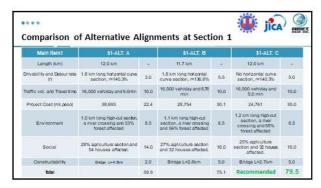


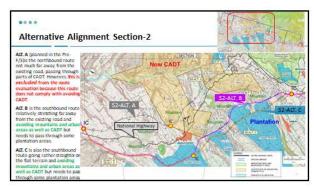




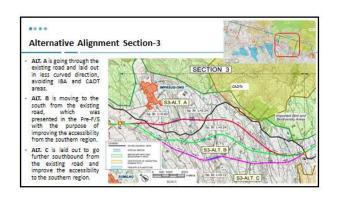


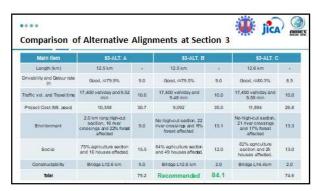






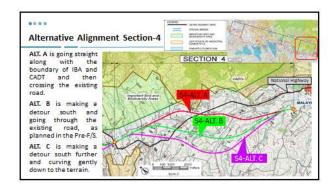
Comparison o	f Alternative	Alia	gnments at Sec	tion	jîca 2) (
Main Item	\$2-ALT: A		\$2-ALT. B		\$2-ALT. C	
Length (km)	31,3 km		30.7 km	187	29.8 km	1(6)
Orivability and Detour rate (r)	Less than 4% vert. gradient, =72.9%		Relatively flat (=71.4%)	8.0	Relatively flat (=69.4%	8.5
Traffic vol. and Travel time	17,700 veh/day and 23,81 min		18,000 veh/day and 23.35 min	9.8	18,500 veh/day and 22.72 m/n	10.0
Project Cost (mli peso)	22,559	16	25,514	30.9	25,515	30.9
Environment	No high cut section, 15 inver crosslings and 18% forest affected		2.2 km long high out section, 18 ther crossings and 23% forest affected	8.2	0.8 km long high cut section, 18 ilver crossings and 21% forest affected	10.2
Social	75% agriculture sector and 98 houses affected.	-2	72% agriculture section and 61 houses affected.	10.5	74% agriculture section and 72 houses affected.	9.5
Constructability	3 long-span bridges (> £=300m)		Bridge L=5.9 km	0.0	Bridge L=5.8 km	0.0
Total				67.4	Recommended	69.1







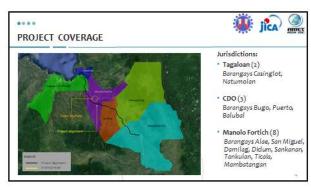


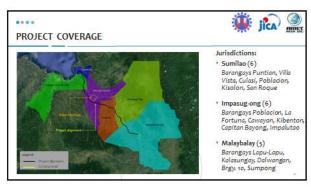










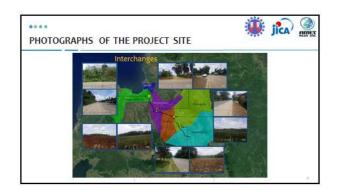




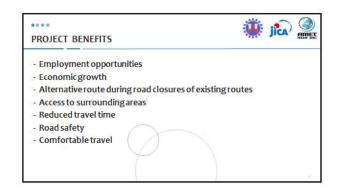


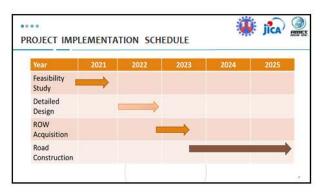




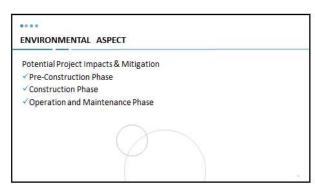


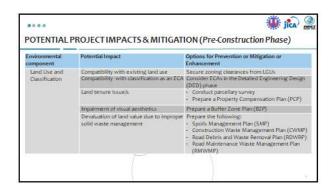












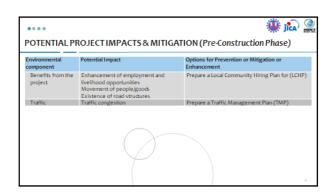


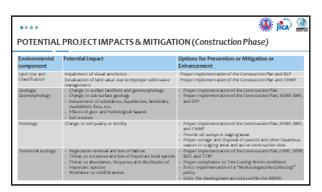


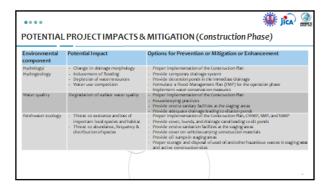


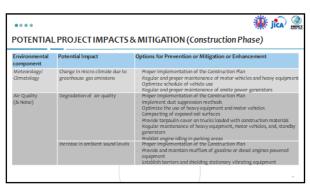


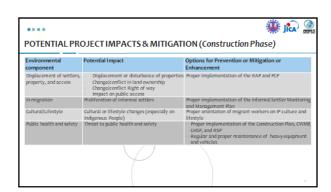


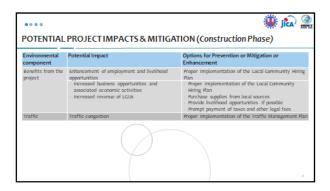






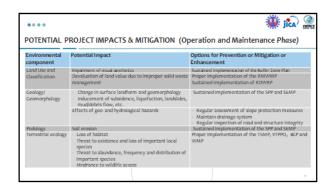


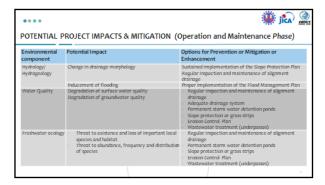




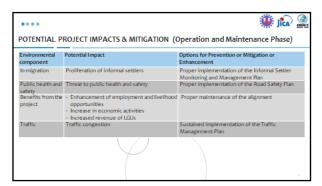
























CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 10. Sample public scoping invitation letters and notices

EMB Central Office notice to the general public



NOTICE OF PUBLIC SCOPING

The Department of Public Works and Highways proposed the a 65.6 kilometers Central Mindanao High Standard Highway Project (Cagayan de Oro-Malaybalay Section) traversing Cagayan de Oro City, Tagaloan, Province of Misamis Oriental and Manolo Fortich, Sumlao, Impasug-ong, Province of Bukidnon.

Notice is hereby given to interested and concerned parties who wish to participate in the Public

Scoping Activity that is scheduled on:

Date / Time	Participants	Venue
28 May 2021 (Friday) /10:00 AM (Registration starts at 9:30 AM)	Tagoloan	Tagoloan Dome, Tagoloan, Misamis Oriental
31 May 2021 (Monday) /10:00 AM (Registration starts at 9:30 AM)	Cagayan de Oro City	Puerto Gymnasium, Puerto, Cagayan de Oro City, Misamis Oriental
01 June 2021 (Tuesday) /10:00 AM (Registration starts at 9:30 AM)	Manolo Fortich	BRCI Dicklum, Dicklum, Manolo Fortich, Bukidnon
02 June 2021 (Tuesday) /10:00 AM (Registration starts at 9:30 AM)	Sumilao	2nd Fl., New Bulding, Sumilao, Municipal Hall
03 June 2021 (Tuesday) /10:00 AM (Registration starts at 9:30 AM)	Malaybalay City	People's Hall, 2nd Flr, Malaybalay City
04 June 2021 (Tuesday) /10:00 AM (Registration starts at 9:30 AM)	Impasug-ong	Impasug-ong Tree Park Function Hall, Impasug-ong, Bukidnon

The public scoping is an early stage in the Environmental Impact Assessment Process where the proponent aims to provide an overview of the proposed project, present proposed action, gather issues and concerns, and other relevant information to provide the scope of work and terms of reference for the preparation of Environmental Impact Statement.

All interested parties, organizations and agencies are encourage to provide inputs during the Public Scoping and public review periods and provide comments to admin@amet-asia.com copy furnished EMB Central Office through email at eia@emb.gov.ph.

A copy of the Project Description Report for Scoping is downloadable at our website: www.eia.emb.gov.ph (kindly access the Notice of Public Scoping link found at the lower right portion of our website).



ica

PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Tagoloan, Misamis Oriental



Department of Environment and Natural Resources
ENVIRONMENTAL MANAGEMENT BUREAU
DENR Compount Visus Avenue Differen Outron City 1115

DENR Compound, Visayas Avenue, Diliman, Quezon City 1116 Tel.Nos. (632)927-1517; 928-3725; Fax No.(632)920-2258 Website: www.emb.gov.ph Email: recordsco@emb.gov.ph



Management System 150 9901:2015 150 14001:2016



May 18, 2021

Hon.Gomer A Sabio
Municipal Mayor
Office of the Municipal Mayor
Claro M Recto Avenue, Poblacion, Tagoloan, Misamis Oriental

SUBJECT :

PUBLIC SCOPING FOR THE PROPOSED 65.6 KILOMETERS CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CAGAYAN DE ORO-MALAYBALAY SECTION)

Dear Hon. Sabio:

We are pleased to invite you or your representative to attend the Public Scoping for the Department of Public Works and Highways proposed 65.6 kilometers Central Mindanao High Standard Highway Project (Cagayan de Oro-Malaybalay Section) traversing Cagayan de Oro City, Tagaloan, Province of Misamis Oriental and Manolo Fortich, Sumlao, Impasug-ong, Province of Bukidnon. The said Scoping is scheduled on:

Date / Time	Participants		Venue	
28 May 2021 (Friday) /10:00 AM	Tagoloan	Tagoloan Misamis Or	Dome,	Tagoloan
(Registration starts at 9:30 AM)		17413411113 (51	TORING.	

The Public Scoping will be conducted as part of the requirements of the Philippine Environmental Impact Statement System in relation to the proponent's application for Environmental Compliance Certificate. Representatives from the proponent will present about the proposed project activities, its potential impacts, and the proposed measures to address these impacts. Project stakeholders within the concerned local communities will be given the opportunity to express freely their concerns, support, opposition or questions about the project in order to identify the most significant issues and impacts of the Proposed Project that need to be addressed in the project's Environmental Impact Assessment study.

A copy of the Project Description Report for Scoping is downloadable at our website: www.eia.emb.gov.ph (kindly access the Notice of Public Scoping link found at the lower right portion of our website). For more details, you may contact this Office at telephone numbers (02) 8920-2240 to 41.

Thank you and we look forward to your participation.

AL MAYOR'S CHIENTAL

Very truly yours,

Chest 4

WILLIAM P. CUÑADO Director





jica

PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Cagayan de Oro, Misamis Oriental



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU

DENR Compound, Visayee Avenue, Diliman, Quezon City 1116 Tel.Nos. (632)927-1517; 926-3725; Fax No.(632)920-2258 Websitn: www.emb.gov.ph Websitn: www.emb.gov.ph



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OFFICE OF THE GOVERNOR



May 18, 2021

Mr. Yevgeny Vicente B Emano Governor Office of the Governor Provincial Capitol, Don Apolinar Velez Street Cagayan de Oro City, Misamis Oriental

RECEIVED BY:

DTS No. 0488

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SUBJECT :

PUBLIC SCOPING FOR THE PROPOSED 65.6 KILOMETERS CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CAGAYAN DE ORO-MALAYBALAY SECTION)

Dear Mr. Emano:

We are pleased to invite you or your representative to attend the Public Scoping for the Department of Public Works and Highways proposed 65.6 kilometers Central Mindanan High Standard Highway Project (Cagayan de Oro-Malaybulay Section) traversing Cagayan de Oro City, Tagaloan, Province of Misamis Oriental and Manolo Fortich, Sumlao, Impasag-ong, Province of Bukidnon. The said Scoping is scheduled on:

Date / Time	Participants	Venue
31 May 2021 (Monday) /10:00 AM	Cagayan de Oro City	Puerto Gymnasium, Puerto, Cagayan de Oro City, Misamis
(Registration starts at 9:30 AM)		Oriental

The Public Scoping will be conducted as part of the requirements of the Philippine Environmental Impact Statement System in relation to the proponent's application for Environmental Compliance Certificate. Representatives from the proposent will present about the proposed project activities, its potential impacts, and the proposed measures to address these impacts. Project stakeholders within the concerned local communities will be given the opportunity to express freely their concerns, support, opposition or questions about the project in order to identify the most significant issues and impacts of the Proposed Project that need to be addressed in the project's Environmental Impact Assessment study.

A copy of the Project Description Report for Scoping is downloadable at our website: www.eia.cob.cov.ch (kindly access the Notice of Public Scoping link found at the lower right portion of our website). For more details, you may contact this Office at telephone numbers (02) 8920-2240 to 41.

Thank you and we look forward to your participation.

Very truly yours,

NHO. WILLIAM P. CUÑADO

Director





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Manolo Fortich, Bukidnon



Department of Environment and Natural Resources **ENVIRONMENTAL MANAGEMENT BUREAU**

DENR Compound, Visayas Avenue, Dillmon, Quezon City 1116 Tel.Nos. (632)927-1617; 828-3725; Fax No.(632)926-2258 Website: www.emb.gov.ph Email: recordsco@emb.gov.ph



ISO 9001:2019



May 18, 2021

Rev. Fr Felix B Abadies Abadies Parish Priest St. Jude Thaddeus Parish Damilag Manolo Fortich, Bukidnon

SUBJECT 20 PUBLIC SCOPING FOR THE PROPOSED 65.6 KILOMETERS CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CAGAYAN DE ORO-MALAYBALAY SECTION)

Dear Rev. Fr Abadies:

We are pleased to invite you or your representative to attend the Public Scoping for the Department of Public Works and Highways proposed 65.6 kilometers Central Mindanao High Standard Highway Project (Cagayan de Oro-Malaybalay Section) traversing Cagayan de Oro City, Tagaloan, Province of Misamis Oriental and Manolo Fortich, Sumlao, Impasug-ong, Province of Bukidnon. The said Scoping is scheduled on:

Date / Time	Participants	Venue
01 June 2021 (Tuesday) /10:00 AM	Manolo Fortich	BRCI Dicklum, Dicklum, Manolo Fortich, Bukidnon
(Registration starts at 9:30 AM)		

The Public Scoping will be conducted as part of the requirements of the Philippine Environmental Impact Statement System in relation to the proponent's application for Environmental Compliance Certificate. Representatives from the proponent will present about the proposed project activities, its potential impacts, and the proposed measures to address these impacts. Project stakeholders within the concerned local communities will be given the opportunity to express freely their concerns, support, opposition or questions about the project in order to identify the most significant issues and impacts of the Proposed Project that need to be addressed in the project's Environmental Impact Assessment study.

A copy of the Project Description Report for Scoping is downloadable at our website: www.cia.emb.gov.ph (kindly access the Notice of Public Scoping link found at the lower right portion of our website). For more details, you may contact this Office at telephone numbers (02) 8920-2240 to 41.

General Rose Rosencio Thank you and we look forward to your participation.

Very truly yours,

ENRG. ILLIAM P. CUÑADO Director



jica

PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Sumilao, Bukidnon



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU

DENR Compound, Visayas Avenue, Dilliman, Quezon City 1116 Tel.Nos. (632)927-1517; 928-3725; Faz No.(632)929-2258 Website: www.amb.gov.ph Email: recordeco@emb.gov.ph



Management Soften (SO 9001:2015 (SO 14001:2015



May 18, 2021

Datu Carlito Lalanan Tribal Chief Brgy. Kisolon Sumilao, Bukidnon

SUBJECT :

PUBLIC SCOPING FOR THE PROPOSED 65.6 KILOMETERS CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT (CAGAYAN DE ORO-MALAYBALAY SECTION)

Dear Datu Lalanan:

We are pleased to invite you or your representative to attend the Public Scoping for the Department of Public Works and Highways proposed 65.6 kilometers Central Mindamao High Standard Highway Project (Cagayan de Oro-Malaybalay Section) traversing Cagayan de Oro City, Tagaloan, Province of Misamis Oriental and Manolo Fortich, Sumlao, Impasug-ong, Province of Bukidnon. The said Scoping is scheduled on:

Date / Time	Participants	Venue
02 June 2021 (Wednesday) /10:00 AM (Registration starts at 9:30 AM)	Sumilao	2 nd FL, New Bldg., Sumilao Municipal Hall Sumilao, Bukidnon

The Public Scoping will be conducted as part of the requirements of the Philippine Environmental Impact Statement System in relation to the proponent's application for Environmental Compliance Certificate. Representatives from the proposed will present about the proposed project activities, its potential impacts, and the proposed measures to address these impacts. Project stakeholders within the concerned local communities will be given the opportunity to express freely their concerns, support, opposition or questions about the project in order to identify the most significant issues and impacts of the Proposed Project that need to be addressed in the project's Environmental Impact Assessment study.

A copy of the Project Description Report for Scoping is downloadable at our website: www.cia.emb.gov.ph (kindly access the Notice of Public Scoping link found at the lower right portion of our website). For more details, you may contact this Office at telephone numbers (02) 8920-2240 to 41.

Thank you and we look forward to your participation.

Very truly yours,

ENRG. WILLIAM P. CUÑADO

Director







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Impasug-ong, Bukidnon





May 18, 2021

Ms. Julieta Zulieta

Head

KAYU Women's Organization
Impasug-ong, Bukidnon

SUBJECT

PUBLIC SCOPING FOR THE PROPOSED 65.6 KILOMETERS CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT

(CAGAYAN DE ORO-MALAYBALAY SECTION)

Dear Ms. Zulieta:

We are pleased to invite you or your representative to attend the Public Scoping for the Department of Public Works and Highways proposed 65.6 kilometers Central Mindanao High Standard Highway Project (Cagayan de Oro-Malaybalay Section) traversing Cagayan de Oro City, Tagaloan, Province of Misamis Oriental and Manolo Fortich, Sumlao, Impasug-ong, Province of Bukidnon. The said Scoping is scheduled on:

Date / Time	Participants	Ven	ue
04 June 2021 (Friday) /10:00 AM (Registration starts at 9:30 AM)	Impasug-ong	Impasug-ong Function Hall, Bukidnon	Tree Park Impasug-ong,

The Public Scoping will be conducted as part of the requirements of the Philippine Environmental Impact Statement System in relation to the proponent's application for Environmental Compliance Certificate. Representatives from the proposed will present about the proposed project activities, its potential impacts, and the proposed measures to address these impacts. Project stakeholders within the concerned local communities will be given the opportunity to express freely their concerns, support, opposition or questions about the project in order to identify the most significant issues and impacts of the Proposed Project that need to be addressed in the project's Environmental Impact Assessment study.

A copy of the Project Description Report for Scoping is downloadable at our website: www.eia.enb.gov.ph (kindly access the Notice of Public Scoping link found at the lower right portion of our website). For more details, you may contact this Office at telephone numbers (02) 8920-2240 to 41.

Thank you and we look forward to your participation.

Very truly yours,

ENRG. WILLIAM P. CUÑADO

Director









CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Malaybalay City, Bukidnon



Department of Environment and Natural Resources
ENVIRONMENTAL MANAGEMENT BUREAU

DENR Compound, Visayas Avenue, Diliman, Quezon City 1115 Tel.Nos. (632)927-1817; 928-3725; Fax No.(632)920-2258 Website: www.amb.gov.ph Email: recordsco@emb.gov.ph



Management System ISO 16001-2015 ISO 16001-2015



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May 18, 2021

Hon. Nilo Q Salga Punong Barangay LGU-Brgy. 10 Brgy. 10 Malaybalay City, Bukidnon

SUBJECT

PUBLIC SCOPING FOR THE PROPOSED 65.6 KHOMETERS CENTRAL MINDANAO HIGH STANDARD HIGHWAY PROJECT

(CAGAYAN DE ORO-MALAYBALAY SECTION)

Dear Hon. Salga:

We are pleased to invite you or your representative to attend the Public Scoping for the Department of Public Works and Highways proposed 63.6 kilometers Central Mindanao High Standard Highway Project (Cagayan de Oro-Malaybalay Section) traversing Cagayan de Oro City, Tagaloan, Province of Misamis Oriental and Manolo Fortich, Sumiao, Impasug-ong, Province of Bukidnon. The said Scoping is scheduled on:

Date / Time	Participants	Venue		
03 June 2021 (Thursday) /10:00 AM	Malaybalay City	People's Hall, Malaybalay City	2nd	Flr,
(Registration starts at 9:30 AM)				

The Public Scoping will be conducted as part of the requirements of the Philippine Environmental Impact Statement System in relation to the proponent's application for Environmental Compliance Certificate. Representatives from the proposed will present about the proposed project activities, its potential impacts, and the proposed measures to address these impacts. Project stakeholders within the concerned local communities will be given the opportunity to express freely their concerns, support, opposition or questions about the project in order to identify the most significant issues and impacts of the Proposed Project that need to be addressed in the project's Environmental Impact Assessment study.

A copy of the Project Description Report for Scoping is downloadable at our website: www.eia.emb.gov.ph (kindly access the Notice of Public Scoping link found at the lower right portion of our website). For more details, you may contact this Office at telephone numbers (02) 8920-2240 to 41.

Thank you and we look forward to your participation.

Very truly yours,

NRC WILLIAM P. CUÑADO

Director







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 11. Public scoping attendance sheets (onsite and virtual via Zoom)

Tagoloan, Misamis Oriental

On-site participants



ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: May 28, 2021; 10:00 AM

Venue: 1 Rollingson Hall Conglet, Tagolian, Winner greated

Name	Company/Organization	Position	Contact number	E-mail	Barangay	Gender	Age	Signature
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ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: May 28, 2021; 10:00 AM

Venue: Naturalen, Bogg Hall, Shaturalan, Tagalum, Minnis Orlandal

Name	Company/Organization	Position	Contact number	E-mail	Barangay	Gender	Age	Signature
DALLY A. XBAD	5 KRANI AY	LUFON	0926300 FIFE		NATIMOLAN	*	50	- China
ESTRELLA R. PINOTES	DANGY	S.F.S.O	59857991302		NATOWING	F	(plo	mules
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

	Name	Position	Company/Organization
1	Nonette Atasan		EMB Region 10 - Clearance and Permitting
			Division
2	Rowena Dorato		EMB Region 10 - Clearance and Permitting
			Division
3	Fe L. Dalugdug		Tagoloan National High School
4	Gene Baculpo	MPDC	LGU Tagoloan - MPDO
5	Jonathan Paulo C. del Rosario	MDRRMO	LGU Tagoloan
6	Zenaida	Assessor	LGU Tagoloan - Municipal Assessor's Office
7	Freeand brent	Assessor	LGU Tagoloan - Municipal Assessor's Office
8	Roy Hugo Pagtalunan		LGU Tagoloan - Municipal Agriculture's
			Office
9	Gomer A Sabio	Mayor	LGU Tagoloan
10		Engineering Office	LGU Tagoloan
11	Neal Vincent Fernando	RA	North Planners INC
12	Tomoaki Tanabe	Environmental Specialist	JICA Study Team
13	Tomoko Ota	RAP Specialist	JICA Study Team
14	Ryuichi Ueno	Project Team Leader	JICA Study Team
15	Angelita Balid	Office Engineer and Project	JICA Study Team
		Coordinator	
16	Maria Victoria Lofamia	Engineer III	DPWH
17	Jan Heidel Bautista	General Manager	Amet Asia, Inc.
18	Pamelle Andrea Pomida	Environmental Specialist	Amet Asia, Inc.
19	Mark Greg Dablo		DPWH R10





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Cagayan de Oro City, Misamis Oriental

On-site participants



Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: May 31, 2021; 10:00 AM

Venue: Engo (1914 , Cagayan de Oro, Misamis Oriental

Skeika Was Lacaba	Company/Organization	Position	Contact number	E-mail	Barangay	Gender	Age	Signature
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ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: May 31, 2021; 10:00 AM

Venue: Ango frym. ·Cagayan de Oro, Misamis Oriental Company/Organization Position Contact number Barangay WARKW GOME 1 50 canes 09676 46546 FAUL FACASUMA 14107. A Buar VICE PALMETINE ADMINISTRATOL F7171457280 AUMIN BREY. LAP 446. And 1/ 1007 Bigo Kagano C"N 1401717 ESCAWAD GO-CHO/CUEHFO CANTO LON 09177197218 EUSA B. MABELY Pulge BYT. CHRIKE cluster that the cond . Com SANDON FOR SET EMALCO ST CLENKO 09950947096 CD4-1 cagnon CUSTINO TON'T HISTON vence who Bour M DRI COR VIC TRUNGTING - 1964 BUGO PARTIEN SOUTH TOWN - DELIVET 4/4 140 44.4 DROY PUCO YOUTH LISURGE 4 4 BLANG MA MAD BUSS LOST 90 April Orosa Mas YOUR 20 Alzald, Moscolys YELTH F-1967 0+5/20716 Transport Attain Plan tore D. Rocen
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

	Name	Position	Company/Organization
1	Nonette Atasan		EMB Region 10
2	Atty. Labas Lao	Division Chief	EMB Region 10
3	Engr. Valmoria		Misamis Oriental ENRO
4	Eugene Magto		LGU Cagayan de Oro - CSWD
5	Joshua del Bando		LGU Cagayan de Oro - City Assessor's Office
6	Manny Ramonal		
7	Rolando Damaolao		
8	Jocelyn Penalosa		East and West Bound Terminals and Public Market
9	Edward		Traffic Engineering Division - RTA
10	Tomoaki Tanabe	Environmental Specialist	JICA Study Team
11	Ryuichi Ueno	Project Team Leader	JICA Study Team
12	Angelita Balid	Office Engineer and Project	JICA Study Team
		Coordinator	
13	Maria Victoria Lofamia	Engineer III	DPWH
14	Jan Heidel Bautista	General Manager	Amet Asia, Inc.
15	Pamelle Andrea Pomida	Environmental Specialist	Amet Asia, Inc.
16	Patricia Erika Lim	Assistant Team Leader	Amet Asia, Inc.
17	Darwin Gaba	Consultant	Amet Asia, Inc.
18	Samuel Sendon	Consultant	Amet Asia, Inc.
19	PENRO Mis Or		PENRO Mis Or
20	Eugene		CWSD
21	Oliver		Office of the City Administrator
22	Landcare Foundation		
23	Mark Greg Dablo		DPWH R10





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Manolo Fortich, Bukidnon

On-site participants



ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: June 1, 2021; 10:00 AM

Venue: BRFI Dicklum, Dicklum, Manolo Fortich, Bukidnon

Name	Company/Organization	Position	Contact number	E-mail .	Barangay	Gender	Age	Signature
DABLO, GEGG MAKE	DEMON *	#66/th1	09/836 07 2 6 09	andresson the	BANNETH C.	M	9.14	V Jan
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA



ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: _in 1 to 1 |0 a0 bit

nues basis Distriction, plans		Position	Contact number	E-mail	Barangay	Gender	Age	Signature
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ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: June 1, 2021; 10:00 AM

Venue: BRFI Dicklum, Dicklum, Manolo Fortich, Bukidnon

Name	Company/Organization	Position .	Contact number	It-mail	Barangay	Gender	Age	Signature
PAFEC JIMENEZ VK	BROY MEKEUM	KAGA ENT 10	0117540777		MICK LUGA.	M	60	-
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

	Name	Position	Company/Organization				
1	Nonette Atasan		EMB Region 10 - Clearance and Permitting Division				
2	Atty. Labas Lao	Division Chief	EMB Region 10 - Clearance and Permitting Division				
4	Datu Amay Elfranco Linsahay	MPUMATRIC	Higaonon-Talaandig Ancestral Domain - Barangay				
			Ticala				
5	Arlene B. Arenal	Barangay Secretary	Barangay Damilag				
6	Tomoaki Tanabe		JICA Study Team				
7	Angelita Balid		JICA Study Team				
8	Maria Victoria Lofamia	Engineer III	DPWH				
9	Michiko Quiachon		DPWH				
	Jan Heidel Bautista	General Manager	Amet Asia, Inc.				
	Patricia Erika Lim	Assistant Team Leader	Amet Asia, Inc.				
	Pamelle Andrea Pomida	Environmental Specialist	Amet Asia, Inc.				
	Ron Capili	Consultant	Amet Asia, Inc.				
14	Neil Johannes Botor	Consultant	Amet Asia, Inc.				
_	Shirley L. Tagapulot	Barangay Councilor	Barangay Diclum				
_	Jun Pablo Jimenez	Barangay Councilor	Barangay Diclum				
_	Teogenes Abarabar	Barangay Councilor	Barangay Alae				
18	Nelfa Tero	Barangay Secretary	Barangay Alae				
19	Nancita Yompoca	Barangay Councilor	Barangay Ticala				
20	Ronald Magdaleno	Barangay Councilor	Barangay Ticala				
21	Rufino Bulanta Jr.	Barangay Councilor	Barangay Ticala				
22	Dievra Jay Payanan	Barangay SK	Barangay Ticala				
	Renato Coguihsn Jr.	Barangay Secretary	Barangay Ticala				
24	Elfranco Linhasay	Barangay IPMR	Barangay Ticala				
25	Romeo P. Dagunlay	Barangay Captain	Barangay Tangkulan				
26	Lemuel Rey I. Arana	Barangay Councilor	Barangay Tangkulan				
_	alan A. Improgo	Barangay Councilor	Barangay Tangkulan				
	Daniel V. Onahaon Jr.	Barangay Councilor	Barangay Tangkulan				
29	Reve G Abarquez	Barangay Councilor	Barangay Tangkulan				
30	Diomedes Pinalas	PWD	Barangay Tangkulan				
31	Danny Banyogan	Habal-habal operator	Barangay Tangkulan				
32	Fe Lahayon	Purok Leader	Barangay Tangkulan				
	Lee Alberece	Barangay Councilor	Barangay Tangkulan				
	Angeli Roa	Barangay Captain	Barangay Mambatangan				
	Melan Dave Lalucan	Barangay Councilor	Barangay Mambatangan				
36	Neal Fernandez	Research Assistant	Amet Asia				
37	Jaime Namocatcat	Consultant	Amet Asia				





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Sumilao, Bukidnon

On-site participants



ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: June 2, 2021; 10:00 AM

Venue: 2nd Floor, New Bldg., Sumilao Municipal Hall

Name	Company/Organization	Position	Contact number	E-mail	Barangay	Gender	Age	Signature
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	Name	Position	Company/Organization
1	Nonette Atasan		EMB Region 10 - Clearance and Permitting
			Division
2	Rowena Dorato		EMB Region 10 - Clearance and Permitting
			Division
3	Tomoaki Tanabe	Environmental Specialist	JICA Study Team
4	Ryuichi Ueno	Project Team Leader	JICA Study Team
5	Angelita Balid	Office Engineer and Project	JICA Study Team
		Coordinator	
6	Maria Victoria Lofamia	Engineer III	DPWH ESSD
7	Michiko Quiachon		D DPWH ESSD
8	Jan Heidel Bautista	General Manager	Amet Asia, Inc.
9	Patricia Erika Lim	Assistant Team Leader	Amet Asia, Inc.
10	Pamelle Andrea Pomida	Environmental Specialist	Amet Asia, Inc.
11	Ron Capili	Research Assistant	Amet Asia, Inc.
12	Hideo Sugiyama		JICA Study Team
13	Samuel Sendon	Geology Consultant	Amet Asia, Inc.
14	Gella Abella	Traffic consultant	Amet Asia, Inc.





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Impasug-ong, Bukidnon

On-site participants



ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: June 4, 2021: 10:00 AM

Venue Familios Hall Copition Browns, lapsying any

Name	Company/Organization	Position	Contact number	E-mail	Barangay	Gender	Age	Signature
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Control Mindrone mgh Standard Hybridg Construction Project - Public Sciency

	Name	Position	Company/Organization
1	Nonette Atasa		EMB Region 10
2	Atty. Labas Lao	Division Chief	EMB Region 10 - Clearance and Permitting Division
3	Idylla Jane Juaniza	Engineer I	LGU Impasugong - MEO
4	Eutiquia A. Bato-on	MPDC	LGU Impasug-ong - MPDO
5	Jocelyn J. Binasag-MASSO- LGU,Impasugong,Buk		LGU Impasug-ong - Municipal Assessor Office
6	Von Omar P. Lagayan	Punong Barangay	Barangay Poblacion
7	Shirley A. Curiba	Barangay Secretary	Barangay Poblacion
8	Rolando E. Eguia	Barangay Councilor	Barangay Poblacion
9	Ayagil Kilah D. Quines	Barangay Councilor	Barangay Poblacion
	Reina O. Paluga	Barangay Councilor	Barangay Poblacion
11	Irene Kristine D. Quines	SK Chairperson	Barangay Poblacion
12	Edison E. Bondoc	Municipal Engineering Office	LGU Impasug-ong
13	Ayagil Kilah D. Quines	Barangay Councilor	Barangay Poblacion
14	Alexander Dupeno		LGU Impasugong
15	Antonio O. Dominao	Barangay Captain	Barangay Impalutao
16	Jeryl D. Pacatang	Barangay Councilor	Barangay Impalutao
17	Romeo R. Abunda	Barangay Councilor	Barangay Impalutao
18	Narizza S. Rivera	Barangay Councilor	Barangay Impalutao
19	Martha G. Bustamante	Barangay Councilor	Barangay Impalutao
20	Esteban G. Macapaz	Barangay Councilor	Barangay Impalutao





	Name	Position	Company/Organization		
21	Raquel L. Buco	Barangay Councilor	Barangay Impalutao		
22	Alberto Sarento	Barangay Tanod	Barangay Impalutao		
23	Rene Rey M. Angel	Barangay Tresurer	Barangay Impalutao		
24	Rene Galvez	Driver	Barangay Impalutao		
25	Rey U. Lumacang	Barangay Tanod	Barangay Impalutao		
26	Danilo N. Micabalo	Barangay Councilor	Barangay Impalutao		
27	Analou L. Paul	Barangay Secretary	Barangay Impalutao		
28	Nicasio P. Llamoso Barangay Councilor		Barangay Impalutao		
29	Mayflor P. Santos	or P. Santos SK Chairperson			
30	Sheila May C. Urgel	eila May C. Urgel SK Chairperson			
31	Ma. Chenita R. Miras	Barangay Secretary	Barangay Cawayan		
32	Renie Rey Ange				
33	Tomoaki Tanabe	Environmental Specialist	JICA Study Team		
34	Angelita Balid	Office Engineer and Project	JICA Study Team		
		Coordinator			
35	Maria Victoria Lofamia	Engineer III	DPWH		
36	Michiko Quiachon		DPWH		
37	Jan Heidel Bautista	General Manager	Amet Asia, Inc.		
38	Patricia Erika Lim	Assistant Team Leader	Amet Asia, Inc.		
39	Pamelle Andrea Pomida	Environmental Specialist	Amet Asia, Inc.		
40	Ron Capili	Consultant	Amet Asia, Inc.		





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

City of Malaybalay, Bukidnon

On-site participants



ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: June 3, 2021; 10:00 AM

Venue: People's Hall, 2rd Fl., New City Hall, Malaybalay City

Name	Company/Organization	Position	Contact number	E-mail	Barangay	Gender	Age	Signature
1. Marbrie A. John	PMAG / PWN	Panded	09479115274	partialydes	Cocau Sary I	C F	7.3	Charles
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Central Affinished High Streether Highwest Construction Project - Fushic Screens



ATTENDANCE SHEET

Activity: PUBLIC SCOPING (Central Mindanao High Standard Highway Construction Project)

Date: June 3, 2021; 10:00 AM

Venue: People's Hall, 2nd Fl., New City Hall, Malaybalay City

Name	Company/Organization	Position	Contact number	E-mail	Barangay	Gender	Age	Signature
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Virtual (via Zoom) participants

	Name	Position	Company/Organization
1	Nonette Atasa		EMB Region 10 - Clearance and
			Permitting Division
2	Atty. Labas Lao	Division Chief	EMB Region 10 - Clearance and
			Permitting Division
3	Anthon Son R.	SK Chairman	Barangay Dalwangan
	Morento		
4	Nilo Q. Salga	Punong Barangay	Barangay 10
5	Renato O. Binayao	IPMR	Barangay Kalasungay
6	Karl Marlone	SK Chairman	Barangay Kalasungay
	Manahan		
7	Herculano Lupiba	Barangay Councilor	Barangay 10
8	Alex Agustin	Barangay Councilor	Barangay 10
9	Armando Blanco	Barangay Councilor	Barangay 10
10	Alejandro Ferrer Jr.	Barangay Councilor	Barangay 10
11	Francis Eddie Dagang	Barangay Councilor	Barangay 10
12	Isidro Desabille	Barangay Councilor	Barangay 10
13	Winefreda Dahumay	IPMR	Barangay 10
14	Tiffany Galindo	Secretary	Barangay 10
15	Vanessa Revisado	Secretary	Barangay 10
16	Cedric Nacua	Barangay Councilor	Barangay 10
17	Adrian Gamboa		LGU Malaybalay - CPDO
18	Roberto Solito Sr	Punong Barangay	Barangay Sumpong
19	Phoebe Petalcorin		PPDO Bukidnon
20			Malaybalay City Agriculture's Office
21	Leslie T. Fontanilla	Division Engineer	DepED Malaybalay City Division
22	Tomoaki Tanabe	Environmental Specialist	JICA Study Team
23	Ryuichi Ueno	Project Team Leader	JICA Study Team
24	Angelita Balid	Office Engineer and Project Coordinator	JICA Study Team
25	Maria Victoria Lofamia	Engineer	DPWH
26	Michiko Quiachon		DPWH
27	Jan Heidel Bautista	General Manager	Amet Asia, Inc.
28	Patricia Erika Lim	Assistant Team Leader	Amet Asia, Inc.
29	Pamelle Andrea	Environmental Specialist	Amet Asia, Inc.
	Pomida		
30	Emeraldo		
31	Mark Greg Dablo		DPWH R10



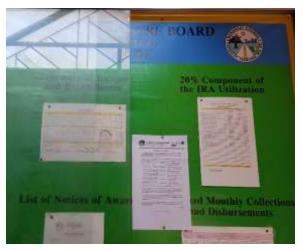


CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 12. Public scoping photo documentation

Tagoloan, Misamis Oriental





Notice of Posting in Brgy. Natunolan (left) and Casinglot (right), Tagoloan



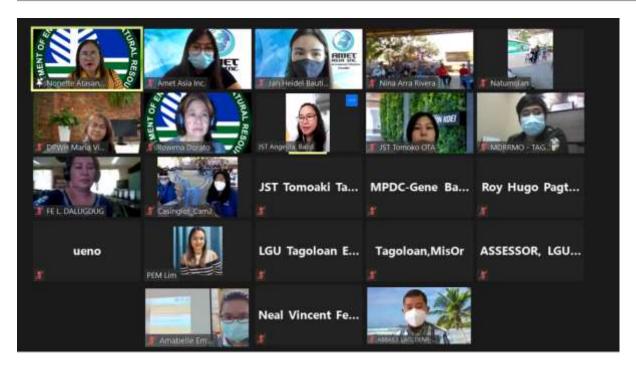


Posted banners in Brgy. Natunolan (left) and Casinglot (right),





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA



Online attendees



On-site Attendees (Brgy. Casinglot)







On-site Attendees (Brgy. Natumolan)



Engr. Nonette Atasan from EMB R10 on the overview of EIA





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

PROJECT RATIONALE





- Mindanao lagged in terms of economic and infrastructure development due to peace and security issues
- Economic development seen to accelerate after comprehensive peace agreement with armed groups
- Infrastructure development crucial to attaining inclusive and sustainable economic growth
- Proposed project is expected to improve the road transport network in Mindanao
- Improve the economic situation of surrounding municipalities

Engr. Angelita Balid from JICA Study Team on the presentation of the Project



Ms. Patricia Erika Lim discussing the potential project impacts and mitigation







Engr. Rowena Dorato from EMB Region 10 facilitating the Open Forum



Brgy. Captain Marlon Bolanio from Casignlot raising his concern during the open forum



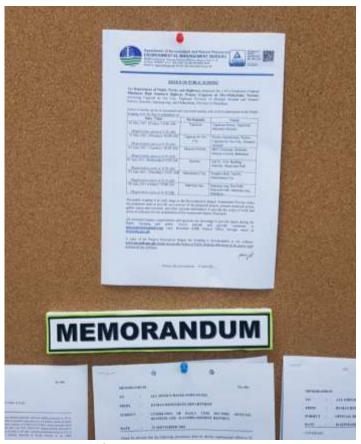


CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Cagayan de Oro City



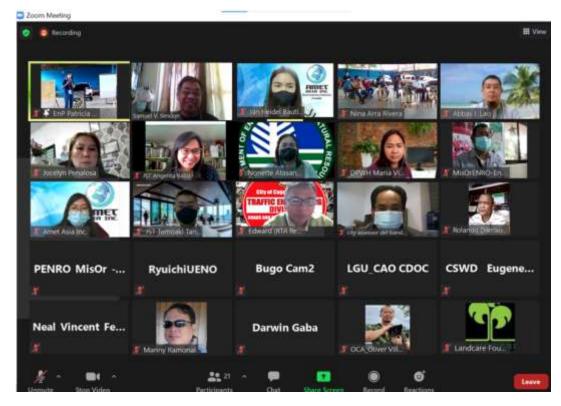
Posting of banner in public places



Notice of posting in Cagayan de Oro City Hall







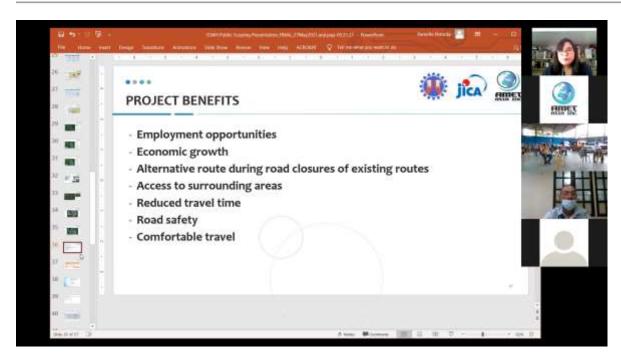
Online Attendees



On-site Attendees







Engr. Angelita Balid on the presentation of the Project benefits



Ms. Patricia Erika Lim from Amet-Asia presenting the potential project impacts and mitigation







Atty. Abbas Lao facilitating the open forum



Brgy. Capt Vic Talingting from Bugo during the open forum





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Manolo Fortich



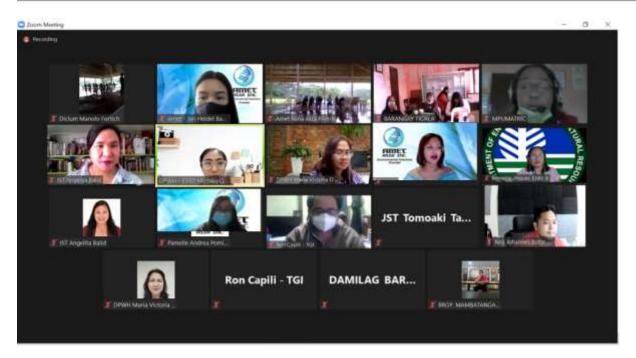
Posting of banner in BRFI Dicklum, Manolo Fortich



Notice of Public Scoping posted in Manolo Fortich Municipal Hall









Online attendees







On-site registration



On-site attendees







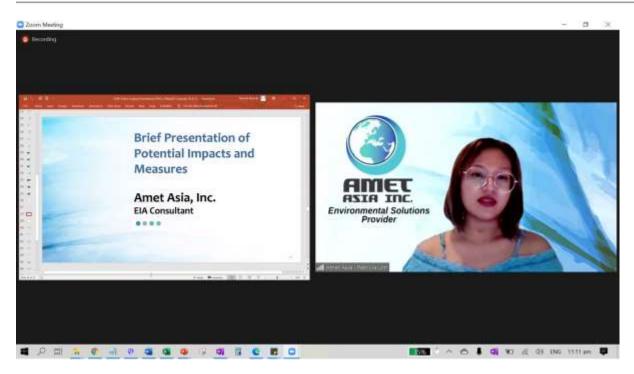
Engr. Nonette Atasan on the overview of EIA



Presentation of project components by Engr. Angelita Balid







Amet-Asia, Inc. represented by Ms. Patricia Lim on the potential impacts and measures



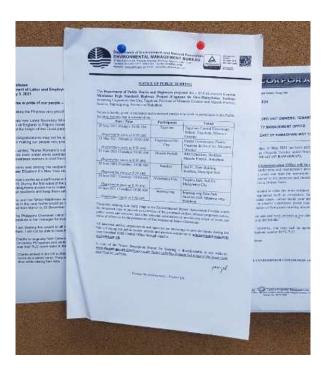
Ms. Rosie Lyn P. del Rosario from MPDO raising her question regarding the project





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Sumilao, Bukidnon



Notice of public scoping posted in Sumilao Municipal Hall



Banner posting in Sumilao Municipal Hall







On-line attendees



On-site Attendees





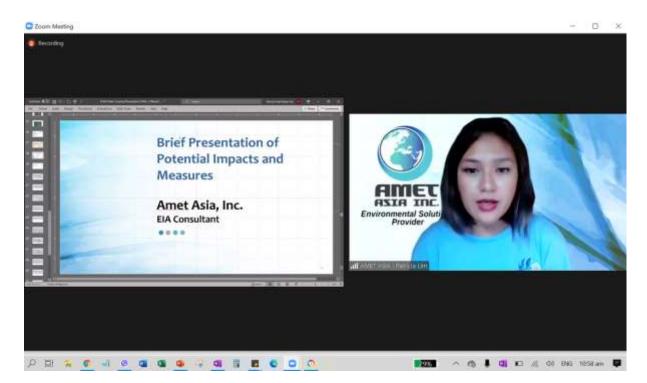
CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

PROJECT BACKGROUND



- CMH is a high Priority Project chosen from amongst the four (4) priority Pre-Feasibility Projects from the Phase II of the Master Plan on High Standard Highway Network Development which started in March 2019.
- A Pre-Feasibility Study of the Central Mindanao Highway which was conducted last March 2020 has proposed an alignment which was presented in a series of Stakeholders Meetings last February 2021.
- We are now at the Feasibility Stage, where we carefully studied the alternative alignments minimizing environmental impacts and avoiding CADT and IBA, and above all, to have a high standard highway design
- Goal: Improving the transport efficiency of the region.

