Environmental Monitoring Report

For the period covering January–July 2017
Project Number: 38412-023
October 2017

India: Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program — Project 1

Prepared by the Flood and River Erosion Management Agency of Assam (FREMAA) for the State Government of Assam and the Asian Development Bank.

BI-ANNUAL REPORT ON IMPLEMENTATION OF EMP

Project No 38412
Loan No 2684-IND

India: Multi tranche Financing Facility –
Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program

Reporting Period – January 2017 to July 2017

Submitted by Executing Agency

Flood and River Erosion Management Agency of Assam (FREMAA)

Prepared for FREMAA by Project Management Consultancy (PMC-FREMAA)

Bi-Annual Report on Implementation of Environmental Management Plan
January 2017 to July 2017

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ABBREVIATIONS

ADB – Asian Development Bank
AIFRERMIP – Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program
CBFRML – Community based flood risk management and livelihood
EIA – Environmental impact assessment
EMP – Environmental management plan
EMoP – Environmental Monitoring Plan
FRERM – Flood and riverbank erosion risk management
FREMAA - Flood and River Erosion Management Agency of Assam
MFF – Multi tranche financing facility
MIS – Management information system
MoEF & CC – Ministry of Environment Forests and Climate Change
GOI – Government of India
NGOs – Nongovernment organizations
PMU – Project management unit
SEIA – Summary environmental impact assessment
SGOA – State government of Assam
SIO – Subproject implementation office
SPCB – State Pollution Control Board
UNDP – United Nations Development Program
WRD – Water Resources Department

LOAN PROCESSING HISTORY

Approval of PPTA 26 September 2008
Fact-finding Mission 27 January-7 February 2009
Management Review Meeting (MRM) 9 October 2009
Appraisal Mission-1 1-16 February 2010
Appraisal Mission (Final) 27 April – 10 May 2010
Staff Review Meeting (SRM) 29 July 2010
Loan Negotiations for MFF and Tranche 1 7-8 September 2010
Board Circulation 29 September 2010
Board Approval 19 October 2010
Project 1 Approval IV October 2010
Loan Agreement Signing November/December 2010
Loan Effectiveness December/January 2010
Physical Completion Date 31 March 2017
Loan Closing Date 30 September 2017

1. Introduction :

The goal of the Safeguard Policy Statement (2009) is to promote the environmental and social sustainability of ADB supported projects by protecting people and their environment from potential adverse impacts and enhancing the benefits provided. This goal is integral to achieving environmentally sustainable and socially inclusive growth and poverty reduction in Asia.

The growing human footprint, however, compromises Asia's biologically diverse natural ecosystem. ADB's environmental safeguards aim to ensure the environmental soundness and sustainability of projects, and to support the integration of environmental considerations into the project decision-making process. ADB's environmental and social safeguards are cornerstone of its support to inclusive economic growth and environmental sustainability. The objectives of the SPS are to avoid, or when avoidance is not possible, to minimize and mitigate adverse project impacts on the environment and affected people.

The ADBs Safeguard Policy Statement (SPS) requires borrowers to identify project impacts and assess their significance; examine alternatives; and prepare, implement, and monitor environmental management plans.

In complying with the SPS requirements:

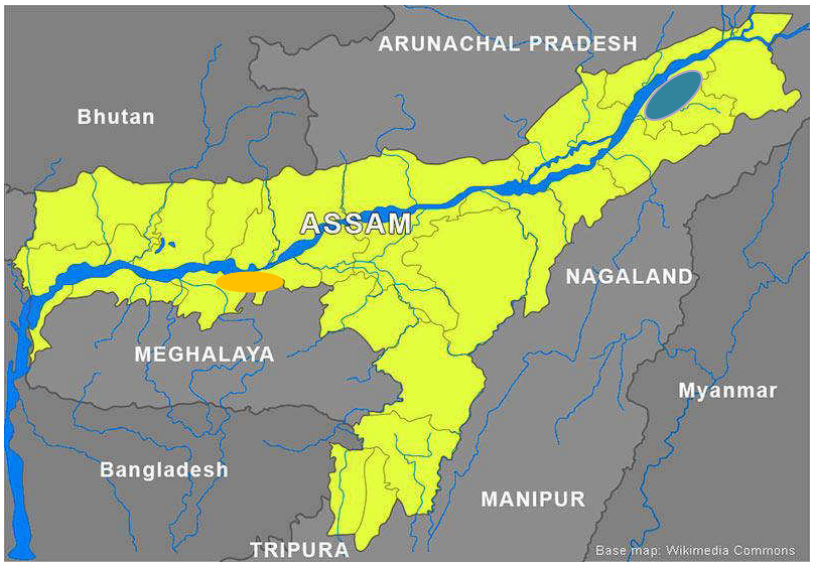
(i) environmentally sustainable projects are primarily achieved through a good project design during project preparation and effective environmental management during project implementation;
(ii) integrating environmental considerations into the project feasibility study and design calls for the incorporation of environmental assessment and management into the economic, financial, institutional, social, and technical analysis of a project; and
(iii) good environmental assessment and management enables the continued improvement of environmental performance throughout the life of a project, and can lead to enhanced economic, financial, and social outcomes.

The Flood and River Erosion Management Agency of Assam (FREMAA) under the state Government of Assam is responsible for the implementation of ADB-financed Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program (AIFRERMIP), as agreed jointly between the SGOA, Government of India and ADB, and in accordance with government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by FREMAA of their obligations and responsibilities for program implementation in accordance with ADB's policies and procedures. Country safeguard systems (CSS) refer to the existing laws, regulations, rules, and procedures on the policy areas of environment prevailing in India and Assam.

The project under the program come under **Category A**, as Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program is likely to affect an

area larger than the sites or facilities subject to physical works. Overall, the two subprojects (Dibrugarh, Palasbari and Gumi) are needed primarily to safeguard the people, property and environment from frequent floods of the Brahmaputra River, and strongly supported by the stakeholders. The FREMAA aims to integrate key Environmental Safeguards at all the levels of planning and implementation so that critical natural ecosystem. The flood plains of Brahmaputra and the resources are not destroyed. Nevertheless, close monitoring were operationalized so that any unforeseen impact can be detected and mitigation measures provided. Possible negative impacts include those associated with construction, which are temporary and can be mitigated through prescribed mitigation measures under the environmental monitoring and management plan to be operationalized under the Project, with the necessary capacity building of the executing agency and outsourcing. This will help in maintaining environmental sustainability along with inclusive economic growth. The FREMAA aims to integrate key Environmental Safeguards at all the levels of planning and implementation so that the natural ecosystem are maintained and are least disturbed.

The FREMAA also aims to integrate key Environmental Safeguards at all the levels of planning and implementation so that critical natural ecosystem and the resources are not destroyed in this biodiversity hotspot. There is a need for recognition and following the compliance with national and state system and regulations on environmental standards by the contractors. Some of the specific environmental parameters are to be monitored periodically to check the compliance. This helps in maintaining environmental sustainability along with inclusive economic growth. Besides above, for achieving the compliance specific arrangements are made in the contract.



Dibrugarh sub project Palasbari Sub Project

Project sites in Assam along the river Brahmaputra

Structural works of the two subproject areas under Tranche-1 are:

Palasbari Sub Project:

Palasbari Reach

1. Palasbari Erosion Protection under water works below LWL (4.9 Km).
2. Construction of Palasbari Embankment and slope protection work above LWL along Brahmaputra river at Palasbari. (5.1 Km.)

Gumi Reach (completed before December, 2016)

3. Construction of under water and Bank Revetment with loose boulder crates over geobag apron including supply of boulders and wire mesh nets for Gumi erosion Protection works along the Brahmaputra river. (4.5 Km)

Dibrugarh Subproject

(i) Raising, Strengthening Upgradation and Construction of Road Works for Dibrugarh Town protection (DTP) Dyke along the Brahmaputra River in Dibrugarh – 8.53 Km,

(ii) 1.8 km of bank protection through pro-siltation measures along the town protection dykes, (Fabrication and Launching of Porcupines Lot-1, Lot 2, Lot 3 and Lot 4) (completed before December, 2016) and

(iii) Construction of Revetments, Geobag Aprons for Mothola Oakland Bank Area, Dibrugarh Erosion Protection Works from Ch. 000 to Ch 2400m

(**Kaziranga Sub Project**– shifted to Tranche-2 due to non availability of Wild life Clearance from MoEF & CC)

1.1. Report Purpose :

This project at two sub project sites (Dibrugarh, Palashbari and Gumi) in Assam is implemented by FREMAA through Water Resource Department, Assam in accordance with ADB's Safeguard Policy Statement, 2009 and Ministry of Environment, Forest and Climate Change (GOI) and Government of Assam guidelines so as to ensure that all environmental monitoring measures and when ever applicable Environmental mitigation measures as given in Environmental Impact Assessment and subsequent Environmental Management Plans incorporating all the Environmental concerns of the project.

The principle objectives of the report are to:

- To ensure environmentally compatible project implementation by avoiding and mitigation of negative impacts that arises from the project during the period January to July, 2017.
- To ensure that EIA recommendations are adequately followed in EMP and EMoP to meet the Environmental Compliances of statutory requirements of MoEF &CC, GOI.

The Bi Annual Report on the implementation of Environmental Management Plan ending July, 2017 (as the tranche 1 completion date is July 2017, this report covers 7 months) delineates:-

- Environmental Monitoring of the project from January, 2017 to July, 2017 considering the environmental activities along with environmental compliances of statutory requirements of MoEF &CC, GOI and agreement conditions.
- This report also highlights the gaps and deficiencies while executing the environmental management.

1.2. Project Implementation Progress :

Although the effectiveness of the loan started from December, 2010 and January 2011, consideration of the environment safeguard of the project started in the early part of 2013. Construction works started in February-2012 in both the subprojects of Dibrugarh and Palasbari and Gumi. Kaziranga subproject could not be started as required environmental clearance from the standing committee for National Board of Wildlife, MoEF & CC, GoI in 3rd quarter of 2014 and hence, the work was shifted to tranche-2. Several meetings, trainings and workshops were conducted jointly by PMC and FREMAA with the contractors and SIO's in the month of April, 2013, May, 2014 and in subsequent months at the respective SIO office and in the site offices of the contractor for generating the awareness about the environmental safeguard and stipulations of the contract document on environment.

1.2.1. Provisions for compliance :

The FREMAA aims to integrate key Environmental Safeguards at all the levels of planning and implementation so that critical natural ecosystem and the resources are not destroyed in this biodiversity hotspot. There is a need for recognition and following the compliance with national and state system and regulations on environmental standards by the contractors. Some of the specific environmental parameters are to be monitored periodically to check the compliance. This helps in maintaining environmental sustainability along with inclusive economic growth.

Besides above, for achieving the compliance following specific arrangements are made in the contract.

