

ENVIRONMENTAL MONITORING PUBLISHPMENT
DA NHIM HYDROPOWER PLANT EXPANSION PROJECT
2nd QUARTER 2016

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 | - | 6.975 | 6-8.5 | Intake, near construction site of new intake, tailrace: monthly |
| SS (Suspended Solid) | mg/l | 33.150 | 30 | Intake, near construction site of new intake, tailrace: monthly |
| BOD5 | mg/l | 14.193 | 6 | Intake, near construction site of new intake, tailrace: monthly |
| DO | mg/l | 6.075 | ≥5 | Intake, near construction site of new intake, tailrace: monthly |
| Ammonia Nitrogen | mg/l | 0.006 | 0.3 | Intake, near construction site of new intake, tailrace: monthly |
| Total Phosphorus | mg/l | 0.012 | 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

Director



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EVNHPC DHD

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