Presentation of Project Background by Engr. Angelita Balid



Presentation of potential impacts and measures by Ms. Patricia Erika Lim







Engr. Rowena Dorato facilitating the open forum



Vice Mayor Jhun Dhee Leparto raising his question about the project







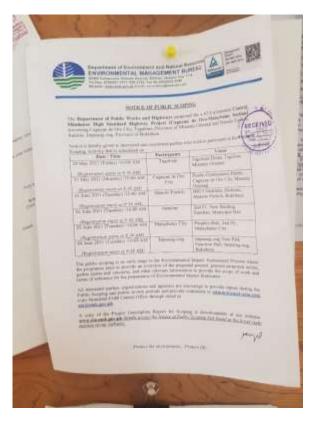
 ${\bf Engr.\ Victoria\ Lofamia\ of\ DPWH\ ESSD\ addressing\ the\ issues\ and\ concern\ about\ the\ project}$





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Malaybalay, Bukidnon



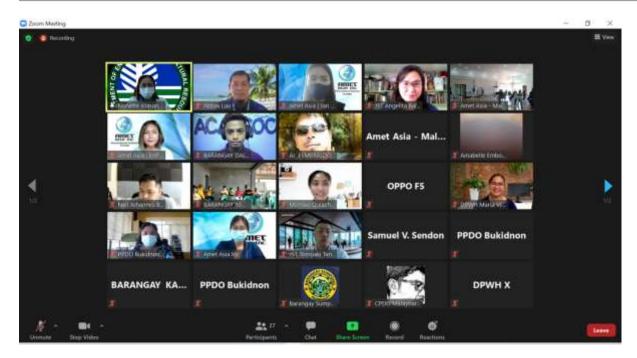
Notice of public scoping posted in Malaybalay City Hall



Posting of banner in Malaybalay City Hall







On-line attendees



On-line attendees







On-site Attendees

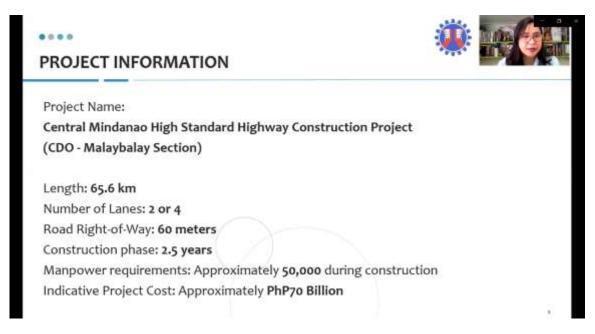


Vice Mayor Atty. Warren Pabillaran giving his opening remarks





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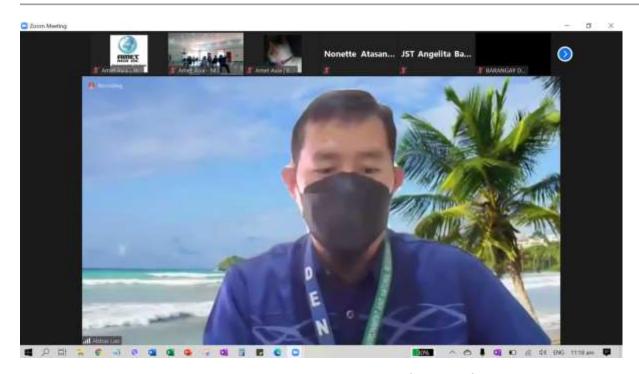
Project information being presented by Engr. Angelita Balid



Potential Impacts and Mitigation being discussed by Ms. Patricia Lim







Atty. Abbas Lao explaining the mechanics of the open forum



Ms. Arbel Sulinay from KADUMA Kalasungay asking a question during the open forum





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Impasug-ong, Bukidnon



Notice of public scoping posted in public areas



Project banner posted in Brgy. Capitan Bayong barangay hall







On-line attendees



On-site Attendees







On-site Attendees



Brgy. Capt. Dawn Roque from Capitan Bayong delivering her opening remarks







Engr. Nonette Atasan introducing the speaker



Potential impacts and mitigations being discussed by Ms. Patricia Erika Lim







Brgy. Kag. Enrique Gayon (Capitan Bayong) addressing his concern



Ms. Michiko Quiachon from DPWH ESSD addressing the question regarding right-of-way





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Attachment 13. Summaries of the Public Scoping proceedings

Cagayan de Oro City

The program started at 10AM at Bugo Gymnasium, Bugo, Cagayan de Oro City. It was started with a prayer from Charlo Badal and followed by the singing of the national anthem. Dr. Nimfa L. Bracamonte, Amet Asia, EIA Consultant, introduced the participants on-site and online through zoom.

Engr. Nonette Atasan – EMB X served as the emcee/facilitator and articulated the EIA process. Overview of public scoping guidelines and mechanics of the scoping project were also presented by Engr. Atasan.

Opening remarks by Kagawad Presly Emano who said that the project will pave the way for easy travel to Bukidnon which is about 28 kilometers and takes more than two hours without traffic.

Engr. Angelita Balid from DPWH-JICA presented the project through zoom. Ms. Patricia Lim from Amet Asia presented the potential impacts of the project and mitigation measures.

Open Forum was moderated by Atty Abbas I. Lao of EMB 10, Division Chief, Clearance and Permit Division. After the open forum Atty Lao mentioned that the presentation includes the mitigations measures. This study will also be presented after it is done. There will also be a public hearing after the study and after it is submitted to EMB.

Closing Remarks was given by Kagawad Ariel Igot who said that they are thankful for all the agencies, and they are clarified with the possible effects of the project. They said that they all support the project.

Municipality of Tagoloan

The program started at 10AM in two barangays in Casinglot Barangay Hall Multipurpose Hall and Natumolan Barangay Multipurpose Hall, Tagoloan, Misamis Oriental. The program started with a prayer and then was followed by the singing of the national anthem. Introduction of participants was made by Dr. Nimfa L. Bracamonte, Amet Asia Consultant.

Engr. Nonette Atasan – EMB Region X served as the emcee/facilitator and articulated the EIA process. She also gave an overview of scoping guidelines and mechanics of the scoping project. She reminded the participants to observe the health protocols.

Opening remarks was given by Marlo Bolanio, Barangay Captain of Casinglot who welcomed the participants to the public scoping.

Engr. Angelita Balid from DPWH-JICA presented the project through zoom. Ms. Patricia Lim from Amet Asia presented the potential impacts of the project and mitigation measures on-site

The Open Forum was moderated by Engr. Rowena Dorato, EMB Region X. The latter gave a brief synthesis of the issues and concerns after which she reiterated the whole process. The report will be submitted to include the public scoping issues/concerns to the Central Office of EMB and Technical Scoping will be set to determine the focus of study. EIS as a document will be prepared by Amet Asia that will be further reviewed by a Technical Committee of third party consultants.

Closing remarks given by Kagawad Marivic Ajon, a proxy of Kagawad Segundino Galorio thanking the organizers and all. Economic growth and good opportunities are cited as impact.





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Municipality of Manolo Fortich

The public scoping was held on June 1, 2021 at BRFI Dicklum, Manolo Fortich. It was started with a prayer from Datu Guhaynon followed by the singing of the national anthem. Dr. Nimfa L. Bracamonte, Amet Asia, EIA Consultant, introduced the participants, those on-site at the zoom.

Engr. Nonette Atasan – EMB X emcee/facilitator and articulated the EIA process and presented the overview of scoping guidelines and mechanics of the scoping project/

Opening remarks was given by Danny Salvador R. Bucon, LGU Manolo Fortich who said that it is a privilege that the meeting is held here. He also thanked the participants and the coordinators for coming to the program which will enhance their knowledge about the project.

Engr. Angelita Balid –JICA Study Team presented the project through zoom. Ms. Patricia Lim – Amet Asia-presented the potential impacts of the project and mitigation measures through zoom.

The Open Forum was moderated by Atty Abbas I. Lao, Division Chief, Clearance and Permit Division, EMB X. After the open forum, DPWH-Engr. Lofamia thanked the participants for airing out their concerns in this activity. It is appreciated to enhance this project.

The closing remark was given by Danny Salvador R. Bucon, LGU Manolo Fortich – who said that he did the opening and also the closing. In behalf of LGU Manolo Fortich, he thanked the organizers for clarifying the project. Hopefully everything that was discussed will be implemented.

Municipality of Sumilao

The public scoping started at 10:00 AM held at the 2nd Floor New Building, Sumilao Municipal Hall. The meeting started with a prayer and then the national anthem was sung. Then the acknowledgement of the participants by Dr. Nimfa Bracamonte followed. The opening remarks was given by Kag. Dominador Del Rosario from Kisolon. After which Engr. Nonette Atasan from DENR EMB X who was the facilitator of the program gave the overview of the scoping guidelines, mechanics of the scoping for the project.

Kag. Dominador Del Rosario (Kisolon) gave the opening remarks. He thanked the participants from all barangays, from the MENRO and Municipal IPMR and from other sectors such as the teachers, as well as the facilitators for this public consultation. He also said that the people of Kisolon are thankful for this project. They would have easier transport of products. Travel time will be shortened from Cagayan to Malaybalay - 65.6. km of road project that is high standard. It can accommodate faster travel time. He welcomed everyone. Engr. Angelina Balid from JICA Study Team presented the project through powerpoint presentation in the zoom. Ms. Patricia Lim from Amet Asia presented the potential impacts and mitigation measures for the project via zoom.

Engr. Rowena Dorato – Section Chief of EIA moderated the open forum.





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Barangay Captain Gilbert Mamatan (Brgy. Kulasi) gave the closing remarks. He thanked the proponents for making them understand and have the issues and concerns addressed. He also said that this is a good project but if the process is not followed, especially for the IPs with no legal documents, what will happen to them if their land and livelihood are affected. He mentioned that they might go to the other group instead. The LGU can help the people in Sumilao to understand the project.

City of the Malaybalay

The public scoping was held on June 3, 2021 at 10:00 AM at the People's Hall, 2nd Floor, New City Hall, Malaybalay City. The meeting started with a prayer and the singing of the national anthem. Then Dr. Nimfa L. Bracamonte acknowledged the participants on-site and online.

Vice Mayor Atty Jay Warren Pabillaran gave the opening remarks. He said that he is happy that this project is following the procedure, this public consultation, so people can state their concerns. He welcomed everyone to Malaybalay City.

Engr Nonette Atasan stated the purpose of this public scoping. She said that the group would want to hear the participants' concerns when this project will be implemented. It is important to reach out to everyone for their concerns.

Engr. Angelita Balid presented the project through powerpoint slides through zoom. Ms. Patricia Lim presented the project potential impact and mitigation through powerpoint slides through zoom.

The open forum was moderated by Atty Abbas Lao. Before starting the open forum Atty Lao set some rules. He emphasized that the project is still in the feasibility study. One of the stages is the public scoping. The purpose of the public scoping is to know the concerns of the stakeholders about the project in the CMH. The areas that will be affected and the mitigation measures. The mitigation measures were presented that could be required for the ECC. He said that he will be presiding in the open forum. Wait to be recognized. Please state the name and the sector of the participants. Participants may also send questions in the chat box. This is a recorded proceeding. Everything will be recorded during the meeting.

Ms Arbel Sulinay from KADUMA Kalasungay gave the closing remarks. She said that in behalf of everyone, they are happy that the proponents are here. On behalf of the different barangay councils that represent everyone, so we will know about the high standard highway project. She also thanked the DENR.





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Municipality of Impasug-ong

The meeting was held on June 4, 2021 at 10:00 AM in Capitan Bayong Barangay Hall, Impasug-ong, Bukidnon. The meeting started with a prayer and the singing of the national anthem. Dr. Nimfa L. Bracamonte acknowledged the participants on-site and online. Engr. Nonette Atasan, the facilitator of the program presented the overview of the scoping guidelines, mechanics of the scoping for the project. According to Engr Atasan, this project requires an ECC because this is a category A project. Amet Asia already conducted the IEC and now they need to conduct this public scoping. Even during the pandemic, we still have to conduct these activities. Issues in terms of land, water, people, and the economic aspect need to be discussed. Participants are encouraged to raise questions, suggestions in order to document this public scoping. It will form part of the documents that the contractor will submit for evaluation. There is no right or wrong answer. The people are asked to raise concerns and what will be affected. The participants are residents here and the team need your concerns.

Brgy Captain Dawn M. Roque gave the welcome remarks. He said that they are happy about this project, especially with the representatives from DENR and JICA. He hoped this will be an enlightening activity for everyone, especially the issues about the environment.

Engr. Angelina Balid – project presentation through powerpoint using zoom. Ms. Patricia Lim presented the potential impacts and mitigation measures through powerpoint through zoom.

Atty Abbas Lao presided the open forum and stated its rules. Only those recognized by the presiding officer are allowed to talk. The following were emphasized: State your name and affiliation before asking the question; Participants may also send questions in the chat box so the presiding officer can read the question and ask the proponent to answer; Also turn off the microphone when not recognized.

Kagawad Generaldo Galambo (Capitan Bayong) gave the closing remarks. He said that they are thankful that the public scoping is held here in their barangay. And for the project, even with the pandemic, participants are here through zoom. They heard the issues and concerns. He also said thank you to all who asked questions and those that answered. If we have problems that are not raised today, we will forward this to your office.









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Attachment 14. Issues raised during the Public Scoping and responses

Issues raised in Tagoloan, Misamis Oriental

No.	Name/Position	Question/Concern	Name/Position	Answer
1	Noel Igno,	Recognized the benefits of the road access system that will	Engr. Maria Victoria	- Environmental concerns are important inputs to the
	Barangay	accrue to the people. But the issue of road alignment will	<u>Lofamia</u> - DPWH ESSD	platform and design and this will be studied to know
	Administrator	hit the water reservoir that benefits the whole community		more and understand the situation. The water
		as source of water.		reservoir will not be hit and will be avoided. This is a
				good venue to mention for the flood mitigating
		In Casinglot, we have a problem during rainy season. We get		measures
		flooded in Casinglot. The water reservoir should be avoided		Casinglot as catch basin will be included in the report
		and should not be damaged during construction.		so proper mitigating mechanisms will be put in place.
2	Rosa Moreno,	Payment of affected lands and houses-	Engr. Angelita Balid -	This study is still on feasibility phase indicative of
	BHW, Barangay	For those of us who have houses and land that will be	JICA Study Team	affected areas. The detailed design will be adjusted
	Natumolan	affected, what will happen to us?		and done later and houses and lands to be affected
				will be discussed in RAP (resettlement action plan)
				meetings. In this public scoping, environmental issues
				are to be discussed. Just compensation is provided by
				law.
			Engr. Maria Victoria	There will be a separate team to go to the area. The
			<u>Lofamia - DPWH ESSD</u>	RAP team will offer detailed explanation, e.g,
				compensation. Invited are those who are affected.
				During implementation, there will be a detailed design
			Rowena Dorato-EMB	Noted that sometimes the DPWH valuing is smaller
			Region X	such as those that happened somewhere in Misamis
				Oriental that the owner had a high blood pressure.
				This is important. There is a need to focus on the
				concept as this also affects the people's health, if
				properties are not fully paid.
3	Paul Paraguya	There are 3 groups:		Comment only, not an issue
	CTI Consultant	1.Amet Asia for the		
		environmental concerns and issues to be noted		
		2. EB Testing Center to take sample soil as input to the		





No.	Name/Position	Question/Concern	Name/Position	Answer
		detailed design. 3. RASA group to determine the drawing design applies to the actual. Who are really affected in terms of properties will be discerned.		
		This forum is underscored as the venue to raise the environmental issues and concerns to know the environmental impact of air, water, and land to the people		
4	Marlon Bolanio Casinglot Barangay Captain	Casinglot is a catch basin and there is the issue of flooding along the national highway due to heavy rains impacting on the drainage system. The newly constructed project may add and aggravate the problem.	Engr. Angelita Balid – JICA Study Team	The issue is valid and good that this is brought up. Water reservoir is important and this is subject for study
		In Casinglot, our water reservoir will be affected. What will happen to our water reservoir?		Assurance given that the water reservoir will not be affected
5	Tessie Dinglasa Women sector Barangay Social Welfare &	If the project will be approved, what about the women? Are there possible projects or programs for their livelihood?	Engr. Angelita Balid – JICA Study Team	Livelihood project for the women sector will be considered along side with other sectors in line with GAD. This will be included in the study.
	Development		Ms. Patricia Lim – Amet- Asia	It is not only women's concerns, but also the PWDs are included. The sensitive sectors are to be included in the study to have a GAD plan. No need to worry since this is included in the plan





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Issues raised in Cagayan de Oro City

No.	Name/Position	Question/Concern	Name/Position	Answer
1	Vic C. Talingting	I want to assure the support of the barangay to the	Engr. Angelita Balid –	There is a separate team that will conduct the RAP
	Bugo Barangay	project. I want to hear the settlement of the affected	JICA Study Team	study. The affected people will be invited for
	Captain	private/titled property. I was not able to hear about how		discussion.
		to settle the owners. We have gathered the affected		
		residents and I think there are no problems. They are	Paul Paragoya – CTI	Hopefully this is the end of meetings. But
		just asking about the settlement. The law says that we	JICA	unfortunately not. There are several studies that
		cannot prevent a government project, but they want to		will be conducted. We have the soil sampling, EB
		know what will be the compensation for the trees, land,		Testing, RASA for the RAP and this is EIA
		houses and development affected.		study.Based on the plan, this year is still the
				feasibility studyThere is no final list of who will be
				affected. But the people are very positive towards
				the highway project.
2	Eugene Magto	Is there no profile yet of the 3 barangays that will be	Engr. Angelita Balid –	There is still no list. We have the RAP Study that will
	CSWD	affected? For Bugo, Balubal and Puerto.	JICA Study Team	be conducted
		Decomposit for the entire leaffe stand by the gradient 2		
3	Sherwin	Payment for the animals affected by the project? Do you have the policy/ordinances for the road highway	Engr. Maria Victoria	Thank you for the issue on ordinances. We will get
3	Cabactulan	construction?	Lofamia - DPWH ESSD	the information and during the engineering design
	RTA, CDO LGU	Are there lighting facilities, warning signs and other	LOIGIIII - DF WIT LSSD	that is where we will look at the traffic and
	KTA, CDO LGO	requirement included in the budget? We have		coordinate with you about your concerns of
		requirements like road permit. We have traffic		hierarchy of arterial.
		management requirements, especially if it intersects		merareny or arterial.
		with Balubal and Puerto city roads. Excavation permit is		
		required for city roads. Is there a policy with hierarchy of		
		arterial? Tthere is no policy to direct opening to enter		
		the super highway that requires speed.		
4	Ariel Igot	In the hillside part of Bugo, the canal might overflow	Engr. Angelita Balid –	-This expressway is a high standard highway. We
	Kagawad of Bugo	down to the barangay to cause flooding. There might be	JICA Study Team	have hydraulic engineers who will study the water
		flooding. It must be part of engineering to look at the		flow. Rest assured that we ensure that if your area
		flooding.		is flood prone, we will study the design of the road.
			Ms. Patricia Lim, Amet	We have a hydrology expert who will study the
			Asia	water flow of the area and look at the bodies of





No.	Name/Position	Question/Concern	Name/Position	Answer
				water and check the effect of flooding and provide recommendations if there is a need for drainage. In the detailed engineering design, we will look at the issue of flooding in the area. There will be experts who will look at the area of the road
			Mr. Samuel Sendon - Amet Asia	We are designing which area is prone to flooding. Road alignment is usually in the highlands and not affected by flooding due to extreme weather conditions. Mostly run off, we will address in the detailed engineering design through detailed hydrology and check the flooding aspect in the area.
5	Armien Cuenca - CLENRO Head	My concern during construction. What measures should be done so that the debris will not go to the lower portion? Apprehension during rain-induced landslide. There should be mitigation for rain induced landslide. I think there will be no problems after the construction.	Engr. Angelita Balid – JICA Study Team	– Your concern is valid. We have a public scoping so we know your concerns, rest assured that since this is a category A project. We will look at the environmental impacts such as the debris during construction, it was presented in the Envi that there are mitigation measures during construction. Don't worry there are a lot of people looking at the project.
			Samuel Sendon - Amet Asia	Landslide is not just during heavy rains, we are looking at the areas whether it is earthquake-induced or rain- induced. We will make the geohazard assessment. Hydraulic concerns will be studied very well to include the areas prone to flooding. The existing road has a lot of landslide prone areas. But there are mitigation measures that can be done.





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Issues raised in Manolo Fortich, Bukidnon

No.	Name/Position	Question/Concern	Name/Position	Answer
1	Shirley Tagapulot	Our concern is if the road will pass through the trees and	Ms. Michiko Quiachon	We are preparing a RAP that will reflect the
	Kagawad,	residential lots. This is because there was a DPWH	- DPWH ESSD	affected lots and trees. There is a plan for that with
	Dicklum	project before and they were not paid/ Will the affected		estimated compensation. The design is still
	Barangay DRRM	lots be paid?		preliminary, not final
2	Datu Alex D.	I would like to inform the body that Amet Asia has		Information, suggestions and comments
	Payangga	complied with the rituals of the IPs. But I have also a		
	Municipal IPMR	knowledge that this activity has 3 contracting parties:		
	Tangkulan	Amet Asia, RASA and EB. The two other parties have		
		already passed through the IP process - RASA and Amet		
		Asia. I talked with EB representative that they should		
		comply with the requirements of the municipalities since		
		they have CADT. That is why we request the contracting		
		party to abide with the IP process. When the detailed		
		design is done, the concern is there are areas that are		
		rented by Del Monte, what if the project will pass		
		through here and the land will be reduced and deducted		
		from the rentals?		
		Forest areas - flora and fauna, how can we mitigate?		
		There must be mitigation procedures to maintain the		
		environmental diversity		
		Follow up Suggestion		
		Another concern is the houses - if you do not follow up		
		the contractor and DPWH, the owners are not paid. This		
		is the common problem among IPs. It is suggested that		
		before the ROW, all areas should already be fully settled		
		and paid before 2023. There are benefits and it can help		
		them.		
3	Datu Amay Iwag	Why are there a lot of rituals? The rituals are required	Engr. Maria Victoria	We have another discussions with another group.
	– MPUMATRIC	before other people are allowed inside our area. So it is	<u>Lofamia -</u> DPWH ESSD	Thank you for sharing your concerns that will be
	Talaandig	one of the requirements of the IPs. We tried to avoid the		included in the discussion in the public scoping.
	Chieftain	CADTs but based on the presentation, all of these are in		
		Ticala, San Roque, Vista Villa – these are ancestral	<u>Dr. Nimfa Bracamonte</u>	We always take consideration of culture sensitivity





No.	Name/Position	Question/Concern	Name/Position	Answer
No.	Name/Position	domains of Higaunon-Talaandig. We want to emphasize that the discussion of the cultural impact of the project should be undertaken. The cultural impact assessment will include not just the rituals, but the 1.belief system/spirituality 2.IKS impact 3. impact of the project to the customary governance, justice system 4.indigenous economic 5. health system (the forest is source of herbal medicines) 6.peace and security of the tribe. These are not part of EIA when these are part of RA 8371. When we talk about construction, big considerations be afforded to these, as these are done only after the construction is almost done and damages are already incurred by the contractors. These impacts should be a component of the project. This will lead to the FPIC of the project. These issues in DPWH complying with the FPIC, usually the projects are already done before they ask for consent. It should be part of the study of JICA. I hope the concerns of the IPs will be included – both the positive and negative	- Amet-Asia	and we are aware that Manolo Fortich is sprinkled with the IPs – Talaandig cultural identity. We are also conducting KII and part of it is determining the lifestyle and practices of the cultural communities – regarding the cultural impact assessment as mentioned by Datu Iwag. This is embodied in RA 8371 or IPRA
	NA TI	impacts.	M 1 2 111	W 2011 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
4	Ma. Theresa Dampal - MENRO	Is it included in the plan to identify and present the disposal site before the construction? There have been incidents of disposal issues that have reached the office.	Ms. Jan Bautista – Amet-Asia Engr. Angelita Balid – JICA Study Team	 We will include the disposal in the plan. It is part of the factors that is being studied on how waste will be disposed. Rest assured that we will look into this issue. It is one of the pointers being closely looked into.
5	Rosie Lyn P. del	The various potential impacts and mitigation were	Atty. Abbas Lao – EMB	The reason behind public scoping is to determine





No.	Name/Position	Question/Concern	Name/Position	Answer
	Rosario	broadly presented. Re waste management plan and	RX	the scope -the baseline studies of this EIA will be
	LGU Manolo	other plans concerns - will this plans be presented to the		disclosed to the public and through the public
	Fortich	LGU? Will the details of the plans be discussed in the		hearing. The chosen representatives from different
	MPDG	public?		sectors who will be invited in a public hearing are to
				disclose, in turn, the details of the study to their
				respective communities.
			Patricia Lim – Amet-	The results will also be reviewed by the EMB central
			Asia	office.
			Asia	office.
				The presentation earlier was potential impact and
				general since we have not done the study yet. The
				potential impact was presented and it depends on
				the result of the assessment. It depends on the
				actual data gathered and these will be presented to
				the community during the public hearing. The
				results and recommendations will likewise be
				presented during the public hearing.
				Results of the study will be presented during the
			Atty. Abbas Lao – EMB	public hearing. All the recommendations for the
			RX	proposed project will be presented during the
				public hearing.
				The concern about several plans – slope protection
			Engr. Maria Victoria	plan, right of way plan. This is part of the scoping.
			Lofamia - DPWH ESSD	From this scoping, we will have the baseline data
			<u>LOTATINA</u> DI VVII LOGD	from the ground and we will see what concerns
				need to be answered like slope protection and
				drainage. This is because of the scoping that there
				is flooding in certain areas. We capture the issues
				for the consultant and look at the mitigating
				measures for every impact seen and evaluated.





No.	Name/Position	Question/Concern	Name/Position	Answer
				All management plans and other baseline studies
				that will be conducted as part of the EIS will be
				discussed and disclosed to the public thru the
				public hearing.
6	Ma.Theresa	Is it possible during construction phase to inform the	Atty. Abbas Lao – EMB	They will identify the disposal site. This study will
	Dampal	LGU so we can check the identified disposal site if it is a	RX	be reviewed by REVCOM comprising of different
	MENRO	good site because others dispose their wastes in the		experts from different institutions to review the
		creek.		plans and disposal site. The REVCOM will also check the concern of LGU Manolo Fortich to check
				if the disposal site is appropriate. We can also check
				if the identified disposal site is appropriate and
				there are no environmental impacts. The request of
				MENRO that they will be consulted during the
				baseline study they can inform – closely coordinate
				with the LGU to directly inform the consultant
				about the issues.
			<u>Patricia Lim – Amet-</u>	
			Asia	Regarding the construction phase, the LGU will be
				part of the MMT in monitoring the issues like in the
				construction site they can suggest to recommend
				what can be done. It is one of the safeguards of the
				project.
7	Paul Paragoya	I would like to apologize for yesterday, no intention. In	Atty. Abbas Lao – EMB	There are guidelines for the MMT. In this project,
	JICA- CTI	the creation of the MMT, where is the level? Is it at the	RX	with different municipalities, there should be levels
	Consultant	national, regional, provincial or municipal? It is good but		of representatives from the different municipalities
		the participants are from the barangay. At what level is		and sectors affected like Bukidnon. The concerned
		the monitoring team?		barangays will also have representatives in the
				sectors. The creation of the MMT has guidelines. Rest assured that all the concerns of the different
				level of the LGU – from barangay to municipal will
				be considered. The provincial government will also
				consider the issues of the municipality. It is
				composed of different sectors pursuant to the
				guidelines of DENR









CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Issues raised in Sumilao, Bukidnon

No.	Name/Position	Question/Concern	Name/Position	Answer
1	Datu Carlo	Our mayor is very supportive. In Vista Villa, the road will be	Engr. Angelita Balid –	It was already presented last time that the land are
	Dahinao	there. In Dalirig, the land and properties affected in the	JICA Study Team	rented by Del Monte. Rest assured that we will take
	– IPMR Sumilao	Higaunon-Talandig ancestral domain were not paid. The		into consideration regarding this. The DPWH has a
		lands are rented by Del Monte, Del Monte reduced the		procedure for that
		payments since the land were added in 30 meters of road.		
		Now with the JICA project, all of the land in the area will be		
		taken so no more land. So we are asking for livelihood in the		
	Date: Carla	area.	Francis Maria Mistaria	There is a DACA substant discuss discuss the multip
2	Datu Carlo	Our land is already rented by Del Monte - the landowners	Engr. Maria Victoria	There is a RASA who can discuss during the public
	Dahinao - IPMR Sumilao	already advanced the payment. What could be done? Thank	<u>Lofamia -</u> DPWH ESSD	consultation. There are some things that cannot be avoided, RASA will discuss this with them. We will take
	Sullillao	you.		this into consideration.
				this into consideration.
			Engr. Rowena Dorato-	The land was already paid by Del Monte, so nothing
			EMB Region X	will be left for them in the payment.
			Engr. Maria Victoria	This is still an initial phase so we cannot tell if the
			<u>Lofamia -</u> DPWH ESSD	payment will be lacking. It is good that we get their
				concerns during the public scoping and we know how
				to deal with the issues.
			Patricia Lim – Amet-Asia	For the EIA consultant, we are applying to the
			Fatricia Liiii — Airiet-Asia	environmental compliance certificate. We take note of
				the issues and include this in the EIS and submit this to
				DENR. At this stage, we will recommend and the
				project alignment might change later. So we
				recommend the FPIC, the project will not start if the
				permits are not given. For the comment of
				representatives – we will really try to have this in the
				area. For the problem with rent – as mentioned by
				Engr Balid and Engr. Lofamia – there are other venues
				for talking, discussing the issues.
3	Fidel Daigon -	There are 2 categories of farmers - small and big. Small	Engr. Maria Victoria	For the small farmers maybe this was discussed in





No.	Name/Position	Question/Concern	Name/Position	Answer
	Kisolon Farmer's	farmers are in the slope area. My question is, will they be	<u>Lofamia - DPWH ESSD</u>	RASA. There are certain processes on how to address
	Association	paid since they don't have any legal document. How do we		small and big farmers. But as mentioned by Pam Lim,
		address the small farmers with no legal documents?		we will get their issues and concerns so we can place
				the mitigating measures that we have these issues and
				how to address them. But for now, we cannot answer
				directly if they are entitled or not. What if I say yes but
				they will not be affected. It is after the detailed
				engineering design where we can say that they will be affected. This are initial issues and concerns and we
				want to hear them so we can look at the mitigating
				measures.
				Theasures.
			Engr. Rowena Dorato-	Even if you do not have the legal documents, what is
			EMB Region X	compensated are the improvements in the land and
				the trees. But during the detailed engineering for the
				final alignment. They will call for another meeting
				where the compensation will be discussed.
4	Julius Tan -	Follow up question for Sir Fidel Daigon. All the slopes are	Engr. Rowena Dorato-	This cannot be answered right now. But we have the
	Poblacion	owned by the IPs but they do not have papers. In the IP	EMB Region X	procedure for the compensation of the land and
	Barangay Captain	tradition we have certain signs that this is owned by		improvements.
		someone. There are trees and other improvements. Thank		
5	Julius Tan -	you In the Sumbalan - it was a previous lake and was planted	Engr. Angelita Balid –	Thank you for the information for the previous lake.
	Poblacion	with pineapple by Del Monte. The lake was 4 hectares	JICA Study Team	Do you have a map when the lake was shown?
	Barangay Captain	With pilled ppie by ber monte. The take was Theotares	Jier Cotady Team	bo you have a map when the take was shown.
	2.00.7 2.00.00	I have a map in 1930 and I can show you the area.		
6	Datu Carlo	Compliance with Free and Prior Informed Consent. We are	Engr. Angelita Balid –	We required that those who go to the field bring
	Dahinao - IPMR	not against the road - during the RASA meeting, we	JICA Study Team	someone who can translate. For RASA who were not
	Sumilao	understood the project. But the problem is that they were		able to provide a translation, rest assured that in the
		talking in English and Tagalog. An IPMR representative must		next meetings there will be someone who will
		be present to translate to the IPs. The project proponents		translate.
		must go through the barangay for public hearing and		
		consultation. They were speaking in English and Tagalog and		
		the people could not understand so I translated for the		





No.	Name/Position	Question/Concern	Name/Position	Answer
		people.		
7	Vice Mayor of Sumilao – Jhun Dhee Leparto	In VIsta Villa, they presented the road project. There were many comments and issues. We are building a community in the area who were relocated from danger zone areas - 77 households in Sitio Basag. We invested and allocated funds to build that community. A JICA personnel showed a map and that the road will pass through the community. There are farm areas which are their source of livelihood. We presented to JICA a proposal. We presented a proposed road to them and they will only deal with Del Monte. The road you are proposing is more than the existing road. This is a redundant road. According to the JICA representative we talked to - they like our proposed road alignment. We hope it reached your office. So we can go with the project.	Engr. Rowena Dorato- EMB Region X	The contractor and JICA should conduct a survey and you can see the road. The budget can be added to the livelihood instead.
		The existing road is almost 90% done and it is really close to the proposed JICA road. That is why we proposed another alignment for the road. You only talk with Del Monte. You can visit our office so we can show the area.		





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Issues raised in Malaybalay, Bukidnon

No.	Name/Position	Question/Concern	Name/Position	Answer
1	Bae Inatlawan	If our land which is CADT is affected, will we be paid and	Ms. Michiko Quiachon –	The RAP will be undertaken for those with lands that
	Adelina Tarino –	how much?	DPWH ESSD	are affected. We cannot answer how much because
	Daraghuyan			the process is not yet finished and we are still in the
	Ancestral Domain –			FS.
	CADT Holder			
			Atty. Abbas Lao – EMB	The project is still in the FS and they cannot answer
			RX	yet.
2	Arbel Sulinay from	As heard from the presentation, we are not sure if the	Ms. Michiko Quiachon –	The FPIC with NCIP will be complied
	KADUMA	project will pass through our ancestral domain, the FPIC	DPWH ESSD	
	Kalasungay	should be followed in partnership with the NCIP.		
3	Josette Ygonia –	Are the Department of Education Malaybalay City	Ms. Patricia Lim – Amet-	The representatives from different areas are invited
	Principal,	represented in this public scoping?	Asia	to the public scoping.
	Dalwangan			
	Elementary School		Atty. Abbas Lao – EMB	The representatives from DepEd are also represented
			RX	here.
4	Leslie T. Fontanilla -	Good morning po! This is from DepEd Malaybalay City. The	Atty. Abbas Lao – EMB	We will coordinate with the concerned offices
	Division Engineer-	schools -Kalasungay Central School and Dalwangan	RX	regarding this project. Any other concerns about this
	DepED Malaybalay	Elementary School, received letters directly from the DENR-		project?
	City Division	EMB. We will wait for the finalization of the project if ever		
	(through zoom)	our school property will be affected, or there will be	Engr. Angelita Balid –	They are invited so they will know about the project.
		utilization of the school area for the proposed project. We	JICA Study Team	They are not affected because the project might not
		hope that the Office will be informed if there are activities		pass through the school. We want to avoid that the
		like this.		project will affect establishments.
5	Mary Fe C.	The highway might pass through our area. The DPWH went	Atty. Abbas Lao – EMB	There should be proper coordination with the
	Gumayao, SP1 of	through our school and they did not coordinate with the	RX	concerned officials. Thank you for the information.
	Kalasungay Central	School Superintendent. I told the School Superintendent to		
	School (through	look into the situation.		
	zoom)			
6	Josette Ygonia –	Can we have a copy of the proposed alignment of the	Atty. Abbas Lao – EMB	We cannot provide the map because there is still no
	Principal,	project? There might be school structures that will be	RX	detailed design. But there will be coordination with
	Dalwangan	affected. We have to know how the project will affect our		the concerned agencies so you will be informed for
	Elementary School	school so we can make initial requests. I would like to ask		the final detailed design.