- The Contractor shall employ one fulltime inspector for supervising compliance with the environmental management plan. The environmental inspector shall keep one set of current environmental standards and regulations at the site at all times, available for consultation. The environmental inspector shall submit an Environmental Management Plan and a monthly environmental report. The report shall be written in English language in a format acceptable to the Engineer.
- Measures for monitoring and preventing pollution of air, water, noise, vehicle, waste.
- No part of the work shall be started before environmental and safety inspectors and first aid nurse are present at the site.
- Other measures like, Borrow pit management, maintenance of access road, compensatory afforestation, emergency response plan, etc are also under the preview of the environmental safeguard measures under the project.

2. Incorporation of Environmental Requirements into Project Contractual Agreements

Manner by which EMP requirements are incorporated into contractual arrangements, such as with contractors or other parties.

Each project requires a suite of environmental safeguards defined by impact mitigations and environmental monitoring requirements that are specific to the project type, scale, activities, and location.

The key design considerations and elements of environmental monitoring are incorporated in the contract agreement enabling with ADB's Safeguard Policies 2009 and with environmental compliances of statutory requirements of MoEF & CC, GoI.

FIDIC-BASED BID DOCUMENTS

GC 4.18 Protection of the Environment

Contractor shall protect the environment on and off site and limit damage/nuisance to public from water/soil/air pollution, noise and other adverse impacts.

Section 6, Clause 2.1 - Environment

Contractor must submit EMP for approval, employ full time environmental inspector, and submit monthly reports to Engineer and monitor impacts and the success of mitigation measures.

Section 6, Clause 2.3 – Safety Precautions & Medical Attendance

Contractor shall employ a full time safety inspector, provide safety and first aid equipment, access to nurse and doctor, etc

In terms of allowable pollutant values and occupational health and safety, the laws, standards and regulations in force in India will be the references to be adhered to by the Contractor.

Following the above clause of the ADB contract document were prepared.

- **Environmental Management Plan (EMP) Compliance as per Bid Document Procurement of Works, Section 6 - Employers Requirements, Subsection 2**

2A. Components of Environmental Safeguards:

To look after the safeguard issues FREMAA and PMC has one unit comprising of Environmental expert, Land acquisition expert, resettlement expert and Social safeguard expert. Environmental Safeguards are against the work packages executed under the project. These are as mentioned below.

- **Compliance to Environmental Management and Environmental Monitoring**
  Under each packages of works, contract documents were prepared to safeguard the environment under subsection 2 of the Section 6.

  - **Environmental Management Plan and Environmental Inspector**: In that section the Contractor have to appoint one fulltime Environmental Inspector for supervising compliance with the environmental management plan. The environmental inspector has to keep one set of current environmental standards and regulations at the site at all times, available for consultation. The environmental inspector has to submit an ***Environmental Management Plan*** including the Monitoring Plan and a ***Monthly environmental report***. The report should be acceptable to the Engineer in Charge.

  - Provisions were also made in the contract document that, the Contractor shall remedy any damages resulting from non-compliance of stipulations of this Sub-section 2 at his own cost. All work shall be stopped until compliance is assured.

- **Monitor Pollution and measures for prevention**: To monitor the effect of the civil work on the local environment following provisions were kept in the contract.

    - Prevention of spills of oil and lubricants from vehicles, engines, etc at work sites are required. Used engine oil must be removed in an environmentally acceptable manner in accordance with current legislation of India.
      In the event of any spoil, debris, waste or any deleterious substance from the Site being deposited on any adjacent land, the Contractor shall immediately remove all such material and restore the affected area to its original state to the satisfaction of the Engineer.

- **Measures for prevention of Air Pollution**

The Contractor shall devise and arrange methods of working to minimize dust, gaseous or other air-borne emissions and carry out the Works in such a manner as to minimize adverse impacts on air quality.
The Contractor shall utilize effective water sprays during delivery manufacture, processing and handling of materials when dust is likely to be created, and to dampen stored materials during dry and windy weather. Stockpiles of friable materials shall be covered with clean tarpaulins, with application of sprayed water during dry and windy weather. Stockpiles of material or debris shall be dampened prior to their movement, except where this is contrary to the Specification.
Any vehicle with an open load-carrying area used for transporting potentially dust producing material shall have properly fitting side and tail boards. Materials having the potential to produce dust shall not be loaded to a level higher than the side and tail boards, and shall be covered with a clean tarpaulin in good condition. The tarpaulin shall be properly secured and extend at least 300 mm over the edges of the side and tail boards.
In the event that the Contractor is permitted to use gravel or earth roads for haulage, he shall provide suitable measures for dust palliation, if these are, in the opinion of the Engineer, necessary. Such measures may include spraying the road surface with water at regular intervals.

- **Measures for prevention of Noise Pollution**

The Contractor shall consider noise as an environmental constraint in his planning and execution of the Works.
The Contractor shall take all necessary measures so that the operation of all mechanical equipment and construction processes on and off the Site shall not cause any unnecessary or excessive noise, taking into account applicable environment requirements. The Contractor shall use all necessary measures and shall maintain all plant and silencing equipment in good condition so as to minimize the noise emission during construction works.
The Contractor shall avoid unnecessary noise, especially at night.

- **Measures for prevention of Water Pollution**

The Contractor shall prevent any interference with the supply to or abstraction from, and prevent any pollution of, water resources (including underground percolating water) as a result of the execution of the Works.
Areas where water is regularly or repetitively used for dust suppression purposes shall be laid to fall to specially-constructed settlement tanks to permit sedimentation of

particulate matter. After settlement, the water may be re-used for dust suppression and rinsing.
All water and other liquid waste products arising on the Site shall be collected and disposed of at a location on or off the Site and in a manner that shall not cause either nuisance or pollution.
The Contractor shall not discharge or deposit any matter arising from the execution of the Works into any waters except with the permission of the Engineer and the regulatory authorities concerned.
The Contractor shall at all times ensure that all existing stream courses and drains within, and adjacent to, the Site are kept safe and free from any debris and any materials arising from the Works.
The Contractor shall protect all watercourses, waterways, ditches, canals, drains, lakes and the like from pollution as a result of the execution of the Works.

- **Measures to prevent Vehicular Pollution**

The Contractor shall regulate vehicle emission and noise in accordance with current legislation of India.

- **Control of Wastes**

The Contractor shall control the disposal of all forms of waste generated by the construction operations and in all associated activities. No uncontrolled deposit ion or dumping shall be permitted. Wastes to be so controlled shall include, but shall not be limited to, all forms of fuel and engine oils, all types of bitumen, cement, surplus aggregates, gravels, bituminous mixtures etc. The Contractor shall make specific provision for the proper disposal of these and any other waste products, conforming to local regulations and acceptable to the Engineer.

- **Land Use**

The Contractor shall remove and store topsoil for replacement after construction. The Contractor shall restore the surface vegetation in his work areas to the level found before the start of work. This includes the replacement of topsoil removed before construction.

- **Disruption of Agricultural Activities**

The Contractor shall minimize the disruption of any agricultural activities within the flood embankments. To the extent possible, land outside the flood embankments used for construction purposes shall consist of WRD property. Any disruption of private agricultural land used shall be compensated by the Contractor at the current market value.

- **Access Routes**

Roads -The Contractor shall inspect all access roads for their appropriateness for moving construction equipment or materials. Roads found inappropriate shall be strengthened by the Contractor. If the access road degrades, by more than expected normal use, due to the Contractor's activities, it will be repaired by the Contractor at his own cost.

- **Site Installations**

The Contractor must provide and maintain reasonable sanitary facilities, proper lighting and adequate protection of the Site against accidents and the like. The Contractor shall

organize the disposal of wastes in an environmentally acceptable manner, in accordance with environmental standards and regulations of India.

- **Excavation and Filling of Earth for Raising and Strengthening works**

Earth excavation and filling activities shall take place after the area has been surveyed and inspected by the Engineer. The Contractor shall submit a map indicating the areas of planned earth excavation and filling activities; together with cross-sections showing earth cut and filled areas, based on the results of the baseline survey, within one week of survey completion. These earth excavation and fill volumes must be confirmed and revised during the subsequent pre-work survey, before actual excavation and filling work can proceed.

- **Borrow materials** :

Where the materials are to be obtained from designated borrow areas, the location, size and shape of these areas shall be as indicated by the Engineer and the same shall not be opened without his written permission. Where specific borrow areas are not designated by the Employer/the Engineer, arrangement for locating the source of supply of material for embankment and sub-grade as well as compliance to environmental requirements in respect of excavation and borrow areas as stipulated, from time to time by the Ministry of Environment Forests and Climate Change, Government of India and the local bodies, as applicable, shall be the sole responsibility of the Contractor, Borrow pits along the road shall be discouraged. If permitted by the Engineer, these shall not be dug continuously. Ridges of not less than 8 m width should be left at intervals not exceeding 300 m. Small drains shall be cut through the ridges to facilitate drainage. The depth of the pits shall be so regulated that their bottom does not cut an imaginary line having a slope of 1 vertical to 4 horizontal projected from the edge of the final section of the bank, the maximum depth in any case being limited-to 1.5 m. Also, no pit shall be dug within the offset width from the toe of the embankment required as per the consideration of stability with a minimum width of 10 m. Haulage of material to embankments or other areas of fill shall proceed only when sufficient spreading and compaction plant is operating at the place of deposition. No excavated acceptable material other than surplus to requirements of the Contract shall be removed-from the site. Should the Contractor be permitted to remove acceptable material from the site to suit his operational procedure, then he shall make good any consequent deficit of material arising there from. Where the excavation reveals a combination of acceptable and unacceptable materials, the Contractor shall, unless otherwise agreed by the Engineer, carry out the excavation in such a manner that the acceptable materials are excavated separately for use in the permanent works without contamination by the unacceptable materials. The acceptable materials shall be stockpiled separately. The Contractor shall ensure that he does not adversely affect the stability of excavation or fills by the methods of stockpiling materials, use of plants or shifting of temporary buildings or structures. The Contractor shall obtain representative samples from each of the identified borrow areas and have these tested at the site laboratory following a testing programme approved by the Engineer. It shall be ensured that the sub-grade material when compacted to the density requirements shall yield the design CBR value of the sub-grade.

- **Emergency Response**

The Contractor shall plan and provide for remedial measures to be implemented in the event of occurrence of emergencies such as spillages of oil or bitumen or chemicals.

The Contractor shall, provide the Engineer with a statement of the measures he intends to implement in the event of such an emergency which shall include a statement of how he intends to provide personnel adequately trained to implement such measures.

