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ENVIRONMENTAL MONITORING PUBLISHERMENT
DA NHIM HYDROPOWER PLANT EXPANSION PROJECT
1st QUARTER, 2017

1. Responses/Actions to Comments and Guidance from Government Authorities and the Public

Monitoring item	Monitoring results during report period
Responses/Actions to Comments and Guidance from Government Authorities	The Employer has carried out Monitoring Plan in compliance with Government Authorities Guidance.

2. Mitigation Measures

[Pre-Construction Phase]

- Land Acquisition

Land Acquisition Activities	Planned Total	Unit	Progress in Quantity	Progress in %	Expected Date of Completion
Progress of Compensation Payment					
- Hydropower Station Expansion	17.29	Bil.VND	21.33	100%	28 August 2015
- Valve House and its Access Road					
- Adit 1 and its Access Road Construction					
- Intake Construction					
Progress of Land Acquisition					
- Hydropower Station Expansion	31.25	ha	29.48	100%	28 August 2015
- Valve House and its Access Road					
- Adit 1 and its Access Road Construction					
- Intake Construction					

- Lost Assets



Progress of Compensation Payment	Planned Total	Unit (No. of PAPs)	Progress in Quantity	Progress in %	Expected Date of Completion
Lost Tree					
- Hydropower Station Expansion	30.3	ha	17.41	100%	28 August 2015
- Valve House and its Access Road					
- Adit 1 and its Access Road Construction					
- Intake Construction					
Lost Crop					
- Hydropower Station Expansion	0.95	ha	12.07	100%	13 April 2015
- Valve House and its Access Road					
- Adit 1 and its Access Road Construction					
- Intake Construction					
Lost Assets (other than Tree and Crop)					
- Hydropower Station Expansion	NA		NA		
- Valve House and its Access Road					
- Adit 1 and its Access Road Construction					
- Intake Construction					

[Construction Phase]

- Air Quality (Emission Gas / Ambient Air Quality)

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Sprinkle water to control dust	Construction site	Daily	The Employer instructed the Contractor at site.
Minimize travel distance	Construction site	Daily	The Employer instructed the Contractor at site.
Regular checking of engine and exhaust of machinery and its recording and reporting	Construction site	Monthly	The Employer instructed the Contractor at site.
Respiratory protection for worker at site	Construction site	Daily	The Employer instructed the Contractor at site.

- Water Quality (Effluent/Wastewater/Ambient Water Quality)

Item	Unit	Measured value (average)	Country's standards QCVN 08:2015/BTNMT	Remarks (measurement point, frequency)
pH	-	6.8	6-8.5	Intake, near construction site of new intake, tailrace: monthly
SS (Suspended Solid)	mg/l	16.625	30	Intake, near construction site of new intake, tailrace: monthly
BOD5	mg/l	9.7	6	Intake, near construction site of new intake, tailrace: monthly
DO	mg/l	5.95	≥5	Intake, near construction site of new intake, tailrace: monthly
Ammonia Nitrogen	mg/l	0.215	0.3	Intake, near construction site of new intake, tailrace: monthly
Total Phosphorus	mg/l	0.01575	0.2	Intake, near construction site of new intake, tailrace: monthly

Based on the category of B1- for irrigation purpose or other purposes with demand for similar quality water or other purpose of B2 in NATIONAL TECHNICAL REGULATIONS ON SURFACE WATER QUALITY, QCVN 08:2015/BTNMT

- Waste

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Dispose of material to approved area so as not to disturb scenery and not to contaminate water	Construction site (New Intake, Adit Tunnel, Headrace Tunnel, Surge Tank, Valve House, Penstock, Powerhouse, Worker's Camp)	Monthly	-The Contractor has settled containers at some fixed locations at the construction site to collect and classify domestic waste including: Recycle waste, organic waste and hazardous waste. - The disposed material was gathered at approved areas.

- Soil contamination

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Capture insulation oils in barrel and use oil proof sheet to avoid any leakage	Construction site	Monthly	The Contractor has been instructed to keep oil in the oil tanks to avoid any leaking.

- Noise / Vibration

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Instruction to driver to comply speed limit	Construction site	Monthly	The Contractor installed signs to limit speed of construction vehicles at site.

Check proper material loading and uploading	Construction site	Monthly	The Contractor was requested to check proper material loading and uploading at site.
Use silencer and muffler for equipment	Construction site	Monthly	The Contractor was requested to use silencer and muffler for equipment at site.

- Flora, Fauna and Biodiversity

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Regular water sampling and quality analysis	(See Water Quality)		

- Landfill Site Management

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Construction waste soil needs disposed of the designated site	Construction site	Monthly	The Contractor disposed waste soil properly.

- Topography and Geology

Monitoring item	Measurement point	Frequency	Implementation phase	Monitoring result during report period
Site rehabilitation with topsoil recovery, reshaping, re-vegetation and remediation with site cleanup work	Construction site	-	At finishing stage of construction phase	This works will be executed at next steps.

- Existing Social Infrastructures and Services

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Check proper amount of material loading	Construction site	Monthly	The Contractor carried out checking material loading for every delivery.

- Sanitation

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Provision of proper sanitation with septic facilities (prohibition of untreated human waste to enter any watercourse)	Construction site/Worker's camp	Monthly	The Contractor provided proper sanitation at site.



[Operation Phase]

- Flora, Fauna, and Biodiversity/Hydrology/Social and Economic Environment/Public Safety/Water Usage or Water Rights of Common

Monitoring item	Measurement point*	Frequency	Monitoring result during report period
Minimum water requirement requested from DARD shall be observed	Hydropower Station	Daily	NA

- Water Quality

Item	Unit	Measured value (Mean)	Measured value (Max.)	Country's standards	Remarks (measurement point, frequency, implementation phase)
pH	-	This work will be executed at the operation phase.		5.9-9	Intake, New intake, Tailrace: Monthly
SS (Suspended Solid)	mg/l			50	Intake, New intake, Tailrace: Monthly
BOD5	mg/l			1.5	Intake, New intake, Tailrace: Monthly
DO	mg/l			≥4	Intake, New intake, Tailrace: Monthly
Ammonia Nitrogen	mg/l			0.5	Intake, New intake, Tailrace: Monthly
Total Phosphorus	mg/l			0.3	Intake, New intake, Tailrace: Monthly

Based on the category of B1- for irrigation purpose or other purposes with demand for similar quality water or other purpose of B2 in NATIONAL TECHNICAL REGULATIONS ON SURFACE WATER QUALITY, QCVN 08:2008/BTNMT

Da Nhim Hydropower Plant Expansion

Project Management Board

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