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

No.	Name/Position	Question/Concern	Name/Position	Answer
		where in Dalwangan the project will pass through - the Elementary and High School might be affected. Thank you.		
7	Phoebe B. Petalcorin, Engineer II, Provincial Planning and Development Office -Bukidnon (through zoom)	Please also identify if the affected roads will be barangay road or the classification of that road.	Engr. Maria Victoria Lofamia - DPWH ESSD	Rest assured that we will have proper coordination with the LGUs regarding this project. High Standard Highway – all our concerns during the public scoping will be taken into consideration. Like in the education sector, and the road classification will be coordinated so we will have a smooth flow.
8	Phoebe B. Petalcorin, Engineer II, Provincial Planning and	Regarding the High Standard Highway what is the classification?	Engr. Angelita Balid – JICA Study Team	This is an express highway project design. But we still need to study the detailed design of the project.
	Development Office -Bukidnon (through zoom)		Atty. Abbas Lao – EMB RX	This project is an express highway and different from the provincial road.
9	Arbel Sulinay from KADUMA Kalasungay	From Tagoloan to Malaybalay – is this the dead-end of the project or will it continue to Davao City so there will be more barangays which will be affected in Malaybalay City.	Engr. Angelita Balid – JICA Study Team	Thank you for the question. The project is CDO-Malaybalay, for the road in Davao City that is another project. The affected barangays in Malaybalay are only those listed. For the Davao City highway project that is another study.
10	Phoebe B. Petalcorin, Engineer II, Provincial Planning and Development Office -Bukidnon (through zoom)	There are a lot of on-going DPWH projects, so it is important to clarify the areas.	Engr. Angelita Balid – JICA Study Team	Thank you. We are trying to design the expressway to coordinate with the roads projects. So we are asking for the plans, so there is no conflict with the current projects of DPWH.
11	Jonar Yanggo – Brgy Secretary, Cabanglasan	After the project, will this be turned over to big companies and will there be toll fee?	Engr. Angelita Balid – JICA Study Team	We still cannot answer that. We will study if we can fund the expressway and not ask for the toll fee.

Issues raised in Impasug-ong, Bukidnon





No.	Name/Position	Question/Concern	Name/Position	Answer
1	Dawn Roque,	We received the map of the project. And the highway will	Engr. Angelita Balid –	We will take note of the concern in Capitan Bayong.
	Barangay Captain,	pass beside the poultry. Our concern is that the chicks will	JICA Study Team	Thank you for relating your concern.
	Capitan Bayong	be affected by the noise. This is a highway and there will be		
		a lot of cars passing by. Even the helicopter passing by will	Atty. Abbas Lao – EMB	The map is still initial and the consultant will conduct
		affect the chicks. We are requesting that the road will be	RX	a detailed investigation on the alignment of the
		moved a few meters – still within our land. We are happy		project. What is the appropriate distance of the
		with the project but can it be moved further from the poultry? Thank you.		highway for the poultry?
				This will be included in the proponent
		I don't have the exact number for the site – but the existing		recommendation.
		plan is just 5 meters from the highway. Maybe 30 meters		
		away from the highway.	Engr. Angelita Balid –	That is a good question. But I cannot imagine the
			JICA Study Team	access road and the highway. Will the highway be
		Our access road of the highway is along the Atugan river. Is		elevated to allow trucks to pass?
		the highway going to be elevated? Our delivery might be		
		impeded if the highway is along the way. The access road		This is an expressway and will be elevated. But we
		and the highway cross each other.		will see in Capitan Bayong to show in the map where the poultry is located.
			Atty. Abbas Lao – EMB	It will be one of the concern in the baseline and this
			RX	will be included in the detailed design in
				consideration of the poultry.
2	Kag. Rolando E.	From Manolo to Malaybalay there are a lot of poultry farms.	Atty. Abbas Lao – EMB	If possible all poultry farms within the direct impact
	Eguia Brgy	The consideration of Kap Roque is not just in their area but	RX	area of the proposed project will be considered. I
	Poblacion (through	also for Bukidnon. Can this be considered?		think it will be included in the actual site survey. That
	zoom)			is actually one of the purpose of the environmental
				impact assessment to look at the directly and
				indirectly affected areas. To relocate the road
				alignment to pass by the poultry farms. It depends on
				the mitigation of the proponent. And your concern
				will be considered in the environmental impact
				assessment.
3	Brgy. Cawayan	For the affected houses, will there be any compensation	Atty. Abbas Lao – EMB	There will be a compensation plan – any other
	(through zoom)	and relocation? If there will be infrastructure in the area	RX	structure will be included in the inventory and will be





No.	Name/Position	Question/Concern	Name/Position	Answer
		that will be affected, can the alignment be moved to avoid		discussed in the compensation.
		the infrastructures already in the area?		
			Engr. Angelita Balid –	This is the work of RASA – you can include that in
			JICA Study Team	their discussion. But this is good that it is raised in
				this forum that there is a concern in this barangay.
				There is a compensation for the affected residents.
4	Brgy La Fortuna –	There are two irrigation canal structures in San Juan and La	Engr. Angelita Balid –	We will take note and study so that the survey team
	Kagawad (through	Fortuna proper	JICA Study Team	will see how the alignment will be adjusted. Please
	zoom)			accompany the survey team so they will know the
5	Vac Enrique Cayon	I was the one who accompanied in the survey and saw that	Engr. Angelita Balid –	area. Like the other farms that will be affected by the
5	Kag. Enrique Gayon – Capitan Bayong	many banana and pineapple plantation will be affected.	JICA Study Team	alignment, rest assured that we will consider these
	Capitan bayong	What will happen to them?	JICA Study Team	affected areas. Please inform us so we can validate
		What will happen to them.		these areas that will be possibly affected by the
				alignment.
			Atty. Abbas Lao – EMB	It will be included in the inventory. That aspect will
			RX	be included in the impact evaluation of the review
				committee. All your issues will be addressed before
				the ECC is given.
6	Kag. Enrique Gayon	I think our source of water - main line and reservoir - will be	Atty. Abbas Lao – EMB	This is the projected alignment of the road. This is not
	(Capitan Bayong)	affected. What will be the solution for this?	RX	the final alignment. The proponent will still do a
				study for the final alignment.
			Engr. Angelita Balid –	It is good that you mentioned that concern. So if
			JICA Study Team	there are reservoirs we try not to affect them. We
			JICA Study Team	will ensure that the design will not affect the
				reservoir. We will make sure that the alignment will
				not be affecting your water line and reservoir
				3,11
			Atty. Abbas Lao – EMB	If there is a possibility to re-align the project and not
			RX	affect the reservoir then it will be done. This study
				will look at the directly and indirectly affected and
				make mitigation measures. Like if the reservoir is





No.	Name/Position	Question/Concern	Name/Position	Answer
				affected, they will find ways to look for economically
				probable solutions. This meeting is documented and
				your concern will be included.
7	Brgy Poblacion	Will we be paid for the agricultural land that will be	Ms. Michiko Quiachon –	We will follow RA 10752 – ROW Act – this will be
	(through zoom)	affected? Will there be a relocation for the affected?	DPWH ESSD	included in the RAP. It is also included there the
				relocation site in coordination with the LGUs.
				In terms of payment of affected land, we will strongly
	Vos. The de New week	If there is a musicat like this was possible a vitual Wayne	Ma Datricia Line Areat	adhere with the provisions of RA 10752.
8	Kag. Thoda Napuran	If there is a project like this, we conduct a ritual. We are	Ms. Patricia Lim – Amet-	Actually, before we went to the site, our team in the
	(Capitan Bayong)	part of the tribal group. We have a ritual before the start of	Asia	envi – we attended the ritual. Nina, Ivan and I attended the ritual in Manolo Fortich. We also
		the activity. The proponent will pay for the expenses. Thank		
		you.		followed the procedure in following the rituals, if it is required. We sponsored the ritual.
				required. We sponsored the ritual.
			Atty. Abbas Lao – EMB	Rest assured Kagawad that the proponent will follow
			RX	the rituals required.
9	Kag. Rodrigo Antivo	What was mentioned was in Manolo only. In our area, we	Atty. Abbas Lao – EMB	What was mentioned by Patricia Lim is that they have
	(Capt Bayong)	also require the conduct of rituals.	RX	already conducted rituals in other areas. Rest assured
				that in Capitan Bayong the proponent will follow the
				rituals.



CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 155. Public Disclosure

Notice of Public Hearing for the project in newspaper

Tuesday, 25 September 2023 MONEY B11 Daily Tribune

PCCI, DTI forms free trade front

PCCI has always been a reliable partner in shaping trade and investment policies

The Philippine Chamber of Commerce and Industry, the country's biggest trade group, and the Department of Trade and Industry, or DTI, have combined forces to push for the promotion and utilization of the country's trade agreements.

Trade Secretary Alfredo Pascual and PCCI president George

Barcelon on Monday sealed the memorandum of understanding, which will complement the department's trade education and advocacy campaign to ensure that stakeholders are aware of the



opportunities that these trade agreements bring and that they are able to utilize the FTAs.

"The MoU is another concrete step to help boost the impetitiveness of domestic industries. We aim to undertake The saot is another concrete seep to neep boost the competitiveness of domestic industries, We aim to undertake initiatives that will empower our stakeholders to compete in a bigger market and seize the available opportunities therein. Through these FTAs, it will provide an enabling environment for businesses, particularly as we advocate the utilization of these FTAs and build the capacity of our stakeholders," according to

Sokor free trade
The latest FTA was sealed by the
Philippines and South Korea, aimed to
significantly contribute to the Philippines' value proposition as a strong market for smart and sustainable investments, for smart and sustainable investments, especially as a manufacturing and export hub in the region, a milestone to further enhance the Philippines and South Korea partnership through increased trade and investment relations as well as job execution. generation.

Barcelon said PCCI has always been

Barceion said PCGI has always been a reliable partner in shaping trade and investment policies.

He said with its extensive network and partnerships with various industry associations, and business councils, PCGI is significant in empowering the export sector through the trade agreements.

The partnership is aligned with DTI's objective to strengthen the competitiveness of Philippine businesses, particularly the micro, small, and medium enterprises.

and its local chambers. Further, building on a holistic approach, the PCCI and other industry associations will be provided with capacity

building and mentorship programs to strengthen their capability to utilize trade agreements and arrangements effectively. Likewise, regular trade-related dialogues and consultations will be held for local business communities, especially those

will be held for local business.

With export potential.

The PCCI and DTI both said the partnership is timely with the recent entry into force of the Regional Comprehensive Economic Partnership agreement for the Philippines that will seize opportunities in the RCEP region.

JOB OPENING

D'HOOVER RESIDENCES DEVELOPMENT CORP.

JOB VACANCY ENDO LIGHTING (THAILAND)
PUBLIC COMPANY LIMITED
PHILIPPINES BRANCH

MANAGER (1)

- (8) JOB VACANCIES:
- Mandarin Operation Manager Mandarin Finance Manager Mandarin Human Resources Supervisor
- 3 Mandarin Marketing/Sales Coc 3 Mandarin General Manager 3 Mandarin Quality Inspector

- With at least 1 yr the related field.
- the related field.

 *With good verbal & written skills, specifically English & Mandarin.

 *Knowledge in field/real estate works



Records stoke in versay a memorance of tracerus any formalize a partnership in the promotion and utilization of trade ag-and other preferential arrangements to bornst the economy

It's imperative to rise in the Life Sciences and Global Innovation Index

Another imports Another important factor is the establishment of trust among curvain players in the Bits sciences value chain, allowing them to estfaherate and co-create, in fact, it was collaboration that gowed the way for the world's new and brave steep of survival and recovery from the Coriol By pandersic.

In his operating remarks, Alejandro Campaña, senior director at WHY's IP for Invostators Bepartment, highlighted collaboration in making possible the development und laureth of vaccinen in one and a

half years, a far cry from the average 10 to 15 years.
This was supported by WIPO's patent applications data in which almost a quarter named more than one inventor as the patent holder.

Hising in the GH
In the Philippines, callaboration takes center stage
in our insecution offerts with the creation of the
National Inservation Council, created by the Philippine
Inservation Act of 20th.
The 25-member NG, which (POPIL) is a member
to the Philippine of the Philippine

of, alms to transfers Philippine insovation with more

of, aims to transform Philippine Insorration with more and better quality surpairs. It also aims to relevant the country's ranking in the Global Insorration Index from Bith is the lap third of acconstance.

The Bith edition of WIPLYs GH will be released on Wednesdor, 27 September, during a hybrid event from 1300 to 1500 p.m. CEST (feature time). Control on a very timely theree, "Interestion in the face of uncertainty," the report will be discussed in greater detail in a possed discussion which will also talk about the way Servard for global innovation.

Alejandro Casupaña, action director at WIPO's IN Co-Propries Department PISSER SDC.

One of the main responsion activities to be undertaken under the MoC is the establishment of international trade assistance centres or help desks in he regions or produces with the help of PCCI

Ferronoux Holdings, Inc.

Notice in heavy given that the Arrant Machader FERRONOUS HOLDINGS, INC. (Not "Corporation") will via service communication (finally). Even halfly on the pig tempte communication (from (Friday) at 1:00 in the effection.

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About agricultured the agency lives which requires stockholded agrees in provided in the Information Statement. The Information Statement, the agency Information Statement, the agreement Report, the Amoust Report SEC From ITAL and Questing Rep

Deadline for registration and automasson of voting terms and prosent in \$500 pass are Cleanine 10, 2023, flockstein of piocess shall be made on Notice 11, 1500 at the principal offers of the Company of the State 10, 1500 personal or Action 10, 1500 perso

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

IP for Innovators Department, highlighted collaboration as making possible the development and launch of vaccines in one and a half years.

Aside from driving innovation in an imperative sector like the life sciences, the Philippines has been relentless in making the country's overall innovation ecosystem more vibrant and productive. Our efforts must be reflected and justified in this next GII report where we hope to see the Philippines rise up and soar.

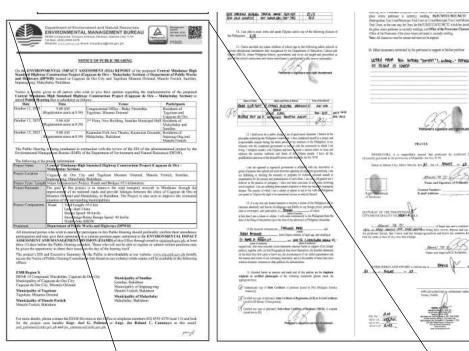
JOB OPENING HOST, PREMIUM MARKETING SERVICES

- Conducts the daily membership enrollment process, ensuring pattons are well-informed about the advantages and exclusive privileges of becoming a Rewards Circle Club member.

 Maintains and updates patron account information to efficiently respond to inquiries regarding membership status. Actively promotes Rewards collection items to patrons, aiming to achieve revenue targets established by management.

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TIGER RESORT LEISURE & ENTERTAINMENT, INC. Okada Manila, New Seaside Drive, Entertain City, Barangay Tambo, Parañaque City









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Notice of Public Hearing for the project in newspaper

Komfie Manalo, Editor

Monday, 2 October 2023 Daily Tribune

INDUSTRY 4.0 B11

APPENDENCE OF THE PROPERTY OF

MSERV bags contract to supply energy efficient chillers to ePLDT

Merales Energy Inc. or MSERV, a rapidly emerging contractor in the hyperscale data center industry, has been awarded the contract to supply highly efficient and oil free Smarch magnetic chillers and chilier sunsagment system for ell-III, Inc.'s Vitro Sta. Rosa Hyperscale Data Center in Laguna.

largema. MSERV, a whistly-owned substituty of Morados, provides energy efficient and innovative solutions. It is known as a reliable and trasted choice for companies in the energy industry that airus to achieve optimal performance and untainabūty.

Bayad seals partnership with Tala for convenient bill payment

We continue to strengthen our digital footprint by cocreating payment innovations with forward-thinking fintech institutions like Tala

Two finiseds important — CIS Bayad Center Inc. (Bayad), the country's piomeer beand in the outsourced payment collection system, and Tula Financing Philippines Inc. (Tala) — a global leading money app for the underbanked, have officially scaled their partnership, sharing the same goal of elevating the financial

their partnership, sharing the same goal of elevating the financial experience of Pilipinas.

Since 2017, Tala has been providing financial tools that help its entorners manage their household expenses and help them movigate opportunibles to invest us small businesses. Tala has recently reached one million wallet users on its mobile application since its official launch earlier this year.

Through its partnership with Bayad, Tala now enables Meralcubili payments in its mobile application, while also offering quick and easy ways to pay loans, allowing its customers to settle their bills on time.

Todo: Tala nationers can now may their bills in matthing using

mas on tame.

Today, Tala customers can new pay their bills in real-time using
their credit of up to P25,000 all within the Tala app. With its flexible
credit terms, customers have the freedom to choose when to repay

credit terms, customers have the freedom to choose when to report
within 61 days, aligning with their respective income cycles.

Bayard President and CEO Lawrence Y. Ferrer shared, "We
continue to strengthen our digital footprint by co-creating paymout
innovations with forward-thriking finite-th is satistations like Tala.
We are one with Tala as we help boost the financial well-being of
our koborboyatos. We are keen an expanding our hiller coupstem
as we bring our one-step bill payment solution to the Tala App.
With this, Tala will also soon be able to accept payments for other
closests and water willlists to the commissions, while internal. electric and water utilities, telecommunications, cable, internet, insurance, online shopping, and many others."

Answering the call for digitalization

At Microsoft, we think about this as having a copilot to help navigate

Digitalization in the call of today; "ingularization in the case of today," not the call of the fature — but of the present. It is here. It is needed, and it is needed today. "These words of Precident Ferdinand E. Marrow Jr. during his 2023 State of the Nation Address couldn't ring more true, especially with the state of digitalization in national government insultrations." institutions.

institutions.

While much has been said about the need for micro, small, and medium businesses to upgrade their digital facilities, it may very well be that the biggest (and most pressing) beneficiary of digitalization today is the government

'In addition to catering to the needs of Fülpino households and hosinesses, Converge has always envisioned harmensing our fiber technology in the service of government. We've long considered government frontli services as an area badly in need of transformation," said Converge CEO and co-founder Dennis Anthony Uy.

In South Korea, a digital-forward economy, the government took its one from the private sector in coming up with the 'Digital Platform Government.' This platform aims at "fondamentally innovating government operations" by utilizing new technologies like AI and

utilizing new technologies like At and cloud computing, among other strategies. In the Philippines, government bodies are showly (but survey) realizing their role in leading e-governmee projects, expocially those that facilitate the delivery of public service.

Converge has been a stanach proponent of 'e-governance', helping various government agencies and local various government agencies and local government units, or LeGs, in realizing their smart initiatives and digital transformation, especially in response to the global pandemic. At the height of the pandemic in 2021,

with distance learning weighing heavily on students shuttered at home, Cornerge on students strattered at hume, Cornerge supported the Department of Education's Public Education Notwork and enabled learning management systems that earnied Dept6 TV and Dept61 Common content to supplement the learners'

In 2022, with the country's tourism in 2022, with the country's isorism back on the upswing and Filiptino travelers' upsized needs to connect in the country's gateways, Correrge partnered with the Department of Transportation and airport operators to extend free public WPS services in the passenger terminals of nine international

passenger terminals of nine international and domestic airports across the country. This project is currently underway. The Department of Information and Communications Technology, or DICT, the main regulating agency in the industry, gave the green light to Converge this past month to provide free Wi-Fi services

in various municipalities across Ilocos Norte, Bocon Sur and La Union. This falls under the 'Free WiFi for All' program of

And just this September, Converge once again offered its fiber broodband in the service of the government as it in the service in the government as in closed another agreement, this time is collaboration with the Department of Science and Technology – Science and Technology information Institute. This collaboration will make DoST. TV programs and content accessible on Converge's free streaming service, as well as affiliate PKN Group's Vision and Piber TV.

At the local government level, this At the local government level, this urgency to go digital is even more argent as busic public services are devolved to cities and manicipalities. Again, in response to the difficulties of distance learning, Camerge fiber powered the elearning of 25,000 public school students

the elearning of 23,000 public acheod students and toachers the San Janes City in 3221. In partnership with the local government of San Janes and Converge's pureet company Cont/Sark, a suite of learning tools was made available to students and teachers, all made possible by the fiber connection supplied by Converge

supposed by Converge.

In 2021, as the government strived to meet vaccination goals, Converge powered up LGC vaccination sizes and centure, it powered up PhOL Hying V Arena and Theater Mall in Greenholls in overna and theater Mall in Greenfells in San Juan, the City College of Angeles, and the Angeles National High School vaccination aline in Angeles, The Philippine Red Cruss' testing site in SM Bagtis, and more sites in Lagma and Microscole.

During the launch of Converge fiber broadband in Boracay, CEO and co-founder Dennis Anthony Uy vowed

to boost order and safety in the top tourist destination, promising to build a resilient digital infrastructure to support the island's surveillance system and command center. As the government bead the call of the administration to embrace digitalization, Compares stands ready to compare it.

ammissration to emrace organization, Comverge stands ready to support its broader aims of using technology not just to ease doing business in the country but to finally moderatize the functioning of government, especially for front-line public services.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

everyone deserves access to financial services, regardless of their background or circumstances. As the Philippines is Tala's innovation hab and its largest market in Asia, we view this collaboration with Bayad as part of our outgoing commitment i financial inclusion as we step up to help revive our economy."



Union Bank celebrates quadruple victory at the 2023 Stevie Awards

This award recognizes UnionBank's successful acquisition of Citibank's consumer banking business in the Philippines which was greatly driven by its promise of continuity and care for its people

Union Bank of the Philippines celebrated a remarkable victory at the 2023 Sevie Awards for Great Employers, or SMSE, held at the Marriott Marquis listed in New York City. This trapressive achievement signifies the Bank's commitment to its employees and its growing influence as a financial institution.

institution.

The SAGE is internationally acclaimed The SAUL is internationally accusations for recognizing outstanding archievements in business and has been a symbol of excellence since the inception in 2002. These awards celebrate organizations and individuals across more than 60 nations who exact in various nepects of business, including human resources, innovation, and converse culture.

and corporate culture.
UnionBank took home four significant

awards at the exent: Gold Stevie Award for HR Thought Leader of the Year: Ms. Michelle Rubio, chief human resource officer at

UnionBank, was honored with this to accolade. Her pivotal role as the lead driver of people transformation an culture optimization was instrumenta

culture optimization was instruments in the Bank's successful digital transformation journey.

This contributed to UnionBank's prestigious skeyear streak as the Digital Bank of the Year and its transformation to the presentation of the Pear and its presentation of consecutive three-year recognition as one of the Most Recommended Banks, As a thought leader, she has

As a thought leader, she has been invited to numerous speaking engagements, podeasts, and bearning sessions on the future of work, People Tech, and digital transferradism.

Silver Stevio Award for Arhievement in New Engloyee Orbourding This sward recognizes UnionBank's soccessful acquisition of Citibank's consumer

banking business in the Philippin which was greatly driven by its promi of continuity and care for its peopl Central to this success was Onewith a collaborative effort involving multip workstreams

OnewithU played a pérotal role providing operatial support and re-cururing a searcless and su-transition for all employees, 1,300 or made the transition to Unio

AT EMPLOYERS

constituting an impressive 88 percent of the eligible population and surpassing the 55 percent target.

This turned out to be the highest percentage of employees who accepted the job offer to transfer to the acquiring

the job citie to impace to the acquiring company across all Chi consumer bank acquisitions worktwide. UnionBank also became the 2nd to complete the Chi acquisition worldwide among 14 consumer markets that are part of the strategy refresh.



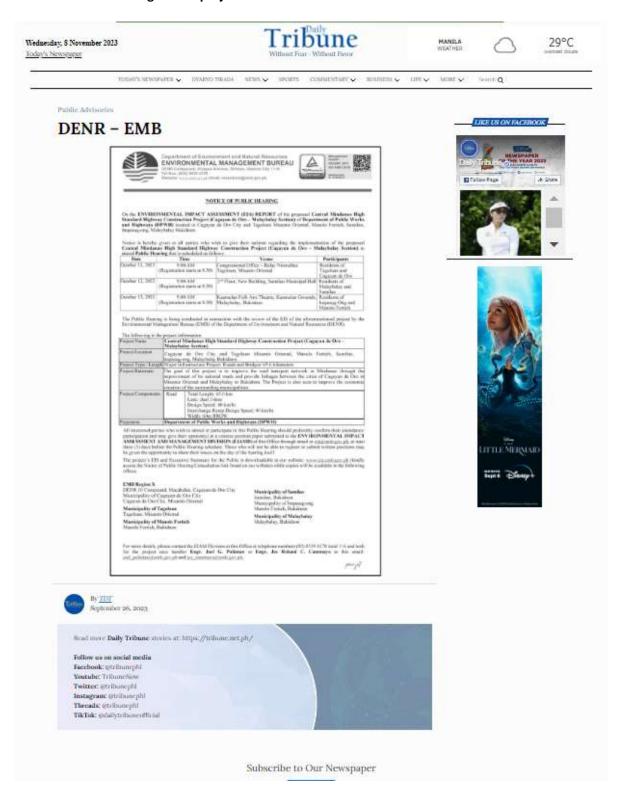






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Notice of Public Hearing for the project in website

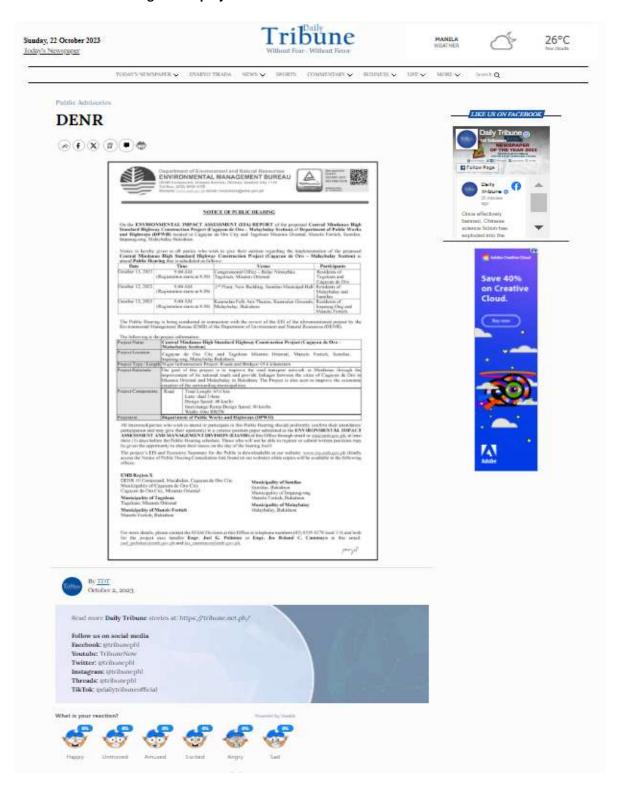






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Notice of Public Hearing for the project in venues





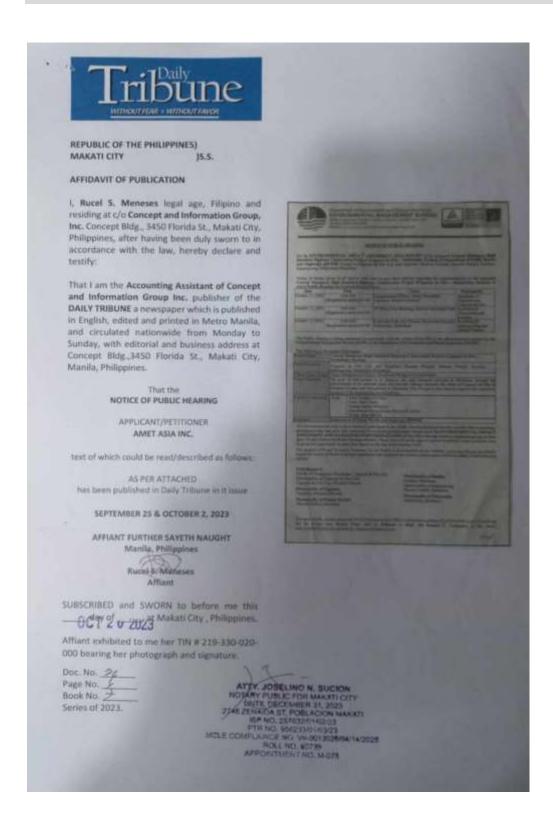






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Attachment 166. Affidavit of Public Disclosure







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 17. Public Hearing Program

Public Hearing Program

CLUSTER 1: Cagayan de Oro and Tagoloan

Public Hearing on the Central Mindanao High Standard Highway Project

Congressional Office, Balay Ninotchka, Tagoloan, Misamis Oriental

October 11, 2023; 9:30-12:00 NN

Registration	
National anthem	Mr. Alwin T. Olina, Casinglot Elementary School
Invocation	Mr. Gedion Buyan, Bugo, Cagayan de Oro
Briefing and orientation on the purpose of Public Hearing and the Philippine EIS system	Engr. Jes Roland Cammayo, DENR Central Office
Project Description	Engr. Mary Joyce Ann Manuel, DPWH Central Office
Presentation of EIS output	Ms. Francina Balido, Amet Asia
Open Forum	Regional Director Reynaldo Digamo, DENR Region 10
Next steps in the EIA Process	Engr. Jes Roland Cammayo, DENR Central Office

Program Facilitator: Engr. Joel Polintan, DENR Central Office

CLUSTER 2: SUMILAO AND MALAYBALAY

Public Hearing on the Central Mindanao High Standard Highway Project

Sumilao New Building, Sumilao, Bukidnon

October 12, 2023; 9:10-12:00 NN

Registration	
National anthem	Josephine Patarlas, DepEd Vista Villa
Invocation	Datu Fidel Daigon, BAFC, Kisolon
Briefing and orientation on the purpose of Public Hearing and the Philippine EIS system	Engr. Joel Polintan, DENR Central Office



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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Project Description	Engr. Mary Joyce Ann Manuel, DPWH Central Office
Presentation of EIS output	Ms. Francina Balido, Amet Asia
Open Forum	Regional Director Reynaldo Digamo, DENR Region
Next steps in the EIA Process	Engr. Jes Roland Cammayo, DENR Central Office

Program Facilitator: Engr. Jes Roland Cammayo, DENR Central Office

CLUSTER 3: IMPASUG-ONG AND MANOLO FORTICH

Public Hearing on the Central Mindanao High Standard Highway Project

PENRO Conference Room, Malaybalay City

October 13, 2023; 9:45-12:00 NN

Registration	
National anthem	Eleanor Agan, DepEd Manolo Fortich
Invocation	Kagawad Alberto Buynay, Sankanan
Briefing and orientation on the purpose of Public Hearing and the Philippine EIS system	Engr. Joel Polintan, DENR Central Office
Project Description	Engr. Mary Joyce Ann Manuel, DPWH Central Office
Presentation of EIS output	Ms. Francina Balido, Amet Asia
Open Forum	Regional Director Reynaldo Digamo, DENR Region 10
Next steps in the EIA Process	Engr. Jes Roland Cammayo, DENR Central Office

Program Facilitator: Engr. Jes Roland Cammayo, DENR Central Offic

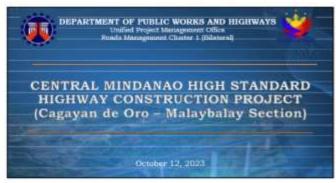


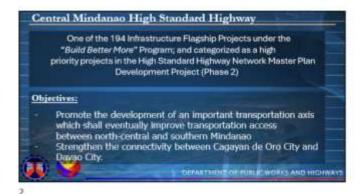


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Attachment 18. Public Hearing Presentation

03/11/2023





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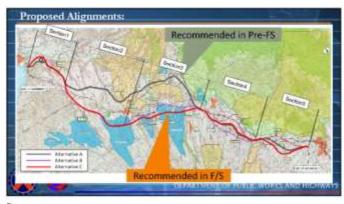


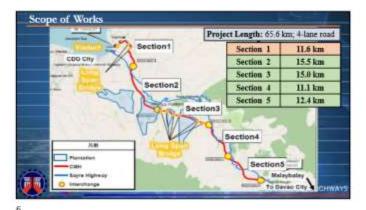
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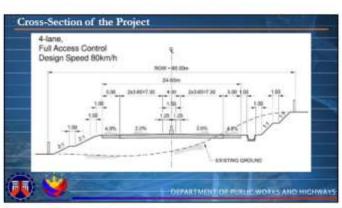
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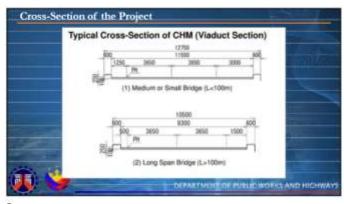


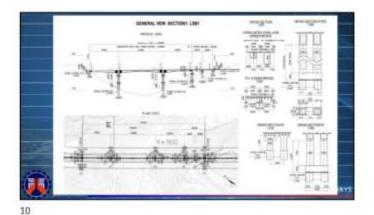




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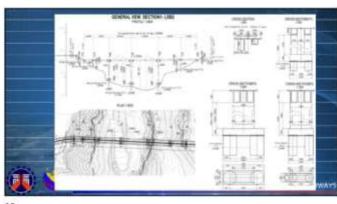






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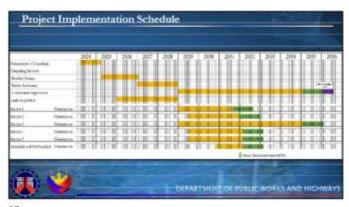






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03/11/2023



Consulting Services

Implementing Office DPWH-UPMO-BARCLIE

Scope of Works Detailed Engineering Design

Funding Source JICA Serion () ADB Section 2.1

Mode of Procurement Quality-Cost Based Selection (QCBS)

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Tentative Team Composition

Local Experts

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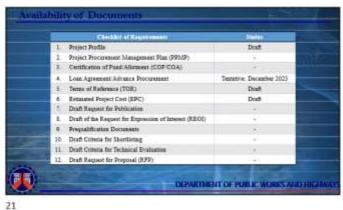
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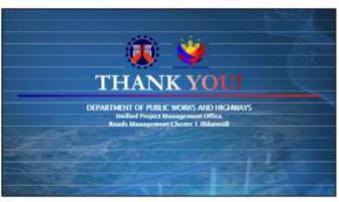


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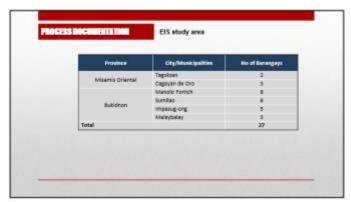
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03/11/2023





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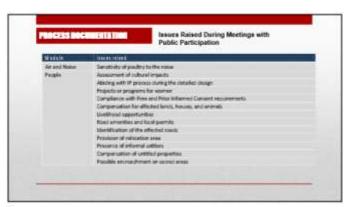
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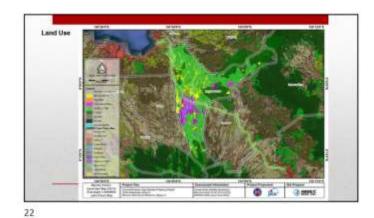
ASIA INC.



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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03/11/2023



Mil.	ECA CAMPBOY	WHEN ECAY	Comments
Ж	All arose doctored by low as national paths, waterched assumes, widely proserves and sensitivenes.	36	The proposed alignment is outside of any Protected Area
2	Areas set asins as within a priority by my spirit	Problem	The proposed dispersent apparent to hences burners areas in Santino
3.	Arpes which constitute the babase for any entergence or descripted spaces of indigenous Philippess will be (Phon and Paura)	70	The proposed alignment is outside of any Protected Area and recommon mostly against and levels.
4	Areas of integer finitely, antheringinal, geological, or according interests.	No	The proposed alignment resulty traverses aproxitised tands
1	Areas which are traditionally uncopied by sultimal immensions or titles.	Yes.	The proposed dispressed will not make any agreement GADE to GADE.
6.	Areas Visquently visited and or hard fittily natural saturation (percept hecants, filmsts, bedware, windows activity)	791	The proposed alignment towards areas premi to natural higgards (autoextence higgard, seconds, creep, flace higgard, seconds show latery, provid nature).

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•	ECA Category	MISSING ECTA	Contracts
,	Among with critical slope, All lands with slope of 50% or seem (complied as produced by Mines and Christians sees Burner (MCB)	Von	Some portions of the proposed obgressed will be verse orbital trapes.
	Access classified as private agreeational tends:	Prodpt	Most of the alignment towards applicable at large.
*	Recturge arms of asystem	No	The proposed oligonium mosts insvenies agricultural lands in the law lands.
10	Wake looker sharechested by one or any continuous of the following conditions: topped for domestic purposes, within the controlled and/or proceed areas declared by appropriate authorities, which support widths and follows artistics:	No	The proposed alignment will lievente water button (mink; money) that are not topped as a source of streetlist water or within Proposed Association.

H0.	ECA Catagory	WEIGH SCAT	Colonada
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u	Canal work observations by one or any confidence of the following continuous with SPSs and above here specified cover, appearing and reviews grounds for Eds, and an natural breakwater of constitute.	**	The proposed alignment is triand and for from the see





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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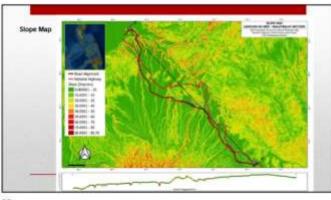
CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

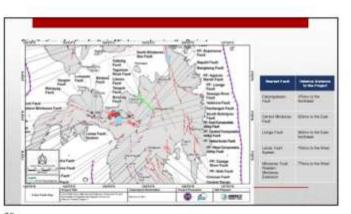
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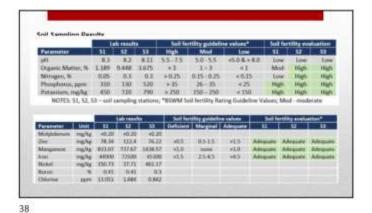
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

03/11/2023





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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

03/11/2023





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Summary of key impacts, milligation options, and residual effects
(Land Component)

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

03/11/2023

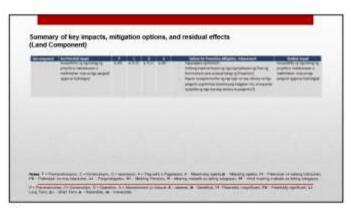
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Summary of key impacts, mitigation options, and residual effects
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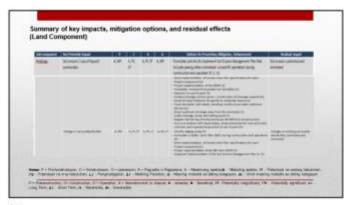
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

03/11/2023



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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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03/11/2023



Summary of key impacts, mitigation options, and residual effects (Water Component) Make 7 - Parameteran C - Controllers II - services A - Paparts of Register A - Make any contral States (seek, 17 - Paparts is extended by Control to the obligation of Paparts (seek, 18 - Paparts) and the obligation of the obliga

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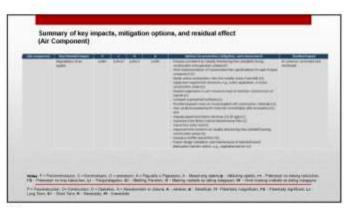
CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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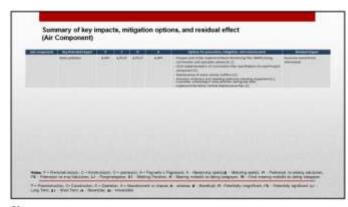
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

03/11/2023





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Summary of key impacts, mitigation options, and residual effect (People Component)

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Summary of key impacts, miligation options, and residual effect (People Component)

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

03/11/2023





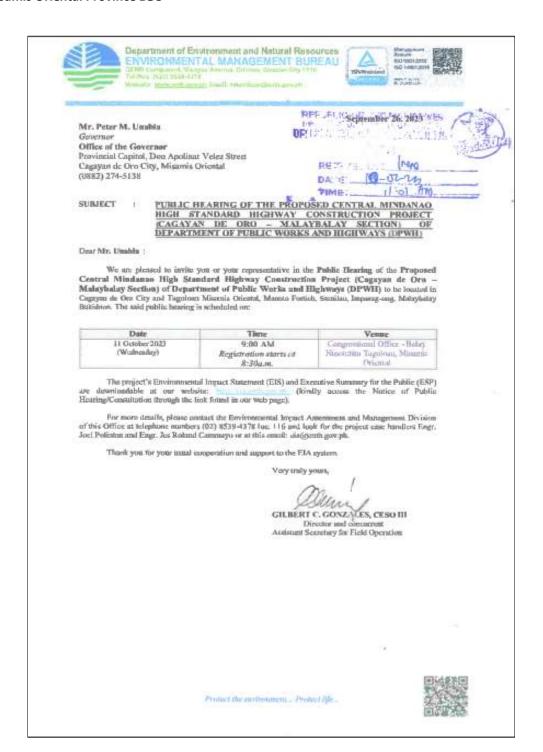




CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 19. Public Hearing Invitation Letters

Misamis Oriental Province LGU





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Cagayan De Oro City LGU



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU
SOM Composited, Villages America, Oriento, Colores City 1118
Tel Nov., (527) 1028-1276

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September 26, 2023

Hon, Oscar S Moreno City Mayor Office of the City Mayor 2nd Floor, Executive Building, City Hall Cagayan de Oro City, Misamis Oriental 857-7587, 09656679604 osm.cdo@gmail.com

SUBJECT 1

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO – MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon, Marene :

We are planted to invite you or your representative in the Publike Hearing of the Proposed Central Mindamos High Standard Highway Construction Project (Cagayan de Ore – Makaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Ore City and Tagoloun Missonis Osicotal, Masolo Fostich, Samikao, Impasag-ang, Mataybalay Bukidnos. The said public hearing is scheduled on:

Dute	Time	Venue
(Wednesday)	9:00 AM Registration starts at H: Sila m.	Congression Office - Biday Nivestchira Tagolean, Wisamis Oriental

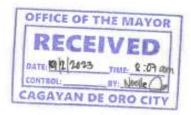
The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: (kindly access the Notice of Public Hearing/Consultation through the link funnd in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at telephone surebors (92) 8539-4878 Ioc. 116 and Iouk for the project case hundlers Engr. Joel Polistan and Engr. Jes Roland Cantenayo or at this estable einigenth gow.ph.