- **Measurement and Payment**

Protecting the Environment

The Bill of Quantities contains a separate line item to include all costs for protecting the environment. Cost for complying with all requirements related to construction of labour camps/ancillary sites, strengthening and/or repair of roads, rehabilitation of ancillary sites etc. are deemed to be included in the bill of quantities. Cost for specific activities related to the work, such as stripping and replacing top soils (agricultural soil), dust suppression, water supply, sanitation facilities, camp site waste disposal, control of pollution from leakage and spill of oils and lubricants, safety and warning signs/signals etc., should be included in this line item in the bill of quantities.

2B. Monitoring Contractors activities

The activities that may have environmental impact are to be checked periodically or by recurrent spot checks. Contractor's activities are looked after by one Environmental Inspector for each site. In all the field visits the following activities of the contractors were checked by FREMAA officers PMC experts and by the SIOs:

a. Sprinkling of water during movement of trucks
b. The vehicles used during the work has due pollution control certificate
c. Solid waste management in the labour camps
d. Quality checks for drinking water in the camps
e. Sanitary toilets in the camps
f. Use of LPG gas for preparing food in the labour camps,
g. Burrow pit areas
h. Oil and grease spilling
i. Test to check the ambient environment

2C. Tests to check the ambient environment

The following parameters are to be monitored with the frequencies described.

For Air Quality : SPM, RSPM, SO2, NOx, CO, Pb - With in 100 m of Hot mix plant, construction camp, crusher and near sensitive locations/ settlement –Continuous 24-hourly, twice a week, for two weeks once every year (summer).

For Dust & Smoke- Details of water sprinkling and frequency of sprinkling per day

Vehicular pollution - Emission records of vehicular pollution of all the vehicles used (updated PUC)

Surface Water - pH, BOD, COD, TDS, TSS, DO, Oil and Grease – from Brahmaputra River - Once during the dry season.

Ground water - pH, BOD,DO, total coliform, As, Cd, Mn and Ground Water levels – Construction site, Rehabilitation site, service areas, - Once at the start of construction

Noise - Noise Level in dB (A) – Near the construction sites and sensitive locations close to embankment – One day hourly measurement, once in six months

2D. Environmental Clearances required during Construction Stage

(This list excludes clearance from MOEF&CC for forest land diversion and areas falling under critical habitats)

Sl. No	Description	Approval from Assam Forest Department	Approval from SIO, WRD	Approval from Pollution Control Board, Assam	Responsi-bility
1	Camp Site	X	√	X	Contractor
2	Borrow area for soil	√	√	√	Contractor
3	Stone from Quarry	√	X	√	Contractor
4	Borrow area for sand	√	√	X	Contractor
5	Top soil monitoring	X	√	X	Contractor
6	DG set noise and oil spill monitoring	X	X	√	Contractor
7	PUC certificate for Vehicles	X	X	√	Contractor
8	Loss of agricultural land	X	√	X	Contractor
9	Environment Monitoring	√	√	√	Contractor, SIO, FREMAA

Required √ Not Required X

2E. Compliance with Environmental Management Plan (Provisions in the Bid document).

2.5.1: "*The Contractor shall work in strict compliance with the principles of the Environmental Management Plan. No part of the work shall be started before environmental and safety inspectors and first aid nurse are present at the site. No part of the work shall be started, or if defects are found later, continued or restarted before complying with all conditions of Sub-section 2 in this Section."*

2.5.2 "*The Contractor shall remedy any damages resulting from non-compliance of stipulations of this Sub-section 2 at his own cost. All work shall be stopped until compliance is assured."*

2.5.3 "*If the Contractor is not able or unwilling to start remedial work within five working days after detection of any defect or omission, the Engineer can order remedial works through third parties. The cost for third-party services is to be borne by the Contractor and shall be deducted from the Contractor's invoices or from the Retention Money."*

2.6 Measurement and Payment.
2.6.1 Protecting the Environment:
"*The Bill of Quantities contains a separate line item to include all costs for protecting the environment. Cost for complying with all requirements related to construction of labour camps/ancillary sites, strengthening and/or repair of roads, rehabilitation of ancillary sites etc. are deemed to be included in the bill of quantities. Cost for specific activities related to the work, such as stripping and replacing top soil (agricultural soil), dust suppression, water supply, sanitation facilities, camp site waste disposal, control of pollution from leakage and spill of oils and lubricants, safety and warning signs/signals etc., should be included in this line item in the bill of quantities. Payments will be made on the basis of available market rates and prevailing schedule of rates of Government of Assam."*

3. Summary of Environmental Mitigation and Compensation Measures Implemented

Based on EMP, may include measures related to air quality, water quality, noise quality, pollution prevention, biodiversity and natural resources, health and safety, physical cultural resources, capacity building and others.

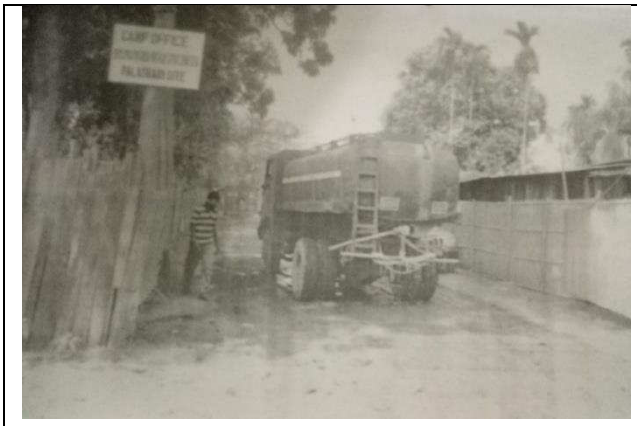
3.1. Preparation of site specific EMPs :

Following the contract stipulations Environmental Inspectors prepared the site specific EMPs following the EIA and the EMPs on DTP Dyke works, Mothola Oakland works, Porcupine lot-IV under Dibrugarh subproject, Palasbari and Gumi work packages, Palasbari embankment and was approved by the concerned SIO. The approved EMP was followed by the contractors during January to July, 2017 for DTP Dyke works, Palasbari apron and Palasbari embankment works.

3.2. Measures taken to reduce pollution:

Several measures taken to reduce the environmental pollution, some of them are:

- **Air**
  - Spray water on dry surface to reduce dust in the air
  - Use tarpaulins to cover sand and other loose materials were transported by vehicles
  - Clean wheels and undercarriage of vehicles while leaving the site
  - Certificates on Vehicular Emission of all the vehicles used in the site
  - Checked air quality by PCB approved lab



Water sprinkling under Palasbari sub project

- **Noise**
    - Plan activities in consultation with SIO, community to reduce noise level
    - Provide information to public about work schedule
    - Horns not used, unless essential
    - Minimize the noise by silencers
    - Do not allow workers to an exposure of 80 dBA or above without ear plug
    - Use of heavy vehicles during specified period of day
    - Use of Generators during specified period of day
    - Checked Noise level by PCB approved lab

- **Surface water quality**
    - Avoid stockpiling of earth fill, especially during monsoon unless covered by tarpaulin or plastic sheets
    - Install temporary silt traps or sedimentation basins along the drainage leading to water bodies
    - Store fuel and lubricants away from the drains
    - Checked surface water quality by PCB approved lab

- **Pollution**
    - Spills of oils on the site and on river regularly checked
    - Specific measures taken to remove the Used engine oils
    - Surface discharges monitored

- **Site Installations**
    - Protection of trees for their preservation
    - temporary roads were constructed
    - environmental friendly waste disposal system properly monitored and executed in the work sites

- **Labour Camps**
    - Minimize the removal of vegetation and do not allow cutting of trees
    - Provide safe drinking water to the camp inhabitants
    - Sanitation facility to the camp inhabitants
    - Solid waste management practiced in the camps
    - before vacating the camp after the work, SIO and fringe community inspect the labour camp sites

3.3. Status of the mechanisms present for the Implementation of EMP

Table 1: Status of implementation of EMP as on 31.07.2017

Following the contract stipulations Compliance Inspectors in the form of Environmental Inspector were deployed by all the contractors and Safety Inspectors were also recruitment by all the contractors. Other contract packages were completed before December, 2016.

	Sub Projects according to the contract packages	Environmental Inspector appointed	EMP prepared	EMP approved by SIO	EMoP	Safety Inspector appointed	Monthly Environmental report	First aid Nurse engaged
1	Palasbari Apron	√ – Appointed	√- Submitted to SIO	√	√-Submitted to SIO	√	√- Prepared & submitted to SIO till July, 2017	√- Agreement has been made with the local Pharmacy
2	Palasbari Embankment	√	√- Submitted to SIO	√	√- Submitted to SIO	√	√-Submitted till April, 2017 (Other reports are in preparation)	√- Agreement has been made with the local Pharmacy
3	DTP Dyke	√ – Appointed	√-EMP submitted to SIO	√	√- Submitted to SIO	√	√-Submitted. till July, 2017	√-Agreement with local nursing home

As most of the contractors doing the ADB supported works for the first time, they do not have the knowledge about the safeguards requirements by the ADB. To improve the scenario following Actions were taken:

- Several meetings and training were organized (detail in QPRs and Bi annual reports) to aware the contractors on the environmental safeguard of ADB (Strategy and directions), stipulations of the contract document, testing of selected environmental parameters, national environmental standards, acts and rules of MoEF & CC, GOI and Government of Assam.
- Helped in the preparation of EMP and EMoP
- Assisted in preparation of monthly environmental Reports
- In the training workshop and in all the meetings with contractors and SIO's during field visits and review meetings it has been emphasized to carry out the required numbers of tests as per EMP.
  Moreover, special efforts has been made so that that the contractors adheres to the EMP norms.

Most of the contractors have employed Environmental Inspectors and they have submitted the Environmental Management Plans to the respective Engineers in Charge. In most of the cases the compliance were now net but are in different level of compliance (Package wise details in Table-2).

Table -2: Environmental Clearances during Construction Stage

Sl. No	Description	Approval from Assam Forest Department	Approval from SIO, WRD	Approval from Pollution Control Board, Assam	Responsi-bility	Status
1	Camp Site	X	√	X	Contractor	Obtained
2	Borrow area for soil	√	√	√	Contractor	Obtained,by DTP dyke
3	Stone from Quarry	√	X	√	Contractor	Obtained
4	Borrow area for sand	√	√	X	Contractor	Obtained
5	Top soil monitoring	X	√	X	Contractor	Obtained
6	DG set noise and oil spill monitoring	X	X	√	Contractor	Obtained
7	PUC certificate for Vehicles	X	X	√	Contractor	Obtained
8	Loss of agricultural land	X	√	X	Contractor	Monitored
9	Environment Monitoring	√	√	√	Contractor, SIO, FREMAA	Obtained

Required √ Not Required X

4. Summary of Environmental Monitoring

4.1. Compliance Inspectors (if relevant)

Following the contract stipulations Compliance Inspectors in the form of Environmental Inspector were deployed by all contractors and Safety Inspectors were also recruited by all the contractors (detail in Table-1).