Thank you for your usual enoperation and support to the EIA system.

Vary truly yours,

Deller GILBERT C. GONZALES, CESO III Director and electricity Auditor Secretary for Field Operation



Protect the controvineur. Protect Me.





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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

DA Region 10



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU DEM Compount, Margin Assista, Different, Current Gry 1910 74 May (2021) 1820-1929



Managarrian Suspen 100 90010011 100 140012000 Marrian Marrian

September 26, 2023

Ms. Carlene C Collindo OIC, Regional Executive Director DA Region 10 Amunio Lum Street Cagayan de Oro City, Misanis Oriental 088-8566871 / 088-8562753-55 agri 10edo@gmail.com

SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAU HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT [CAGAYAN DE ORO - MALAYBALAY SECTION] OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Ms. Collado:

We are pleased to invite you or your representative in the Public Bearing of the Proposed Central Mindamae High Standard Highway Censtruction Project (Cagayan de Oru – Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oru City and Tugolous Misarcis Oriental, Manulo Forisch, Sumilius Impatag-oug, Multyfethy Bulcimon. The said public bearing is achefuled on:

Date	Time	Venue
I.I. October 2023 (Wodnesday)	9:00 AM Registration starts at R:30a.m.	Congressional Office - Balay Ninotobica Tagorean, Missania Occasol

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: (kindly access the Neclee of Public Hearing/Consultation through the link found in our web page).

For more details, please contact the linvironmental impact Assamment and Managament Division of this Orlice at telephone numbers (02) 8539-4378 loc. 116 and look for the project case bundlers Eagr. Joul Polintan and Engr. Jes Roland Camenayo or at this enail: eia⊗emb.gov.ph.

Thank you for your initial occupantion and support to the EIA system.

Very truly yours,

GILBERT C. GONZACES, CESO III Director and checustent Assistant Secretary for Field Operation



Protect the environment... Probact life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

DPWH Region 10



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU CERT Compaint, Visions Assens, Differen, Guerra City 1116 THEOL. (ED) 1509-1576 Website: www.cfc.comp. Error (acceptable) 2016-2018



September 26, 2023

Dir. Zenalda T Tan Regional Director DPWH Region 10 Bultat Cagayan De Oro, Mis

Cagayan De Oro, Misomis Oriental (088) 858-4323 tan xonaida@dpwh.gov.ph



SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT [CAGAYAN DE ORO – MALAYBALAY SECTION] OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Dir, Tan :

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanuo High Standard Highway Construction Project (Cagayan de Ore – Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Ore Cey and Tagalana Minania Oriental, Manuta Fortich, Sumilan, Impanag-ang, Malayhalay Butridson. The sold public bearing is scheduled on:

Date	Time	Venue
11 October 2023 (Wednesday)	9:00 AM. Registration starts at	Congressional Office -Rafay Ninetchia Tagolom, Misamis
	#7.30a.m.	Octomal

The project's Environmental Impact Statument (EIS) and Executive Summary for the Public (ESP) are downloadable at our website; (Kindly access the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at telephone numbers (02) 8539-4578 luc. 116 and look for the project case hundlers Engl. Joel Polisius and Engr. Joe Roland Camenayo or at this entail: sia@emb.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Very truly yours,

GILBERT C. GONZACES, CESO III Divotor and chacterent Assistant Secretary for Field Operation

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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

NCIP Region 10



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Patring, Jerce, M., Roysee Provincial Officer NCIP Minamia Oriental Provincial Capitol Building, Corrales Ext Cajagyan & Oro City, Misamis Oriental 9053603564/08822) 714513

SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT ICAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND RIGHWAYS (DEWIL)

Dear Mr. Binshon JR:

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindaeum High Standard Highway Construction Project (Cagayan de Ora — Malaybalay Section) of Department of Public Works and Highways (DPWH) in he located in Cagayan de Ora City and Tagolous Mounts Orional, Minois Fortich, Staniau, Impanyong, Motaybalay Buitidoor. The said public hearing is acheduled on:

Date	Time	Venue
11 October 2023 (Wodnesday)	9:00 AM Registration starte at	Congarinional Office - Balay Nicotatica Tagologo, Missmin
	8:30a.m.	Oriental

The project's Environmental Impact Statement (ESS) and Executive Summary for the Public (ESP) are downloadable at our Website: [1] [Could be deserted the Notice of Public Hearing/Consultation through the link found in our with page).

For more details, please contact the Environmental Jopes! Asterment, and Management Division of this Office at telephone numbers (02) 8539-6376 for 116 and look for the project case hundlers Engr. Just Polinius and Engr. Jes Roland Commayo or at this cateall: classoomh gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Very tridy yours.

GRBERT C. GONZALES, CESO III Director and concurrent Assistant Secretary for Field Operation

Protect the environment.. Protect life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Balubal, Cagayan De Oro City Misamis Oriental





September 26, 2823

Hon. Bactong Pablo Punong Berangay Begy. Belubal Cagayan de Oro, Misumis Oriental

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT [CAGAYAN DE ORG - MALAYBALAY SECTION] OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon. Public 7

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindaman High Standard Highway Construction Project (Cagayan de Ore — Mahaybalay Section) of Department of Public Works and Highways (DEWH) to be located in Cognyon de Ore City and Tagotem Misamio Criental, Mosole Forich, Semileo, Impanay-ong, Malaybalay Bahishon. The said public bearing is scheduled on:

Dute	Time	Venue
J1 October 2023 (Wadnosday)	9:00 AM Registration starts at 8:30a.m.	Congressional Office -Balay Ninstalita Tagolom, Missesia Orienal

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: https://downloadable.org/public/firefiles/firefil

For more details, please quatact the Environmental Impact Assessment and Management Division of this Office at belephone autobers (02) 8539-4378 Inc. 116 and look for the project case handless Engr. Joel Polinten and Engr. Jos Rolend Cammayo or at this email: cis@cuts.gov.ph,

Thank you for your assail cooperation and support to the FIA system.

Very truly years,

GH HERT C. GOVERNES, CFSO III Director and concurrent Assistant Secretary for Field Operation

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Puerto, Cagayan De Oro City Misamis Oriental



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU BENR Composing, Veryal Awmie, Dilliem, Guston Dity 1116 Tellifer, (2019 5138-5176 Wyestle: and antidoxial Estill, reconsulation to pro-



September 26, 2023

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JOSEPHING E. DUA Hon. Christian Rustico M Achas

Passing Barangay Iligan-Cagayan de Oro-Buttain Rd Brgy, Puerto Cagayan de Oro, Misamis Oriental

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dow Him, Actus. 1

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanan High Standard Highway Construction Project (Cagayan de Ore – Malaybalay Section) of Department of Public Works and Highways (DPWH) to be tecated in Cagayan de Ore City and Tagoloon Misanis Oriental, Manoto Forich, Sunitas, Imposug-ong, Malaylialay Busidman. The said public hearing is achedued on:

Date	Time	Venue
11 October 2023 (Wolnesday)	9:00 AM Registration startest 8:30a.m.	Congressional Office - Bakey Neocolita Togolom, Minima Oriental

The project's Environmental Impact Senement (EES) and Executive Summary for the Public (ESP) are downloadable at our website. It is not so that the field occase the Natice of Public Hearing/Consultation through the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at telephone manters (D2) 8539-4378 Inc. 116 and look for the project case handlers Engr. Joel Polinton and Engr. Joe Robard Cammayo or at this email; eia@cmb.gov.pt.

Thank you for your usual cooperation and support to the EIA system.

Very truly yours,

peceived: 18

GILBERT C. GONZ MEN, CESO III Director and clusturent Assistant Secretary for Field Operation

Protect the excironment... Protect life...







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Bugo, Cagayan De Oro City, Misamis Oriental





September 26, 2823

Hen. Vic Talingting Punong Barangay Brgy. Bugo Cagayan de Oro, Misansis Oriental

SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (UPWH)

Dear Han. Tallingting:

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanae High Standard Highway Construction Project (Cagayan de Oro — Malayhalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayas de Oro City and Tagoloun Miseriis Oriestal, Manota Fonich, Staniko, Impasing-ong, Malayhalay Bakidson. The said public busing is acheduled on:

Date	Time	Venne
(Walasilay)	9:00 AM Registration starts of	Congrussional Office - Batay Nesotetika Togoloon, Mission
	8:30а.т.	Driental

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: (Readly across the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please cuntact the Environmental Impact Assessment and Management Division of this Office at telephone numbers (02) 8539-4378 loc. 116 and look for the project case hundlers Engr. Joci Polintan and Engr. Jes Robertl Commanyo or at this email: etaiglenth.gov.ph.

Thank you for your usual cooperation and support to the FIA system.

Very intly years.

GILBERT C. GONZACES, CESO III Director and concurrent Assistant Secretary for Field Operation



Protest the environment. Protect life...





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Tagoloan, Misamis Oriental LGU





September 26, 2023

Hon. Nadya Emann-Elipe
Municipal Mayor
Office at the Municipal Mayor
Claro M Recto Avenue, Poblacian
Tagoloan, Misamis Oriental
(088) 990-4561
tagoloanmayoraoffice@gmail.com

WHITE PALSTY OF TAGOLOGIA OFFICE OF THE MAYOR RECEIVED BY: LAMING C. G.

SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAD HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO — MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon. Emano-Elipe :

We are pleased to invite you or your representative in the Pathlic Hearing of the Proposed Central Misdanase High Standard Highway Construction Project (Cagayan de Oro — Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tagolous Missanis Oriental, Manoio Furtich, Sumilao, Imparag-ong, Mislaybalay Bukishon. The said public hearing is acheduled on:

Date	Time	Venue
11 October 2023 (Wednesday)	9:00 AM Registration starts at N. 30a.m.	Campressional Office - Balay Ninotchia Tagolom, Misumia Discusal

The project's binvironmental Impact Statement (E3S) and Executive Summary for the Public (ESP) are downloadable at our website; (kindly second the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, glosse contact the Environmental Impact Assessment and Management Division of this Office at telephone numbers (02) 8539-4378 loc. 116 and look for the project case hundless Engr. Joel Polinton and Engr. Jes Robard Cammayo or at this estail: nis@mitt.gov.ph.

Thank you for your usual occuperation and support to the EIA system.

Very tody years,

GILBERT C. GONZALES, CESO III

Director and concernent.

Autigant Secretary for Field Operation

Product the excironoment. Protect life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Natumolan, Tagoloan, Misamis Oriental



Department of Environment and Natural Resources
ENVIRONMENTAL MANAGEMENT BUREAU
GENE Compount Vesqua Augus, Danasi, Gazzio Gightis
Tel-Res, (DD) 4884-1879
Wealth government built combanifications at



National States of States

September 26, 2023

Hnn. Rafael P Vidal Panong Barangay Begy. Natumulan Tagoloan, Misamis Oriental

SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon, Vidal :

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Oro – Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro Cey and Togoloan Minanis Griental, Manula Fortich, Statislae, Impacag-tag, Malaybalay Bukidnor. The said public hearing is scheduled out

Date	Time	Venne
H Outober 2023 (Walnushy)	9:00 AM Registration marts at 8:30a.m.	Congrammad Office - Balay Neutralita Tagnious, Misseria Overnal

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: (kindly access the Notice of Public Heating/Consultation through the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at belophous numbers (02) 8539-4378 Ioc. 116 and look for the project case handlers Engr. Joc. Polinton and Engr. Joc Rotand Cammayo or at this email: ela@tento.gov.ph.

Thank you for your usual cooperation and support to the ETA system.

Very truly yours,

GH.BERT C. GONZALES, CESO III Director and consument Authorst Securiary for Field Operation

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BRGY. SECRETARY

Date: 10 el 20 Time: 2: 21 79

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Protect the antinument... Protect life...







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Casinglot, Tagoloan, Misamis Oriental





September 26, 2023

Hon. Rafael P Vidal Panong Barangay Brgy. Natumolan Tagotoan, Misamis Oriental

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT. (CAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon, Vidal :

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindamao High Standard Highway Construction Project (Cagayan de Oro – Mahaybabay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro Cicy and Togolous Missonis Oriental, Manaise Fostich, Samilao, Imporag-ong, Malaybalay Buhidron. The said public bearing is scheduled on:

Date	Time	Venue
11 October 2023 (Walcomby)	9:00 AM Registration starts at 8:30a.m.	Congressional Office - Bate Ninotalia Tagainea, Missio Oriental

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: (kindly access the Notice of Public Hoaring/Consultation through the link found in our web page).

For more details, please contact the Environmental Inspect Assessment and Management Division of this Office at telephone attribute (02) 8539-4378 Inc. 116 and look for the project case hundless Engr. Joe! Polinton and Engr. Joe Robard Cammaryo or at this email: ring/enab.gov.ph.

Thank you for your usual cooperation and support to the ETA system.

Yery truly yours,

GILBERT C. GONZAES, CFSO III Director and consumerent Austrant Secretary For Fladd Operation

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IVY LA SINERO
BRGY. SECRETARY

Date: 10 e1/25 Time. 2: 21/25

Protect the austronoman, Protect Rfe





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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Sumilao Bukidnon LGU



Department of Environment and Natural Resources
ENVIRONMENTAL MANAGEMENT BUREAU
BERS Grospound, Vazyus Aversus, Dilletin, Quasan Gity 1116
ToUldes, (822) 8339-4338
Website: yeww.anthacc.str Ensit: second-co@enit-gov.ph



Management System 150-9691-2016 180-14801-2019



September 26, 2023

Hon. Jose Antonio A Villo Mayor Office of the Municipal Mayor Kisolon Sumilao, Bukidoon Igusumilao@gmail.com

UBJOCT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hos. Villo:

We are pleased to invite you or your representative in the Public Hearing of the Proposed Contral Mindanao High Standard Highway Construction Project (Cagayan de Oro – Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tageloan Misanis Oriental, Manulo Fortich, Sumilao, Impung-ong, Malaybalay Bukidnon. The said public hearing is scheduled on:

Date	Time	Venue
12 October 2023 (Thursday)	9:00 AM Registration starts at 8:30a.m.	2 rd Floor, New Building Sumilan Municipal Hal

The project's Environmental Impact Statement (EIS) and Executive Stammery for the Public (ESP) are downloadable at our website: http://eis.emb.gov.nb/ (kindly access the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at selephone mambers (62) 8539-4378 loc. 116 and look for the project case handlers Engr. Joel Polintan and Engr. Jes Roland Cammayo or at this email: eia@emb.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Very trady weeks

GILBERT C. GONZATES, CESO III Director and concurrent Assistant Secretary for Field Operation

Men

10/0/29

Protect the ourirement... Protect life...







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Kulasi Sumilao Bukidnon



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU DENI Georgeon, Wasses Resource (Minor, George Co. 1118) 74(18) (202) E229-4718 WALTE WITH ANTHONY END SECTION (See 197)



Management Separation BIO HOUSE STATE SEPARATION STATES



September 26, 2023

Hon, Gilbert T Mamatan Proving Barangay Brgy, Kulasi Sumilao, Bukidnon

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO – MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND BIGHWAYS (DPWH)

Dear Hun, Mamutun;

We are pleased to invite you ar your representative in the Public Hearing of the Proposed Central Mindanau High Standard Highway Construction Project (Cagayan de Oro — Malaybulay Section) of Department of Public Works and Highways (DPWR) to be located in Cagayan de Oro City not Tagedom Minnais Oriental, Manolo Fortich, Sanilao, Inossug-sag, Malaybulay Bakishou. The said public hearing is acheduled on:

Date	Time	Venue
12 October 2023 (Thursday)	9:00 AM Registration starts at 8:30a.m.	2* Floor, New Ruilding Sumilar Municipal Hall

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: (Eindly access the Notice of Public Hearing/Consultation thorough the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at telephone numbers (02) 8539-4378 for. 116 and look for the project case handless Engr. Joe Polinzan and Engr. Joe Robard Carumayo or at this email: elasgents.gov.ph.

Thank you for your usual cooperation and support to the ETA system.

Very truly years,

GILBERT C. GONZALES, CESO III Director and ometarrent Assistant Secretary for Field Operation



Protect the environment... Protect life...







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT
Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong
PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Poblacion Sumilao, Bukidnon



Department of Environment and Natural Resources
ENVIRONMENT AL MANAGEMENT BUREAU
BERG Companies, Wayne Alverse, Different Gester Gig 1616
Management of State 4176
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Management System EX SORT 2016 GC NAST 2015

September 26, 2023

Hon, Julius Cesar A Tan Paneng Berengay Brgy, Poblacion Sumilao, Bukidnon

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO – MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Bon, Tan !

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Oro – Malaybulay Section) of Department of Public Works and Highways (DPWH) to be located in Orgayan de Oro City and Tagoloan Minania Oriental, Manolo Fortich, Samilao, Impung-ong, Malaybulay Bukadono. The said public hearing is acheduled on:

Dute	Time	Vessue
(Thursday)	9:00 AM Registration starts at 8:30s m	2 rd Floor, New Building Sumilan Maricipal Hall

The project's Environmental Impact Statesown (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: (kindly access the Notice of Public Hearing/Coosultation through the link found in our web page).

For store details, please contact the Environmental Impact Assessment and Management Divisions of this Office at telephone numbers (02) 8539-4378 for. 116 and look for the project case handless Engr. Joci Poliuran and Engr. Jos Robind Cammayo as at this email: cis@conto.gov.pb.

Thank you for your usual cooperation and support to the FIA system.

Very truly years,

GILBERT C. GONZAÇES, CESO III Director and concurrent Assistant Secretary for Field Operation



Protect the entirement. Present life.





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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Vista Villa Sumilao, Bukidnon





September 26, 2823

Hon, Noland Caramente Punang Barangay Brgy, Vista Villa Sumilao, Bukidnon

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO – MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Han. Corumente:

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanno High Standard Highway Construction Project (Cagayan de Oro – Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tagoloso Misemis Oriental, Manolo Fonich, Similao, Impasug-ong, Malaybalay Bekidnor, The said public hearing is scheduled on:

Dute	Time	Venue
12 October 2023 (Thursday)	9:00 AM Registration starts at	2 nd Floor, New Building, Sumitao Municipal Hall
	R:30la.m.	-22.00

The project's Environmental Impact Statument (EIS) and Executive Summary for the Public (ESP) are slowaloudable at our website: (bindly access the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at telephone numbers (02) 8539-4378 for, 116 and look for the project case handlers Engr. Joet Polintan and Engr. Jos Roland Cammayo or at this email: classessh grouph.

Thank you for your usual cooperation and support to the FIA system.

Very truly yours.

GILBERT C. GONZALES, CESO III Director and operators Assistant Secretary for Field Operation



Protect the entirement... Protect life.



Brgy. San Roque Sumilao, Bukidnon





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA





September 26, 2023

Hon, Jake T Curay Punong Barangay Begy, San Roque Sumilao, Bukidnon

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT [CAGAYAN DE ORO - MALAYBALAY SECTION] OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear How, Coray:

We are pleased to invite you or your representative in the Public Hearing of the Propused Control Mindanan High Standard Highway Construction Project (Cagayan de Oro — Makaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tagefour Misamis Oriental, Manslo Forcick, Sumbas, Imputing-ong, Makaybalay Bukishum. The said public hearing is reheduled on:

Date	Time	Venne
12 October 2023 (Thursday)	9:00 AM Registration starts at 8:30a.m.	2 nd Floor, New Building Sumilso Municipal Hall

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: the project (kindly states the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Divisions of this Office at telephone sumbers (02) 8599-4378 lee. 116 and look for the project case handlers Engr. Just Polistan and Engr. Jes Roland Cammayo or at this email: classemb.gov.ph.

Thank you for your usual cooperation and support to the EIA system,

Vary truly yours,

GILBERT C. GONZAGES, CESO III Hirottar and concurrent Assistant Scenetary for Field Operation



Protect the environment. Protect life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Puntian Sumilao, Bukidnon



Department of Environment and Natural Resources
ENVIRONMENT AL MANAGEMENT BUREAU
BERK Committee Wiscons Assessed Blanco, Charles City 1155
Tel No. 362 5576-6523
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Management Relation (SD 1400 LSD*E SMALL-CSF)



September 26, 2023

Hon, Tirso B Amistoso Panong Rarangay Begy, Pustian Samilao, Bakidoon

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MUNDANAQ HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon. Amistose :

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Oro – Malaybulay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tagolosis Minanais Oriental, Manolo Fortich, Samilao, Impung-ong, Malaybulay Bukidoot. The said public bearing is achestulast on:

Dute	Time	Venne
12 October 2023 (Thursday)	9:00 AM Registration starts at 8:30a.m.	2 nd Floor, New Beilding Sumilio Municipal Hal

The project's Environmental Impact Statement (EES) and Executive Summary for the Public (ESP) are downloadable at our website; (Rindly access the Notice of Public Hearing/Consultation through the link found in our web page).

For roose details, please contact the Environmental Inspect Assessment and Management Division of this Office at selephone numbers (02) 8539-4378 loc. 116 and look for the project case hundlers Engr. Joel Pollman and Engr. Joe Roland Cammayo or at this small: eta@em6.gov.ph.

Thank you fur your usual cooperation and support to the EIA system.

Very bruly yours.

GILBERT C. GONZAZES, CESO III Director and constructif Assistant Secretary for Field Openation



Protect the environment. Protect life.





jica

PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Bukidnon Province LGU



Department of Environment and Natural Resources
ENVIRONMENTAL MANAGEMENT SUREAU
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September 26, 2023

Hon, Rogelin Nell P. Ruque Gesterior

Office of the Governor
Bulcidnes Provincial Capital, Impalambong Old Carisang Road,
Malnyhelay City, Bukidoon
813-2457/0909 417 8156

bultidnonpgbofficial@gmail.com



SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon, Rospe :

We are pleased to swite you or your expresentative to the Public Hearing of the Proposed Central Mindanae High Standard Highway Construction Project (Cagayan de Ore – Malaybulay Section) of Department of Public Works and Highways (DPWW) to be beauted in Cagayan de Ore City and Tagobon Misanis Oriental, Manufu Fortion, Sumilas, Impang-ong, Malaybakry Buhidson. The said public bearing is scheduled on:

Date	Time	Venne
12 October 2023 (Thursday)	9:00 AM Registration starts at 8:30a m	2 rd Floor, New Building Sumilso Municipal Hall

The project's Environmental Impair Statement (EIS) and Executive Summary for the Public (ESP) are downloadafile at our website: (Exp) (finally access the Notice of Public Haming/Consultation through the link found in our web page).

For chore details, please contact the Environmental Impact Assessment and Management Division of this Office at telephone numbers (02) 8539-4578 los. 116 and look for the project cone handless lings. Joel Pollorum and Engr. Jes Robard Cammayo or at this armail: etailments, gove ph.

Thank you for your usual enoperation and support to the EIA system

Vary mily years,

GILBERT C. GONZAPES, CESO III Director and concurrent Austriant Someony for Field Operation

Protect the endrument... Protect life...





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Malaybalay Bukidnon LGU



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU
DENR Companied, Visuoyas Avistics, Different, Oxford City, 1176
(Chilling, (Right) 1879)
Weshard Software Little (Child Child Chil



Mr. Jan Warren Pubilluran Office of the City Mayor 2nd floor, New City Hall, Barangay Casissing Malayhalay City, Bakidoon (1886)-813-5643 cmonulayhalay2019@gonul.com



PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANAO HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORG - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Mr. Pabillarun:

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Ore - Mulayhalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Ovo City and Tagoloan Miseries Oriental, Manulo Fortich, Sumitso, Impusayong, Malayhalay Bikidnen. The said public hearing is scheduled on:

Date	Time	Venue
12 October 2023 (Thursday)	9:00 AM Registration starts at 8:30a.m.	2rd Floor, New Building Sumilan Municipal Hal

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESF) are downloadship at our website; http://downloadship.ut.our/website; http://downloadship.ut.our/website; http://downloadship.ut.our/website; http://downloadship.ut.our/website; http://downloadship.ut.our/website; http://downloadship.ut.our/website; http://downloadship.ut.our/website; http://downloadship.ut.our/website; http://downloadship.ut.our/websites/fichiadship.ut.our/websites

For more details, please contest the Environmental Impact Assessment and Management Division of this Office at beleptone numbers (02) 8539-4378 for. 116 and look for the empet once bandless Eiger. Joed Pollinton and Engr. Joe Robard Communyo or at this entail; eig@omb.gov.gb.

Thank you for your mond cooperation and support to the EIA system.

Very truly yours,

un GILBERT C. GONZALES, CESO III Director and concurrent Assistant Secretary for Field Operation

Present the surfronment... Protect life...







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Patpat Malaybalay City Bukidnon



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU DERR Continued Visions Disease, Controller 116.

Tollier, (63) 4522-4272 World Vision Disease, Controller 116.

World Controller World Vision Disease, Controller 116.

September 2:

Hon, Renante M Obit Punong Rarangay Brgy. Palpat Malaybalay City, Bukidnon

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDA OF HIGH STANDARD HIGHWAY CONSTRUCTION PROJECTION OF CAGAYAN DE ORO - MALAYBALAY SECTION; OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon. Oldr :

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanus High Standard Highway Construction Project (Cagayan de Oro – Malaybalay Section) of Department of Public Works and Highways (DPWH) to be found in Cagayan de Oro City and Tagolom Misamis Oriental, Manulo Fortich, Sumilao, Impussay-ong, Makaybalay Rubifore, The mid swiftle Beering is scheduled on: Bukishon. The said public hearing is scheduled on:

Date	Time	Venue
12 October 2023 (Thursday)	9:00 AM Registration starts at 8:38a.m.	2 nd Flow, New Building Samilao Municipal Hal

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP). are downloadable at our website. (kindly access the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please consust the Environmental Impact Assessment and Management Division of this Office at telephone numbers (02) 8539-4378 loc. 116 and look for the project cose handlers Engr. Joel Poliman and Engr. Joe Researd Cammayo or at this email; ela@emb.gov.ph.

Thank you for your usual cooperation and support to the EIA system,

Very truly yours,

GILBERT C. GONZALES, CESO III Director and cor Assettant Secretary for Field Operation

Protect the analyganisms... Protect life...





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Dalwangan Malaybalay City Bukidnon





TIME: -

Hon, Raul B Pandong

Pamong Ravangay Begy, Dalwangan Malaybalay City, Bukidnon

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MIND CASE
HIGH STANDARD HIGHWAY CONSTRUCTION PROSECTIVAL
CAGAYAN DE ORO — MALAYBALAY SECTION) OF
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS OPWH)

Dear Hon. Pandong

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanto High Standard Highway Construction Project (Cagayan de Oro - Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro Cice and Tagolean Miserie Oriental, Manolo Fortich, Sumilan, Imputig-ong, Malaybalay Bekintona. The said public hearing is subcataled on:

Date	Time	Venue
12 October 2023 (Thursday)	9:00 AM Registration starts at 8:30a.m.	2 st Floor, New Bailding Somilao Municipal Hall

The project's Environmental Inspect Statemens (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: (Rindly across the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please consust the Environmental Impact Assessment and Management Devision of this Office at telephone numbers (02) #539-4378 for. 116 and look for the project case handlers Engr. Joel Poliman and Engr. Jee Roland Cammayo or at this ensait windpent-gov.ph.

Thank you fur your usual ecoperation and support to the EIA system.

Very truly yours,

GILBURT C. GONZALES. CESO III Director and concurrent Assistant Socretary for Field Operation

Protect the ventropping . Protect life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. 10 Malaybalay City Bukidnon



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TIME!

September 26, 26

Hun, Nile Q Salga Punong Harangay Brgy, 10 Mulayhalay City, Bukidoon

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MIND AND HIGHWAY CONSTRUCTION PROMO CAGAYAN DE ORD - MALAYBALAY SECTION: O DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon, Salga

We are pleased to invite you or your representative in the Public Hearing of the Proposed.

Central Mindanae High Standard Highway Construction Project (Cagayan de Ore —
Malaybalay Section) of Department of Public Works and Highways (DFWH) to be tonsed in
Cagayan do Ore City and Tagolom Minarels Oriental, Manulo Fortick, Sumilae, Impang-org, Malaybalay
Bokishoo, The said public bearing is scheduled uti.

Dute	Time	Vente
12 October 2023 (Thursday)	9:00 AM Registration starts at	2 nd Floor, New Building, Sumilise Musicipal Holl
(IIIII) study)	8:3thr.m.	

The project's Environmental Impact Statement (ESS) and Executive Summary for the Public (ESP) and downloadable at our website (Idpdly access the Notice of Public Heuring/Consultation through the link Sound in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at takeptoon numbers (02) K539-4378 loc. 116 and look for the project case hundres Engr. Just Poliman and Engr. Just Roland Carmwayo or at this email: eto@emb.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Very only yours.

GILBERT C. GONZALES, CESO III Director and concernent Assistant Secretary for Field Operation

Protectific confrontest... Protectific...





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Kalasungay Malaybalay City Bukidnon



Department of Environment and Natural Resources
ENVIRONMENTAL MANAGEMENT BUREAU
DENG Compound Visione Avenue, Different, Omders Coy 1116
Telline, 323 953-457
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September 26,

0.24E

TIME:

Hon, Rodrigo O Niere Pumong Barangay Begy, Kalasungay Mulaykulay City, Bukidaan

SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MINNAND
HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT
(CAGAYAN DE ORO - MALAYBALAY SECTION) OF
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon. Niere :

We are pleased to invite you or your representative in the Public Hearing of the Propused Central Mindanao High Standard Highway Construction Project (Cagayan de Oro – Malaybalay Section) of Department of Public Works and Highways (DPWH) to be tecuted in Cagayan de Oro City and Tagultan Misamis Oriental, Manelo Fortich, Samilao, Impastg-org, Malaybalay Bukidnan. The said public hearing is scheduled on:

Dure	Tlime	Venue
12 October 2023 (Thursday)	9:00 AM Registration starts at 8:30a.m.	2 rd Floor, New Building Sunitae Municipal Had

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: https://doi.org/10.100/j.com/access the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, piesse contact the Environmental Impact Assessment and Management Division of this Office at telephone numbers (02) #339-4378 loc. 116 and look for the project case handless Engr. Joel Polintan and Engr. Jes Roland Cammayo or at this e-mail: elegitenth gov.ph.

Threk you for your usual cooperation and support to the EIA system.

Very truly years,

GILBERT C. GONZALES, CESO III Director and concurrent Assistant Secretary for Field Operation

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PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Impasug-ong Bukidnon LGU





Hon. Anthony Uy
Mayor
Office of the Municipal Mayor
Old Sayn: Hwy. Poblacion
Impassig-nog, Bukidnon

RECEIVED

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINES OF HIGH STANDARD HIGHWAY CONSTRUCTION PROBLEM (CAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Don Hen, Uy:

We are pleased to invite you or your approxistive in the Public Hearing of the Proposed Central Mindamao High Standard Highway Construction Project (Cagayan do Oro — Malayhalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tagotom Misamis Orional, Maneto Fertich, Samisso, Impung-ong, Malayanay Bukahan. The ords public hearing is schoolabel out:

Dute	Time	Venue
13 October 2023 (Friday)	9:00 AM Registration sures at 8:30a.m.	Kaumilan Bulk Aris Thoses Kaumilan Gottada Malaybalay Bakishan

For more details, please contact the fun transmostal largues Assessment and Management Division of this Office at telephone numbers (02) 8539-4378 loc. 116 and look for the project case handlers lings, Juel Poliman and Engs, Jes Rotand Camenayo or at this entail: ein@enth.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Vary truly yours

GILBERT C. GONZAPES, CESO III Director and concurrent Assistant Surremey for Field Operation

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Kibenton Impasug-ong Bukidnon



Dear Hon. Rojue:

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindamos High Standard Highway Construction Project (Cagayan de Oro — Malayhalay Section) of Department of Public Works and Highways (DPWH) to be tocated in Cagayan de Oro City and Tagoloan Misamis Oriental, Manolo Fertich, Sumilso, Impussig-org, Malayhalay Bukidnon. The sold public boaring is suboduled on:

Date	Time	Venue
13 October 2023 (Friday)	9:00 AM Registration starts at N:30a.m.	Knamilai Feli Ara Tharis Knamilai ilhamle Matestolia Baladisa

The project's Environmental Impact Statement (EIS) and Excontive Summary for the Public (ESP) are downloadable at our website. (kindly secess the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at selephone numbers (02) 8539–4378 Jos. 116 and look for the project case handlors Tingr-Joel Polintan and Engr. Jes Roland Caramayo or as this armsit: siaggents.gov.ph.

Thank you for your must cooperation and support to the ELA system.

Very truly yours,

GILBERT C. GONZAPES. CESO III Director and concurrent. Assistant Sucretary for Field Operation

Project the surfronment. Project life.

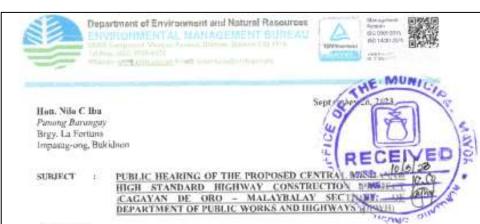






CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. La Fortuna Impasug-ong Bukidnon



Dear Hon, How

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Oro — Malaybulay Section) of Department of Public Works and Highways (DPWH) to be tocated in Cagayan de Oro City and Tagotoun Missaus Oriental, Mando Fortich, Samilao, Impanag-org, Malaybulay-Bukidnon. The said public hearing is schoolated on

Date	Time	Venue
[3 October 2023 (Friday)	9:00 AM Registration starts at 8:30cm	Kaumuun Park Ame These Kaumuun Goodnik Makedadas Deliziere

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: (kindly access the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please contact the Environmental Jaquici. Assessment and Management Division of this Office at telephone numbers (92) 8539-4578 Sq. 116 and look for the project case handless Engineer Pedintan and Engr. Jes Roland Commayo or at this empit: eiaglents.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Very truly yours,

GILBERT C. GONZAPES, CESO III Director and concurrent Assistant Secretary for Field Operation

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Poblacion Impasug-ong Bukidnon



SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MOROS AND HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT CAGAYAN DE ORO - MALAYBALAY SECTION) OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hun, Lagayun:

We are photosed to invite you or your representative in the Public Hearing of the Proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Oro — Malayhalay Section) of Department of Public Works and Highways (DPWH) to be incared in Cagayan de Oro City and Tagolism Misamis Oriental, Manolo Fortich, Sumiton, Impassig-eng, Makayhalay Bukidason. The said public hearing is scheduled on:

Date	Time	Venue
13 October 2023	9:00 AM	Kaantalan Polit Asia Thomas
(Friday)	Registration starts at	Blascheden Classende
M	N.30ho.m.	Media todas Publidanio

The project's Environmental Impact Statement (EIS) and Excentive Summary for the Public (ESP) are derenhability at our website. (kindly access the Notice of Public Hearing/Consultation through the lists found in our web page).

Fig. more details, please contact the Environmental Impact Assessment and Management Division of this Office of telephone numbers (92) 8539-4178 Job. 116 and look for the project case handless Engr. Joid Polintan and Engr. Jes Rohand Cammayo or at this entail: eta@centh.gov.ph.

Thank you for your usual ecoperation and support to the EIA system.

Very truly yours,

GR.BERT C. GONZA (E.S. CESO III Director and consuprent Assistant Socretary for Field Operation

Protect the community. Protect this







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Capitan Bayong Impasug-ong Bukidnon



Den Hon, Roque:

We are pleased to invite you or year representative in the Public Hearing of the Proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Ovo — Malaybalay Section) of Department of Public Works and Highways (DPWH) to be incated in Cagayan de Oro City and Tagolom Missinis Oriental, Mando Fortich, Sundao, Impusag-ong, Malaybalay Bukidaon. The smit public having is achestuled on:

Date	Time	Venue
13 October 2023 (Friday)	9:00 AM Registration starts at R:3/ks.m.	Knamulas Folk Ara Traine Kaantilas Gronnes Malaybalay Belsidine

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website [15] [Consultation through the link found in our web pages.

For more details, plosse contact the Environmental Impact Assessment and Management Division of this Office at uslephone numbers (02) 8539-0578 loc. 116 and back for the project case hundres lings. Just Polintan and Eags. Ses Rotand Caustrayo or at this sensial: eaggests, gov.pt.

Thank you for your usual cooperation and support to the EIA system.

Very telly yours,

GILBERT C. GONZATES, CESO III Diseaster and concurrent Assistant Sucretary for Field Operation

Propert the overrooment. Propert life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Cawayan Impasug-ong Bukidnon



Dear Han, Manule:

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Oro — Malayhalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tagolean Misanis Oriental, Manolo Fortich, Samilao, Imposing-ora, Mulayhalay Bakishon. The axid public houring is acheduled ret:

Date	Time	Venue
13 October 2023	9:00 AM	Knaorolas Folk Arta Trisure
(Friday)	Registration starts at	Turumdan Grounds
	N-30u.m.	Mulaybalay Buhanun

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are denvirondable at our website: (Couldy access the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please curriest the Environmental Impact Assessment and Management Division of this Office of selephone numbers (02) R539-4378 (ee. 116 and look for the project case handless lings, Juel Polintan and Engr. Jes Rotand Cassemayo or as this ernall: cia@emb.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Very truly yours,

GH. BERT C. GONZAKES, CESO III Director and olecutrent Assistant Societary for Field Operation

Protect the sweltpannent... Protect life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Impalutao Impasug-ong Bukidnon



Dear Hon, Deminasc

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanao High Standard, Highway Construction Project (Cagayan de Oro — Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tagolam Misanis Oriontal, Manelo Fortich, Samilao, Impasag-mg, Malaybalay Bukidnon. The said public beating is scheduled on:

Date	Time	Venue
13 October 2023	9:00 AM	Kaprulan Fulk Arts Thatte
(Friday)	Registrollow stores at	Kaunulan Giyands
40000000	N-300 m.	Mulaybulay Pluk idose

The project's Environmental Impact Statemens (EIS) and Encentive Summary for the Public (ESP) are developed at var website. (kindly access the Notice of Public Hearing/Consultation through the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at seleptions numbers (02) 8539-4378 Joc. 116 and book for the project case hundren Engr. Juel Polinian and Engr. Jes Roland Cammuyo or at this eruail: eiu@entb.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Very truly yours.

GH. BERT C. GONZAÉES, CESO TH Director and concerned Assistant Secretary for Field Operation

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

September 26-

Manolo Fortich Bukidnon LGU



Hun, Clive D Quiño Manufelpal May Office of the Municipal Mayor Cascawon Manolo Fortich, Bukidana 9177243823

lgamanulofortich@yshoo.cum

CKOF MANO SURIECT : PUBLIC HEARING OF THE PROPOSED CENTRAL MINIMA HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO - MALAYBALAY SECTION) O DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon. Quite:

We are pleased in invite you or your representative in the Public Hearing of the Proposed.

Central Mindanus High Standard Highway Construction Project (Cugayan de Ore —
Makaybakay Section) of Department of Public Works and Highways (DPWH) in he located in
Cagayan de Ore City and Tagulan Missonic Oriental, Massle Portich, Suntite, Impacageorg, Makaybakay
Bukistoon. The sold public hearing is scheduled on:

Dura	Time	Venue
13 October 2023 (Friday)	9:00 AM. Registration starts at 8:300.m.	Kannalen Filli Aris Tildern Konstan Okoneti Maleybahay Bukidwai

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) are downloadable at our website: https://downloadable.ut.our.websiter.html.com/web.archote.ut.our.web.nage).

For more details, please contact the Environmental Impact Assessment and Maragement Division of this Office at telephone numbers (02) 8339-4378 loc. 116 and look for the project case bandlers Engr. Jud Polistan and Engr. Jes Roland Camurayo or at this circuit cints cutting on the project case bandlers and polistan and Engr. Jes Roland Camurayo or at this circuit cints cutting.

Think you for your usual cooperation and support to the EIA system

Very buly yours,

GILBERT C. GONZAVES, CESO III Divoctor and concurrent Assistant Socretary for Field Operation

Printed the swittenment. Printed life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Alae Manolo Fortich, Bukidnon



September 26,

OF THE

OF MANO

Hon. Erusino Censur A Ramirez Punning Barangay Bogy, Alac Manolo Fortick, Bakidnon

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDANA HIGH STANDARD RIGHWAY CONSTRUCTION PROJECT ICAGAYAN DE ORO — MALAYBALAY SECTION OF DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS IDPWHI

Plear Hun, Ramirer

SUBJECT

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanao High Standard Highway Construction Project (Cagayan de Oro = Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tagnitum Micania Griostal, Manelo Fertich, Sumitan, Impung-ong, Malaybalay Bukidson. The said public hearing is asheduled on:

Date	Time	Venue
13 October 2023 (Friday)	9:00 AM Registration starts at N-Thurs.	Kairmilas Folk Arit Theatre Kaismilas Fijounds Mahaybalay Plukldous

The project's Environmental Impact Statement (E1S) and Executive Statement for the Public (ESP) are directlosolable at our website; to a second of Carally access the Notice of Public Harring/Consultation through the link found in our web page).

Far more details, please contact the Environmental Inquite Assistment and Management Devision of this Office of telephone numbers (O2) 8539-4578 Inc. 116 and look for the project case handlers Engr. Just Polinton and Engr. Jest Roland Cammayo or at this entail: eli@anda.gov.ph.

Thank you for your usual cooperation and support to the UfA system.

Very truly yours.

GILBERT C. GONZALES, CESO III Assistant Secretary for Field Operation

Protect the enstrumment. Propert life...







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Sankanan Manolo Fortich, Bukidnon



THYMATING OF TH

September 2

Hon, Dennis G Salvo Punong Barangay Begg, Sankanan Manolo Fortich, Bukidnan

SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDA HIGH STANDARD HIGHWAY CONSTRUCTION PROJEC (CAGAYAN DE ORO – MALAYBALAY SECTION) DI DEPARTMENT OF PURLIC WORKS AND HIGHWAYS (DPWH)

Dear Han, Salve:

We are pleased to invite you or your representative in the Public Henring of the Proposed Central Mindanao High Stundard Highway Construction Project (Cagayun de Ore — Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Ore City and Tagodom Misanis Oriental, Moreto Fortich, Sunsite, Improve_ong, Malaybalay Bukidosa. The said proble huning is schoolabed on.

Date	Time	Venue
13 October 2023 (Friday)	9:00 AM. Registration starts at 8:30s.m.	Kaunulan Folk Aris Thatro Examples Grounds Malaybulay Bukidnoo

The project's Environmental Impact Statement (EIS) and Executive Summary for the Public (ESP) and development (Findly access the Notice of Public Hearing/Consultation through the link found in 16th web page).

For more dendle, please contact the Environmental Impact Assessment and Management Division of this Office at telephone numbers (92) 8559-4578 for. 116 and look for the project case bumillers Engr. Just Poliman and Engr. Jes Roland Cammingo or a this consit: eia@enth.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Vary truly yours.

GILBERT C. GONZAKES, CESO III Director and consumers Assistant Societary for Field Operation

Protect the exercismost a Protect life...







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Mambatangan Manolo Fortich, Bukidnon



Management | 100 Mg |

September 2016

Hen, Angelic's Roa Panong Barangay Bryy, Mambahangas Manolo Forlich, Bukidnon

SUBJECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MIND.

HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT
(CAGAYAN DE ORO - MALAYBALAY SECTION; OF
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon, Run;

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindamo High Standard Highway Construction Project (Cagayan de Ora — Mulaybalay Section) of Department of Public Works and Highways (DPWH) to be fecuted in Cagayan de Ora City and Tagolous Misanis Orienal, Musolo Fortich, Sunitso, Impossig-org, Malaybalay Buildneo, The said public terring is acheshded on

Date	Time	Venue
13 October 2023 (Friday)	9:00 AM Registration starts at K:30a.m.	Knamilies Folk Arta Thiotise Knamilies Grounds Me Sylveby Bekning

The project's Environmental Impact Statement (EIS) and Executive Summery for the Public (ESP) are downloadable at our website, attached to the Window of Public Hearing/Consultation through the link found at air web page).

For more details, please contact the limit mountal bopest Assessment and Management Division of this Office at telephone sumbers (03) 8539-4378 lost 116 and look for the project case hundlers Engl. Just Polintan and Engr. Jes Roland Commayo or at this entail; ris@emb.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Very texty yours,

GILBERT C. GONZAZES, CESO III Diventor and concernium Assistant Societary for Field Operation

Protect the environment. Protect life...

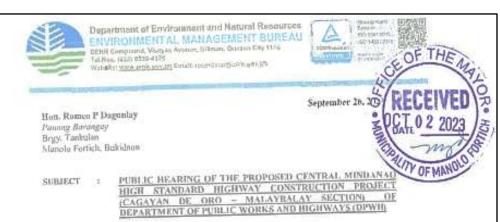






CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Tankulan Manolo Fortich, Bukidnon



Den Hon, Dugunlay

We not pleased to issue you or your representative in the Public Hearing of the Proposed Central Mindanan High Standard Highway Construction Project (Cagayan de Oro — Malaybalay Section) of Department of Public Works and Highways (DPWH) to be found in Cagayan de Oro City and Tagalous Misanis Oviernal, Manoin Fortich, Sumilos, Imperagency, Malaybalay this idea. The said public bearing is acheloided on:

Date	Time	Venue
13 October 2023 (Friday)	9:00 AM Registration starts at X-30x.m.	Kannalan Fulk And Thomas Kannalan Gonardi Mataybalay Palishnan

The project's Environmental Impact Statement (E1S) and Executive Summary for the Public (ESP) are drowloadable at our website land and the limit of the Public Intering/Constitution through the link found in our web page).

For more details, please contact the Environmental Impact Assessment and Management Division of this Office at seleptione numbers (02) 8339-4378 (cc. 116 and 100), for the project case handlers Engr. Joul Polintan and Engr. Jes Robard Cansonayo or at this sensit; sis genth, gov.ph.

Thank you for your mail conperation and support to the EIA system.

Very tody yours

GILBERT C. GONZALES, CESO TO Director and concurrent Assistant Secretary for Field Operation

Propert the environment. Propert life...







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO - MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy.San Miguel Manolo Fortich, Bukidnon



Department of Environment and Natural Resources ENVIRONMENTAL MANAGEMENT BUREAU
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Tallinox, 1922) #539-4579 the feet brane with play 4th Entitle recommendate the proudit

September 2642

Hon, Benjamin S Minora Pannog Barongoy Brgy, San Miguel Manolo Fortich, Bukidnon

SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDA HIGH STANDARD HIGHWAY CONSTRUCTION PROFES OF MANO CAGAYAN DE ORO - MALAYBALAY SECTIONI. O DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear How, Minure :

We are pleased in invite you or your representative in the Public Bearing of the Proposed Central Mindanes High Scoodant Highway Construction Project (Cagayan de Uro — Malaybulay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oro City and Tagelean Mixamis Oriental, Munsin Fortich, Surnitas, Improve-exty, Malaybulay Batridian. The said public houring is scheduled on:

Date	Time	Venue
13 October 2023 (Friday)	9:00 AM Registration starts at	Katamptan Polk Arta Thoma Kammitan Granish
	R: 170c; m.	Midwhalep Pakidna

The project's Environmental Impact Systemen (EES) and Executive Systementy for the Public (ESP) are developed to the Public of Public (ESP). Hearing/Consultation through the link found in our web page).

For more details, phase contact the Environmental Impact Association and Management Division of this Office at seleptions sumbers (02) 8339-4378 i.e. 116 and look for the project cose bundlers lings. Jud Poliston and Engr. Jos Rokard Commence or at this evails etailcents gov pt.

Thank you for your small cooperation and support to the EEA system.

Very truly yours.

GILBERT C. GONZALES, CESO III Assistant Secretary for Field Operation

Printer the programment. Printer life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Damilag Manolo Fortich, Bukidnon



100.5

Hun, Allan G Torres

Punong Baranger

Brgy, Danidag

Manolo Fortich, Bukidana

SERIECT :

PUBLIC HEARING OF THE PROPOSED CENTRAL MINDS
HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT
[CAGAYAN DE ORO - MALAYBALAY SECTION] OF
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

Dear Hon. Torrest:

We are pleased to invite you or your representative in the Public Hearing of the Proposed Central Mindanus High Standard Highway Construction Project (Cagayan de Oro — Malaybalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayan de Oto City and Tagolom Misamis Oriental, Marola Fortich, Sumilies, Inspiring-ong, Malaybalay Buildings. The said public horizing is schoolated on:

Dute	Time	Venue
13 October 2023 (Friday)	9:00 AM Registration starts at 8:30hrm.	Kazimilan Pala Aris Teorite Kazimilan teramah Majashilay Bukidani

"The project's Environmental Impact Statement (E1S) and Executive Summary for the Public (ESF) are downhaulable at our website for a public Hearing/Consultation through the link found in our web page).

For more dutils, planer contact the Environmental Impart Association and Munigeneous Division of this Office at telephone numbers (02) 8539-4378 for. 116 and look for the project case handlers lings. Jost Polisian and Engr. Jet Roland Castrings or at this emails classically gov.ph.

Think you for your usual exoperation and support to the ETA system.

Very truly yours,

GILBERT C. GONZACES, CESO III Directur and overcortent Assistant Socretary for Field Operation

Protect the environment... Prouse life.







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Diclum Manolo Fortich, Bukidnon



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OF MANO

September 26

Hun, Nelson S Binnyao Pamong Baranggay Brgy, Dielam Manolu Furtich, Bakidnun

SUBJECT

PUBLIC HEARING OF THE PROPOSED CENTRAL MIND HIGH STANDARD HIGHWAY CONSTRUCTION PROJECT (CAGAYAN DE ORO — MALAYBALAY SECTION) DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH

Dear Hon, Blazyne:

We are pleased to invite you or your experientative in the Public Houring of the Proposed Central Minduson High Standard Highway Countraction Project (Cagayun de Oro – Malayhalay Section) of Department of Public Works and Highways (DPWH) to be located in Cagayar de Oro City and Tagolosta Minamir Grierial, Mando Fortick, Sumilar, Impuning-org, Malayhalay Bukishon. The axid public hearing is exhabited on:

Date	Time	Venue
13 October 2023	9:00 AM	Kaamilan Pilite Arts Theatre
(Friday)	Megistration starts at	Eastwichn-Gronings
	At Filler see	Musichiday Bulliform

The preject's Environmental Impact Statement (EIS) and Executive Stemmary for the Public (ESP) are downloadable at our website: (Constitution (Constitution

For introductable, please contact the linvirusmental impact Assessment and Management Division of this Office at telephone numbers (02) 8539-4578 loc. 1.6 and look for the project case handless Eage. Ind Polinum and Eage. Ion Reland Commayo or a this small: sixthernb.gov.ph.

Thank you for your usual cooperation and support to the EIA system.

Very truly yours,

GILBERT C. GONZÁLES, CESO III Director and concurrent Assistant Secretary for Field Operation

Protect the restrongers. Protect life.

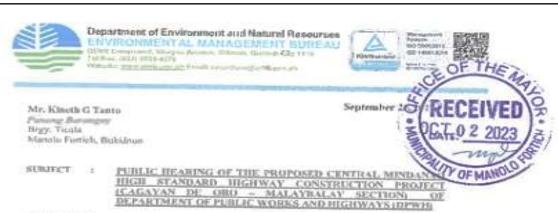






CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Brgy. Ticala Manolo Fortich, Bukidnon



Dear Mr. Tento:

We are piersed to invite you or your expronuncive in the Public Hearing of the Proposed Central Mindamou High Standard Highway Construction Project (Cagayan de Ore — Malayladay Section) of Department of Public Works and Highways (DPWH) to be because in Capayan de Ore City and Tagatora Minamis Oriental, Mazolo Ferich, Sumilion, Income, Malayladay Bultimos. The said public learing is submitted on:

Date	Time	Venus
13 October 2023 (Feiday)	9:90 AM Registration stores at R-20a m	Enamelist Field Arts Theater Fairmales Grunnelli Malaybulay Bakulane

The project's Environmental Impact Suttement (E15) and Executive Summary for the Public (E5D) are dominablede at our website (Emply sales the Notice of Public Having/Consultation Strongle the link Board in one web page).

For more details, ploner contact the fary/comment inquest Assument and Management Deviators of this Office at scholorous exacts on \$129.4578 for. 116 and forth for the project state fundless Engr. Joel Poliston and Cogr. So Builded Commeyor or in this amount examines got pt.

Thirst you for your usual evoposition and appart to the EIA system.

Very truly yours.

GILBERT C. GONZALES. CESO III Directine and colocurum. Assistant Soccessivy for Field Operation

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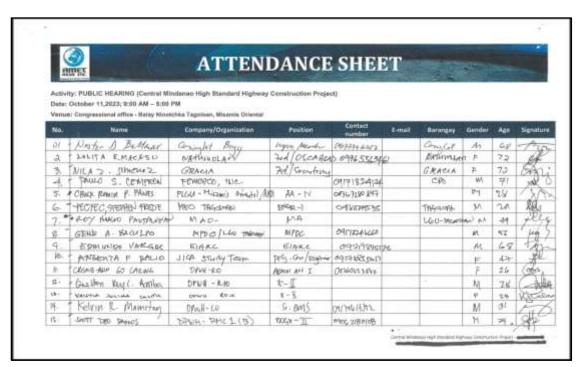
CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

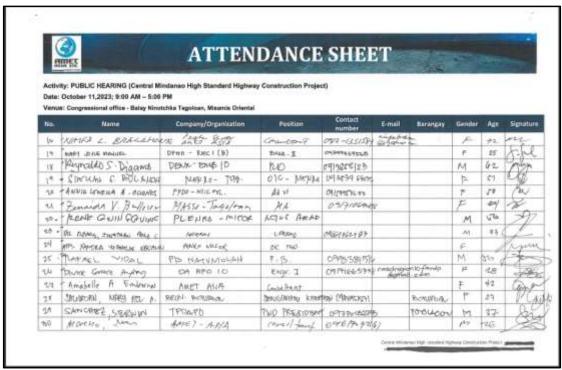
Attachment 20. Public Hearing Attendance

Public Hearing attendance sheets (onsite and virtual via Zoom)

Cagayan De Oro City and Tagoloan, Misamis Oriental

On-site participants

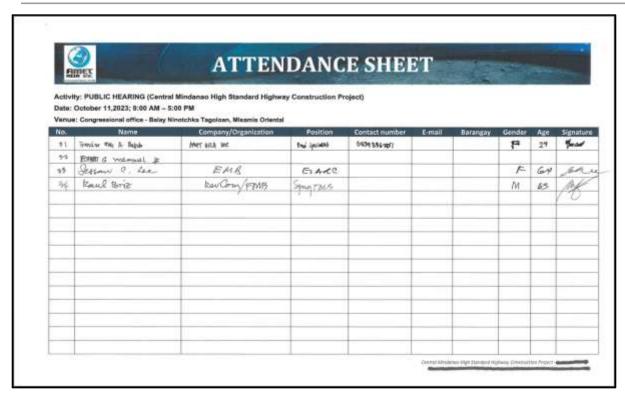








CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA



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Virtual (via Zoom) participants



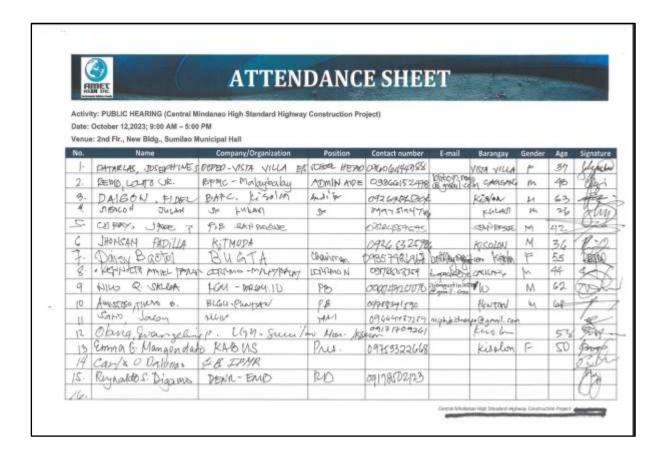


CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

	Name	Position	Company/Organization
1	Tomoaki Tanabe		JICA Study Team
2	Emmanuel Ramos	Consultant	Amet Asia

Sumilao and Malaybalay Bukidnon

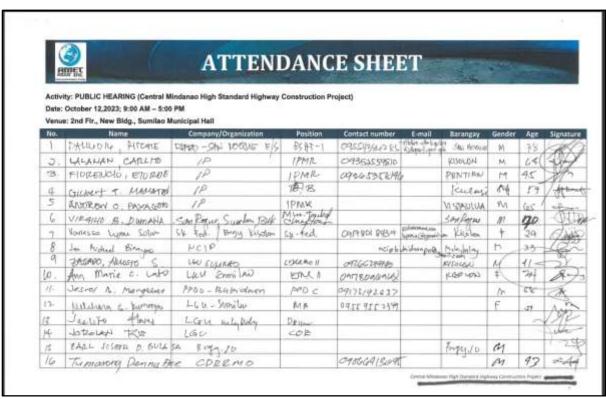
On-site participants

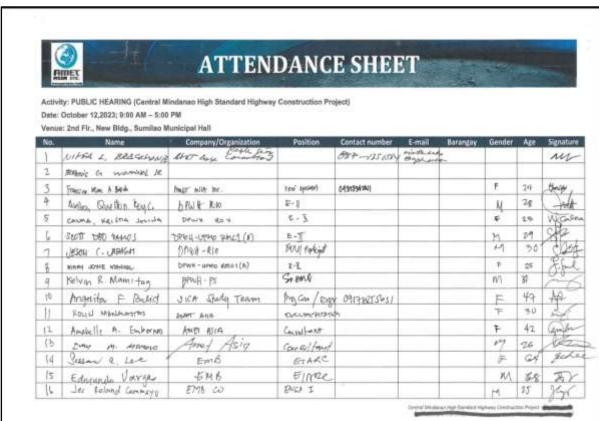






CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA







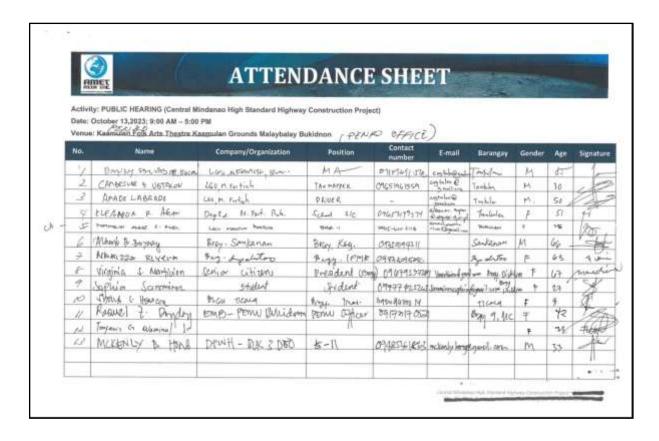


CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

	Name	Position	Company/Organization
1	Tomoaki Tanabe		JICA Study Team
2	Emmanuel Ramos	Consultant	Amet Asia
3	Samuel Sendon	Consultant	Amet Asia
4	Patricia Lim	Consultant	Amet Asia

Impasug-ong and Manolo Fortich Bukidnon

On-site participants







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

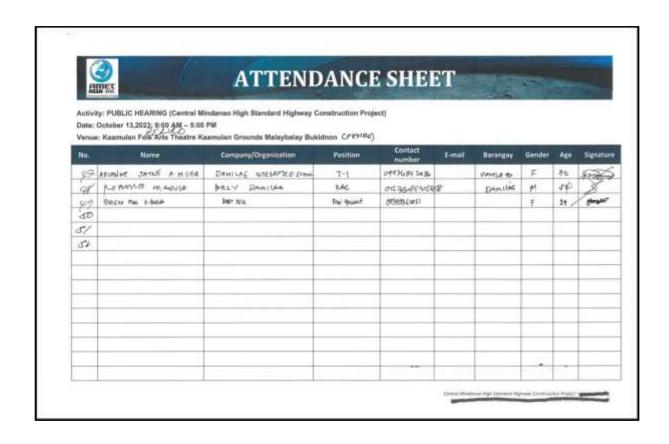
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	ity: PUBLIC HEARING (Central N October 13,2023; 9:00 AM - 5:00		y Construction Proje	ot)					
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CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA



Virtual (via Zoom) participants

	Name	Position	Company/Organization
1	Tomoaki Tanabe		JICA Study Team





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 21. Public Hearing Photodocumentation

Cluster 1: Cagayan De Oro and Tagoloan Public Hearing

Onsite Attendees - Cagayan De Oro and Tagoloan Cluster in Congressional Office - Balay Ninotchka Tagoloan, Misamis Oriental





Engr. Joyce Manuel from DPWH RMC 1 (Bilateral) presenting the project description



Ms. Francina Balido presenting the EIA Study results and mitigation measures





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Engr. Angelica Balid from JICA Study team showing the road alignment during the open forum



Cluster 2: Sumilao and Malaybalay Public Hearing

Onsite Attendees - Sumilao and Malaybalay Cluster in 2nd Flr., New Bldg., Sumilao Municipal Hall in Sumilao, Bukidnon

Signing the attendance sheet for Cluster 2 Public Hearing





Engr. Joyce Manuel from DPWH RMC 1 (Bilateral) presenting the project description







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Mr. Fidel Daigon, FAFC Kisolon, during the open forum



Mr.Kenneth Taylor, DRRM, during the open forum



Notice of Public Hearing and change of venue at Centenniel Stage in Capitol Grounds, Malaybalay



Mr. Bienvinido Narciso from ABAG, during the open forum



Ms.Ann Lato, EMS, during the open forum



Notice of Public Hearing and change of venue at Kaamulan Folk Arts Theater







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Cluster 3: Impasug-ong and Manalo Fortich Public Hearing

Onsite Attendees - Impasug-ong and Manolo Fortich Cluster in PENRO office in Capitol Drive, Malaybalay Bukidnon



Mr.Danny Bocan, Municipal Assessor Manolo Fotich, during the open forum



Mr. Alex Payangga, S.B. Manolo Fortich, during the open forum



Signing the attendance sheet for Cluster 3 Public Hearing



Ms. Francina Balido from Amet Asia presenting the EIA study results and mitigation measures



Ms.Bae Judith Dinsag, Municipal IPMR 'and Chieftain, asking a question during the open forum





CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Engr. Angelita Balid, JICA Study Team, answering a question during the open forum

Ms.Allan Torres, PB Damilag Manolo Fortich, during the open forum







CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

Attachment 22. Public Hearing Proceedings

CLUSTER 1: Cagayan de Oro and Tagoloan

Public Hearing on the Central Mindanao High Standard Highway Project

Congressional Office, Balay Ninotchka, Tagoloan, Misamis Oriental October 11, 2023

9:30-12:00 NN

Facilitator: Regional Director Reynaldo Digamo

Participants

- 1. Eli Mamaklay, Division Chief DepEd
- 2. Galaura, CLENRO Cagayan de Oro City
- 3. Gedion Buyan, Bugo
- 4. Jed Valerio, CPDO, Cagayan de Oro City
- 5. Jefferson Escarpe, CEPALCO
- 6. Kag. Dionedes Rosel, Balubal
- 7. Maynard Torres, DRRM Oro Rescue
- 8. Nelson Jumilla, Bugo Senior Citizen Vice President
- 9. Paolo, LGU MDRRM Tagoloan
- 10. Paulo Cempron, FEMODCO, Inc
- 11. Punong Barangay Rafael Vidal, Natumolan
- 12. Rene Guingguing, PENRO'
- 13. Roy Bataluna, Tagoloan

RD Digamo:

Okay umpisahan nato ha. So, kinsa man dinhe nga naka-participate public consultation process? Diba gaingon sila ganiha sa presentation nga part sa process is the public hearing. But before the public hearing, meron pang public scoping, public consultation. So, who among you here was able to participate in the public consultation? Wala? Because during the public consultation process meron mga issues and concerns. And then you have the right to know.

House rules sa public hearing, ang katong gusto na dunay pangutana ug naay concern itaas ang kamot. Ang hearing officer i-acknowledge ka. Imo ipaila imong kaugalingon kung unsa na grupo ang imong girepresentahan and then imong ipasigot imong mga panguntana. Okay, who will shoot the first question?

Mr. Cempron:

Good morning. I'm Paulo Cempron, federation chairman of Cagayan de Oro City Motorcade Federation. This is my first time, ingo pa ni Sir nga kami tanan bag-o pa gyud me ani, wala pa me kaapil sa consultation. So, kung i-weight lang nako particular sa kaangayan ba nga i-divert ang highway kay ibutang nato nga ang alignment ako na obserbahan sa akong mama nga in which part on Tagoloan diretso didto sa Sumilao possible Sumilao, Bukidnon. Meaning kato Puerto mawala nato, so may I know the reason why ingon ani?



ica jica

PUBLIC SCOPING REPORT

CENTRAL MINDANAO HIGH STANDARD HIGHWAY (CDO – MALAYBALAY SECTION) PROJECT Cagayan de Oro City, Malaybalay City, Municipalities of Tagoloan, Manolo Fortich, Sumilao, Impasug-ong PROPONENT: Department of Public Works and Highways in cooperation with JICA

RD Digamo: Thank you, Sir Paul. So, atong ipatubag sa DPWH. Why the road

alignment is diverted from Puerto dire sa Sumilao. Pero dili mawala atong kalsada sa Puerto. Naa ra gihapon yan. It will still remain and unclog the traffic. Kasi nakita niyo na ang Puerto labi na diha sa bakana grabeh na dira ka traffic. So, we have somehow constructed another road to unclog the traffic labi na diha sa Puerto. But then we

will let the DPWH reply to that query.

Engr. Ramos: Good morning po. So, sa part po namin sa DPWH as pinakita po

kanina may tatlong alignment po na pinagaralan and ang nasabi po ng kasama ko na sa Engr. Joyce may limang aspect po siya para mapili po ang proposal alignment. So, itong alignment po ito. Ito po yung para mai-ano ang traffic tulad po ng nasabi ni direktor po. Para hindi po masyado ma-traffic sa area na sinasabi niyo po. Kung saan po yung

mas economical kaya yan po ang napili naming alignment.

Mr. Cempron: Okay but dunay alignment didto another way nga less atong traffic

but niabot gyapon ta sa Puerto sa highway. Magsugat ra gihapon. So, ang decongestion dadto sa imabaw pero pagabot na sa highway na, yang existing highway natin but didto gyapon ang highway kuno.

RD Digamo: Ang punto niya. Pagdating dito mag-abot parin sila.

Engr. Ramos: Sayre highway, Sir. That's an alternative alignment.

Mr. Cempron: Ang ako lang pangutana sa existing highway nato Tagoloan siya sa

highway. So, niliko sa pikas murag nihawa, tungod sa alignment all which ang Puerto naa lang gihapon muagi. Ang purpose is to decongest. Pero nganong pagabot sa highway the same highway pa gyapon ang tinagpuan sa mga sakyanan nga buwag ni sa high standard highway ug sa Puerto nga highway sa Sayre mutagbo lang gyapon didto sa Tagoloan. Adto ka sa Puerto para Tagoloan,

musangko ka sa Tagoloan. Unya ang isa pud sa alignment sa high standard highway nga propose, magtagbo lang gyapon na sa ubos. Sa

ato pa, mutagbo ra gyapon siya.

RD Digamo: Sige si Sir Gideon.

Mr. Buyan: Gedion Buyan. Barangay legislator at the same time leader sa

barangay Bugo. Sir ang concern nako related ra pud sa concern sa Lipunan. Based on some observation naa lang affected na mga families even siguro ilang mga properties na maapektuhan. Pero naa



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bay anticipation na gihimo nga gitawag nga plano? Kay kung magsugod na pud ang project, mag-ongoing na ang gitawag nga construction sa dalan, I'm sure padulong sa Bugo. So, naa na bay anticipation mga gitawag nga affiliated agencies nga ingkaso mahitabo ni naa nay mga plano unsay buhaton? Ang Bugo nagbaha na gyud sa ubos. Pero kung naay gamay nga eroded nga lugar didto padulong gyud sa ato sa Bugo.

RD Digamo:

The moment na magumpisa na ang construction, definitely there will be some sort of planning. Ang tanong, will you have identified measures to prevent this flooding, landslide or whatever consultation in the barangay Bugo?

Ms.Balido:

Let me clarify. Ang question po natin ano po measures ang gagawin to prevent flooding? Tama ba? Ano ang gagawin? So, this one po. Dito po. Ito po yung options para ma-prevent or para ma-indicate po yung sinasabi ni sir na flooding. So una, kailangan po makapag-design po tayo na adequate na drainage system. So this will be on...Ito po kasi sinasabi ko halos mga plans pa po na kailangan po nilang maimplement during the construction. Dapat din po yung road design is compatible din po doon sa slopes or structures. Meron din po tayong mga recommend po sa kanila na mga kailangan gawin katulad po noong...Barangay Bugo po kayo, Sir? So, bale mababa po yung lugar niyo? So, kunyari ang mangyayari yung matataas po nating mga lugar yung mga flood po galing sa kanila napupunta po sa inyo? Pero may nabanggit po kayong project? Iba po yun. So, ayun po. May mga projects po na mga plans po na dapat po masunod during the operations po. And nakalagay po sa report po namin. So, kailangan din nila makapag provide ng mga backfilling and leveling of borrow pits to prevent water filling. But then again general po sabihin is may mga plans po na nakalagay po dito for prevention and mitigation po para maiwasan po yung mga ibang yun. Kasi during our study nakita po namin yung impact na binangit niyo po. So, these options para to prevent po yun. So, this must be masunod po para maiwasan po ito.

Mr. Buyan:

Ang request po namin, Ma'am kung saan ang specific na entrada para diyan na this will be the plan ninyo if in case mangyari yun during sa constructions. Be specific talaga. Kasi yung nakalagay diyan pang general yan. Kadalasan kasi kung ano nangyayari sa taas ang mga tubig doon pumupunta sa amin. So, syempre yung mga tao concern nila kung halimbawa may road construction nanaman. Mas higit pa ang mangayayari.

RD Digamo: Yung concern ni Sir Gideon that will be addressed during the detailed





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engineering design. Ngayon part of this study aaralin nila yung mga natural drainage system. Yung may mga tally? Kung saan dadaloy yung tubig. Possibly contaminated yung soil, sediment ana. So, aaralin nila yun based on the area and then based on that consider nila doon sa detailed engineering design. Ngayon, yung detailed engineering design na yan should be made known to the stakeholders dito sa baba. DPWH, you should make that known to the stakeholders and those areas that are more concerned about flooding. Don't worry kasi each project is there's an ECP and there will be MMT. Naalala niyo yun? That is still part of the public consultation. We will organize the MMT and there will be representatives coming from barangay Bugo. Definitely there will be representation from barangay Bugo, barangay Puerto. So that during the monitoring, yung concern po ninyo ma-input doon sa report. Okay.

Engr. Ramos:

Actually, ito rin ang purpose ng public hearing, yung mga concern po ninyo kagaya kay sir kanina, kasama sa detailed engineering design kasi hindi naman namin alam particularly kung titingin lang kami sa google map. That is why pumunta po kami mismo dito para malaman natin yung mga concerns ninyo and magandang concern po yun para masama po natin siya. So, meron pa po kayong katanungan?

Mr. Jumilla:

Maayong Buntag sa tanan. Ako Sir 50 years na ako sa Bugo, bahaonon na daan pa. Kay ang Bugo murag embudo. Pagbalhin nimo sa pikas kay moadto sa Bugo ang tubig sa taas. Nibalhin ko sa taas nga lugar pero nabahaan gihapon. Tama tong ingon ni Sir nga dapat naay public consultation kay ang taga Bugo ang maoy nasayod sa problema. Ang outlet sa Bugo connected sa Tagoloan gamay kaayo mao magbaha. Ang mga balay pud naa sa canal mao magbaha.

Mr. Cempron:

So, related lang yung tatlo nilang concerns. It's about flooding. So you have to identify the sources of this flood waters during heavy rains. Kay baka mamaya kahit malayo doon sa project natin kayo parin yung ituturo na dahilan. Thank you at these guys are already telling us even without this project yet, there is already flooding. So, para hindi maattribute sa project natin you have to identify the sources of flood waters during heavy rains. Si sir po next.

Engr. Mamaklay: DepEd po.

RD Digamo: Pangalan, Sir?

Engr. Mamaklay: Engr. Eli Mamaklay. Division Chief head. Bali yung problema po namin



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sa Bugo National High School meron kasi doon sa taas, may pipe doon. Ewan ko lang bakit andoon 4.9. Yung pipe na yun nakatutok doon sa school. Yun pala ang problema namin bumabagsak doon sa school. Ang ground floor namin na four-storey building hindi po namin magamit kasi kapag umuulan napupuno palagi ng lupa na galing sa taas.

RD Digamo: Sino po naglagay ng pipe na yan?

Engr. Mamaklay: Hindi ko po alam.

RD Digamo: You can bring your concern to the DPWH or to the city. Kasi

pagusapan natin itong project na ito. You are talking of something that is existing. Okay. So, how will that affect itong project na ito. Ngayon, sa school niyo dinala niyo na ba yang concern na yan sa

kinauukulan?

Engr. Mamaklay: Wala pa. Hindi namin alam kasi bali tinatanong ko kung siguro part ng

Tagoloan yun sana maisama nila sa project na ito yung pag divert noong pipe. Kasi may isang bridge doon na dinugdon ang pipe papunta doon sa... anong tawag nito? Dapat doon sa bridge.

RD Digamo: Ganito nalang gawin natin. Maybe this guy doesn't know about it.

Maybe you can bring the concern to the local DPWH. If not, the

district office in the region. Okay, si Sir sa likod.

Kag. Rosel: Maayong buntag sa tanan. Ako si Kagawad Dionedes Rosel sa

barangay Balubal. Kinis siya, maagian man amuang area sa private land. So akong question, na-negotiate na ba ang lot diha? Naa na bay negotiation about sa yuta, tanum. Adto pud na hapak sa barangay. Before sa construction at least plantsado na tanan. Ang mga tag-iya sa yuta wala nay reklamo didto sa barangay kay ato naman gi-negotiate.

Mao na akong concern, Sir.

RD Digamo: Salamat sa concern, kagawad. Ang concern ni kagawad yung right-of-

way natin. Meron na ba daw negotiation sa mga private properties na

dadaanan ng project natin. So, sino sasagot?

Engr. Ramos: Sir, uulitin ko lang po. Ang tanong niyo po kung may negotiation na po

sa mga tatamaan ng project?



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RD Digamo: Yes.

Engr. Ramos: Sa ngayon po sir, Feasibility study palang tayo and may engineering

detailed design pa. Sa detailed engineering design, so may mga separate na public consultation meetings regarding sa RAP yung Resettlement Action Plan. So, itong mga affected families po may separate na siya na public consultation meetings. And once na final and approved yung periciliary survey po natin. As of now po, yung alignment is para initially since FS palang po siya, magco-conduct pa

po tayo ng more detailed na pagaaral po yung

detailed engineering design. And may separate na public consultation.

Kag. Rosel: May mga papers po ba na kailangan e-prepare

RD Digamo: Yes, definitely. Standard procedure yan ng DPWH. Bago sila pumasok

diyan meron pa permit to enter na isyu ng mga private landowners.

May mga negotiation.

The final negotiation magkaroon yan kapag natapo yan detailed engineering design. Kasi sigurado na tayo sa road alignment natin. So, magkaroon din ng separate na public consultation sabi ng taga DPWH.

Okay, so si Rafael.

P.B. Vidal: From barangay Natumolan. Punong Barangay Rafael Vidal

Pumunta po ang DPWH sa Barangay Natumolan at pinagtatanong ang mga owners. Akala ko ay okay na itong project. May usapan na...the same project but anyway, kasi ang sa Barangay Natumolan dati hindi talaga problema ang floods. Ang nangyari pagdating ng Alae yung bagong daan, doon nagkaproblema na kami. Grabe ang baha talaga. May putik pa. So, kung pwede yung implementation kung magumpisa bigayan ng pansin. Kasi ganitong impact flooding, traffic, talagang worst na talaga sa lugar namin sa Tagoloan especially sa Kasinglot. Nagpasalamat kami sa Barangay Natumolan na meron ibang daan na mas shorten papuntang Bukidnon. So, we are blessed and happy barangay Natumolan but yun lang ang problema namin. Baka mangyari uli ang naranasan namin ngayon.

RD Digamo: Salamat Kap. Ang sabi ni kapitan, he was referring to the impact of the

construction sa Alae Bridge. So, ang suggestion niya na tignan yun. Ibang project naman yun. Ano ibig sabihin noon? Doon sa study ninyo correlate niyo yung impact noong project by the local DPWH and this project. Yun ang ibig sabihin ni kapitan. Yung correlation at impact ng project dito. Para there is a way na ma-address yun dito sa mga mitigating measures natin para di na natin maranasan yung flooding



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during the construction of the Alae Bridge. Okay. Dito muna.

Mr. Valerio:

Maayong buntag sa tanan. Sa City government sa Cagayan de oro. Suggestion lang sana kasi meron mga concerns doon sa mga low lying barangays natin sa lalo na papuntang low land. Sana before magumpisa itong project na ito 2029 siguro, ma-address na sana ang problema sa baha dito sa baba. Sana meron ng project para mamitigate na yung flooding. So, hindi parallel yung project na kapag develop natin ng highway saka pa gagawin pa yung measure. Kung pwede sana unahin muna yung flood mitigating plans before maimplement ang project na ito. Secondly, meron tayong partly na monitoring team na gagawin. Tanon ko lang sana, ako kasi ang head of team. Monthly ba sila nag rereport? Kung meron bang reklamo sa kanila ba isasanguni ang mga problema? Yun lang sir.

RD Digamo:

Thank you, sir. From the City of Cagayan de Oro. Unahin niyo muna doon sa MMT. Yung mechanism sa MMT coming from the different stakeholders. Definitely from the government meron talagang representation. Usually, the monitoring is quarterly yan. Unless na meron talagang special na meeting ng team. As to saan magcomplain? The MMT can also accept complaints and MMT will take care of that. Okay.

Doon sa unang concern na dapat sana una address itong existing na flooding dito sa mga low lying barangays bago ito umpisahan. So, may I heard the response from the proponent?

Engr. Ramos:

Regarding po doon sa problem niyo po sa flooding since po kasi kami is RFC 1 po kami. May minutes of meeting naman po tayo na mamaya namin address yung concern siguro. If ever po no mag-meeting po kami with our flood control. Meron po kasi kami FCFC specifically flood controls po yung mga handle po nila na project. So, for this specific project po yung address naman po namin yung magiging flooding upon implementation habang construct kasama po sa construction methodology kung paano namin mitigate yung flooding. Pero yung mga out na po sa project namin siguro relay nalang po namin sa department kung saan po nag-handle.

RD Digamo: Sige, si Sir sa likuran.

Mr. Paolo: Hello, good morning. Paolo from LGU Tagoloan. MDRRM. Do you

consider na climate projection? Kasi, I noticed the drainage system. Actually, pwede na sa amount of rainfall. So, nakita ko kanina part sa design na naay drainage. Hopefully, the drainage will be capable of holding those certain amounts. Kasi may [Inaudible 39:51-40:01] and



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siguro try to coordinate city and Tagoloan Planning Office sa MDRR kasi may mga datas kami yung mga history at tsaka yung twice na nangayri na. Yung nakita namin na pagbasak ng ulan. Hopefully the drainage size will be able to cope. And also, please consider the sea level rise. As we all know, dahil sa climate change. Pagdating sa nag level na yung water ng dagat useless na yung outlet.

RD Digamo:

Very clear na siguro yung point ni Si Pao. So, the DRRM offices are good sources of data sa climate, about sa weather. So, coordinate with local DRRM office. So, sagot ng DPWH about sa suggestion ng drainage. Okay na ba yun, kaya ng drainage natin? Paano natin address yan.

Engr. Balid:

Engr. Balid ng JICA study team. Bali since kami po gumagawa palang po kami ng FS. Meron naman po kaming hydrologist na inaral talaga kung ano yung impact ng mga tubig, kung ano yung mga inflows and outflows. So, since FS palang tayo ngayon considered naman siya doon sa detail engineering design na ginawa namin. Next step po nito magkakaroon tayo ng detailed design. Yung sa detailed design syempre engineering detailed design meron din po sila hydrologist. So, for sure makikipag-coordinate talaga sila sa inyo kasi kailangang kailangan nila yung mga secondary datas aside from the primary datas from other agencies.

RD Digamo:

Okay malinawa po. Thank you very much for clarifying that and for assuring our stakeholder that these will be seriously considered in the final design. Anymore? Si Sir.