4.1.1. Summary of Inspection Activities

Environmental Inspectors monitors the day to day environmental safeguards at the site and reports to the SIO. Moreover, FREMAA along with PMC also monitors the implementation of the EMP (Table- 3 to 5).

Table 3.Showing the site inspections by FREMAA and PMC during January, 2017 to July, 2017.

List of Meetings Attended (Period January to July 2017)

No.	Date	Meetings
1	13.02.17 & 14.02.17	Meeting with FREMAA and ADB consultant on implementation of Environment Safeguards and preparation of tranche 2 documents
2	20.02.17	Meetings with ADB, FREMAA , SIO at FREMAA office on frequency of tests under EMoP
3	29.03.17	Meeting with SIO Kaziranga, FREMAA on grievance redress mechanism.
4	15.06.17	Meeting with FREMAA, SIO, Contractors on implementation of Environment Safeguards

Table 4.Field visit carried out by FREMAA, during January to July 2017.

No.	Date	Place of visit	Participants in visit	Meeting with	Purpose of Visit
1	08.03.17	Kaziranga	FREMAA officers	Meeting with WRD, Forest Department, Villagers, SIO, FREMAA	Finalization of EIA for Tranche 2. Public consultation
2	11.03.17	Palasbari	FREMAA officers	Meeting with WRD, Villager, SIO	Implementation of EMP
3	19.05.17	Dibrugarh	FREMAA officers	Meeting with WRD, Villager, SIO	Implementation of EMP

Table 5.List of Discussion and Meeting with Contractors (Period January to July, 2017)

No.	Date	Meetings
1	11.03.17	Discussed with Contractor's Environmental Inspector of Palasbari embankment on Monthly Environmental Report and on Environmental Monitoring (test of ambient environment)
2	12.03.17	Discussed with Contractor's Environmental Inspector of Palasbari Apron on Monthly Environmental Report and on Environmental Monitoring (test of ambient environment)
3	19.03.17	Discussed with Contractor's Environmental Inspector of DTP Dyke on Monthly Environmental Report and on Environmental Monitoring

Meeting with the contractors on implementation of EMP under Palasbari Sub Project

Inspection activities on Environmental Safeguards are done in several stages:

- Monthly Environmental Reporting Formats were developed at PMC to check the compliance. These reports are to be complied by the Environmental Inspector and to be submitted to the SIO for his approval (Form-1).
- Site Engineers of PMC also monitor the Environmental Safeguards (Form-2).
- SIO also monitor the implementation of EMP during their inspection (Form-3)

Form-1

Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program	
Tranche-1	Sub Project :
Contractor :	Project No : 38412
Date of Agreement :	Contract Period :
Target Date of Completion :	Extended upto :
Name of the Environmental Inspector :	Month : Year:

Monthly Environmental Report

.		Status	Remarks
	Environment		
1	**Sources of materials**		
1.a	Use quarry sites and sources permitted by Government		
1.b	Verify suitability and approval by SIO		
1.c	Submission of monthly documentation of all material sources		
2	**Air**		
2.a	Spray water on dry surface to reduce dust in the air		
2.b	Use tarpaulins to cover sand and other loose materials where transported by vehicles		
2.c	Clean wheels and undercarriage of vehicles while leaving the site		
2.d	Certificates on Vehicular Emission of all the vehicles used in the site		
2.e	Checked air quality by PCB approved lab		
3	**Noise**		
3.a	Plan activities in consultation with SIO, community to reduce noise level		
3.b	Provide information to public about work schedule		
3.c	Horns not used, unless essential		
3.d	Minimize the noise by silencers		
3.e	Do not allow workers to an exposure of 80 dBA or above without ear plug		
3.f	Use of heavy vehicles from to		
3.g	Use of Generators KV from to		
3.h	Checked Noise level by PCB approved lab		
4	**Surface water quality**		
4.a	Avoid stockpiling of earth fill, especially during monsoon unless covered by tarpaulin or plastic sheets		
4.b	Install temporary silt traps or sedimentation basins along the drainage leading to water bodies		
4.c	Store fuel and lubricants away from the drains		
4.d	Checked surface water quality by PCB approved lab		
5	**Land Use**		
5.a	Has the contractor preserved the top soil for replacement after construction		
5.b	Status of the surface vegetation on the construction site prior to the initiation of the work (Detail report with number of trees cut and initial photographs of the area)		
5.c	Borrow pit – Rehabilitation of the borrow pit was done		
6	**Pollution**		
6.a	Spills of oils on the site and on river regularly checked		
6.b	Necessary measures taken to stop it		
6.c	What measures taken to remove the Used engine oils		
6.d	Surface discharges monitored		
7	**Disruption of Agricultural activities**		
7.a	Any agricultural activity in the flood embankment		
7.b	Any measures taken to minimize the impact on agricultural activity in the flood embankment		
7.c	Land used outside the flood embankment belongs to WRD or private		
7.d	If private agricultural land is used proper compensation is made by the Contractor at current market value		
	Access routes (River)		
a	Whether the Navigation routs are blocked ?		
b	How interference with the riverine traffic is minimized ?		
c	All the floating equipments following navigation standards applicable in India.		

d	All the floating equipments following safety standards applicable in India.		
e	Any dredging operation done ?		
	Road		
a	All the access roads inspected for their appropriateness for moving construction equipments		
b	If found inappropriate, strengthened by Contractor		
c	Due to the movement of the heavy vehicles, the access road is degraded more than normal use		
d	Contractor repaired the degraded access road		
e	Access road for the fringe community is used / blocked and alternate route provided		
f	Conduct the work during light traffic		
	Excavation and filling of Earth in Slope Protection		
a	Whether the area has been surveyed, inspected and approved by the SIO after the identification of excavation and filling site.		
b	Whether contractor has submitted a map indicating the area of earth excavation and filling activities showing the earth cut and fill areas, based on the baseline survey.		
	Sand Excavation		
	Whether the sand excavation area was approved by the SIO in writing.		
b	Whether contractor has submitted a map indicating the area of planned sand excavation		
c	Whether the sand excavation area is close to the work site or to char inhabitants		
	Site Installations		
a	Protection of trees for their preservation		
b	Whether temporary roads were constructed ?		
c	Whether environmental friendly waste disposal system properly monitored and executed in the work sites ?		
	Labour Camps		
a	Consult SIO and fringe community for establishing the temporary office shed, camp and plant		
b	Minimize the removal of vegetation and donot allow cutting of trees		
c	Provide safe drinking water to the camp inhabitants		
d	Sanitation facility to the camp inhabitants		
e	Solid waste management practiced in the camps		
f	Report SIO and fringe community before vacating the camp after the work		
	Agricultural Land and Crop Loss		
a	Any loss or damage of agricultural land and crops due to project construction activities		
	Homestead Loss		
a	Any home stead loss (including loss of trees, ponds, shifting of any other installations)		Addressed by RAP
)	**Drainage from Adjacent Area**		
).a	Natural drainage system blocked or disrupted.		
l	**Wildlife**		
l.a	Sighting of Dolphin (National Aquatic Animal)		
2	**Fish productivity**		
2.a	Fish productivity increased or decreased (survey in the boat ghats)		
2.b	Landing facility- Change of Boat Ghats		
3	**Display Materials**		
3.a	Signs like “Only Staff”, “Restricted Area” displayed in relevant area		
3.b	Safety (including traffic signs), notice board is available		
4	**Health and Safety**		
4.a	Provision of First Aid and medical service available		

Provide GPS coordinates for most of the descriptions so that map can be prepared.

5	Additional comments or actions required :

	Signature by Environmental Inspector Date : Contact Details :	Accepted/ Approved by SIO Date : Contact Details :

Form-2

Environmental Safeguards : Monitoring at site

Location : _____ Month : _____

(Give √ as applicable)

	Item	Yes	No	Remarks
1	Environmental Inspector present in all the works carried out at site			
2	EMP			
3	EMoP			
4	Baseline information of environment are present at site office			
5	Relevant Acts and Rules are available at site camps			
6	Air, water and Noise standards present at site			
7a	Air water and noise test results are kept in the site office			
7b	If Yes, Name the company performing the test			
7c	Test conducted			
8	Vehicles are checked in the camp before the work			
9	Oil seepage are checked for generators and motors of boats daily			
10	Oils are stored safely (to avoid soil & water contamination)			
11	Solid waste management practiced at the site			
12	Measures taken to reduce the dust pollution			
13	Access roads and navigation routes obstructed			
14	Access road maintained by the contractor			
15	Sand collected from the chars which are not inhabited			
16	Borrow pit rehabilitation done			
17	Loss of agricultural area if any			
18	Sanitation facility at campus is adequate			
19	Quality of drinking water tested			
20	Quantity of drinking water is sufficient.			
21	Record kept for cutting of trees			
22	Sitting of dolphin, If yes give dates and mention site			
23	Register checked weekly (attendance of Environmental Inspector, PUC certificate of all the vehicles used at site)			
24	Meeting related to awareness on environmental safeguards carried out during the month			
25	Any grievances lodged / discussed during the meeting related to Environment			
26	Monthly environmental report submitted to SIO . If submitted give the date.			
Remarks:				

*Take photographs of the important events with date and location,

**Mention any other measures taken to protect the environment and the people.

Date : Signature

Form-3

SIO CHECKLIST FOR ENVIRONMENTAL SUPERVISION AND MONITORING DURING CONSTRUCTION

Contractor's Name : _____

Month : _____ Dates of Inspection :

1	2	3	4	5		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

1. Is the Environmental Management Plan being implemented during the construction phase of the river bank protection work ?	Yes	No
2. Environmental Inspector present during the construction work ?	Yes	No
3. Are there sufficient measures incorporated in the subproject to prevent water pollution of nearby water bodies ?	Yes	No
4. Are there adequate erosion control measures to prevent erosion and sedimentation during the riverbank protection works ?	Yes	No
5. Is the project taking adequate measures to control dust and noise pollution ?	Yes	No
6. Is the project providing adequate alternative traffic routes (diversion/temporary access roads, etc) during the riverbank protection work ?	Yes	No
7. Is the subproject avoiding mining of sand from locations adjacent to inhabited char land areas, where applicable ?	Yes	No
8. Has the contractor used permitted sites for collection of materials (Boulders, Soil, etc)	Yes	No
9. Has the project resolved issues related to land accusation and compensation under the RAP ?	Yes	No
10. Have the Labour Camps and project Site Office and storage areas been constructed with sufficient sanitation and water supply facilities and other environmental and social associates with the construction ?	Yes	No
11. Is the sub project taking adequate measures to avoid spills of oil/lubricants smoke and noise pollution ?	Yes	No
12. Is the composite generated waste / garbage being disposed in an environmentally acceptable manner ?	Yes	No
13. Is there sufficient safety looked after by Safety Inspector at the work place and health care facilities (First Aid Nurse, and regular visit by Physician) or clinic close by to composites ?	Yes	No
14. Is the construction contractor adequately prepared to handle emergency situations like accidents and illness ?	Yes	No
15. Is the contractor keeping the records of the trees destroyed during the construction work ?	Yes	No
16. Is the subproject taking adequate measures to preserve the topsoil for later replacement ?	Yes	No
17. Are there adequate measures to avoid disturbances to the habitat of fish and other aquatic fauna and flora ?	Yes	No
18. Do the vehicles used in the site has valid PUC certificates ?	Yes	No
19. Is there any complaints lodged by the local community on environmental issues ?	Yes	No
20. **Major observations, Conclusion, Recommendations** :		

_____
Contractor or his representative

_____
Name and Signature of the Supervisor

Designation _____
Date _____

4.1.2. Mitigation Compliance:

Following measures were taken to meet the compliance.