Roy Bataluna,

Tagoloan:

Maayong buntag sa tanan. Roy Bataluna sa

Municipal Agriculture office sa Tagoloan. Ang akon lang question is kaning sure gyud ko nga big volume gyud ni sa balas nga gamiton sa construction. Then ang source ana is Tagoloan river. Ang problem ana karon sa among part sa agriculture dire sa Tagoloan, grabe na nga erosion ang naguba na gyud ang suba tungod sa paspas nga quarry. Dagahan man ang nisulod nga quarry. Mao na siya ang pangutana is wala bay laing source sa niyo gawas sa Tagoloan? Kay basin mahurot ang luna sa Tagoloan mahulog didto na sa upper part kay murag nahurot na sa daghan quarry dadto.

Ang akong concern is tagaan unta ug plano or unsa mga preventive measure nga dili pud maapektuhan ang agriculture area kay gamay ra kaayo ang agriculture area sa Tagoloan tungod sa quarry halos tanan suba sa Tagoloan gikan sa bukana paingon sa part na Bukidnon last



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gyud. Niabot na ang buhangin karon. Mao na siya ang problema. Ang balas.

RD Digamo: Ang concern ni Sir Roy ang sources sa atong requirement sa aggregate

sa balas. Sa ECC ana sigurado ako that sources of aggregates and construction

materials shall be from legitimate suppliers. Pero balik tayo sa concern ni Sir Roy because too much quarrying will somehow erode the environment. Ang atong patubagon kay ang provincial ENRO nato na ang province ang mag-issue sa quarry permit. So, we will request engineer Guingguing to reply to that particular concern because the

quarry permit is issued by the province.

Engr. Guingguing: Regards sa quarrying sa Tagoloan, Balinsag, even Cagayan de Oro.

Ayaw lang mo kabalaka ang MGB and EMB ang provincial government sa construction ato na monitor nga walay construction sa Tagoloan. Then sa local source naa man ta Balingasag. Didto sila mukuha sa Cagayan de Oro. Didto sila sa Bukidnon. Daghan tag sources.

RD Digamo: Thank you. So, mabulagbulag ang sources nato sa aggregate base ng

materials. But that will again reflect in the environmental impact

assessment and in the FS. Okay. Meron pa ba?

Engr. Galaura: Good morning, I'm engineer Jannene Galaura from City

LENRO, Cagayan de Oro City. Bali po ongoing po yung updating ng CLUP namin. And there are proposals to, highway designs

to incorporate this planting strips. So, bale kapag ordinance na we will implement this in the whole constructions. For now, po, since wala pang ordinance we suggest na yung sa highway design po ninyo road

wee tapos merong drainage canals. Then we highly

recommend planting strips. To implement po green spaces. Sa gilid ng

highway.

RD Digamo: Ma'am Jannene, thank you for bringing that up. Cagayan de Oro is a

candidate for green cities. So, it is just correct that it could be

captured sa design natin sa ating kalsada. Please capture that. I want to see that in the public hearing report. Thank you, Ma'am Jannene.

Anymore?

Mr. Baltazar: Good morning sa tanan. Representing barangay Casinglot. So,

pasalamat sa dakong project sa highway. Naa mga problema pero naa man solusyon. So, dili nalang ko muhatag ug problema. So, pasalamat

lang mi sa mga taga Casinglot nga naa mi apil sa project sa highway. Kay kami man pud ang makagamit ana nga project.

RD Digamo: So, yung first section funded by hapon. Yung section funded by ADB.



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Mr. Escarpe: Good morning. I'm Jefferson Escarpe from CEPALCO. Yung concern ko lang sa feasibility study if involved ba kung saan kami pwedeng maglagay kami ng poles for electricity? May concern dati sa construction na parang nagaaway kami sa right-of-way. Sa drainage, yungs a water system at tsaka kami. Minsa kapag mag ano kami sa lupa matamaan namin yung tubig, if not yung drainage. So, yung concern ko lang sana if ever sa study niyo, may nakalaan sana kaming note kung saan kami magalalagay ng poste.

Kapag highway kasi malalaking poste ang lalagay namin so malalaking hukay ang kailangan. Tapos isa sa complain na natanggap ko sa customer yung ibang may-ari ng lupa na nakapasok kami ay nagtatanong kung bakit bakapasok kami sa lupa nila. Problema namin saan namin ilipat yung poste yung lang po.

RD Digamo: Very valid concern yan. Ayan, sige. Sagutin mo, Ma'am.

Engr. Calma: Good morning, everyone. For the DPWH standard project yung sixty

meters natin right-of-way na pinakita nila earlier. Yung last meter to the left and 4 meters to the right is actually dedicated for electric cooperatives or utilities PLDT, Globe, whatever. Hindi kasi kayo allowed mag encroach within na talaga sa right-of-way namin. Dili mo pwede muduol sa drainage or sidewalk para dili nato ma obstruct ang vehicles or ang pedestrian. Sometime man gud mauna mo before me makaabot. Diha gyud mugawas ang problema kapag naa nay post before kami magdalan. Pero if mauna ang dalan naa man gihatag nga

space for electric cooperatives.

RD Digamo: Let us clarify these 4 meters left and right, this is allocated for

utilities?

Engr. Calma: This is away sa drainage. Ang 4 meters is separate from the drainage

and only for utilities.

Mr. Escarpe: Ang concern lang nako kay not part sa design pero paghuman

sa dalan diba 4 meters. So, paghuman sa dalan kinsa ang unan muplastar drainage dayon ayha dayon me para dili namo mabungkal ang drainage, dili pud namo maigo ang tubig. Mao na among concern. At least part sa plan paghimo sa highway dadto me muplastar but

include siya sa plano.

Engr. Calma: Ang drainage kay amua gyud na siya. Dili part of the 4 meters. Naa

gyud siya sa sulod. Sometimes gani ang drainage is situated below the sidewalk or usahay naa siya sa tunga. Ang water lines lang ang kamo

ang sa kilid.

RD Digamo: Good, thank you sir. Yes, ma'am.

Engr. Balid: Noong nag-conduct kami ng feasibility study. We take into



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consideration the height ng electric lights, electric poles. For example, dito sa part ng Tagoloan meron kaming nire-align para hindi namin tamaan yung post na yun. Kaya huwag po kayo magalala. And kunyari dadaan sa highway kung gaano kalaki yung magiging poste ninyo. Nag-coordinate kami sa NGCP para sa lights.

RD Digamo: Don't worry kasi may coordination na ang mga agencies ngayon.

Mr. Torres: Good morning po. Maynard Torres, Disaster Risk

Reduction Management Oro Rescue. For the information of everybody, not all incidents we receive involve wheels and persons, naa pud sakyanan. Ang rason sa driver, sakyanan and structures. Unsa ilang reklamo? Sa kalsada naay deretso liko. Example sa coastal road daghan nag reklamo kay moderetso ug liko ang dalan. Diha pud sa Puerto – sad but true nga ang dalan pa Bukidnon liko-liko jud maka cause ug disgrasya. Naa mi data sa mga areas nga daghan accidents.

RD Digamo: It's all about too many curves. Tama napansin ko nga yan. Sige

address natin yan.

Engr. Balid: Ito nga po yung magandang balita dahil itong project kasi natin high

standard highway. So, isa sa dahilan kung bakit siya tinawag na high standard kasi kailangan natin ma-evade yung mga accidents na nangyayari. So, mapapansin niyo isa sa mga rason kaya magkakaroon tayo ng ganito para maiwasan natin itong near death zigzags. Kasi base sa aming research ang laki laki ng mga aksidente dito nangyayari. Nakita niyo yung mga zigzag diyan ang steep ng gradient. 6% lang ang maximum steepness. Para smooth ang kanyang takbo at maiwasan

natin yung aksidente.

RD Digamo: That is good news. Sa Claveria ang daming curves. Isa sa features

natin na maiwasan ang curves. Only 6% compared sa matarik na road. But that will not eliminate traffic accidents – kay pag tul-id ang kalsada mas mabilis ang sasakyan. Very valid concern. Bakit ba high

standard? Ano ang difference paki-explain po.

Engr. Balid: Bale po yung high standard highway isa po yan sa dahilan kung bakit

ko kinuha yung project. So, yun ang mga expressway like NLEX, SCLEX kung sino ang nakapunta a Cebu yung bagong Mactan bridge high standard din po yun. Yung maka travel ka ng 80 km/hour na comfortable ka at safe ka. Yung ang gradient is 6% lang. Ang

expressway sa Luzon halos patag lang, deretso, walang masyadong

traffic. Yun, Sir.

RD Digamo: Tulad ng TPLEX, NLEX flat lang. Kasi nasa ibabaw ng lahat. Ang



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features na hindi matarik at 6% gradient at may reflectorized lights. Sana naman mas matibay na reflectorized lights ang gamitin kasi after a month na daanan ng sasakyan nasira na. Sige si Sir muna.

Engr. Guingguing: The design is for 4 lanes, many years in the past nag widening ang DPWH at may matirang puno or poste sa gitna dahil dito, baka dapat ma incorporate ito sa design?

RD Digamo: Parang hindi na yata mangyayari yan kasi yung 60 meters nagiwan ng

4 meters bawat side. So, ibigsabihin yung kabuuan is 26-meter yun. So, kung mag six lanes ka na diyan hindi pa rin tatamaan kapag dito

lang maglagay sa allocate na 4 meters both sides.

Engr. Balid: Yang design ay for 4 lanes ngayon pero siguro in 2050 ay maging 6

lanes.

Mr. Jamilla: Ang project about sa metro rail project for Mindanao. Pero yung alam

namin meron line from Bukidnon to Cagayan. So, pwede niyo macheck kung affected yung metro rail project from Davao ata to

Cagayan to Iligan to Mindanao.

RD Digamo: May idea ba kayo diyan? But anyway, you should also consider if the

government will pursue that project. Kasi that was conceptualized during the time of president Duterte. Wala na? Ah hindi natuloy daw.

Engr. Balid: We also asked for the tentative alignment of the metro rail project for

now on hold pa.

RD Digamo: Meron pa ba? May tatamaan ba ng project ng DENR itong alignment

na ito? Wala daw tatamaan. So, maraming salamat po sa pagdalo. And

I would like to assure everybody that all were considered in the conduct of study, in the FS and the final design of this project.

ENGLISH LANGUAGE

RD Digamo: Okay, we will start. So, who was able to participate in the public

consultation process? In the presentation earlier, they discussed that public hearings are also part of the process. But before the public hearing, there was public scoping and public consultation. So, who among you here was able to participate in the public consultation? None? Because during the public consultation process, they presented their issues and concerns. And then you have the right to know. House rules of the public hearing: to those who have questions and

concerns, raise your hands. The hearing officer will acknowledge you.



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Introduce yourself, the group represented, and then your questions. Okay, who will shoot the first question?

Mr. Cempron: Good morning. I'm Paulo Cempron, federation chairman of the

Cagayan de Oro City Motorcade Federation. This is my first time, like most of us. We have not attended the consultation. So, if I will determine if it is applicable to divert the highway that my mom has observed since then, which part of Tagoloan to Sumilao, Bukidnon?

Does it mean Puerto Road will be gone? So, may I know the reason

why it is like this?

RD Digamo: Thank you, Sir Paul. So, I will let the DPWH answer that. Why is the

road alignment diverted from Puerto to Sumilao? But the Puerto Road will not be removed. There will be a new additional road to unclog the

traffic. But then we will let the DPWH reply to that query.

Engr. Ramos: Good morning. So, we from the DPWH showed earlier that there were

three alignments proposed, and according to my colleague Engr.

Joyce said that there are five aspects to be considered before

choosing that proposal alignment. We chose this alignment because it

is the most economical and to relieve traffic.

Mr. Cempron: Okay but, there is another alignment there that is less traffic but it will

still end in Puerto highway. But the traffic will still merge at the top.

There will still be traffic.

RD Digamo: This means that the traffic will still merge here.

Engr. Ramos: Sayre highway, Sir. That's an alternative alignment.

Mr. Cempron: The alignment, although the Puerto Road exists and its purpose is to

decongest, the traffic will still merge into Tagoloan, causing more congestion. But why will they still use the same highway? So, it means

that the new road will still merge with the old road.

RD Digamo: Go on, Sir Gideon.

Mr. Buyan: Gedion Buyan. Barangay legislator and at the same time leader in

barangay Bugo. My concern is also related to Lipunan. Based on some observation, there are affected families and their properties. Is there a plan from the affected agencies? In Bugo, there is flooding, if there is a landslide, it floods toward Bugo. Is there any plan to anticipate



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this scenario?

RD Digamo: The moment construction starts, there will definitely be some sort of

planning. The question is, will you identify measures to prevent this flooding, landslide, or whatever consultation in barangay Bugo?

Ms. Balido: Let me clarify. The question is: What are the measures to prevent

flooding? These are the options to mitigate the flooding: design an adequate drainage system; these are plans to be implemented during the construction phase; and the road design slope structures should complement the elevation. You are from Bugo, sir; the flooding comes from the top, then it goes to your place? There are plans during operation that should be implemented for this; Lastly, provide backfilling to prevent flooding and landslides. These must be followed

to avoid these impacts.

Mr. Buyan: Ma'am, our request is where specifically the entry point on your plan

in case the construction pushes through. Be specific. Because what is in your report is general. The water from the top will come to our place. So, of course, people are concerned because there will be road

construction again. Even worse will happen.

RD Digamo: Sir Gideon's concern will be addressed during the detailed

engineering design. As part of this study, they will study the natural drainage systems. The one with the tally? Where the water will flow, the soil and sediment are possibly contaminated. So, they will study that based on the area, and then, based on that, they will consider that in the detailed engineering design. Now, that detailed engineering design should be made known to the stakeholders here. DPWH, you should make that known to the stakeholders and those areas that are more concerned about flooding. Don't worry because each project is required to get an ECP and there will be MMT. Do you remember that? That is still part of the public consultation. We will organize the MMT, and there will be representatives coming from

barangay Bugo. Definitely, there will be representation from barangay

Bugo and barangay Puerto. So that during the monitoring, your concern will be included in the report. Okay.

Engr. Ramos: Actually, this is also the purpose of the public hearing. Your concerns

are included in the detailed engineering design because we don't know the exact details or concerns if we just look at the Google map. That is why we came here ourselves so that we would know your concerns, and that is a good concern. So, do you have any questions?

Mr. Jumilla: Good morning, everyone. I have been in Bugo for 50 years, but there



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is still a long way to go for development. Because Bugo is like a funnel. When you move to the other side, the water at the top goes to Bugo. I moved to a higher place, but it was still flooded. You are right, sir. There should be a public consultation because the people from Bugo are the ones who know about the problem. The outlet in Bugo connected to Tagoloan causes flooding. The houses on the canal also cause flooding.

RD Digamo: So, the three concerns are related. It is all about flooding. So you have

to identify the sources of these flood waters during heavy rains. Because maybe later, even if you are far away from our project, you will still be the one to blame. Thank you, and these guys are already telling us that even though the project has not started yet, there is already flooding. So, in order not to be attributed to our project, you have to identify the sources of flood waters during heavy rains. Sir,

you're next.

Mr. Mamaklay: From DepEd.

RD Digamo: Your name, Sir?

Mr. Mamaklay: Engr. Eli Mamaklay. Division Chief head. The problem we have at Bugo

National High School is that there is a pipe up there. I just don't know why there is a 4.9. That pipe is pointed at the school. That's the problem—the water goes into the school. We cannot use the ground floor of our four-story building because when it rains, it is always filled

with mud.

RD Digamo: Who put that pipe there?

Mr. Mamaklay: I do not know.

RD Digamo: You can bring your concern to the DPWH or to the city. Let's talk

about this project. You are talking about something that already exists. Okay. So, how will that affect this project? Now, at your school,

have you brought that concern to the appropriate person?

Mr. Mamaklay: Not yet. We don't know because I'm asking if maybe that's part of

Tagoloan. I hope they can include the diversion of the pipe in this project. Because there's a bridge there with the pipe going there

to...What's it called? It should be there on the bridge.

RD Digamo: This is what we will do. Maybe this guy does not know about it.

Maybe you can bring the concern to the local DPWH. If not, the

district office in the region Okay, sir, in the back.

Kag. Rosel: Good morning, everyone. I am Kagawad Dionedes Rosel in Barangay

Balubal. Our private land is included in the affected areas. So, my



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question is, has the lot been negotiated? Negotiations about the land and crops. I hope that before construction, everything has been negotiated. So that the landowners have no complaints in the barangay. That is all my concern, sir.

RD Digamo: Thanks for the concern, Kagawad. Kagawad's concern is about right-

of-way. Is there any negotiation on the private properties that our will

be affected by the project? So, who will answer?

Sir, let me just clarify. Your question is: is there a negotiation with Engr. Ramos:

those who will be affected by the project?

RD Digamo: Yes.

Right now, sir, we are doing a feasibility study and have an Engr. Ramos:

> engineering-detailed design. In the detailed engineering design, there are separate public consultation meetings regarding the RAP, the Resettlement Action Plan. So, these affected families have separate public consultation meetings. And once our periciliary survey is final and approved. The alignment is not final since we are still conducting our FS. We will conduct a more detailed study of the detailed engineering design. And there is a separate public consultation for

this.

Kag. Rosel: We need to prepare our papers.

RD Digamo: Yes, definitely. That is the standard procedure of the DPWH. Before

> they enter, there is a permit to enter that is issued by private landowners. There will be negotiations. The final negotiation will occur when the detailed engineering design is done. Because the road

alignment is final. So, there should also be a separate public

consultation, as said by the DPWH. Okay, so Rafael.

B.C. Vidal: From barangay Natumolan. Barangay captain Rafael Vidal. The DPWH

went to Barangay Natumolan and asked questions of the landowners.

I thought this project was okay. There are already negotiations for the same project, but anyway, because in Barangay Natumolan, floods were not really a problem before. What happened when the new road came to Alae? That's when we got into trouble. The flood was really bad. There is still mud. So, if the implementation is possible when it starts, pay attention. Because this causes flooding, traffic is really bad in our area in Tagoloan, especially in Kasinglot. We are grateful to Barangay Natumolan because there is another road that is



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shorter to Bukidnon. So, we are blessed and happy in Barangay Natumolan, but that's our only problem. Maybe what we experienced today will happen again.

RD Digamo:

Thank you, Cap. The captain said he was referring to the impact of the construction on the Alae Bridge. So, his suggestion is to look at that. That's another project. What does that mean? In your study, correlate the impact of the project by the local DPWH with this project. That's what the captain meant. The correlation and impact of the project are here. So that there is a way to address that in our mitigating measures so that we no longer experience flooding during the construction of the Alae Bridge. Okay. Next.

Mr. Valerio:

Good morning, everyone. I'm from the city government of Cagayan de Oro. It's just a suggestion because there are concerns in our low-lying barangays, especially towards the lowlands. I hope that before this project starts in 2029, maybe the flood problem here will be addressed. I hope there is a project to mitigate the flooding. So, when we develop the highway, then there will be measures to be taken. If possible, the flood mitigating plans should be prioritized before this project is implemented. Secondly, we should have a monitoring team to work with this. I just wanted to ask because I'm the head of the team. Will they report monthly? If there is a complaint, will the problems be reported to them? That's it, sir.

RD Digamo:

Thank you, sir. From the city of Cagayan de Oro. First, go to MMT. The mechanism in MMT comes from the different stakeholders. Definitely, from the government, there is real representation. Usually, the monitoring is quarterly. Unless there is a really special team meeting, as to where to complain? The MMT can also accept complaints, and the MMT will take care of them. Okay.

The first concern, this existing flooding here in the low-lying barangays should have been addressed first. So, may I hear the response from the proponent?

Engr. Ramos:

Regarding your problem with flooding since we are RFC 1. We have minutes of the meeting, and we will address the concern later. If ever, we will have a meeting with our flood control. We have FCFC, specifically flood controls. So, for this specific project, we will address the flooding upon implementation during construction, including in the construction methodology how we mitigate the flooding. But the ones that are out of our project, maybe we just relay them to the department that handles those particular concerns.

RD Digamo: All right, sir, in the back.

Mr. Paolo: Hello and good morning. Paolo from LGU Tagoloan. MDRRM. Do you



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consider that climate projection? I noticed the drainage system. Actually, it is possible with the amount of rainfall. So, I saw an earlier part of the design that had drainage. Hopefully, the drainage will be capable of holding certain amounts. Because there is [Inaudible 39:51-40:01] and maybe try to coordinate the city and Tagoloan Planning Office in MDRR because we have data, the history, and also it happened twice already. The one we saw was rain. Hopefully, the drainage size will be able to cope. And also, please consider the rise in sea level. As we all know, because of climate change. When the water levels the sea, the outlet is useless.

RD Digamo:

Sir Pao's point is probably very clear. So, the DRRM offices are good sources of data on the climate and the weather. So, coordinate with the local DRRM office. So, DPWH's answer to the drainage suggestion Is that okay? Can our drainage handle it? How do we address that?

Engr. Balid:

Engr. Balid from the JICA study team. Since we are still in the process of doing FS. We have a hydrologist who studied the impact of the waters, including the inflows and outflows. So, since we are doing the FS now, this will be considered in the detailed engineering design that we did. The next step is to have a detailed design. As for the detailed engineering design, they also have a hydrologist. So, for sure, they will really coordinate with you because they need the secondary data aside from the primary data from other agencies.

RD Digamo:

Okay, it's clear. Thank you very much for clarifying that and for assuring our stakeholders that these will be seriously considered in the final design. Any more questions? Sir.

Mr. Bataluna:

Good morning, everyone. Roy Bataluna at the Municipal Agriculture Office in Tagoloan. My only question is that I'm sure it's a big volume of sand that will be used in construction. Then the source is the Tagoloan River. The problem now in our part of agriculture in Tagoloan is that the river has been destroyed by severe erosion due to the rapid quarrying. There are many people who have entered the quarry. My question is: is there no other source for you besides Tagoloan? Because the water in Tagoloan might run out, it will fall in the upper part because it seems like many quarries there have run out. My concern is to give a plan or some kind of preventive measure so that the agriculture area will not be affected because we have few agriculture areas in Tagoloan because of the quarry, almost all the rivers in Tagoloan from the opening to Bukidnon. The sand has reached the area. This is the problem. The sand.

RD Digamo:

Sir Roy's concern is the source of our requirement for aggregate in sand. In ECC, I am sure that sources of aggregates and construction



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materials shall be from legitimate suppliers. But let's go back to Sir Roy's concern, because too much quarrying will somehow erode the environment. Our answer is to our provincial ENRO that the province will issue the quarry permit. So, we will request engineer Guingguing to reply to that particular concern because the quarry permit is issued by the province.

Engr. Guingguing: Regarding the quarrying in Tagoloan, Balinsag, and even

Cagayan de Oro, do not worry because the MGB and EMB, the provincial government, will monitor and make sure that there will be no construction in Tagoloan. Then, from the local source, we have Balingasag. There, they will take Cagayan de Oro. They were in Bukidnon. There are many other sources.

RD Digamo: Thank you. So, we have different sources in the aggregate base of

materials. But that will again reflect in the environmental impact assessment and in the FS. Okay. Do you still have questions?

Engr. Galaura: Good morning! I'm engineer Jannene Galaura from City LENRO,

Cagayan de Oro City. We are currently updating our CLUP. And there are proposals for highway designs to incorporate these planting strips. So, when it becomes an ordinance, we will implement this in the whole construction. For now, since there is no ordinance yet, we suggest that your highway design be road strip and then have drainage canals. Then we highly recommend planting strips. To

implement green spaces. On the side of the highway.

RD Digamo: Ma'am Jannene, thank you for bringing that up. Cagayan de Oro

is a candidate for green cities. So, it is just correct that it could be captured in our design on our road. Please capture that. I want to see that in the public hearing report. Thank you, Ma'am Jannene. Any

more questions?

Mr. Baltazar: Good morning, everyone. Representing barangay Casinglot. So, I just

want to say thank you for the highway project. There are problems, but there are solutions. So, the people of Casinglot are thankful because we are involved in the highway project. We are also the ones

who will benefit from this project.

RD Digamo: So, the first section was funded by the Japanese. The other section is

funded by ADB.

Mr. Escarpe: Good morning. I'm Jefferson Escarpe from CEPALCO. My only concern

is the feasibility study, if it involves where we can put poles for electricity. There was a concern before with the construction that we seemed to be fighting over the right-of-way. In the drainage, its water system, and sometimes when we do something on the ground, we hit

the water pipes, if not the drainage. So, my only concern is that you

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include in your study the location where we could put our post. On national roads, we put up big poles, so big pits are dug up. Then one of the complaints I received was that the land where we put the poles was private property. Now our problem is where to move the pole.

RD Digamo: That's a very valid concern. Please answer, ma'am.

Engr. Calma: Good morning, everyone. For the DPWH standard project, our sixty-

meter right-of-way that they showed earlier—the 4 meters to the right and left—are actually dedicated to electric cooperatives or utilities (PLDT, Globe, whatever). Because you are not allowed to actually encroach within our right-of-way. You cannot approach the drainage or sidewalk so that we do not obstruct vehicles or pedestrians. Sometimes, poles were put first. That's when the problem comes in when there is a post before constructing roads. But

if the road comes first, space is given to electric cooperatives.

RD Digamo: Let us clarify these 4 meters left and right, this is allocated for

utilities?

Engr. Calma: This is from the drainage. The 4 meters are separate from the

drainage and only for utilities.

Mr. Escarpe: My only concern is that it is not part of the design. So, after finishing

the road, who is the one who will install the drainage so that we do not accidentally dig up the drainage and hit the water pipes? That is

our concern. Include it in the plan.

Engr. Calma: We will install the drainage. Not part of the 4 meters. It's actually

inside. Sometimes the drainage is located below the sidewalk, or sometimes it is in the middle. Only the water lines are on the side.

RD Digamo: Good, thank you sir. Yes, ma'am.

Engr. Balid: When we conducted the feasibility study, we took into consideration

the height of electric lights and electric poles. For example, here in the Tagoloan part, we realign some roads so that we don't hit that post. So don't worry. How big will your post be? We coordinated with

NGCP for the lights.

RD Digamo: Don't worry because there will be coordination with the different

agencies.

Mr. Torres: Good morning. Maynard Torres, Disaster Risk Reduction



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Management, Oro Rescue For the information of everybody, not all incidents we receive involve vehicular and people but also structural. What are some complaints? Curve roads. For example, on the coastal road, many people complain that the road is straight and crooked. Also, in Puerto Rico—sad but true—the road to Bukidnon is winding and can cause accidents. We have data on areas where there are many accidents.

RD Digamo: It's all about too many curves. I noticed that also. Let's address that.

Engr. Balid: This is good news because this project is a high-standard highway. So, one of the reasons why it is called high standard is because we have to evade the accidents that will happen. So, you will notice one of the reasons why we have this is so that we can avoid these near-death zigzags. Based on our research, the size of the accidents that happen here. The gradient is steep. The maximum steepness is only 6%. So

that the pace is smooth and we can avoid the accident.

RD Digamo: That is good news. In Claveria, there are many curves. One of our

features is to avoid curves. Only 6% compared to the steep road. But that will not eliminate traffic accidents, because when the road is straight, the car goes faster. Very valid concern. Why high standard?

What is the difference? Please explain.

Engr. Balid: The high standard highway is one of the reasons why I took this

project. So, along with those expressways like NLEX, SCLEX, and Cebu, the new Mactan Bridge is also of high standard. When you can travel at 80 km/hour, you are comfortable and safe. The gradient is only 6%. The expressway in Luzon is almost flat and straight, without much

traffic. That's it, sir.

RD Digamo: Like TPLEX, NLEX is just flat. Because it's on top of everything. The

features are not steep, have a 6% gradient, and have reflectorized lights. I hope more durable reflectorized lights are used because, after

a month, the driveway has been damaged.

Engr. Guingguing: The design is for 4 lanes. Many years ago, the DPWH widened,

and there is a tree or pole left in the middle because of this. Maybe it

should be incorporated into the design.

RD Digamo: It seems like that won't happen anymore because the 60 meters left 4

meters on each side. So, that means the total is 26 meters. So, if you make six lanes there, it will still not be hit if you only put in the

allocated 4 meters on both sides.

Engr. Balid: The design is for 4 lanes now but maybe in 2050 it will be 6 lanes.





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Mr. Jamilla: The project is about the metro rail project for Mindanao. But what we

> know is that there is a line from Bukidnon to Cagayan. So, you can check if the metro rail project from Davao to Cagayan to Iligan to

Mindanao is affected.

RD Digamo: Do you have any ideas on that? But anyway, you should also consider

> that if the government will pursue that project. Because that was conceptualized during the time of president Duterte. None? Oh, it did

not push through.

Engr. Balid: We also asked for the tentative alignment of the metro rail project,

which is now still on hold.

RD Digamo: Are there more questions? Will this alignment hit a DENR project? He

said no one would be hit. So, thank you very much for attending. And I

would like to assure everybody that all were considered in the conduct of the study, in the FS, and in the final design of this project.

CLUSTER 2: SUMILAO AND MALAYBALAY

Public Hearing on the Central Mindanao High Standard Highway Project

Sumilao New Building, Sumilao, Bukidnon October 12, 2023

9:10-12:00 NN

Facilitator: Regional Director Reynaldo Digamo

Participants

- 1. Ann Marie Lato, EMS Sumilao
- 2. Bienvinido Narciso, ABAG
- 3. Ar. Esmeraldo H. Herbito, CPDO, LGU Malaybalay
- 4. Datu Virgilio Dumana, Sumilao Municipal Tribal Chieftain
- 5. Evangeline Olaria, Sumilao Municipal Assessor's Office:
- 6. Fidel Daygon, FAFC Kisolon
- 7. Generero Taberneo, Malaybalay City ENRO
- 8. Kenneth Taylor, DRRM
- 9. Ma. Enore Sale, Puntian Elementary School:
- 10. Stephen Carnazo, OIC MPDO Sumilao

RD Digamo: Okay, let's welcome the open forum. Gamay lang kaayo ang rules

> nato, house rules. Kindly raise your hand, identify yourself, and then mention asa ka nasakop nga grupo - sa barangay ba ikaw, barangay official or whatever. Then kindly shoot your questions because I will be recognizing who will raise their hand. I will encourage everybody to please actively participate para ma ventilate ang inyuhang mga

pangutana sa inyong mga kadauban. Ang unang mangutanan dunay premyo gikan kang Raffy. Who will shoot the first question?



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Mr. Carnazo:

Good morning po sa lahat. I am the OIC MPDO Sumilao. Yung ineexpect namin, sir na particular dito sa Sumilao is yung bigger picture kung saan ba talaga dadaan sana. Yung sinasabi na high standard highway sa bawat barangay. Kahit ako siguro yung mga barangay kapitan meron na mga idea kung saan talaga dadaan yung actual na alignment or kahit yung proposed na alignment. Pero ako ine-expect po namin na makita kung saan yung proposed or yung alignment sa bawat barangay. Ibig ko po sabihin is yung bigger picture po. Kasi alam ko maraming hindi klaro sa kanila. Maraming salamat po.

RD Digamo:

Sige, daghang salamat. Ako ipakita dinhi kung unsa ang initial nga identification sa alignment. Kini ato ipatubag sa DPWH consultant kato imong pangutana. Asa gyud ang iyang agian sa kada barangay? Kailangan gyud ni bahin bahinon, section 1, section 2 kinsa may kaatiman sa grade 1 pa mo? Kinsay section 1? Okay, section 3 section 5, section 5. So, mao ni siya ang initial alignment. Pero subject pa ni siya detailed engineering design. Ang resulta sa detailed engineering design mao na to more or less ang final nga alignment. Okay, ato patubag sa atong mga consultant.

Engr. Balid:

Maayong buntag sa tanan. Bali since nasa feasibility study, bale yung final alignment po talaga kung saan yung mga tatamaang barangay at kung sino sino yung mga taon maapektuhan nga ating proyekto ay doon pa mas malalaman na, esakto kasi mag pa periciliary yung mga tao, yung sa study ng detailed design mag- percialiary kami o kung sino man ang gagawa ng project na next sa amin duon na yung kung sino na talaga yung mga tao na matatamaan. Doon niyo na po malalaman. So, yung ngayon po kasi feasibility palang tayo hindi pa talaga siya yung kayo na mismo yung matatamaan. Pero since dahil dito nga po sa lugar niyo yung project dadaan, imbitado po para po sa mga posibleng environment impacts ang mangyayari sa inyo po. Salamat.

RD Digamo:

Maraming salamat po ano sa ating sagot. Pero initially sa mga nakalagay dito sa Municipality of Sumilao, dito na kanina kung diyan, Vista Villa, Kulasi, Poblacion, Kisolon, San Roque. Yun sila ang mga initial na maapektuhan. Pero possible duna pay laing barangay or kaya hindi pa na-identify basin duna puy matanggal kay basin duna pay rerouting na mahitabo. So, what will tell us the final alignment is the conduct of the detailed engineering design. Kay duna pa man mga survey ana nga ilang himuon. Pero maapektuhan man ang atong barangay o dili kay constituents man ta sa Kisolon, kailangan gyapon ta nga muapil. Okay? Thank you. Kinsa man ang ikaduha? Next?



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Wala bay mangutana kung pananglitan naa kay yuta karon nga girentahan sa DOLE. Unsa man ang plantation nato dire? Del Monte, okay. Kung ang imong lupa girentahan sa Del Monte, magkano ang Rentahan?

Kentanan

ALL: Twenty-five.

RD Digamo: Twenty-five thousand

Male:

Kinse pa ang daaan. Ang bagong contract twenty-five. Ang wala pa na renew kay fifteen thousand. Okay. Natamaan ka ngayon sa alignment ng kalsada, ang limang ektarya mo ang natira nalang ay apat na ektarya because the road right-of-way is pila sa presentation? Sixty meters. Oo, yung right-of-way. So, tatamaan yung lupa mo nakarenta sa Del Monte, yung renta mo sa Del Monte taon taon yan. Ang gagawin ng gobyerno is one time ka lang babayaran sa right-of-way.

Tanong ko, what will be the effect financially and economically? Ang

gobyerno mubayad din yan.

Mr. Daygon: Fidel Daygon sa FAFC sa Famer's Sector. Sa barangay Kisolon ako ang

representative sa Farmer's Sector. Usa sa akong gi-raise dadto, unsaon nalang pagbayad sa mga untitled na mga area nga maagian? Mga dili pa IMB. Daghan man agian na mga kalsada sa mga gamay na

maguuma. Naay mga sekretarya nga maagian sa project.

RD Digamo: Okay, linawon ko sir. Dili buot ipasabot na ang estado sa lupa is

Timberland?

Mr. Daygon: Oo, timberland.

RD Digamo: Ibig sabihin dili siya titulado apan deklarado? Kay naay tax declaration?

Mr. Daygon: Oo.

RD Digamo: I-capture natin yan kasi iba ang arrangement niyan kapag titled

property, alienable and disposable or itong timberland. Kasi ang mahitabo diyan kapag timberland katong dunay mga claimants kinahanglan nila mag-apply sa DENR ng right-to-claim ito ang

requirement noon.

Mr. Daygon: Sa una na mga meeting apil ko sa mga...tapos katong mga concerns.

Ang nahitabo dayon sa kani nga quorum, dili pa man ni mao nga time



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to...dili pa ni nga forum ang sakto nga venue pero ang amo lang bayran daan sa wala pa ang operation. Kay naa mi experience nga nagsugod na ang operation dire pero dugay pa nabayaran ang mga tao gikan sa paingon Tihabong padulong sa Bulawan. Naay duna kuna involvement parehas sa akong igsuon. Maayo unta nga ma address na ang bayad.

RD Digamo: So,

So, for the record, the request is, if possible, the affected property shall be paid ahead of the construction or prior to the constructions. Okay. Di pa man nato tubagon karon basta we'll capture that in our proceedings. Kasi ang gobyerno mubayad gyud na pero dugay kaayo. Okay, that's a concern that we have to bring it out as part of the proceedings dire sa public hearing. Okay, anymore concern? Yes, Ma'am.

Ms. Sale:

Ma. Enore Sale present dean sa Puntian Elementary. My concern is if ever ang area sa school is maagian sa high standard highway among concern is kanang pag-process bitaw sa pag-donate or recoveration sa kaning yuta because kami sa school are not allowed mag pirma. So, property.

RD Digamo:

So, you talk to that project engineer. Kasi hanapan yan yung ECC diyan. Kasi ECC violation kapag hindi inasikaso yung mga right-of-way na yan kapag may nag-complain. Sige kayo.

Engr. Calma:

Clarification lang if along Sayre highway siya, all right-of-way concerns are already settled since this is already a primary national highway.

So, kung along Sayre highway na acquire na dapat namo ang 60 meters na right-of-way. Kay primary national highway man ni, dili man ni maka-convert into national highway kapag wala na acquire previously ang right of way. To clarify lang sa tanan, bahalag i-acquire namo ang 60 meters, dili man gud na namo ginagamit automatically. Usahay, two lanes or four lanes. Pero bahalag mu-widen na me ana padulong ten lanes pwede na me dili mu-consult kay that land is already acquired naman sa government. Bale amua na ng yuta.

RD Digamo: Unsay proof ana nga na-acquire na sa DPWH?

Engr. Calma: Right-of-way namo naay documents. Kay dili man gyud me maka-

convert into national road basta dili namo ma-acquire whole stretch.

RD Digamo: So, I think it's a matter of explaining to them.



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Mrs. Olaria: Possible sa imong lola pa, Ma'am. Kay kaning SAYRE this is very old na.

If along Sayre highway ha.

RD Digamo: Because of lots of projects in the DPWH nagkakagulo because

sometimes it affects sa different areas ako gyud ipa-research. Ang pinaka bagtas sa highway pa 1935. Parang ba naghatag ba ng authority sa DPWH to acquire lands for the road constructions.

Makabantay pud mo sa NGCP.

Ang NGCP ang ilang mga linya, I think right-of-way naman yan is 15 meters from the center line. NGCP also by virtue of law was given the authority to acquire properties like this nga dili ta pwede mag-create ng structures within the 15 meters right-of-way under the main transmission lines. So, something like that. So, maybe in your reply you can cite particular laws vesting authority to the DPWH to acquire lands of the Philippines for the road constructions. Para maintindihan

nila.

Mrs. Olaria: Pero ang gi-mean nimo nga sa una pa 1935 ang Sayre highway kanang

sa Atugan. Kana siya new man gud na. Mga private properties ang nasa highway. Basin naa nay plano sa una kay Sayre highway Atugan kana sa Impasu-ong Poblacion paingon dinhi sa Atugan. Kanang amo bag-o na na ila lang kwaon kay daghan kay ng diha. Private properties

daghan na dila.

Engr. Calma: Sakto si Ma'am. Ang original alignment nato for Sayre highway along

Impasu-ong is traversing kanang nailhan nato nga lover's lane? Bale pag-abot ninyo anang monument mupa-left. Mao na siya ang original nga Sayre highway. After nabuhat aning Atugan bridge nga ni-direct si

Sayre highway.

So, kaning atong linya karon na from monument straight to Atugan padulong anang straight na padulong Malaybalay that has been converted na into a national highway. So, bahalag muingon ta nga sa una nga dili na siya mostly Sayre highway nga original, pagbuhat nato aning diversion road sa Sayre na-convert na pud siya. Mao na atoang Sayre na. Actually, katong karaan nato nga Sayre is old Sayre highway.

Dili na gyud siya mao si Sayre.

RD Digamo: So, mao. Sige lang. Basta settle lang to.

Engr. Balid: Yung project namin is sabi nga po namin high standard highway so

JICA funded and ADB funded. Ibig sabihin internationally funded yung road. So, yung JICA and ADB masado silang stringent sa pagpapatupad



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ng mga ROW acquisition. So, kaya kung mapapansin niyo, yung dito po sa ating project implementation schedule yung land acquisition po natin nandito pa siya bago pa mag-construction. Ibig sabihin, makakausap yung mga may-ari ng lupa, magkakaroon ng periciliary survey during the detailed design.

Makita niyo yung detailed design mauuna siya land acquisition kasi nagkakaroon niya ng periciliary survey. Diyan malalaman, kakausapin yung may-ari ng lupa at tsaka lang magkaka land acquisition. Hindi tayo mag-construct hanggat hindi pa natatapos, hindi pa na settle yung may-ari ng lupa, hindi pa nababayaran, hindi po mag-construct. Very strict po masyado ang JICA. Masyado silang concern sa mga tao ganyan. Kaya assured po kayo na mababayaran or kung ano man magkakaroon po ng usapan. Salamat po.

RD Digamo: Thank you po, Ma'am for hearing that assurance. Tama yun. Kasi

kapag foreign funded projects very strict sa requirements. Lalo na sa social na aspect na maapektuhan ang tao. Pero kung GAA ang project

nako for close lang yan. Sige. Sir.

Mr. Narciso: Bienvenido Narciso ABAG at the same time geographical from Bislig.

So, naka meeting me last week padulong sa Cagayan de Oro. Mostly, ang office dili bitaw

siya lump sum ang mismo. Dapat consider ninyo siya as live, naa tay laing polisiya nga kada area naa gyud consideration usab. Ang ritual man gud dili na siya concern lang sa, ang ritual mao na siya ang naigo

para walay mahitabo nga towards incident.

At the same time, protection pud na sa mga ga-construct nga dili bitaw sila pasudlon. Mao na ilang concern nga mag-ritual lang gyud. Pero mao na siya sa lain laing government so lain lain ilang concern.

RD Digamo: So, capture natin concern na yun. Conduct of rituals. Different

communities kahit it is possible to happen per barangay. As much as possible. Pero kung siguro itong IP community na ito nag-offer ng the same nga IP group na one time para it will not take the long process.

And that will be captured on the request of the series of representatives as RDC. Serious Tribal Organization. Okay si Sir.

Datu Dumana: Municipal Tribal Chieftain. Virgilio Dumana. Support ni sa

kabarangayan nga maagian sa atong dalan. Gikan sa Tingkala paingon sa Kabilya, San Roque to Sumilao tungod kay aduna among ancestral domain nga applyan dadtu. Usa me sa ancestral domain tuig mga

duna pay adto.

RD Digamo: Kadti pa sa inyo?





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Datu Dumana: Oo, ongoing na. Kini akong pagalantaw ani duna pay apektado nga

kabarangayan. Hinaot ko nga ang mahitabo ang gitawag sa IPRA law Pre and Prior Consent sa pagsugod pa. Kay dadto sa amo nagkosulta bahin sa high standard highway. Ang karon kay high standard highway

na ni.

RD Digamo: Mao gyapon ni siya.

Datu Dumana: Ah, mao gyapon ni siya. Ang sa amo kay natingala me kung okay na

me adto. Apan tungod lain na pud siguro ni nga diversion. Nahinaot

kami nga matapok balik ang mga tribu [Inaudible 46:50-

46:57] kasagaran bank allowance agi adto. So, tungod kay kani nga dalan 2 lanes ra. Problema naa man gani nga tribu nga maapasan. Unsa ba kaha ning saysinta metros nga butang nato mao pa atong yutang kabilin. So, kini ang gusto namo nga mahitabo ang tangkob kay magpabilin gyapon ang lantaw nga dunay Pre and Prior Informed Consent kay apektado ang mga kabarangayan kaning among ancestral domain.

Upat ka barangay sa Manolo Tikala and Dalirig and Maluko pero ang maagian kay Tikala ra man, Vista Villa, San Roque, Sumilao, Kisolon. Anaa lang unta naay kana tanan. Dili man kay tungod ra sa tribo supportado gyud namo na among mga katawahan ug silingan nga dunay mga yuta nga walay mga papel. Ang ilang papel kay tax declaration. Hinaot me nga kay kasagaran baligya nila ilang tax declaration, karon kay title naman sa papirma ani. Karon kay ancestral domain wala man naapil ang declarant tapos tax declaration. Kana ra. Gusto nako maapil ug malingkuran kay walay papel ilang yuta. Dungan pa nga yangungo- kini bang Hapon basin naa silay laing tumong. Naa unta kasulatan, kay mahadlok mi sa nahitabo sauna sa atong mga katigulangan. Naga dili gyera ang tuyo ani nga dalan. That's all, sir.

RD Digamo: Daghang salamat kaayo. Higaunon Talaandig nga tribo. So, atong

ipatubag dire sa kang ma'am. Kay nakahisgot ko ani sa una. Pero katong sa una kay mga hapon nga didto pa to sa una. Mao na ang peace offering sa ato, datu. Mga infrastructure. So, kinsa may

mutubag ato?

Engr. Balid: Bali next week po, magkakaroon...Hindi ko lang sure kung

nakatanggap na po kayo ng invite para po sa IPs. Pero magkakaroon po tayo ng third meeting po para sa IP. Yung binabanggit po kanina ni sir yun po yung same project po yun para lang po Malindong. Bali yung magiging third hearing po dito din pero baka para sa mga IP concerns po kasi yun. So, may mga imbitado lang na yung po sa IPs. Dito rin po sa Sumilao conference room next week. Ayun meron po

pala si Ma'am. Salamat po.



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RD Digamo: So, may naka-schedule na pala Dats na magtagbo mo usab. Naay

invitation. So, didto nato ipagawas ang concern sa mga IP. Okay, naa

pa bay nahabilin?

Mr. Taberneo: Akong concerns sa livestock industry kay gi-point ganina nga naay

impact siya in terms of noise sa among poultry. Ang usa pud ka concern namo sa local government unit kay ang Malaybalay City is naa tay times sa national clearance nga ang piggery 500 meters away from the road, ang poultry 200 meters. Unsay mahitabo karon sa atuang existing mga poultry nga pananglitan ang dalan nipaduol dayon magpropose sila ug expansion. Unya mahimo man siyag land

for government use.

RD Digamo: So, that's a big problem because Bukidnon most of the poultry and

piggery projects. In fact, we have here the biggest piggery with more than 20,000 pigs capacity sa farm nato. Again, kana lang dire sa Sumilao. Based on the guidelines 500 meters and 200 meters ang piggery and poultry distance. Kay nauna naman sila. Lumapit kayo dito sana sa gilid ng pader ng piggery - anong gagawin natin diyan? Pwede

natin hindi sagutin yan ngayon.

And that is a very serious concern again that will be captured by the proceedings of this public hearing. Siguro kung meron na tayong alignment, we can again initially identify ano yung exist kasi meron pa tayon issuance ng ECC, may geographical naman yun kung alin dito ang papasok sa 200 meters poultry, alin ba dito yung within 500

meters poultry para maisama na nila sa study.

Mr. Taberneo: Second concern, We have also experienced with project sa DPWH

Malaybalay City nga naay ga-complain bitaw kay ang dalan murag nadaot na so. Ang usa namo nga tagaan ug pagtagad ani nga project nga ma- emphasize ang feedback mechanism. Nahitabo kay ipasa nalang diretso, sa office na magreklamo. So, dapat kung LGU ang ig-on

naay pamaagi nga per LGU naay didto mapagawas ang complains.

RD Digamo: So, feedback mechanism and receive complains. Okay. If regional ang

nag-implement sa project then punta ka sa region, if it is a district project, then punta ka sa district. Pero ibigsabihin, regardless what office implements the project feedback mechanism nga hindi na gagasto ang complainant papunta ka pa sa CDO para doon mo file ang complaint mo. Naku, madadale kayo diyan. So, there's should be a

mechanism. Accepting and receiving complaints from the



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constituents. Yes, Ma'am.

Engr. Bablid:

Kaya nga ng nabanggit ko kanina dahil internationally funded, masyado po kaming strict diyan kung paano siya, yung mga feedback mechanism namin, masyadong nasusunod. Kagaya ngayon, yung ADB project namin meron talagang person-in-charge na para siya lang taga tanggap ng mga complains ng mga tao. Hindi siya pwede magreklamo na, "hindi ka pwede ka magreklamo" kung hindi siya pa mismo magtatanong ano problema niyo sa project, "may problema ba kayo?". So, magkakaroon po ng ganon yung project na ito either sa JICA man ang magimplement or ADB sa buong section meron po sila, parehas po sila na agency na may mga feedback mechanism talaga sila. Ibibigay din sa inyo yung mga cell number ng mga taong in charge. So, madali niyo po silang makontak.

RD Digamo:

Again, we heard the assurance kasi nga fully funded. Talaga ito they will put a mechanism talaga in place para ma address natin ang mga ganyang concerns.

Ms. Lato:

Good morning, everyone. I'm Ann Marie Lato, Team MENRO of LGU Sumilao. This is just a reminder to the DPWH because I understand that if it is an ADB project very stringent talaga yung mga measures para ma-protect yung environment. For the DPWH because we have experience it already dito sa Sumilao. We have an existing project in the circumferential road of Mt. Kitangalad, napabayaan talaga Ma'am. There's a huge damage to the environment. So, I just hope that the DPWH this time would really implement yung mag-conduct talaga ng monitoring sa mga contractor nila. If ano yung nasa program of work like if the number of dump truck na kailangan andoon sa project sana ganon talaga. Kasi ang nangyari dito sa Sumilao grabe yung erosion so the spike of the TSS of our major river here in Sumilao the Kulaman river - a tributary to a class A river the Tagoloan river. Sobrang taas ng Total Suspending Solids. So, I just hope na ma-address talaga itong project na ito. Thank you.

RD Digamo:

Thank you kaayo MENRO. Any response?

Engr. Ramos:

Yes, Ma'am. Good morning po. From DPWH po. Well noted naman po yung sinabi mo po. Bale sa AMET po kami but yung office po namin kasi nag-implement ng project. May mga environmental report po kami nire-review. May mga baseline po doon kung ano yung pasok sa standard kung kami ang mali na and then ginagawan naman actions.

Once nag-implement na yung project makakasama po yung self-monitoring report regarding sa environment concerns po.



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RD Digamo: Thank you for the question and thank you for the response. Nabanggit

ni MENRO na medyo napabayaan yung circumferential road. Tinanong ko from the office kung may ECC ba yan, meron. Ito nanaman. So, may ECC siya from Construction of Bypass Diversion Road Sayre Highway Parallel Road 1 Project located in Barangay Dahilayan, Kalugmanan, Manolo Fortich Bukidnon. Yung karugtong pala another ECC. Construction of Junction Sankanan, Kalugmanan Kaliraya road, Kalugmanan Dahilayan Section, Manolo Fortich, Bukidnon. So, ito yung gusto namin tanggalin na ugali ng DPWH. Kasi gusto nila ito katayin, maraming rason. Kasi yung section 1 is funded by JICA. Section 2 is funded by ADB. Mas maraming rason para katayin kasi iba iba yung funding na pinanggalingan. Ito kapag galing sa General Appropriations Act ang gagaling talaga ng DPWH. Kumbaga, PhD na

sila dito. Meron pa ba?

Ar. Herbito: Good morning. On behalf sa CPDO Architect Esmeraldo Herbito as

representative. So, naa lang koy i-clarify about sa Malaybalay. Permero naay project na circumferential dayon diversion, naa na pud niabot na bypass road. Malaybalay City is bypass road. Then human na pud nia na pud ning Central Mindanao High Standard Highway. So, karon clarify lang nako kay daghan man gud mga issues ang mga lot owner bitaw kay naa kunoy mga nabayran, naay wala. So, naa pud ko issue sa diversion road nga naay nabayran naa pud wala then naay nangadto sa office nga dako daw iyang nadawat sa DPWH. Dili siya pareha. So, karon kining sa kung asa ni dapita ang Malaybalay City Bypass Road? Daghan kaayo project sa DPWH nga dili namo ma kini katunga. Dayon kini napud sa Central Mindanao High Standard Highway so to clarify lang kung unsa man na barangay ang maagian.

RD Digamo: Sa Malaybalay side?

Ar. Herbito: Oo.

RD Digamo: Anyway, duna pa tay ugma kay series man ni atong public hearing.

Kagahapon sa Misamis Oriental sa Cagayan de Oro side karon sa

Sumilao, Impasug-ong. Ugma Malaybalay na pud ta.

Ar. Herbito: After ani, naa bay mahitabo nga toll fee ani?

RD Digamo: Wala ni siyay toll fee kay dili ni siya parehas sa expressway sa Luzon

nga dunay private party nga PPP Private Party Partnership during

agreement. Kani siya government man siya.

Ar. Herbito: Kaning sa Malaybalay City is bypass road. Actually nag-ask me ug



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documents parehas CLUP City Ordinance pareha ra man sa ilang DGM management. Usa ba ni sila?

RD Digamo:

Lahi ni sila. Kana imong gi-mention karon sa local lang na nato nga projects. I think this is already ongoing. Anyway, focus na muna tayo sa high standard. Anyway, you can still raise tomorrow. Punta tayo sa Malaybalay tomorrow. Doon tayo sa Kaamulan Grounds. So, shall we wrap up the open forum unless meron pa pahabol? Yes, Sir!

Mr. Taylor:

From City Disaster Risk reduction management office, Sir. Ang concern namin is maraming talaga nadidisgrasya na mga sasakyan, trucks loaded with iba't ibang materyales, Sir. And then isang bahay doon sa amin talagang doon bumanga yung sasakyan. Tapos maraming namatay. And then yung concern namin is yung safety features ng High Speed Highway nati kasi yung speed natin is maximum 80 kilometers per hour. So, may emergency land off ba na pwedeng if mawalang ng brake yung na loaded na sasakyan pwedeng doon siya pumunta para walang mabanga. Marami kasi dito sa Damay yan ang concern talaga dito kasi sobrang busy yung road from Cagayan de Oro to Malaybalay. Thank you po.

RD Digamo:

Thank you very much for bringing that up. Kasi kahapon din tinanong din yan ng taga disaster risk management. And then kahapon may natutunan ako. Ano yung tatlong elemento kapag nag cause ng traffic accidents? Tatlo daw e. Unang una Human factor. Pangalawa, vehicle. Baka naman karag karag na yung third gear mo hindi na kumakapi yung break. Pangatlo is infrastructure. Kapag sinasabing infrastructure usapan natin kalsada. Baka may mga portion na napakadilim o kay biglang liko. Yan po ang ipapaliwanag ni Ma'am ang kagandahan nito bakit sinasabing high standard highway. Doon sa Luzon yung mga expressway may mga levee. Pwede ka dito tumabi muna. Umihi ka doon, mag sigarilyo, ganyan. Sige po Ma'am pakisagot po.

Engr. Balid:

Ayun nga po. Uulitin ko dahil nga po tayo ay high standard highway so ang features po nong kalsadang gagawin po natin unang una yung kanyang design speed na 80 kilometers per hour design siya para kayang kaya niya takbuhin yung speed na yun pag akyat man o pagbaba kasi yung gradient ng ating highway ang maximu ay six percent. Hindi siya yung usually na makikita niyo sa Sayre highway itong mga kulot kulot na ito ang hirap yan tumakbo dahil hindi ka niyan makakatakbo ng 80 KPH or yung mga dito or dito. Nakita niyo yung alignment halos smooth siya. Yung mga kurba kaya niyo parin. Ang maximum grade niya ay 6 percent lang. So, kung infrastructure ang pagbabasihan natin para sa safety, sigurado po kayo na



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makakatakbo po ng maayos yung sasakyan.

RD Digamo:

Okay at tsaka maliban po doon marami po tayo road signages na kapag may curve na ganyan. Ngayon kasi kung minsan napapansin natin meron kang signage pero isang piraso lang kasi nagtitipid. Ito maraming signages. So, we will expect that from Cagayan de Oro to Malaybalay the moment that will be constructed. Marami pong salamat sa inyong padalo and active participation that is the real essence of public participation process because in the EIA system sa umpisa palang meron na tayong public participation. Public scoping doon muna sa IEC meron mga group discussion, public scoping, public consultation, public hearing, andiyan po palagi. The moment this will be completed magkaroon po tayo ng Multipartite Monitoring Team. So, we will all participate in the monitoring of this project kung yung sinasabi nila traffic plan, soil erosion plan ay na-implement ba talaga on the ground. Ito sama ko lang ito yung kanyan impact doon sa supply ng mga raw materials kasi yan yung kahapon. That is also similar dito sa impact sa Bukidnon.

ENGLISH LANGUAGE

RD Digamo:

Okay, let's welcome the open forum. Our house rules are simple. Kindly raise your hand, identify yourself, and then mention to what group you belong, barangay, barangay official, or whatever. Then kindly shoot your questions because I will be recognizing who will raise their hand. I will encourage everybody to please actively participate in order to ventilate your questions to your colleagues. The first one to answer will get a prize from Raffy. Who will shoot the first question?

Mr. Carnazo:

Good morning, everyone. I am the OIC MPDO Sumilao. What we are expecting, sir, particularly here in Sumilao, is the bigger picture of where the alignment would actually be. The one that is said to be a high-standard highway in every barangay. Even I, or maybe the barangay captains, already have ideas where the actual alignment or even the proposed alignment will go. But we expect to see where the proposed alignment is in each barangay. I mean, it's the bigger picture. Because I know there are many things that are not clear to them. Thank you very much.

RD Digamo:

Alright, thank you very much. I will show here the initial identification in the alignment. I will let the DPWH consultant answer your question. It is divided into sections. Section 1, Section 2. Who remembers their section in Grade 1? Section 1? Okay, section 3, section 5. So, this is the initial alignment. But this is still subject to detailed engineering



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design. The result of the detailed engineering design is more or less the final alignment. Okay, let's hear the answer from our consultants.

Engr. Balid: Good morning, everyone. We are still in the feasibility study. The final

alignment will determine which barangays will be affected by our project. We will still conduct periciliary, in which, in the detailed design, specialists will be chosen, or whoever will do the project next to us. That's when you'll find out. So, the one now is that because we are just feasibility, it's not really you who will be hit. But since the project will pass right here in your area, you are invited to consider the possible environmental impacts that will happen to you. Thank

you

RD Digamo: Thank you very much for your answer. But initially, among those

placed here in the Municipality of Sumilao are Vista Villa, Kulasi, Poblacion, Kisolon, and San Roque. They are the ones who will be affected initially. But it is possible that there are other barangays that have not yet been identified; maybe some villages will be removed, or maybe there will be rerouting. So, what will tell us the final alignment is the conduct of the detailed engineering design. Because there are still some surveys to be done. But whether our barangay is affected or not, whether we are constituents in Kisolon, we must participate.

okay? Thank you. Who is next?

No one wants to ask? For example, your land is now rented by DOLE. What plantation do we have here? Del Monte, okay. If your land is

rented in Del Monte, how much is the rent?

ALL: Twenty-five.

RD Digamo: Twenty-five thousand.

Male: The old one is fifteen.

RD Digamo: The new contract is twenty-five. For example, your land will be hit

with the alignment of the road, your five hectares will now be four

hectares because of the road right-of-way according in the

presentation. Sixty meters. What the government will do is pay you only once for the right of way. Now I will ask you, what will be the effect financially and economically? The government will also pay for

that.

Mr. Daygon: Fidel Daygon of the (FAFC) Famer's Sector In barangay Kisolon, I am

the representative of the farmer's sector. How will they pay the untitled areas that will be affected? Non-IMBs. There are many small small farms that will be affected. There are sectors that will be hit by



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the project.

RD Digamo: Okay, let me clarify sir. You mean your area is timberland?

Mr. Daygon: Yes, timberland.

RD Digamo: Does that mean your land is not titled but declared? Because you

have a tax declaration?

Mr. Daygon: Yes.

RD Digamo: Let's capture that because the arrangement of that is different when

it is titled property, alienable and disposable, or this timberland. Because what happens there is that when there are claimants in timberland, they have to apply to the DENR for a right-to-claim; this

was the requirement before.

Mr. Daygon: In the first meetings, I participated in the... and then the concerns.

What happened immediately with this quorum, it's not even time to...this forum is not the right venue, but I hope they will pay us before the operation starts. We have experienced that the operation has started, but the people from Tihabong to Bulawan have not been paid. My brother has experienced that. It would be nice if this were

addressed.

RD Digamo: So, for the record, the request is that, if possible, the affected

property shall be paid ahead of the construction or prior to the construction. Okay. We can't answer right now, but we'll capture that in our proceedings. Because the government will pay, but it will take a long time. Okay, that's a concern, and we have to bring it out as part of the proceedings in the public hearing. Okay, any more concerns?

Yes ma'am.

Ms. Sale: Ma. Enore Sale present dean at Puntian Elementary. My concern is

that if ever the area at the school is affected by the high-standard highway, our concern is the right process for donating or recovering the land because we at the school are not allowed to sign. So, what I want is a clear agreement, maybe from government-to-government, because I can't decide because the secretary will decide. So, these school heads will soon leave the area. So, by the time this activity can be implemented in 2029, maybe I won't be the school head anymore. So, it must be if the school is ever affected by the super highway, sir.



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RD Digamo: The question is if ever affected.

Ms. Sale: Because the school is government-owned and the only has a tax

declaration. It doesn't have a title yet. Because there is also a

provincial group that will take a portion of the school's land and then

also the national

RD Digamo: How many hectares is the land?

Ms. Sale: Around 9. Then there is a plan to make an oval. If it's possible, maybe

the school won't be a included in the project.

RD Digamo: So, if ever the road alignment will affect the property of the school

there will be a formal arrangement of agreement by the national

officials.

Ms. Sale: Because there were occurrences of problems, of course, sir, we will

clarify with the school head and process them, but the instruction given to us by the division office is that we are not allowed. Then we

have to submit it to the central office, so it needs addressed.

RD Digamo: Between DPWH after the detailed engineering design.

Engr. Balid: The director is right. But as much as possible on the design and

planning side, we usually avoid schools like that, cemeteries,

mosques, and that kind of thing. As long as possible, we are fixing the

alignment so that you don't get hit.

RD Digamo: Okay. As much as possible avoid schools. Yes, Ma'am.

Mrs. Olaria: Good morning, everyone. Evangeline Olaria, Municipal Assessor's

Office, Sumilao. My only concern, sir, is that every time there is a project, the DPWH requests us for tax declarations. The request that reached me already has a claimant. On what basis is he the claimant?

Have they submitted a document?

I can't reply to the highway because what they put in the claimant's name on the tax declaration is incorrect. Then some lot numbers are not specific. No location. Lot number only, no PSD number, survey number location. People here have a lot of property. There is property in Puncha, and there is property in Nituan. So, I can't really identify which lot I should submit the tax declaration for. Can the claimant ask



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them for the exact document for which they are the claimant? Another thing happened, sir. Some people have titles but are no longer in our office because they were not informed; they just received the title, so when they have the title, they go to the Municipal Assessor's Office to file a tax declaration. That's one problem. Has a title but no tax declaration.

RD Digamo: Does it mean they did not pay their property tax?

Mrs. Olaria: Others pay, but the basis for their payment is their old tax declaration.

Because that is the basis for paying real property tax plus a tax declaration. Our requirements are PCA before tax declaration. Others don't care about real property taxes. The gray hair will only be charged. The process is very long. I seem to be struggling because there are many requests on the highway that I can present here and

in the tax declaration to the claimant as well.

RD Digamo:

Thank you very much, ma'am. That's very true. That's what the assessor said. Because if you will just ask for a certification without the details of specifics—where is the particular lot, who is the claimant, lot number, PSD—if there is a private subdivision survey, especially if it is not yet titled. So, it is really a problem to identify. But then every municipality has something called tax mapping. In the tax mapping, that box is labeled, and who are the owners? So, maybe for the DPWH in the right-of-way because this is a concern. When there is already a final alignment, that final alignment has geographical codes. Maybe submit it to the assessor for that to be done by the assessor based again on the overlay on our tax map. Once you have an overview of your road alignment on the tax map, you can more or less identify the lots and who the tax declarants are. But again, you have to be careful about it because it is common for two people to hold the same tax declaration over the same property.

That's common. Because this is an example, I am a tax declarant for lot number 1 and then Ma'am is a tax declarant for the same lot number 1. The obtained tax declaration copy has already been stamped, "Also declared in the name of". That's what ma'am said, "Also declared in the name of". So, who are the two now? Right? So, big mess. But we have to somehow eliminate some of the complications of the problem if the final alignment is superimposed on our tax mapping and if there is an initial identification of the lots that will be affected. Because it is really difficult for the assessor to reply to DPWH, especially if the right-of-way goes to the right side. There was a person there who would ask who the owner of this land was. Who owns it? Ah, Peter. But it wasn't really Pedro that they talked to.

So, what is recorded there at this particular point is that Pedro is the owner, but when it comes to the municipal tax map, Pedro is not the



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one listed. Right? So, who will be installed as the owner now? Subject to negotiation. So, that is what we will probably do with our right-of-way because that is really a problem on the part of the municipal assessor. Okay. So, the issue is a lack of specific information or details about the particular lots affected by the road alignment that the correct party for the negotiation during the right-of-way acquisition.

Yes ma'am. Dungagi still.

Mrs. Olaria:

To support the suggestion of Mr. Daygon. We experience it on our land. Should have paid first or consulted the owner because there is an area in Impasug-ong titled lot. So, from the first CPCP process until now, I have not been paid anything. Now there is also an expansion on the right site cut. What is it called that expanded more than 1 hectare? Maybe I got lot 9.2. Then the owner probably has more than 1 hectare now, and they cut the side even though no one consulted the owner. That's why, even if the land is asking for me, I won't even be able to tolerate it. They have proceeded without consulting the actual owner. Now the civil is still there.

RD Digamo:

This is sometimes the DPWH notorious. I discovered one project today, the Mt. Kitanglad circumferential road. Is that familiar to you? Starting from Dahilayan, that penetrates here. You know ECC shot at the office just three kilometers away. I said, I will really kill this DPWH. I was surprised, "Huh? Three kilometers starting from Dahilayan, going here to Sumilao, going around Mt. Kitanglad". Ma'am is right. So, again, this is a serious concern.

Mrs. Olaria:

They are here, sir. Maybe I can ask for help, as they have a side cut there. I just asked for help because they are already in the area.

RD Digamo:

Is that part of the circumferential road that I mentioned earlier?

Mrs. Olaria:

No, but I just included this because I tried to contact them; the engineer in charge of the highway can't contact them. They did not give us soil. Maybe they did not look for us. That portion of land is agriculture, and they cut the side. It's my land. I was not consulted by anyone. They told us that the owner was informed, but they told us that no one informed them. It is very difficult to ask about our area.

Engr. Calma:

To address the concern about the consultation meetings. Maybe some of you recognize my face. As the representative from the regional office. We are always conducting public consultation meetings, both at the municipal and barangay levels. So, I don't know exactly what happened to your property, ma'am. Maybe the captain didn't notice that there was a meeting, but moving forward, we can't



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settle for what already happened.

Moving forward, you can always prepare a letter addressed to our regional director with geotag photos stating your concern that this is what happened and that the contractor did not help you with your request. And as far as I know, our contractors are really humanitarian. If we have any requests, including some excavated soil, you can also pile it in the back near the farm, as long as it is not more than 10 kilometers from the site. They are really nice. Ma'am, it's just that maybe you want to dump it far away. But rest assured, you can send us a letter anytime with geotag photos so that we can identify the projects in the Impasug-ong area.

Mrs. Olaria: Another thing, Sir. Maybe we were not informed because my husband

is a municipal councilor in impasug-ong and captain, all of them from

the municipality they don't know.

Engr. Calma: Since this is a direct attack, please may I ask for the contract ID so that

we can provide you with the documents to prove that we have done public consultation meetings at the municipal and barangay level. We

have proper documentation for all the meetings we conduct.

RD Digamo: But wait, because the property owners are municipal officials, why

were they not aware of that? Those are allegations that sidelined their property, but they were not informed. So, maybe you have to look at that particular concern because, on the part of the DPWH, there are too many owners and it is difficult to identify them all. But with this complaint, it is said to have surfaced, and it is very clear who complained. I think you have to look at this particular concern. Maybe you already, without even asking for DPWH identification of the

project, are the ones who know what this project is, and why would

you ask them for it?

Mrs. Olaria: Is this one project, sir. The highway, sir.

RD Digamo: Is this road widening?

Mrs. Olaria: We pass by every day, part of our title land and we're paying real

property tax annually. They took more than one-hectare. Not for most of the project. Only one in Impasug-ong. That's only my property

RD Digamo: So, you talk to the project engineer. Ask for the ECC. Because it is an

ECC violation when those rights of way are not taken care of when

someone complains. Go ahead.



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Engr. Calma: Just a clarification: if it is along the Sayre Highway, all right-of-way

concerns are already settled since this is already a primary national highway. So, if we acquire the 60-meter right-of-way along the Sayre highway, even though it is a primary national highway, it cannot be converted into a national highway if the right of way has not been acquired previously.

Just to clarify for everyone, we have to acquire the 60 meters; we don't even use it automatically. Sometimes, there are two lanes or four lanes. But if the lanes are widened, we do not need to consult because the land has already been acquired by the government.

RD Digamo: What proof do you have that this was acquired by the DPWH?

Engr. Calma: We have right-of-way documents. Because we can't really convert

into national road as long as we don't acquire the whole stretch.

RD Digamo: So, I think it's a matter of explaining to them.

Mrs. Olaria: Possible even with your grandmother, ma'am. For Sayre, this is very

old. If along Sayre Highway, ha?

RD Digamo: Because there are lots of projects in the DPWH, there is a mess

because sometimes it affects different areas. I really have to do research. The most trafficked highway was in 1935. Does it seem like

they gave authority to the DPWH to acquire land for road

construction? You can also watch out for NGCP.

Some lines are NGCP, I think that right-of-way is 15 meters from the center line. NGCP was also, by virtue of law, given the authority to acquire properties like this, so we cannot create structures within the

15-meter right-of-way under the main transmission lines. So, something like that. So, maybe in your reply you can cite particular laws vesting authority in the DPWH to acquire lands in the Philippines

for road construction. For them to understand.

Mrs. Olaria: But you mean the Sayre Highway right in Atugan before 1935? That's

new man. Private properties are on the highway. Maybe there is a plan for the first Sayre Highway from Atugan to Impasu-ong Poblacion

to here in Atugan. There are many private properties.

Engr. Calma: She is right. Our original alignment for Sayre Highway along Impasu-

ong is traversing what we know as the lover's lane. Mind you, when you reach that monument, turn left. That is the original Sayre Highway. After the Atugan bridge was lifted, the Sayre Highway was



Engr. Balid:

RD Digamo:

Mr. Narciso:

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directed.

So, our current line from the monument straight to Atugan goes straight to Malaybalay, which has been converted into a national highway. So, let's say at first that it is mostly Sayre Highway that is original. Let's take this diversion road to Sayre, and it has been converted. That's Sayre. Actually, our old Sayre is the old Sayre Highway. It's not really Sayre anymore.

RD Digamo: So, that's it. Go for it. Just settle it.

Our project is a high-standard highway, so JICA and ADB funded it. That means the road is internationally funded. So, JICA and ADB are very strict in the implementation of ROW acquisitions. So, if you notice, the one here in our project implementation schedule is our land acquisition; it is still here before construction. That means the landowners will be consulted, and there will be a parcillary survey during the detailed design.

You can see the detailed design. The land acquisition will go first because we will conduct the periciliary survey. Then it will be known, the land owner will be consulted and land acquisition. We will not construct until it is finished; the land owner has not settled, payment has not been made, and we will not construct. JICA is very strict. They are too concerned with the people. So, you can be assured that you will be paid or whatever; there will be a discussion. Thank you.

Thank you, Ma'am for hearing that assurance. That's right. Because when foreign funded projects are very strict in terms of requirements. Especially in the social aspect that affects people. But if my project is GAA, that's just for close. All right. Sir.

Bienvenido Narciso ABAG, at the same time geographically from Bislig. So, I had a meeting last week on my way to Cagayan de Oro. Mostly, this is not a lump sum itself. You should consider it live; we have a different policy for each area that is also to be considered. Even though the ritual is not the only concern, the ritual is for the affected areas so that no accident will happen. At the same time, there is also protection for those who will do the construction. That's why there are so many concerns about doing theritual. But this is different in different government agencies.

So, let's capture that concern. Conduct of rituals. Different communities, even though it is possible to happen per barangay. As much as possible. But maybe this IP community offered the same IP

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RD Digamo:

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group one time, so it won't take the long process. And that will be captured at the request of the series of representatives as RDC. Serious tribal organization. Sir is okay.

Datu Dumana: Municipal Tribal Chieftain Virgilio Dumana. Support the barangay that

passes our way. From Tingkala to Kabilya, San Roque to Sumilao, because we our applying for ancestral domain there. We are one of

the ancestral domains that still exist.

RD Digamo: Is it Kadti (titled land)?

Datu Dumana: Yes, it's ongoing. This makes me think that there are still affected

villages. I really hope that what is called in the IPRA law, Pre and Prior Consent, will be strictly followed from the very beginning. Now, this is

a high-standard highway.

RD Digamo: it's still the same.

Datu Dumana: Ah, that's what he said. I was surprised if it was okay for me to go

there. But maybe this diversion is for another reason. We hope that

the tribes will gather, mostly bank

allowances. So, because this road is only two lanes, there is even a problem that the tribe can overcome. What if these sixty meters of our land are still our heritage land? So, this is what we want in Tangkob because we want that there is still pre- and prior-informed consent because the villages in our ancestral domain are affected. There are four barangays in Manolo Tikala, Dalirig, and Maluko, but the only ones passing through Tikala are Vista Villa, San Roque, Sumilao, and Kisolon. It's all there. It's not just because of the tribe that we really support our people and neighbors who have land but don't have papers. Some tax declaration papers. I really wish because they usually sell a few tax declarations; now it's time to sign them. Now, with ancestral domain, the declarant is not even included after the tax declaration. That's it. I want to be involved and serve because there is no paper on some land.

Additional concern: The Japanese may have another agenda. There should be a written agreement because we are afraid of what happened to our ancestors in the sauna. The dry road is not a war. That's all, sir.

RD Digamo: Thank you very much. Higaunon Taalaandig tribe So, I will let you

answer, ma'am. Because I mentioned this in the first place. But the first one was in the afternoon. That's the peace offering for us, Datu.



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Infrastructures. So, who will answer this?

Engr. Balid: Yes, next week, there will be...I'm just not sure if you have already

received an invite for the IPs. But we will have a third meeting for IP. What sir was talking about earlier is the same project, that's just for Malindong. We will have the third hearing here as well, but maybe it's for IP concerns. So, there are only invitees in the IPs. Also, here at the Sumilao conference room next week. Ma'am has one. Thank you.

RD Digamo: So, Datu, there is already a schedule for you to meet as well. There is

an invitation. So, that's where we bring out the concern about IPs.

Okay, is there anything left?

Mr. Taberneo: My concern is about the livestock industry because it has been

pointed out that it has an impact in terms of noise on our poultry. The only thing that concerns us in the local government unit is that in Malaybalay City, there are incidences in the national clearance that the piggery is 500 meters away from the road and the poultry is 200 meters away. What will happen now to the existing poultry? For example, if the road approaches, they will propose an expansion.

Then it can be land for government use.

RD Digamo: So, that's a big problem because Bukidnon handles most of the

poultry and piggery projects. In fact, we have the biggest piggery on our farm, with more than 20,000 pigs. Again, that's all in Sumilao. Based on the guidelines, the piggery and poultry distances are 500 meters and 200 meters, respectively. Because they came first. Come here to the side of the piggery wall. What are we going to do there?

We cannot answer that now.

And that is another very serious concern that will be captured by the proceedings of this public hearing. Maybe if we have an alignment, we can again initially identify what exists because we still have the issuance of the ECC, which has a geographical area that will enter the 200-meter poultry, and which of these will be within 500-meter

poultry so they can include them in the study.

Mr. Taberneo: Second concern, we have also experienced with the project in DPWH

Malaybalay City that there are people who will complain because the road seems to be damaged. The one thing we will pay attention to in this project is to emphasize the feedback mechanism. It happened to pass directly to the office to complain. So, there should be a

procedure per LGU where the complaints will be addressed.

RD Digamo: So, use the feedback mechanism and receive complaints. Okay. If the

project is implemented regionally, then go to the region; if it is a district project, then go to the district. But that is to say, regardless of

what office implements the project feedback mechanism, the



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complainant will not spend any more money; you still go to the CDO to file your complaint there. Oh, you will be taken there. So, there should be a mechanism. Accepting and receiving complaints from the constituents Yes ma'am.

Engr. Balid:

That's why I mentioned earlier because it's internationally funded, we're very strict about how our feedback mechanisms are compliant. As it is now, our ADB project actually has a person-in-charge who is the only person who receives people's complaints. They cannot say to them, "You can't complain" if he doesn't ask himself what's wrong with the project, "Do you have a problem?". So, this project will have something like that; whether it is implemented by JICA or ADB in the entire section, they have it; they are the same agency that really has feedback mechanisms. You will also be given the cell numbers of the people in charge. So, you can easily contact them.

RD Digamo:

Again, we heard the assurance because it is fully funded. This is really how they will put a mechanism in place so that we can address such concerns.

Ms. Lato:

Good morning, everyone. I'm Ann Marie Lato, Team MENRO of LGU Sumilao. This is just a reminder to the DPWH because I understand that if it is an ADB project very stringent measures are to be followed to protect the environment. For the DPWH because we have experience it already here in Sumilao.

We have an existing project on the circumferential road of Mt. Kitangalad that has been really neglected, ma'am. There's huge damage to the environment. So, I just hope that the DPWH this time will really implement monitoring of their contractors. If what is in the program of work, like the number of dump trucks that are needed, is in the project, I hope it really is. Because what happened here in Sumilao is severe erosion, the TSS of our major river here in Sumilao, the Kulaman River, is a tributary to a class A river, the Tagoloan River. Total suspended solids are too high. So, I just hope that this project can really be addressed. Thank you.

RD Digamo: Thank you so much MENRO. Any response?

Engr. Ramos:

Yes ma'am. Good morning. From DPWH. Well, what you said is noted. we are from AMET, but our office implemented the project. We are reviewing environmental reports. There are baselines as to what is included in the standard if we are at fault and then actions are taken. Once the project is implemented, a self-monitoring report regarding environmental concerns will be included.



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RD Digamo: Thank you for the question and for the response. MENRO mentioned

that the circumferential road has been somewhat neglected. I asked the office if it has ECC, and it does. ECC from the Construction of Bypass Diversion Road Sayre Highway Parallel Road 1 Project located in Barangay Dahilayan, Kalugmanan, Manolo Fortich, Bukidnon. The continuation of another ECC Construction of Junction Sankanan, Kalugmanan Kaliraya Road, Kalugmanan Dahilayan Section, Manolo Fortich, Bukidnon So, this is the behavior of the DPWH that we want to remove. There are many reasons why they want to divided the project. Section 1 is funded by JICA. Section 2 is funded by ADB. There are more reasons to divide because the funding source is different. When this comes from the General Appropriations Act the DPWH is good at this. Apparently, PhD in this practice. Is there more?

Ar. Herbito: Good morning. On behalf of CPDO Architect Esmeraldo Herbito as

representative, I just have to clarify about Malaybalay. First there is a project called circumferential diversion, and now there is a bypass road. Malaybalay City is a bypass road. Then the Central Mindanao High Standard Highway So, today I just want to clarify that even though the lot owners have many issues, it's because some are said to

have been paid and some are not.

So, I also have an issue on the diversion road; some paid, some didn't, and then some went to the office where they said they received it from the DPWH. This is not the same. So, now where is the Malaybalay City Bypass Road? There are so many projects in DPWH that we can't even do half of them. It is then on the Central Mindanao High Standard Highway, just to clarify which barangay to pass

through.

RD Digamo: In Malaybalay side?

Ar. Herbito: Yes.

RD Digamo: Anyway, we still have tomorrow because this public hearing is a

series. Yesterday in Misamis Oriental in Cagayan de Oro, today in Sumilao, Impasug-ong. Tomorrow, we will be in Malaybalay again.

Ar. Herbito: After this, will they collect the toll fee?

RD Digamo: This does not have a toll fee because it is not the same as the

expressway in Luzon because there is a private party called PPP Private Party Partnership during the agreement. This is a government

project.



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Ar. Herbito: The one in Malaybalay City is a bypass road. Actually, they asked me

for documents similar to the CLUP City Ordinance, just like some DGM

management. Are they the same?

RD Digamo: This is different. What you mentioned now about our local projects I

think this is already ongoing. Anyway, let's focus on the high standard first. Anyway, you can still raise it tomorrow. Attend in Malaybalay tomorrow. We will be there at Kaamulan Grounds. So, shall we wrap

up the open forum unless there is more to say? Yes, Sir!

Mr. Taylor: From the City Disaster Risk Reduction Management Office, sir. Our

concern is that many vehicles and trucks loaded with various materials are really having accidents, sir. And then there was a house near us where the car exploded. Then many died. And then our concern is the safety features of our high-speed highway because our speed is a maximum of 80 kilometers per hour. So, is there an emergency land-off that can be done if the loaded vehicle loses its

many people here in Damay, that is the real concern here because the road from Cagayan de Oro to Malaybalay is very busy. Thank you.

brake? He can go there, so there is no danger. Because there are

RD Digamo: Thank you very much for bringing that up. Because the disaster risk

management person also asked that yesterday. And then yesterday I learned something. What are the three elements that cause traffic accidents? First, human factor. Second, vehicles. Maybe when you're in third gear, the break doesn't stick anymore. Third is infrastructure. When we say infrastructure, we are talking about roads. Maybe there are portions that are very dark, or because of sudden turns. That's why Ma'am will explain its beauty and why it is called a high-standard highway. In Luzon, the expressways have levees. You can stand here first. Pee there, smoke a cigarette, and that's it. All right, ma'am,

please answer.

Engr. Balid: That's it. I will repeat because this is a high-standard highway, so the

features of the road that we will make first are the design speed of 80 kilometers per hour. This is designed so that you can drive at that speed whether going up or down because the gradient of our highway maximum is six percent. Not the one you usually see on the Sayre Highway—these curve ones that are hard because you can't drive at 80 KPH with that, or the ones here or here. The alignment is almost smooth. The maximum grade is only 6 percent. So, if we base it on infrastructure for safety, you are assured that the car will be able to

run smoothly.

RD Digamo: Okay, besides that, we have many road signs when there is a curve



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like that. Now sometimes we notice that you have signage, but it's only one piece because it saves money.

This project has many signages. So, we will expect that from Cagayan de Oro to Malaybalay, this will be constructed. Thank you very much for your attendance and your active participation.

That is the real essence of the public participation process, because in the EIA system, at the very beginning, we had public participation. At IEC, there are group discussions, public scoping, public consultation, and public hearings; it's always there.