Construction Site Set-Up

- Contractor comply with Section 6, Clause 2.4 – Site installations for construction camp, and all working and storage areas
- Safe drinking water and adequate sanitation facilities to be provided.

Waste Materials

- solid waste were either reused or recycled when practical,
- waste lubricant oils and spent oils will be stored in proper containers in a designated area until recycled or properly disposed offsite.
- general waste (metal, paper, cardboard, plastics, etc) are stored in bins and removed to suitable disposal site
- no hazardous wastes are anticipated to be generated from the site.

Noise

- Major construction activities were scheduled during normal daylight working hours and consistent with applicable standards.
- Contractor use equipment that is operated with appropriate noise muffling devices resulting in the least possible noise.

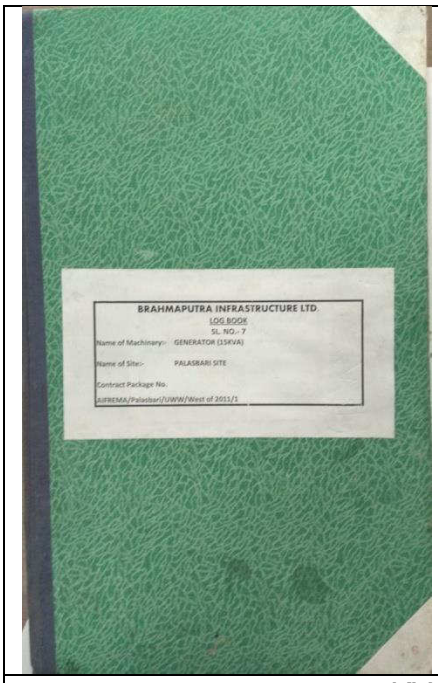
Air Quality and Emissions Management

- Most of all transport vehicles moving soil, granular material and rock to and from the site were covered
- The Contractor implement dust control measures at the source of emissions. The standard method is to wet dry surfaces, over which traffic passes; and encouraged natural re-vegetation or replant as early as practical after the completion of construction
- Suitable emission controls and exhaust systems for all equipment will be maintained, and regular inspection and maintenance of trucks were conducted to control pollutants from exhaust fumes

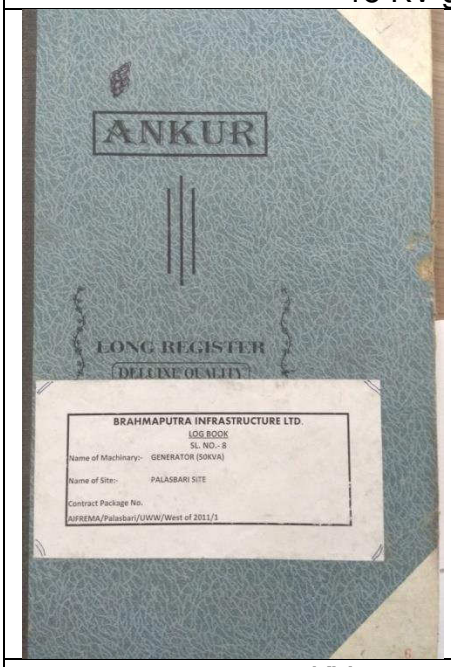
Spills Prevention

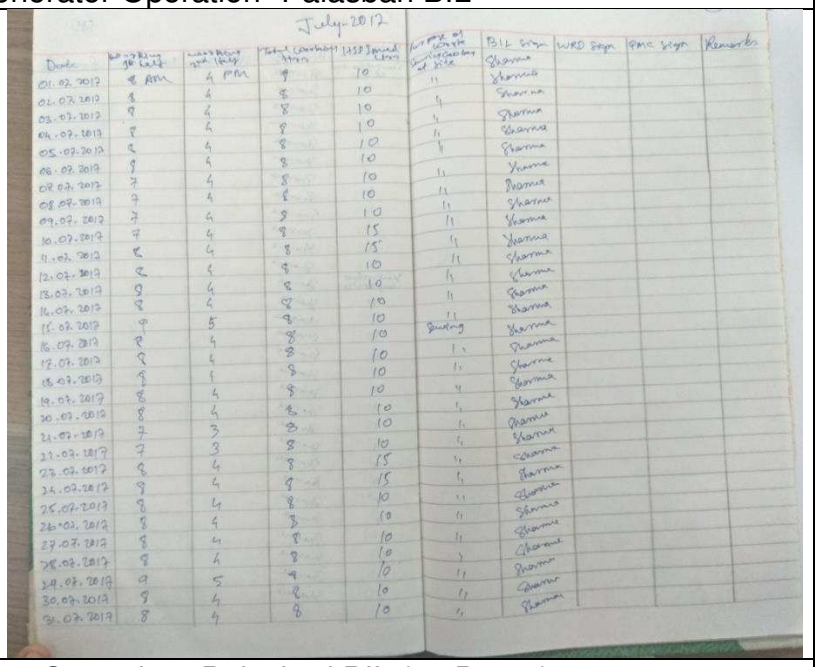
- specific sites with barrier protection and impervious pads for fuelling and servicing were established at sites
- fuel, lubricants and chemical products were kept in special, water tight area, without drainage exit to the river; material to be kept in drums or safe tanks as per practicable
- appropriate pumps and nozzles for refueling were used. Disconnected hoses were placed in containers to prevent spills of residual fuel
- off-site spent lubricants mostly collected and safely disposed
- storm water that collects in secondary containment areas were inspected before release

		Explanatory comments
Overall Compliance	**Good**	1. Contractor arranges training on implementation of EMP for their staffs in Palasbari. 2. Sanitary toilets are installed in all the site camps. As most of the labours are local, sanitary toilets are not present at the temporary labour camps. 3. Safe drinking water used in all the site camps. Where ever not possible contractor provided packaged drinking water. 4. Awareness meeting has been carried out on solid waste management in all the camps 5. Generators are used during the daylight hours 6. Contractors use dust control measures 7. Soil and granular materials are mostly covered by tarpaulin during transport 8. Fuel and lubricants are kept far away from river in specific areas 9. Oil checks of the vehicles and generators are done regularly 10. The environmental standards (Central Pollution Control Board, MoEF & CC, GoI) applicable for the sites are kept at the site for reference. 11. Suggestion made on- Ambient test frequency to be at par EMP.



15 KV generator Operation- Palasbari BIL





50 KV generator Operation- Palasbari BIL (on Berge)

Diesel storage – Palasbari, BIL

15 KVA generator installed in the camp, Palasbari, BIL

4.1.3. Mitigation Effectiveness

- To monitor the mitigation effectiveness the parameters mentioned in EMP were monitored.
- No complaints were lodged to SIO on environmental pollution by any of the fringe villagers, NGO's or other institutions in any of the project sites.
- Results of the ambient environmental tests were within the permissible limit of Central Pollution Control Board, MoEF &CC, GoI.
- Frequency of monitoring (particularly the Test frequency) were not as par the EMP schedule in the initial stages but during this reporting period the contractors have carried out the required tests of ambient environment.

To monitor the mitigation effectiveness the following parameters were monitored.

Table-6: Mitigation Effectiveness during January to July, 2017

	Palasbari–Embankment (Test done March-2017)	Palasbari–Apron (Test done and reports submitted, March, 2017)	Dibrugarh – DTP Dyke (Test done November, 2016) work completed Jan, 2017	Dibrugarh – Mothola Oakland (Test Carried out April, 2016) (completed before Dec, 2016
Ambient Air quality	Within the permissible limit	Within the permissible limit	Within the permissible limit	Within the permissible limit
Surface Water Quality	Within the permissible limit	Within the permissible limit	Not carried out this time	Within the permissible limit
Ground Water Quality	Within the permissible limit	Within the permissible limit	Within the permissible limit	Within the permissible limit
Noise level	Within the permissible limit	Within the permissible limit	Within the permissible limit	Within the permissible limit
Pollution level of the vehicles used at site	PUC certificates present	PUC certificates present	PUC certificates present	PUC certificates present
Complaint lodged by the local residents on Environmental pollution by the construction activity. Jan to July, 2017	No complaints lodged	No complaints lodged	No complaints lodged	No complaints lodged

4.2. Emission Discharge (Source) Monitoring Program (if Relevant)

Not relevant to this project.

4.3. Ambient Monitoring Program (if Relevant)

To monitor the ambient environment the following parameters are to be monitored with the frequencies described in the SEIA. All the tests were performed from the Pollution Control Board, Assam and its approved labs.

- For **Air Quality** :
  SPM, RSPM, SO2, NOx, CO, Pb - With in 100 m of Hot mix plant, construction camp, crusher and near sensitive locations/ settlement – Continuous 24- hourly, once every year (summer).

- For **Dust & Smoke** :
  Details of water sprinkling and frequency of sprinkling per day

- **Vehicular pollution** :
  Emission records of vehicular pollution of all the vehicles used

- **Surface Water** :
  pH, BOD, COD, TDS, TSS, DO, Oil and Grease – from Brahmaputra River - Once during the dry season.

- **Ground water** :
  pH, BOD,DO, total coliform, As, Cd, Mn and Ground Water levels – Construction site, Rehabilitation site, service areas, - Once at the start of construction

- **Noise** :
  Noise Level in dB (A) – Near the construction sites and sensitive locations close to embankment – One day hourly measurement, once in six months

4.3.1. Summary of Monitoring

Table-7: Ambient Environment Monitoring Plan

Attribute	Parameter	Special Guidance	Standards	Frequency	Duration	Location	Implementation
Air	SO_2, NO_x, SPM, RSPM, CO, Pb	High volume sampler to be located 50m from the river bank site Downwind direction. Use method specified by PCB, Assam for analysis	Air (prevention and Control of Pollution) Rules, CPCB, 2009	Six times	24 hours Sampling	Along the river bank area	Contractor
Surface Water	pH, BOD, COD, TDS, TSS, DO	Grab sample collected from source and Analyse as per Standard Methods for Examination of Water	Indian Standards for Inland Surface Waters (IS: 2296, 1982	Two times including baseline	Grab Sampling	Along the Surface water sources	Contractor
Ground Water	pH, BOD, DO, Total Coliform, As, Cd, Mn			Two times including baseline			Contractor
Noise	Noise levels on dB (A) scale	Equivalent noise levels using an integrated noise level meter kept at a distance of 15 m from the river bank construction area.	MoEF Noise Rules, 2000	One time including baseline	Leq in dB(A) of day time and night time	Along the river bank	Contractor

4.3.3. Results

Results of the specific tests on the selected parameters (during January 2017 to July, 2017) samples collected lies within permissible limits described in the

'*Environmental Standards for Ambient Air, Automobiles, Fuels, Industries and Noise, 2000'* (Central Pollution Control Board) and a minor difference between the baseline and the test results during the work being observed, this suggest that the contractor's activity has complied with the contract stipulations on protection of environment.

Table-8. Quality of ambient Air at the site during January to July, 2017

Parameter	Palasbari Apron, Mar, 2017	Palasbari Embankment, Mar, 2017			DTP Dyke Nov, 2011
		Ch. 3560	Ch 250	Ch 1200	
PM 2.5	35	34.4	36.7	35.9	Was within prescribed limit
PM10	66	65.3	64.2	68	
NO2	12	11.2	13.9	9.4	
SO2	4.1	4	4.5	3.8	
Weather	Clear	Clear	Clear	Clear	

(Ref: Appendix-1)

Table-9. Quality of Ground Water at the site during January- July, 2017

Parameter	Palasbari Apron (BIL) Drinking water quality
Hazen unit	
Turbidity	BDL
pH	6.83
TDS mg/l	87.3
BOD	8.7
COD	37.9
DO	5.1
Ca	42.9
Cl	27.8
Fluorides	0.38
Fe	0.2659
Mg	21.6
NO_3	5.4
SO_2	11,6
Total alkalinity $CaCO_3$	58.7
Total Hardness mg/L	63.8

(Ref: Appendix-1)

Table-10. Quality of Surface Water at the site during January- July, 2017

Parameters	Units	Results		
		Palasbari Apron - Upstream	Palasbari Apron – Down stream	Palasbari Embankment
Temperature	C	22	23	20
pH		6.9	7.8	7.1
Dissolved Oxygen	mg/l	8.7	7.5	6.8
Biological Oxygen Demand	mg/l	4.2	3.9	3.7
Chemical oxygen Demand	mg/l	43.6	61.2	57.5
Total suspended solid	mg/l	355.8	375.6	359.6
TDS		178.5	212.4	176.9
Oil and Grease	mg/l	0.5	0.7	0.2

(Ref: Appendix-1)

Table-11. Quality of Noise at the site during January- July, 2017

Parameter	Palasbari Apron- (test- March, 2017)		Palasbari Embankment (test March, 2017)			Dibrugarh DTP Dyke
Location	Ch 1200	Near 15 KV gen set	Ch 3560	Ch 250	Ch 1200	
Noise levels on dB (A) scale Day Time	50.1	71.4	48.1	51.7	52.0	Test on Nov, 2016 and was within limit

		Explanatory comments
Ambient Environment condition	**Good**	• For those sites where the tests are being conducted, the results are within the prescribed limits of the Central Pollution Control Board, MoEF & CC, GoI. • All the works are limited within daylight hours. • As the surface water at the working site contains grease and oils below the detectable

		level, it indicates that the contractor is following the environmental norms prescribed to reduce water pollution. • All the generators were operated during Day time only. • Ear plugs were used by the workers on the Berge under Palasbari.

4.3.3. Assessment

Table-12. Comparison of ambient Air, Surface water, Ground water and Noise at the site with the baseline data and National Standards.

Ambient Air

Parameter	National Standard	Palasbari Apron, Mar, 2017	Palasbari Embankment, Mar, 2017			DTP Dyke Nov, 2011
			Ch. 3560	Ch 250	Ch 1200	
PM 2.5	60 μg/m^3	35	34.4	36.7	35.9	Was within prescribed limit
PM10	100 μg/m^3	66	65.3	64.2	68	
NO2	80 μg/m^3	12	11.2	13.9	9.4	
SO2	80 μg/m^3	4.1	4	4.5	3.8	
Weather		Clear	Clear	Clear	Clear	

Noise

Parameter	National Standards	Palasbari Apron- (test- March, 2017)		Palasbari Embankment (test March, 2017)		
Location		Ch 1200	Near 15 KV gen set	Ch 3560	Ch 250	Ch 1200
Noise levels on dB (A) scale Day Time	Area Code / Category of Area / Zone / Limits in dB(A) Leq*: (A) Industrial area — Day Time 75, Night Time 70; (B) Commercial area — 65, 55; (C) Residential area — 55, 45; (D) Silence Zone — 50, 40	50.1	71.4	48.1	51.7	52.0

Surface water quality

Parameters	Units	Results		
		Palasbari Apron - Upstream	Palasbari Apron – Down stream	Palasbari Embankment
Temperature	C	22	23	20
pH		6.9	7.8	7.1
Dissolved Oxygen	mg/l	8.7	7.5	6.8
Biological Oxygen Demand	mg/l	4.2	3.9	3.7
Chemical oxygen Demand	mg/l	43.6	61.2	57.5
Total suspended solid	mg/l	355.8	375.6	359.6
TDS		178.5	212.4	176.9
Oil and Grease	mg/l	0.5	0.7	0.2

		Explanatory comments
Ambient Environment condition	**Good**	• Noise level was within the prescribed limit for Industrial areas under Dibrugarh. Noise level in Palasbari area falls under commercial area. • Ground Water quality of the river bank in Palasbari was found within the limit. • Surface Water quality of the river bank in Palasbari was found within the limit. • Air quality was within the prescribed standards.

5. Key Environmental Issues

5.1.1. Key Issues Identified

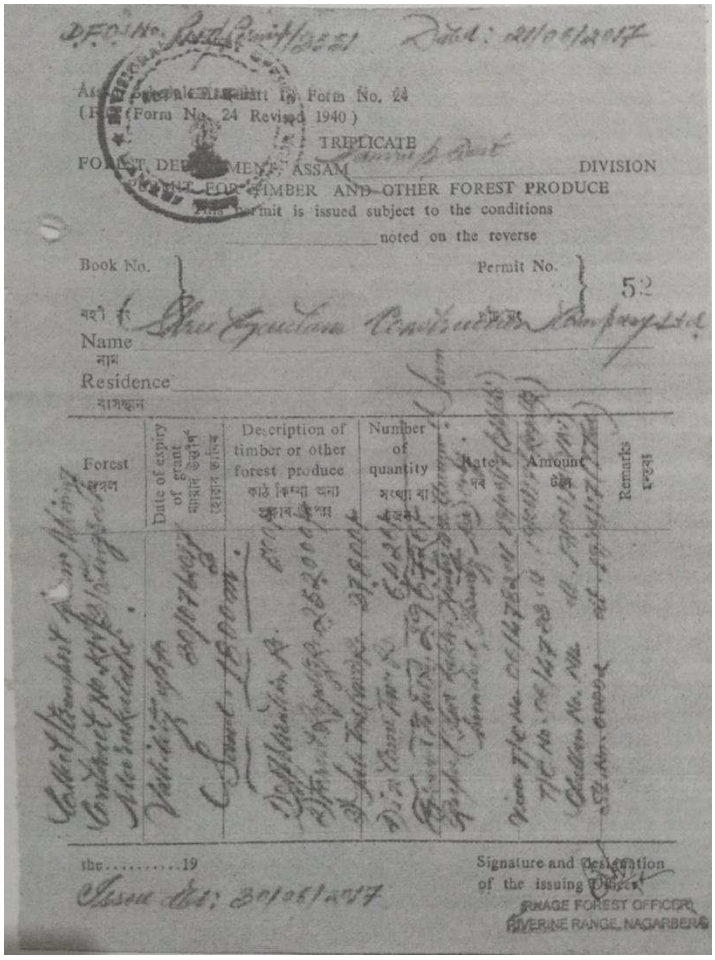
- Environmental Inspector was not recruited by the contractor on time; there was delay in initiation of the EMP works. But after training they were reporting monthly.

- Preparation of EMP, EMoP, monthly environmental Reports were later taken up by the contractors
- Documentation of environmental safeguards was moderately satisfactory.
- Contractors usually do not go through the environment section of the contract document thoroughly.
- Contractors were not aware of the tests to be conducted to know the ambient air quality, surface water quality ground water quality and noise levels.
- Frequency of the tests for ambient environment was not at per EMoP. But during this reporting period it was followed. All the parameters prescribed in EMoP were not tested.
- Contractors were also not aware of the solid waste management at worksite,
- PUC of the vehicles maintained and were in limit.
- Monitoring by SIO's improved on safeguard issues but still they must be trained on ADB's safeguard procedures

5.1.2. Action Taken

- Several meetings and training were organized to aware the contractors on the environmental safeguard of ADB (Strategy and directions), stipulations of the contract document, testing of selected environmental parameters, national environmental standards, acts and rules of MoEF & CC, GoI and Government of Assam.
- Palasbari contractor has started monthly training on implementation of EMP for their staff.
- PMC and FREMAA helped in the preparation of EMP and EMoP,
- Assisted in preparation of monthly environmental Reports
- Check list prepared for the SIOs to check the environmental safeguards followed or not during preparation of the bills by the contractors.
- Contractors improved reporting mechanism.
- Keeping of environment registers (operation time of Gen sets, test reports, Attendance register of environment and safety officers, etc.) were initiated by the contractors.
- Health camp and AIDS awareness camps organized by one of the contractor (Palasbari Apron).
- PUC of all the vehicles were maintained.

- Forest Royalty papers documented in the monthly Environment report.



5.1.3. Additional Action Required

- Constant monitoring and providing suggestions on the implementation of the EMP by FREMAA and PMC.
- Frequency of the tests to be maintained as per EMP submitted by the contractors
- Awareness on environmental safeguards – contractor, SIO and local residents / fringe communities

6. Conclusion

6.1. Overall Progress of implementation of Environmental Management Measures

		Explanatory comments
Overall Project implementation measures	**Good**	• After the training the contractors become aware about the importance of the environmental safeguards. Monthly environmental report submitted to SIOs. • The contractors after few trainings developed perceptions on the National Acts and Rules and standards. • All contractors prepared the EMP and followed most of the EMP specifications. • Monthly environmental reporting on the implementation of EMP has started. Monthly Environmental Reports are submitted regularly to SIO. • They also developed few mitigation measures like spraying or water, covering the sand and soil with tarpaulin while transport. Solid waste management at camp sites • Drinking water facility at work site or camp site

6.2. Problems Identified and Actions Recommended

Problems

- Awareness about the importance of environmental safeguards in the construction works, particularly in this part of India is very poor
- Local people have less knowledge on the environmental issues and environmental standards.
- Awareness of the people on lodging complaints of environmental pollution if any was not adequate.
- Officials of Water Resource Department do not practice the Environmental Safeguards for the projects of the State or Central Government of India, so they are not trained for such implementation of the EMP prescribed measures. Hence the implementation of the EMP was not as per the schedule including the frequency of the tests to be performed, and the

parameters of the tests by the contractors. But at the later stages they were aware of the procedures of EMP.