The moment this is completed, let's have a multipartite monitoring team. So, we will all participate in the monitoring of this project if, as they say, the traffic plan and soil erosion plan have really been implemented on the ground. This is the only impact I have on the supply of raw materials, because that was yesterday. That is also similar to the impact in Bukidnon.

CLUSTER 3: IMPASUG-ONG AND MANOLO FORTICH

Public Hearing on the Central Mindanao High Standard Highway Project

PENRO Conference Room, Malaybalay City October 13, 2023

9:45-12:00 NN

Facilitator: Regional Director Reynaldo Digamo

Participants

- 1. Alex Payangga, IPMR Manolo Fortich
- 2. Allan Flores Jr, Barangay Captain, Damilag
- 3. Bae Judith Dinsag, IPMR Tangkulan
- 4. Danny Bocan, Municipal Assessor Manolo Fotich
- 5. Kag. Alberto Buynay, Sankanan
- 6. Kenneth Tanito, Barangay Captain Ticala
- 7. Mckinley Honi, DPWH Bukidnon
- 8. Sybreen Marsh Velasco, LGU Manolo Fortich

RD Digamo: Maayong Buntag sa atong tana! Buhay pa ba ta? Buhay pa?

All: Buhay pa!

RD Digamo: Buhay na buhay. Yan ang kagandahan ng mga Bisaya. Buhay na buhay

yan kahit hindi pinakinggan, okay lang yan. Kahit palipat lipat tayo ng

venue ay ayos lang, diba?

Okay. The very meat of the public hearing is the open forum. Kay mao man ni ang katuyuan sa public hearing is pasintapay na nahabilin nga mga concerns bahin ani ataong project nga Central Mindanao High Standard Highway. High standard. Dili ni siya basta standard. So dili kasinginlon nga ang mga bisaya kasi sa Mindanao dili man kasi ta mga

second class citizen. Mao ng tagaan gyud tag kalsada nga high



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standard.

Thank you very much PENRO for a very short notice nga naka-occupy ta dire sa ilahang conference room. Kay mahirapan man ta sa hayag kaayo. Dili man ni mabasa. So dire comfortable. Thank you very much through sir Albert among gitawagan si nga maong nahabilin. Kaila mo kinsay PENRO tua sa DENR? Wala mo kaila?

Male: Wala

RD Digamo: Paano kung naa moy concern? Or gusto mo mag apply ug tree cutting

permit or sa invo planted trees? Ang atong PENRO si PENRO TP Alima. Maong mga tambok iyang mga dapig kay ginaalimahan gyud na ni

PENRO TP.

So, atong grupo dire para makahibalo kita kung kinsa man naa karon dinhe nga maga bisita sa Malaybalay gikan sa DPWH nga si Mary Joyce Manuel, katong nagpresent kanina. Asan si Joyce? Andito. Small but

terrible from DPWH UPMO. Ano yan UPMO?

Engr. Manuel: Unified Project Management Office.

RD Digamo: Unified Project Management Office. What about RMC?

Engr. Manuel: Road Management Cluster.

RD Digamo: Road Management Cluster. So, duna pud sa bridge ano. Hiwalay

naman. Kasama ni Joyce si Scott Ramos. Kita mo sa salida ni Scott na

siya maoy actor? Kasama ito si Scott who also from DPWH

UPMO. Then si Kelvin Mamitay sa likoran. Yan yung mga sniper. Yang

mga sniper nasa likoran yan. Kitang kita kayo.

Sa part naman natin ng consultant andito si Ms. Angi. Manager man yun sa JICA study team. So, medyo malusog si Ms. Angi. Malusog

talaga yan. Taga JICA yan eh.

Ang atin naman mga consultant that was commissioned by the proponent to conduct the environmental impact assessment or sa pagtuon sa lugar na maapektuhan sa atong proyekto ang AMET Asia. Ang nia karon dinhe nga very small but terrible si Francin, nasaan? Andoon sa likuran. Yung nag-present kanina. Tapos si Ivan Moreno, andoon sa likuran din. Si Nimfa Bracamonte, Ma'am Nimfa yaan retire nato sa MSU-IIT sa Iligan. Tapos si Ms. Amabelle Embornas and Kolin Manalastas.

Sa Team nato sa central office si Engr. Joel, nasaan si Joel at tsaka si Engr. Jess andito po. Sa ato sa Malaybalay sa Pradis Bukidnon kanina nandiyan si Raquel Lindoy ang atong ang Provincial Environment and



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Management Unit Officer. Siya ang head sa EMB sa province of Bukidnon. Bumalik na siguro sa office niya. And yours truly ang inyong sulugoon sa rehiyon EMB, Ray Digamo. Mao atoang public hearing officer.

Simple lang tayo atoang house rules. You raise your hand, sir we acknowledge you pagtayo nimo you state your name and group na representahan and then I will ask your question. I will encourage everybody to please actively participate. Do not hesitate to ask. Mangutana gyud ta kay pagmasugdan na unya ni nga proyekto although sugdan siya in 2029 pa siya. Pila pa ka tuig? 2023 pa ta karon! Unom pa diay ni ka-tuig. Tapos matapos siya sa 2034. Mommy, pila na imong edad sa 2034?

Female: 67.

RD Digamo: Plus 11? Ah, buhay pa! Kain tayo ng maraming malungay para

malakas. May iron yan. Okay. Anyway, it is better nga naa tay gipaabot. Andito na atong PMO sa Bukidnon si PMO Raquel. Kung naa moy tuyo sa Environmental Management Bureau, kung gusto mo muapply ng ECC sa inyohang resort. Kinsa man naay resort dinhe? Taas ang kamot. Siguro walay heater inyong resort maong dili mo mutaas? Kay tugnaw

kaavo.

Let's start the ball rolling. Teka muna, guto ko mahibalo kaning venue kasi nato sa Malaybalay, kasi nakatulo ta ug venue. Tapos na kami didto sa Tagoloan last wednesday intended for Cagayan de Oro. Gahapon didto me sa Sumilao. Supposedly katong sa Sumilao kahapon intended unta to sa Manolo Fortich and Sumilao. Ang kaning sa Malaybalay is for Impasug-ong and Malaybalay. Kaya lang nagkamali sa clustering. Ang nahatag sa ato kay Malaybalay and Sumilao.

Gusto ko mangutana kung naay representative sa Impasug-ong? Isa, dalawa, tatlo sa impasug-ong. Sa Malaybalay naa bay nibalik? Isa nalang kabuok. Sa Manolo Fortich? Daghan sa Manolo. Ang katong uban nga wala nagpataas asa man to sila gikan?

Basta ang participants nato karon gikan sa LGU, gikan sa IP, naay gikan sa atoang Civil Society Organization, Government national agency, naa pud DepEd. Sige. Ato na umpisahan. Kinsa may gusto mangutana paguna? May premyo nga house and lot! Si Sir. Kinsa man manghatag ani nga microphone. Lisod pud nga ako gihapon.

Allan Flores Jr.: Salamat, Sir. Pwede ba magbisaya?

RD Digamo: Pwede ra bisaya. Naa mu-translate para ma-record.



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B.C. Flores Jr.: Ako po ay si Allan Flores Jr. Barangay Captain po ng Barangay Damilag

under the Municipality of Manolo Fortich. Kanina po ang pinakita na ang isa sa objective ng public hearing natin ngayon sa assessment EIA is para ma-discuss din po yung mga affected parties. Pero since alam ko na malayo pa project na ito. 2029 pa pero ang concern ko lang po as Barangay Captain yung mga residente na apektado. Meron ba kayong data kung kagaya sa amin sa Manolo Fortich mga residente na apektado sa the way ng highway? Households' para ma-include

Namin?

RD Digamo: Sino po ang sasagot?

Engr. Balid: Magandang umaga po, Kapitan. Bale yung study po nag-conduct kami

ng resettlement action plan study. So, meron po mga partial or mga posibleng matamaan pag-construct na talaga yung highway natin. Sa ngayon po kasi yung feasibility study palang naman tayo so yung mga naimbitahan doon sa from survey, posibleng sila na yung matatamaan or posibleng hindi rin sila matatamaan kasi depend na sa DTM design kung saan yun na mismo yung talagang detalyadong na kung saan ba talaga dadaan yung kalsada natin. Pero inaral yan, sir. So, may mga tao

na po na kung sino po yung possibleng matamaan po. Salamat.

RD Digamo: Yun lang? So, yung intensive na dagdag na survey or census of the

parties that will be affected kapag meron na tayong detailed

engineering design kasi sigurado na ta sa atong linya sa atong kalsada.

Okay. Kinsa man musunod?

Bae Dinsag: Maayong udto sa tanan. Bae Judith Dinsag, Municipal IPMR and

Municipal Chieftain sa Bukidnon at the same time IPMR sa barangay Tangkulan. Sa first presentation nila nakaapil me kay sa barangay Tangkulan man to gi-held. Then ang among hangyo is parehas sa giingon ni Ma'am sa amin usa ra ang naay changes sa ruta nila but sa pila karon gibalik katong gi-present nga mao gyud ni ang ruta from Tagoloan unsa ra changes? Basta kay nag-worry man gud dadto sa

Manolo kay daghan man gud ang kalsada.

Pag-survey nila dire muagi pero sa final naa nay changes kay usahay maka-save daw sila unya wala didto ang tag-iya. Ang akong hangyo kung 2029 man tuod na pero before ang construction, mubalik sila didto sa IP community. Kay ang nakahitabo man gud pareha ana sa Minyihun, nagsabot sila nga before matrabaho ang ML kinahangalan ipahibalo kadtong tag-iya sa yuta kay aron dili matabunan ang lubong sa mga kinauhan. Unya ang nahitabo kay nag-bulldoz na. Wala pahibalo. So kato nga problema kay ako na gipabantay wala nakahibalo karon asa tundungan kining kinatawahan. So, ambot gani ug na sala man to nila ug two hundred thousand kay affected man emotionally. So, mao ra na among hangyo nga sa start sa



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constructions ibalik gyud kung asa gyud ang bahin kay basin naay sacred places, burial grounds na maagihan. Importante sad ang magritual before mag-start.

RD Digamo:

Salamat po. Ang ating proyekto is funded po siya internationally. JICA and ADB, very concerned po sila sa social na aspeto lalo na po sa conjugal. So, if there are changes in the road alignment i-define ang computation, provide ang alignment, the team will go back to the IP community and then present and then conduct rituals whatever possibly identify burial grounds, sacred grounds so that as much as possible maiwasan ito sa road alignment. Duly note po ito Bae kasi that was concern yesterday daoon po sa Sumilao. So, magkakaroon pa po ng pagpupulipuli na yung lahat po ng mga IP sa hiwalay na pagpupulong. Okay. Thank you very much po.

Mr. Payangga:

Good morning sa tanan. Alex Payangga, IPMR sa Manolo Fortich. Ang concern namo kay ang nangahitabo sa mga project roads sa IP ang problema nga nangaabot sa amo is kaning pambayad sa right of way, mga tanum. Unya kasagara gyud pag-implement nila sa project malimtan na dayon to mga tagiya. Unya, halo gyud dili mabayran. Hantod karon man gali naa pay pending sa among opisina nga wala pa gyud nahuman nalang ang project wala pa gyud bayari. Daghang salamat.

RD Digamo:

Daghang salamat, Sir. So, Same situation sa Sumilao but for the benefit of this group we will let our representative from the DPWH dito sa central. Kasi yung experience ni sir ayun di ang experience nila, sad experience. Hindi favorable. Sad experience po hindi implemented locally by the head office or district office. So sana naman hindi mabaon sa limot yung pagbabayad. Pero may mga proseso din po. So, papa-explain po natin sa ating DPWH Central.

Engr. Ramos:

Good morning po, I'm Engineer Scott from DPWH National po.
Regarding po sa budget po ng right of way, may allocated po
department namin for the appreciation for the right of way. So, ang sa
amin lang po, strict po kami yun po kompleto ang requirements. May
requirements po tayo na di-discuss po kapag ka may separate public
consultation po ang resettlement action plan. So, sa ngayon po
domain by concerns pala po and then may iba pa po schedule ng
public consultation regarding po sa Right-of-Way Action Plan natin. So,
initially po para mabayaran po dapat kompleto tayo ng requirements.
So, kapag nag-public consultation na po tayo ng RAP may kasama po
kaming legal team. Doon di-discuss or explain kung paano po
ma-compensate yung affected na property. So, sa mga susunod po na
consultation regarding RAP doon po explain kung paano po. Sa
concern mo po if mababayaran, as long as completo po ng
requirements, may pangbayad po, may budget po ang DPWH para sa



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pag-acquire.

RD Digamo: Okay, maraming salamat po. So, yung grupo na po ng Right-of-Way

Appreciation ng DPWH sila naman doon. So, may binangit po si Sir Scott na kung kumpleto ng appreciator ang department para mabayaran, unang una po sa listahan yung proof of ownership po ninyo, the property land naapektuhan sinasabi. Meron kayong titolo,

basahin niyo na yung titulo na yan kasi hahanapin po yan

ng Right-of-Way team doon po sa final negotiation. Tandaan po ninyo na ginamit po kanina yung laki, lawak is 60 meters. That is 30 meters from the center right of sight. Ganyan kalaki ang right of way. Okay so,

meron pa po ba?

Mr. Bocan: Maayong buntag sa tanan. Salamat sa snacks. Ako diay si Danny

Bocan Municipal Assessor sa Manolo Fotich. Ang akong kani bitaw

relocation kay naa man gud mga tao nga maapektuhan

sa Right-of-Way nga wala gyud mabutangan [

inaudile 20:35-20:37] unya ang matulod kay LGU. Si LGU kulang man ug kanang site. Sa national, naa ay para sa ila na intended in case na

wala gyud maplastaran nila?

RD Digamo: Thank you so much sir sa atoang Municipal Assessor sa Manolo Fotich,

Bukidnon. Ang tanong, meron po bang nakalaan na resettlement site

ang DPWH para po doon sa mga maapektuhan lalo na kung

matatamaan po yung kanilang bahay sa inyong gagawing kalsada. Kasi yung experience po nila ay inabadona sa LGU yung relocation. So, meron po ba? Ano po ang masagot po natin diyan sa tanong ng

ating Municipal Assessor?

Engr. Ramos: Regarding po sa resettlement, bale hindi po kasi mandate ni DPWH.

Coordinate po yun sa national council or NCP.

RD Digamo: Okay. Sige ganito, hindi naman talaga mapagusapan yung mandato.

Tama ka naman pero yung proyekto ang dahilan kung bakit meron naapektuhan na bahay o mga tao diyan. But there will be arrangement kasi meron tinatawag natin na convergence kumbaga ng project. The DPWH will coordinate with the National - Department of Human

Settlement and Urban Development. Yan.

But then kung ibabato sa LGU, okay lang siguro si LGU will but magbabayad si DPWH. Ang DPWH should be the one to provide the funding for the acquisition and the development of the resettlement site. Okay na ba tayo doon assessor? Kasi yung sinsasabi nila there can be the DPWH will provide for the funding so LGU will be the one to find a property that we need to acquire [Inaudible 23:00 23:04]

Mr. Bocan: Noted, Sir.



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RD Digamo: O sige, noted. Sige po mara po salamat. Sino po ang sunod na

magtanong?

Mr. Honi: Good morning. Si Mckinley Honi from DPWH Bukidnon. Sir, katong

giingon ni Ma'am nga katong involvement ng district dito sa project.

RD Digamo: District Office ng DPWH?

Mr. Honi: Yes, Sir. Ano po ang magiging involvement ng district sa project.

RD Digamo: Ano daw ang involvement ng DPWH District Office dito sa proyektong

ito?

Engr. Ramos: Bale ang magiging pinaka involvement niyo po, Sir kasi di naman po

kami mga locals dito so yung coordination po ninyo sa district tsaka assistant if ever ano man po yung kailangan ng DPWH na from the district. So, magkakaroon po tayo ng interdepartmental na

communications regarding sa main activity po doon sa district. Sa area

mismo.

RD Digamo: So, okay na po yun sir. So, magkakaroon po ng directives yan from

central office ng DPWH. Okay, meron pa ba?

Mr. Velasco: Good morning, everyone, I'm Sybreen Marsh Velasco, from LGU

Manolo Fortich. Okay lang sir na even though nasa FS stage palang siya maybe we can ask for a shape file of the proposed road alignment

for planning purposes?

RD Digamo: May kahilingan dito kung pwede ba sila humingi ng shapefile and

proposed road alignment kahit na tentative road alignment palang ito? Or do you need clearance muna from your bossing? Yan mga bagay na yan alam niyo, hindi rin natin maiwasan na meron di magaling na mga Pinoy. Kasi yang mnga ganyan alam niyo kapag magkaroon na ng acquisition this is an actual experience in a project, kapag nalaman nila na ito dadaan yung kalsada. Ngayon kung tignan

mo yan, talagang malinis na yan.

Pero kapag nalaman nila na doon dadaan ang kalsada, naku kinabukasana napuno na yan ng saging, napuno na yan sa niyog, oo! Tatayuan na yan ng bahay kasi marami yan din na speedway. Yan din ang masama sa atin minsan we take advantage of. So, ganun na mga bagay na medyo di pa naman sigurado, so maingat talaga. So, sa amin sa EMB kung meron mag-apply ng ECC mag-susubmit yan ng TIS. Yang



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TIS na yan kung meron humihingi hindi namin ibibigay until na-issue yung ECC.

Because that document is not considered as a public domain. Kasi hindi pa na-issue. It is still something to review and evaluate. It is a list you don't give to the public. Pero kapag na-isyu na yung ECC, magiging public document anybody can have access of that document. And this way, na ito ay temporary pa naman itong alignment natin initial certification palang it could beat the mature to keep the proposed alignment. So, sorry po ha. Marami po salamat. Yes, Sir.

Kag. Buynay: Maayong buntag. Ako si Kagawad Alberto Buynay sa barangay

Sankanan, Manolo Fortich. Ang ako lang pangutana, standard ba ang bayad sa yuta nga maagian sa kalsada? Or base ba sa zonal price or pwede ba ang tagtukod sa yuta maoy magbuot sa presyo sa yuta?

RD Digamo: Yan po ang katanungan. Marami din interesadong malaman yan sagot

kung standard ba daw yung presyo ng pagbabayad sa yuta. Valuation of your property that will be affected o baka naman pwede yung may-ari ng lupa ang magtatalaga kung magkano yung benta niya? O

sige, sino ang sasagot diyan?

Engr. Calma: Good morning, everyone. I'm representing DPWH regional office 10.

When it comes to right-of-way acquisition sir, we are guided by Republic Act 10752 also known as Right-of-Way Acquisition Act. So, based ato nga balaod nato, sir ang atoang initial gyud ana nga magbuhat ka ug third party land assesor which is accredited by the BSP. So, para na siya malikay sa pag-put ug interest. So, dili kami ang magbuot, dili pud mo ang magbuot. Katong gi-acredit ni BSP nga Land Appraiser. At the same time property appraiser pud siya so pwede sa structures. Kato pud siya ang mag-assess sa value. Thank

you.

RD Digamo: So, dunay in commissioned of the third-party appraiser na authorized

sa Bangko Sentral ng Pilipinas. Para neutral gyud. So, there will be a fair and just assessment and evaluation of the property that will be

affected.

Darling, ano yung Republic Act?

Engr. Calma: Republic Act 10752.

RD Digamo: Aralin niyo yan. Republic Act 10752. Yan yung Right-of-Way Acquisition

Act. okay. Meron pa ba po na katanungan?





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Kag. Buynay: Ang iyang yuta maagian sa project pero hantod karon wala gyud

nasugdi kung dili ang iyang presyo gyud ang matuman.

RD Digamo: Ang project wala gyud masugdi?

Kag. Buynay: Oo.

RD Digamo: So, unsa to nga project?

Kag. Buynay: Murag nilaktawan lang.

RD Digamo: Anong project yun?

Kag. Buynay: Tulay siya, Sir.

RD Digamo: So, hindi natapos yung tulay?

Kag. Buynay: Yung kang Louie Alongo [?]. Dili siya musugot nga i-open kung dili

mukuan sa iyang price. Murag pila na ka years nga dili masudlan. Karon iyang gihimo nga toll fee. Kuhaan habal-habal bayad.

RD Digamo: Bawal na yan.

Female: Sir, musabat nalang ko. Kung tanawon nimo ang kadtong, ang

approach man gud sa tulay kay naa naman ang tulay nga bag-o. Pag-approach gyud sa tulay murag kung imong tan-awan straight lang siya. Pero kung sa tabok dinhin kung tan-awon nimo is part pa siya sa

straight. Nganong wala pa nakita ang pagtagbo ana.

Engr. Calma: Actually, we are on appropriation pa ani nga property and at the same

time we are planning to realign our local road gamay para lang gyud nga mapadayon lang sa ang road while ga-exploring pa sa may...

Dayon murag naa na may instructions nga murag dili siya allowed nga mag toll fee. Gapa- toll fee pa ba gyapon siya karon? Wala na? I hope wala na kay naa naman gyud kanang changes nga nahitabo. Looking forward dili na magpa toll fee ta. Magpatabang gyud sa DPWH ana.

Residents nga dili magpa toll fee while ongoing pa ang constructions.

RD Digamo: Yan yung hihingin namin yung tulong at kooperasyon for the things na

nangyari diyan. Kasi yan yung magpapatagal ng proseso. So, baka yan tulay na yan, baka siguro nadaanan namin yan because of that concern. So, di talaga pwede yan na may toll fee. The government



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always has the mechanism to acquire the property kung yan ang sinasabing, "kapag hindi nakuha sa santong dasalan, idadaan natin sa expropriation" because the government has the authority to expropriate property for government projects. Okay, didto banda murag mingaw man. Unsa man ni dinhi? Ayun.

B.C. Tanito: Magandang umaga. Ako pala si Kenneth Tanito Punong Barangay ng

Ticala. Paano po yung tax declaration? Dami po namin natamaan?

RD Digamo: Paano yan kapag tax declaration lang ang hawak ng imad ng lupa? Tax

declaration.

Engr. Ramos: Sa ngayon po hindi ko po masagot. So, kapag may RAP na public

consultation nalang po. Masmaganda po kasi manggaling sa legal na.

Sa legal nalang po. May public consultation po for RAP.

RD Digamo: Ano po yung RAP?

Engr. Ramos: Resettlement Action Plan.

RD Digamo: Resettlement Action Plan. And then this team from DPWH will go down.

Engr. Ramos: Gagawa po ng series of public consultation po from Municipa to

Barangay level.

RD Digamo: But then again, that question will be captured in our proceedings ha.

Because that could be the basis now of the RAP putting a

consideration on these concerns. Salamat Kap sa imong concerns. Daghan kaayo interesado kay sigurado gyud na kanang ilang gigunitan kay tax declaration lang. Dili titulo. Kung duna gani kadti ani we do not know kung naa bay tax ana. So, we have to undergo the process.

Meron parin ba? Pahabol? O atong DPWH naay pahabol.

Engr. Calma: Additional lang sa question ni Sir. Ang among process man gud sa

among regional office kay bahalag tax declaration lang naa as long as twenty years minimum pwede siya mag-serve as proof of ownership.

Pero again mas maayo kung naa gyud titulo.

RD Digamo: Twenty years of possession of property. Unsa gani tawag ana? Open

continuous adverse possession of property. Murag base ta ana sa proof of ownership. Pero naa gyapon na siya sa Republic Act?



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Engr. Calma: Actually, sa Article pero dili siya specific na sa type sa, ang gibutang

man gud na requirement proof of ownership. Dili siya specific nga

gitagaan ug tittle.

RD Digamo: Ah, okay yun. So, twenty years of possession of property. So, yung ang

i-prove ninyo. Kung halimbawa ang nag-claim ay thirty years na possession of property kay ang edad niya bente singko palang? So, ano ang magiging proof nya na thirty years na ako nag-occupy diyan, twenty-five years old palang siya. So, yung ang mga kanyang ninuno.

Okay. Meron pa? Wala na talaga.

So, on behalf of DENR EMB, assistant secretary to the environmental sector and director Gilbert Gonzales. I would like to thank PENRO of Bukidnon for this facility and of course kayo po na mga actor at actresses sa public hearing because without your presence kanina medyo na-badtrip ako kanina. Declare ko na sana failure yung public hearing. Oo, mabuti nalang may bumulong sa akin, "maghunos dili ka". From this, we successfully conducted this public hearing. Thank you, very much and good morning.

ENGLISH LANGUAGE

RD Digamo: Good morning to all of us! Are we still alive? Still alive?

All: We are still alive!

RD Digamo: Very alive. That is the good thing about the Bisaya. We are very much

alive, even if they don't listen to us. That's okay. Even if we move from

different venues, it's fine, right?

Okay. The very meat of the public hearing is the open forum. Because the purpose of the public hearing is to confirm that there are still concerns about our project, the Central Mindanao High Standard Highway, High standards. He is not just standard. So, in Mindanao, we are not second-class citizens. That's why they will give us a high standard road.

Thank you very much PENRO for a very short notice that you allow us to occupy here in your conference room. Because it is difficult for us because it is so bright. Can't even read. So, it's comfortable here.



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Thank you very much through sir Albert. Do you know who is the head of PENRO in DENR? You don't know him?

Male: No.

RD Digamo: What if you have concerns? Or do you want to apply for a tree-cutting

permit for your planted trees? Our PENRO is PENRO TP Alima. His sides are fat because PENRO TP is really taking care of them. So, our group, so I will introduce so that you will know who is here today, the visitors here in Malaybalay from the DPWH, is Mary Joyce Manuel, who presented earlier. Where is Joyce? Here. Small but terrible from

DPWH UPMO. What is UPMO?

Engr. Manuel: Unified Project Management Office.

RD Digamo: Unified Project Management Office. What about RMC?

Engr. Manuel: Road Management Cluster

RD Digamo:

Road Management Cluster, so there is also a consultant for bridges. It's separate. Joyce is with Scott Ramos. Have you seen Scott's movie where he is the actor? This is Scott, who is from DPWH UPMO. Then Kelvin Mamitay is in the back. Those are the snipers. Those snipers in the back. Our consultant, Ms. Angi, is the manager of the JICA study team. So, Ms. Angi is relatively healthy. She is really healthy. She is from JICA.

We have consultants that were commissioned by the proponent to conduct the environmental impact assessment or to focus on the area that will be affected by the project, AMET Asia. Francine is very small but terrible, where is she? She is also at the back. The one who presented earlier. Then Ivan Moreno, there in the back too. Nimfa Bracamonte, Ma'am Nimfa is a retired MSU-IIT in Iligan. Then Ms. Amabelle Embornas and Kolin Manalastas

Our team at the central office is Engineer Joel, and Engineer Jess is also here. In Malaybalay, in Pradis Bukidnon, Raquel Lindoy is our Provincial Environment and Management Unit Officer. She is the head of the EMB in the province of Bukidnon. And yours truly is your servant in the EMB region, Ray Digamo. I will be your public hearing officer today.

Our house rules are simple. You raise your hand, we acknowledge you, introduce yourself by stating your name and group, and then ask your question. I encourage everyone to actively participate. Don't



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hesitate to ask. Let's ask questions, even though it will start in 2029. How old are you? It's still 2023! This project will be finished in 2034. Mommy, how old will you be in 2034?

Female: 67.

RD Digamo: Plus 11? Ah, still alive! Let's eat a lot of food strong It has iron. Okay.

Anyway, it is better that we have something to look forward to. PMO Raquel is here as our PMO in Bukidnon. If you have permission from the Environmental Management Bureau, if you want to apply for an ECC at your resort. Does anyone have a resort here? Hands up. Maybe your resort doesn't have a heater so you can't get up? Because it's so

cold.

Let's start the ball rolling. Wait, I want to know this venue because we are in Malaybalay, because we have three venues. We finished in Tagoloan last wednesday intended for Cagayan de Oro. Yesterday I was in Sumilao. Supposedly the one in Sumilao yesterday was meant to be Manolo Fortich and Sumilao. This one in Malaybalay is for Impasug-ong and Malaybalay. That's why the clustering went wrong. What was given to us was Malaybalay and Sumilao.

I want to ask if there is a representative in Impasug-ong? One, two, three in impasug-ong. Has anyone returned to Malaybalay? Just one in total. In Manolo Fortich? Many in Manolo. Those who did not raise their hands, where are they from?

As long as our participants today are from the LGU, from the IP, there are from our Civil Society Organization, Government national agency, there is also DepEd. All right. Let's start. Who wants to ask first? There is a house and lot prize! Sir.

Allan Flores Jr.: Thank you, Sir. Is it okay to speak in Bisaya?

RD Digamo: It's okay to speak in Bisaya. Someone will translate.

B.C. Flores Jr.: I am Allan Flores Jr. Barangay Captain of Barangay Damilag under the

Municipality of Manolo Fortich. Earlier, it was shown that one of the objectives of our public hearing today in the assessment EIA is to discuss with the affected parties. But since I know that this project is still a long way from being started, it's still 2029, but my only concern as the barangay captain is the residents who are affected. Do you have any data on residents like us in Manolo Fortich who are affected by the highway project? Households so that we can include?

QMET

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RD Digamo: Who will answer his question?

Engr. Balid: Good morning, Captain. In our study, we conducted a resettlement

action plan study. So, there are partial or possible ones that will be hit when our highway is actually constructed. Right now, we are just

doing the feasibility study.

So, for those who have been invited to the survey, it is possible that they will be hit or they may not be hit because it depends on the DTM design, which is the very detailed design of the road. Thank you.

RD Digamo: That's all? So, the intensive additional survey or census of the parties

that will be affected when we have a detailed engineering design because we are sure of our line on our road. Okay. Who's next?

Bae Dinsag: Good afternoon, everyone. Bae Judith Dinsag, Municipal IPMR and

Municipal Chieftain in Bukidnon, and, at the same time, IPMR in barangay Tangkulan. In their first presentation, I was able to participate because it was held in Barangay Tangkulan. Then our request is the same as what Ma'am told us only there are changes in their route, but in the presentation today, we are being presented with the same route from Tagoloan. What are the changes? It's just that they were worried in Manolo because there are too many roads. They did a survey early on, but in the end, there were changes because it was more economical but the owner was not informed. My request before the construction, I hope they will return to the IP community. Because what happened was the same in Minyihun, they agreed that before the ML, it was necessary to inform the owner of the land so that the burial site would not be affected.

Then what happened was that it was bulldozed. They did not inform us. So that's the problem, because we are the watchers, and we were not informed. So, I don't know. It's their fault, the two hundred thousand are affected emotionally. So, before the construction starts, inform us. We know the location of sacred places and burial grounds that are affected. It is also very important to perform a ritual before

starting.

RD Digamo: Thank you. Our project is funded internationally. JICA and ADB are

very concerned with the social aspect, especially the conjugal one. So, if there are changes in the road alignment, define the computation, provide the alignment, and then the team will go back to the IP community and then present and then conduct rituals, identify burial grounds or sacred grounds so that, as much as possible, avoid them in the road alignment. This is a duly noted, Bae, because that was a concern yesterday in Sumilao. So, all the IPs will have a turn in a



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separate meeting. Okay. Thank you very much.

Mr. Payangga: Go

Good morning, everyone. Alex Payangga, IPMR from Manolo Fortich. Our concern is what is happening with the project roads in IP. The problem that has reached us is the payment for the right-of-way, our crops. Then, usually, when they implement the project, the owners forget about it. Then it's almost impossible to receive payment from them. Even now, it is still pending in our office that the project has been completed, but there is still no payment received. Thanks a lot.

RD Digamo:

Thank you very much, sir. So, same situation in Sumilao, but for the benefit of this group, we will let our representative from the DPWH answer the query. Because their experience different, sad experience. Not favorable. The sad experience was not implemented locally by the head office or district office. So, I hope the payment will not be forgotten. But there are also processes. So, we will explain to our DPWH Central

Engr. Ramos:

Good morning! I'm Engineer Scott from DPWH National. Regarding the budget for the right of way, our department has allocated something for the appreciation of the right of way. So, we are strict about the complete requirements. There are requirements, and we will discuss them in a separate public consultation in the resettlement action plan. So, right now, it is a domain of concerns, and then there is another public consultation schedule regarding our Right-of-Way Action Plan. So, initially, in order to be paid, we must complete the requirements. So, when we do a public consultation with RAP, we have a legal team with us. We will discuss or explain how to compensate the affected property. So, in the next consultations regarding RAP, we will explain how. Regarding your concern about whether you will be paid, as long as the requirements are complete, you will be paid. The DPWH has a budget for acquisition.

RD Digamo:

Okay, thank you very much. So, they are the group in charge for DPWH's Right-of-Way Appreciation. So, Sir Scott mentioned something that if the appraiser's documents are complete - to be paid, the first thing on the list is your proof of ownership of the affected property. You have titles, read your titles because the Right-of-Way team will look for them during the final negotiation. Please remember that the size was used earlier, the width is 60 meters. That is 30 meters from the center. That's how wide the right-of-way is.

Okay, so is there anything else?

Mr. Bocan:

Good morning, everyone. Thanks for the snacks. I am Danny Bocan Municipal Assessor in Manolo Fotich. About the relocation, because there are people who will be affected by the right-of-way, there will



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be nothing [inaudile 20:35–20:37], then it will be submitted to the LGU. LGU lacks the capacity for this. What are the plans of the national government?

RD Digamo: Thank you so much, sir, to our municipal assessor in Manolo Fotich,

Bukidnon. The question is, does the DPWH have a designated resettlement site for those who will be affected, especially if their house will be hit by the road you will build? Their experience was the task of relocation was given to the LGU. So, are there any? How can

we answer the question from our municipal assessor?

Engr. Ramos: Regarding resettlement, it doesn't matter because it is not a DPWH

mandate. Coordinate with the national council or NCP.

RD Digamo: Okay. All right, the mandate was not negotiated. You are right, but

the project is the reason why there are affected houses or people there. But there will be arrangements because there is what we call the convergence of the project. The DPWH will coordinate with the National Department of Human Settlement and Urban Development. That. But then, if it is thrown at the LGU, maybe the LGU will be okay, but DPWH will pay. The DPWH should be the one to provide the funding for the acquisition and development of the resettlement site. Are we okay there, assessor? Because of what they are saying, the DPWH will provide the funding, so LGU will be the one to find a property that we

need to acquire [Inaudible 23:00 23:04].

Mr. Bocan: Noted, Sir.

RD Digamo: Oh okay, noted. Thank you. Who will ask next?

Mr. Honi: Good morning. Mckinley Honi from DPWH Bukidnon. Sir, what Ma'am

said was the district's involvement in the project.

RD Digamo: District Office of DPWH?

Mr. Honi: Yes, Sir. What will be the involvement of the district office in the

Project?

RD Digamo: What is the involvement of the DPWH District Office in this project?



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Engr. Ramos: We will coordinate with the district office if we ever need assistance.

So, we will have interdepartmental communications regarding the

main activity in the district. In the area itself.

RD Digamo: So, it's okay, sir. So, there will be directives from the DPWH central

office. Okay, is there anything else?

Mr. Velasco: Good morning, everyone. I'm Sybreen Marsh Velasco, from LGU

Manolo Fortich. Sir, even though it's still in the FS stage, maybe we can ask for a shape file of the proposed road alignment for planning

purposes?

RD Digamo: There is a request here if they can ask for a shapefile and proposed

road alignment, even if it is just a tentative road alignment. Or do you need clearance from your boss first? You know those things; we can't avoid the fact that there are also clever Filipinos. Because things like that, you know that when there is an acquisition, this is an actual experience in a project, when they know that the location of the road. But when they found out that the road would go through there, oh, the next day it was full of bananas; it was full of coconuts, yes! A

house will be built there because there are also many speedways.

That's also a bad thing about us that sometimes we take advantage of. So, things like that are still a bit uncertain, so be really careful. So, for us at EMB, if someone applies for ECC, they will submit TIS. If someone asks for that TIS, we will not give it until the ECC is issued. Because that document is not considered as a public domain. Because it hasn't been issued yet. It is still something to review and evaluate. It is a list you don't give to the public. But once the ECC is issued, it will become a public document anyone can have access to that document. And this way, this is still a temporary alignment of our initial certification because it could beat the mature to keep the proposed

alignment. So, I'm sorry. Thank you very much. Yes, Sir.

Kag. Buynay: Good morning. I am Kagawad Alberto Buynay in barangay Sankanan,

Manolo Fortich. My only question is, do we have a standard fee for the land that will be affected by the project? Or is it based on the

zonal price or can the owner of the land decide the price?

RD Digamo: That's the question. Many people are also interested in knowing

whether the payment price for land is standard. The valuation of your property will be affected, or maybe the land owner can assign how

much he sells? Oh well, who's going to answer that?



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Engr. Calma: Good morning, everyone. I'm representing DPWH regional office 10.

When it comes to right-of-way acquisition, sir, we are guided by Republic Act 10752, also known as the Right-of-Way Acquisition Act. So, based on our law, sir, our initial requirement is that you hire a third-party land assessor that is accredited by the BSP. So, he can avoid showing interest. So, we don't decide, and you don't either. The land appraiser is accredited by BSP. At the same time a property appraiser for structures. He is also the one to assess the value. Thank

you.

RD Digamo: So, there is a commissioned third-party appraiser authorized by the

Bangko Sentral ng Pilipinas. To be neutral. So, there will be a fair and just assessment and evaluation of the property that will be affected.

Darling, what is the Republic Act?

Engr. Calma: Republic Act 10752.

RD Digamo: Learn that. Republic Act 10752. That is the Right-of-Way Acquisition

Act. okay Do you have any more questions?

Kag. Buynay: His land is affected by the project but so far nothing has been agreed

upon unless his price is met.

RD Digamo: The project hasn't started yet?

Kag. Buynay: Yes.

RD Digamo: So, what project?

Kag. Buynay: They just skipped the area.

RD Digamo: What project is that?

Kag. Buynay: Bridge, Sir.

RD Digamo: So, the bridge was not completed?

Kag. Buynay: The one of Louie Alongo [?]. He won't agree to open if they will not

pay his price. It's like you haven't been able to get in for years. Now

he is collecting the toll fee.

RD Digamo: That is not allowed.



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Female: Sir, I will interrupt. The approach to the bridge is good because the

bridge is new. Approaching the bridge, it seems that if you look at it, it's straight. But if you look across it, it's still part of the straight.

Engr. Calma: Actually, we are still appropriating this property, and at the same

time, we are planning to realign our local road a little so that we can continue on the road while still exploring the area. It seems that there are already instructions. It seems like he is not allowed to collect the toll fee. Is he still collecting toll fees now? I hope there are no more changes. Looking forward, he should not collect toll fees. Ask for help

from the DPWH. Residents should not pay toll fees while the

construction is still ongoing.

RD Digamo: That's why we're asking for help and cooperation for the things that

happened there. Because that will prolong the process. So, they are not allowed to collect toll fees. The government always has the mechanism to acquire the property, such as through expropriation, because the government has the authority to expropriate property for

government projects.

B.C. Tanito: Good morning. I am Kenneth Tanito Punong Barangay of Ticala. How

about the tax declaration? Many of us will be affected?

RD Digamo: What if the land owner only has a tax declaration?

Engr. Ramos: Right now, I can't answer your question. So, only during RAP public

consultation. It's even better because the legal team will attend the

consultation. There is a public consultation for RAP.

RD Digamo: What is RAP?

Engr. Ramos: Resettlement Action Plan.

RD Digamo: Resettlement Action Plan. And then this team from DPWH will go

down.

Engr. Ramos: A series of public consultations will be held from the municipal to the

barangay level.





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RD Digamo: But then again, that question will be captured in our proceedings.

Because that could be the basis for the RAP putting these concerns into consideration. Thank you, Kap, for your concerns. A lot of people are interested because I'm sure that some of them are just holding on to the tax declaration. Not a title. If there is any product, we do not know if there is a tax. So, we have to undergo the process. Do you still

have it? postscript? Or our DPWH has an afterthought.

Engr. Calma: Additional, Sir. Our process in our regional office is that only tax

declarations that are at least twenty years old can serve as proof of

ownership. But again, it is better if there is a title.

RD Digamo: Twenty years of possession of property. What is it called? Open

continuous adverse possession of property. It seems to be based on

proof of ownership. But is it already under the Republic Act?

Engr. Calma: Actually, in the Article, but not specific to the type, the proof of

ownership requirement is also stated. It is not specifically given a title.

RD Digamo: Ah, that's okay. So, twenty years of possession of property. So, that's

what you will prove. For example, if the claimant has thirty years of possession of property, why is he only twenty-five? So, what will be his proof that I have been occupying there for thirty years, he is twenty-five years old. So, those are his ancestors. Okay. Is there anything else? So, on behalf of DENR EMB, assistant secretary to the environmental sector and director Gilbert Gonzales. I would like to thank PENRO of Bukidnon for this facility and of course you actors and actresses at the public hearing because without your presence earlier I had a bit of a bad trip. I would have declared the public hearing a failure. Yes, it's a good thing someone whispered to me, "don't get carried away". From this, we successfully conducted this public

hearing. Thank you, very much and good morning.





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