- Documentation and reporting on environment safeguard were still to be improved. After repeated training and instructions from PMC and FREMAA, this section still required improvement.

Actions Recommended

- Regular awareness Training on Environmental Safeguards required for the contractors
- Awareness required for the implementing officers on the ADB's safeguard Policy statements
  - Awareness and training required to incorporate basic ideas on current environmental safety issues and relate it with the development and economy.
  - Use of special enclosures and critical grade silencers to be used to reduce the noise level during geo bag damping.

- In future projects or in Tranche 2, following can be thought of :
  - Pre bid awareness workshop on the implementation of EMP for the probable bidders.
  - Awareness/ training on the preparation of EMP budget of the contractor.
  - Qualification and experience of the environment and safety officers to be strictly followed as in the case of civil works.
  - Workshop on implementation of EMP for the awarded contractors and environment and safety officers
  - Exposure of the environment and safety officers to the best sites (on Implementation of EMP) of the nearby project within the state.

Appendix 1 Ambient Monitoring Results (Scanned copy of the reports)
Air Quality – Palasbari embankment (Contractor SGCCL)

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AMBIENT AIR ANALYSIS REPORT

Rep.No. 170328_1503048_01_925/982 Date: 28/03/2017

Name & Address:

M/s. Shree Gautam Construction Co. Ltd.
Project Name: (Construction of palasbari Embankment with black topped road and slop protection works above LWL along the Brahmaputra River), Dist: Kamrup, Assam.

SL. NO.	DATE OF SAMPLING	LOCATION/ SOURCE	WEATHER	PARAMETERS			
				PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)
i)	23/03/17	Near Palasbari Ward No. 7 (Ch. 3560m)	Clear	65.3	34.4	11.2	4.0
ii)		Near Palasbari Ward No. 1 (Ch. 250m)		64.2	36.7	13.9	4.5
iii)		Satilapur (Ch. 1200m)		68.0	35.9	9.4	3.8

Remarks: - Parameters are within the permissible limit.

NATIONAL AMBIENT AIR QUALITY STANDARDS:

SL.No	Pollutant	Time Weighted Average	Concentration in Ambient Air
			Industrial, Residential, Rural and Other Area
1	Sulphur Dioxide (SO_2), $\mu g/m^3$	24 hours	80
2	Nitrogen Dioxide (NO_x), $\mu g/m^3$	24 hours	80
3	Particulate Matter (PM_{10}), $\mu g/m^3$	24 hours	100
4	Particulate Matter ($PM_{2.5}$), $\mu g/m^3$	24 hours	60

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(Quality control Manager)

Note: i) The results relate only to the parameters tested
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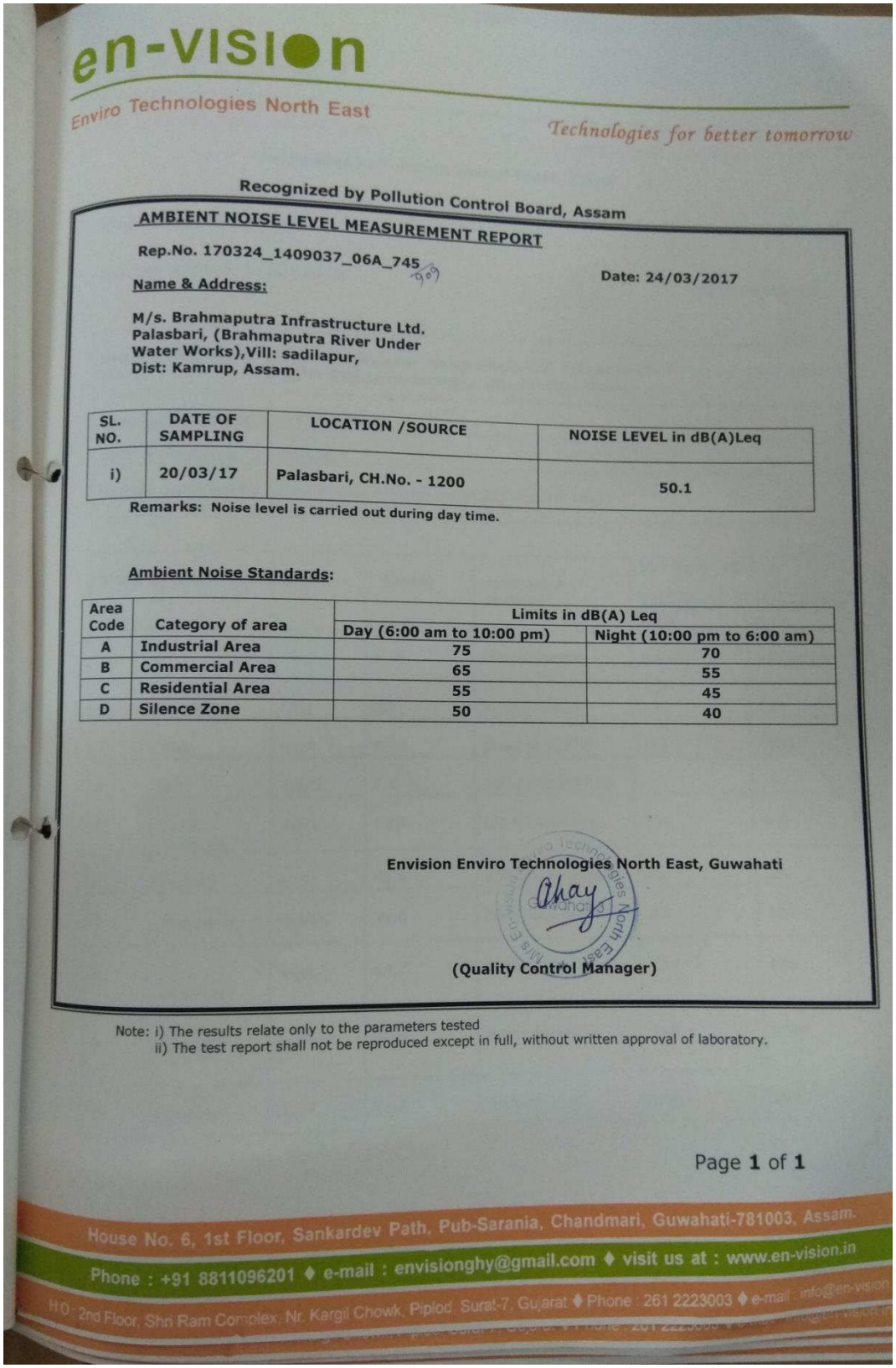
Quality of Noise- Palasbari Apron



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AMBIENT NOISE LEVEL MEASUREMENT REPORT

Rep.No. 170324_1409037_06A_745

Date: 24/03/2017

Name & Address:

M/s. Brahmaputra Infrastructure Ltd.
Palasbari, (Brahmaputra River Under
Water Works),Vill: sadilapur,
Dist: Kamrup, Assam.

SL. NO.	DATE OF SAMPLING	LOCATION /SOURCE	NOISE LEVEL in dB(A)Leq
i)	20/03/17	Palasbari, CH.No. - 1200	50.1

Remarks: Noise level is carried out during day time.

Ambient Noise Standards:

Area Code	Category of area	Limits in dB(A) Leq	
		Day (6:00 am to 10:00 pm)	Night (10:00 pm to 6:00 am)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

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(Quality Control Manager)

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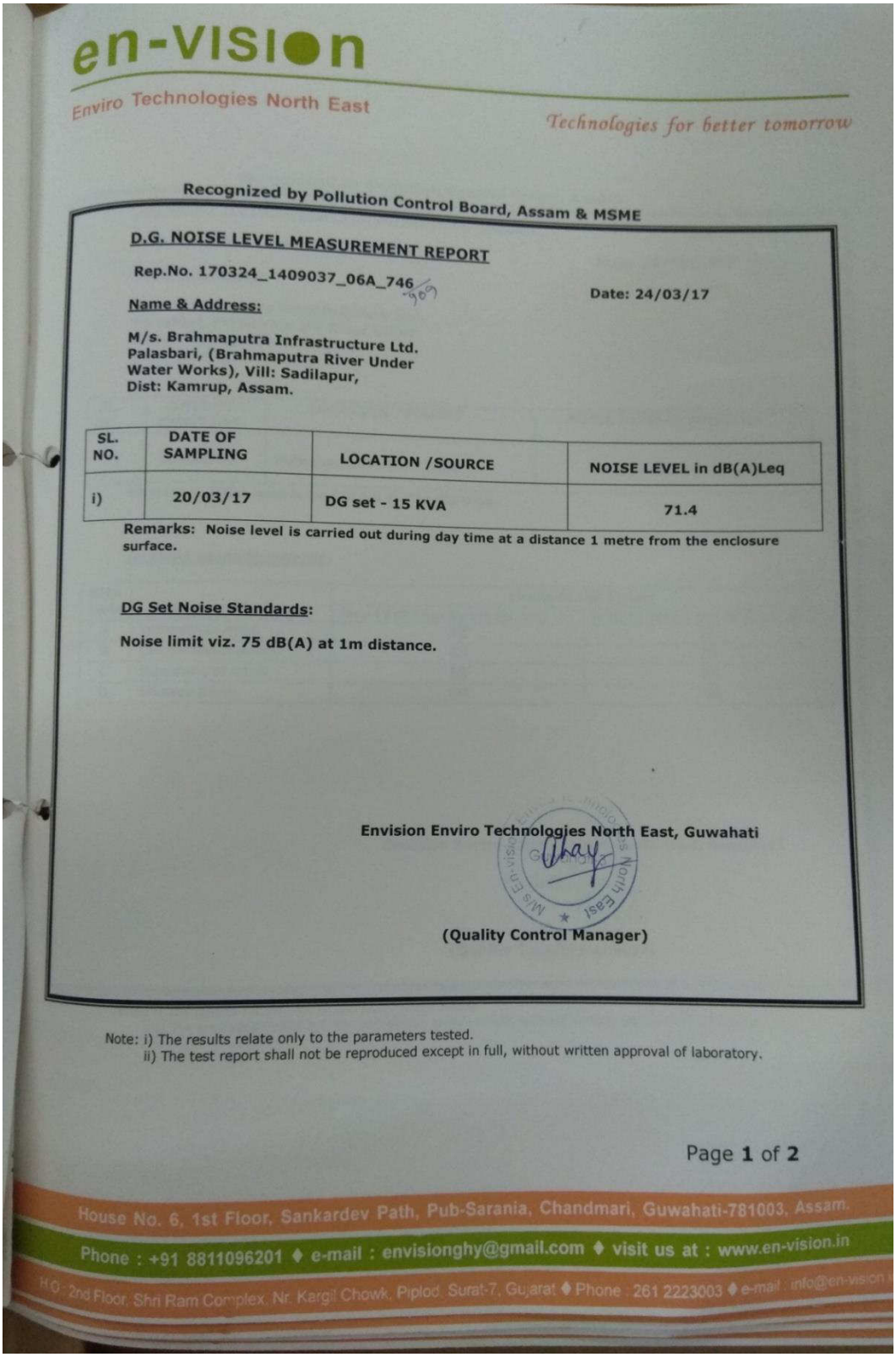
Quality of Noise- Palasbari Apron (near 15 KV Gen set)



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D.G. NOISE LEVEL MEASUREMENT REPORT

Rep.No. 170324_1409037_06A_746

Date: 24/03/17

Name & Address:

M/s. Brahmaputra Infrastructure Ltd.
Palasbari, (Brahmaputra River Under
Water Works), Vill: Sadilapur,
Dist: Kamrup, Assam.

SL. NO.	DATE OF SAMPLING	LOCATION /SOURCE	NOISE LEVEL in dB(A)Leq
i)	20/03/17	DG set - 15 KVA	71.4

Remarks: Noise level is carried out during day time at a distance 1 metre from the enclosure surface.

DG Set Noise Standards:

Noise limit viz. 75 dB(A) at 1m distance.

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(Quality Control Manager)

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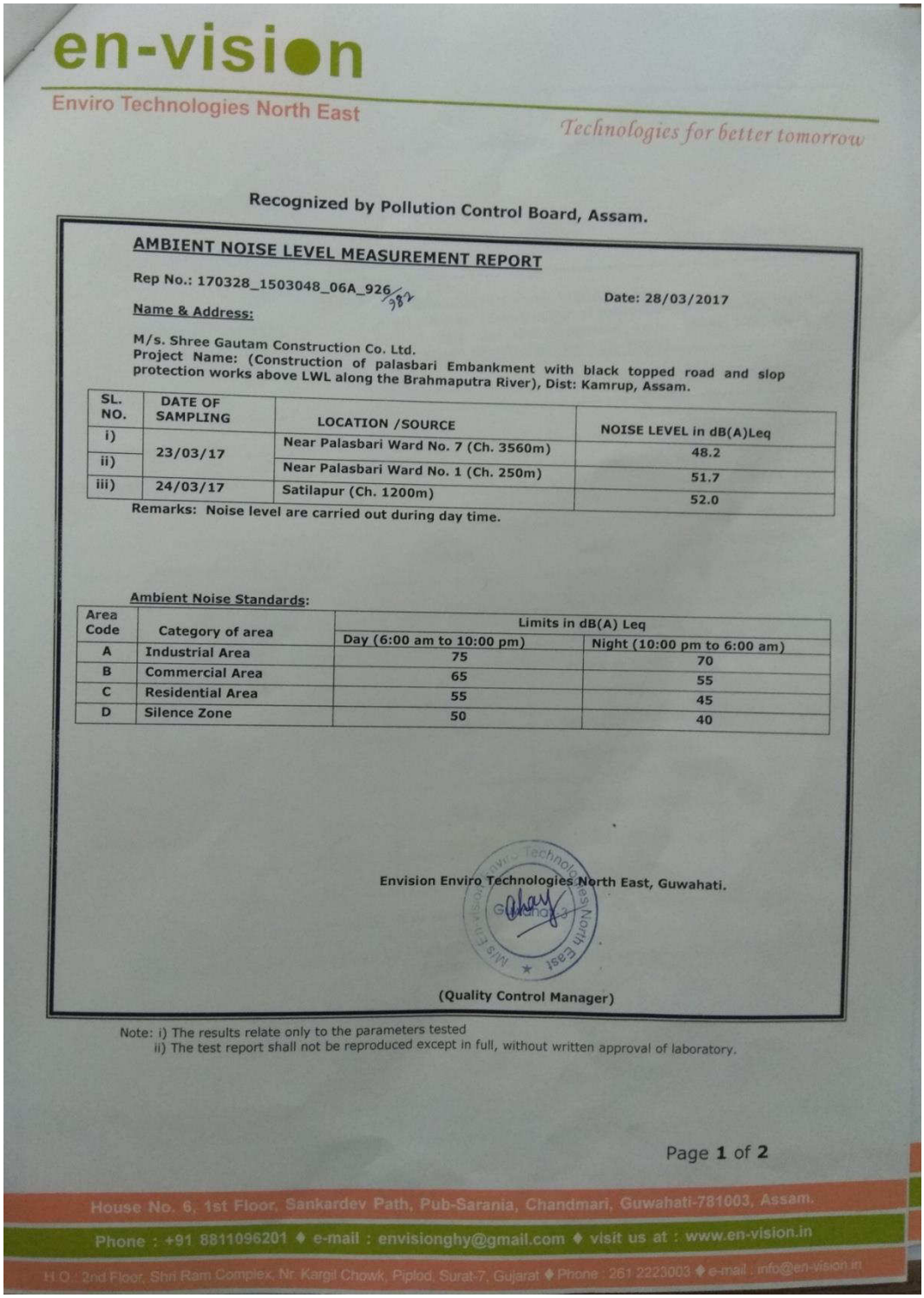
Quality of Noise- Palasbari Sub Project (Palasbari Embankment)



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AMBIENT NOISE LEVEL MEASUREMENT REPORT

Rep No.: 170328_1503048_06A_926/987

Date: 28/03/2017

Name & Address:

M/s. Shree Gautam Construction Co. Ltd.
Project Name: (Construction of palasbari Embankment with black topped road and slop protection works above LWL along the Brahmaputra River), Dist: Kamrup, Assam.

SL. NO.	DATE OF SAMPLING	LOCATION /SOURCE	NOISE LEVEL in dB(A)Leq
i)	23/03/17	Near Palasbari Ward No. 7 (Ch. 3560m)	48.2
ii)		Near Palasbari Ward No. 1 (Ch. 250m)	51.7
iii)	24/03/17	Satilapur (Ch. 1200m)	52.0

Remarks: Noise level are carried out during day time.

Ambient Noise Standards:

Area Code	Category of area	Limits in dB(A) Leq	
		Day (6:00 am to 10:00 pm)	Night (10:00 pm to 6:00 am)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Envision Enviro Technologies North East, Guwahati.

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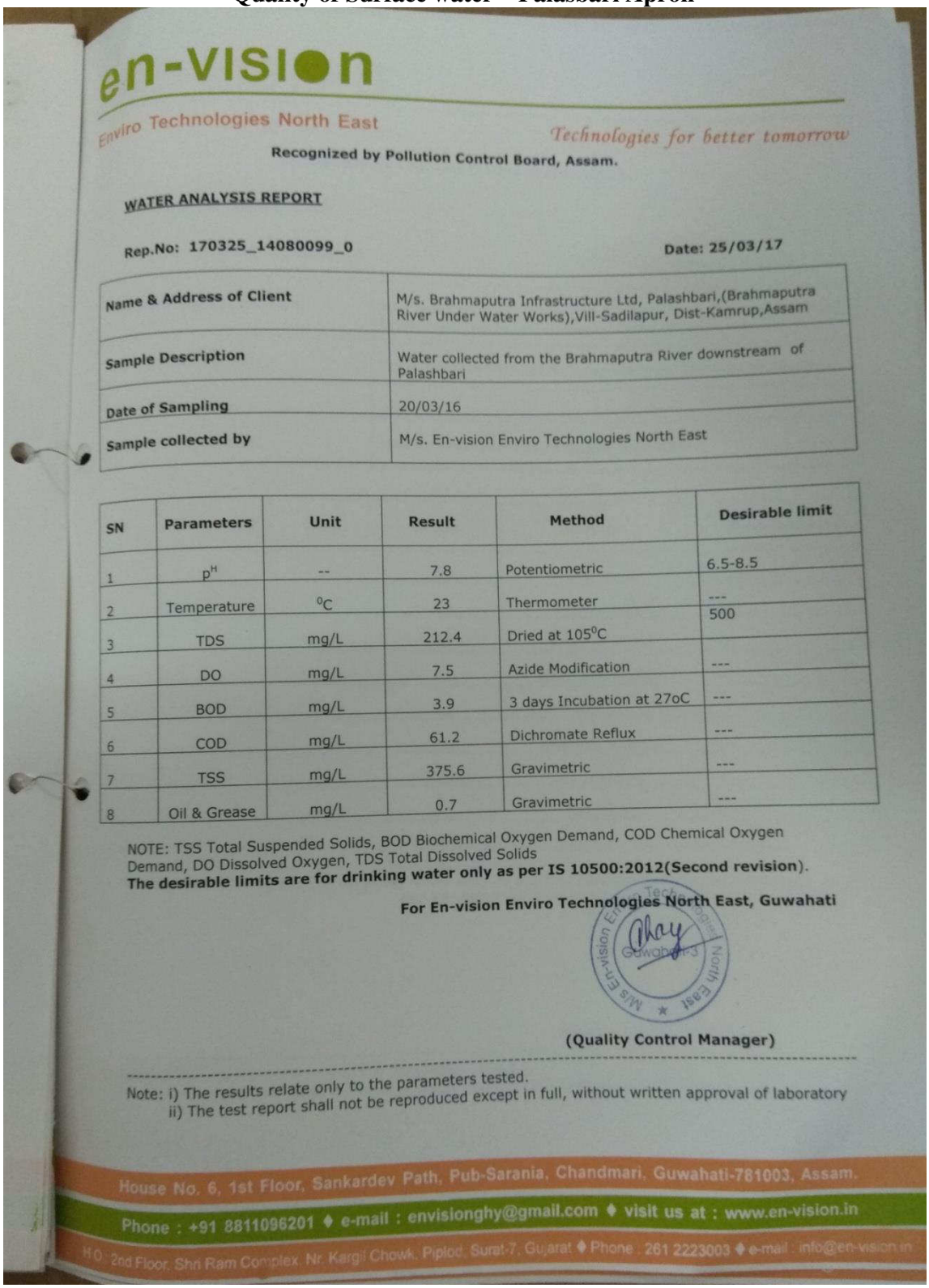
Quality of Surface water – Palasbari Apron



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WATER ANALYSIS REPORT

Rep.No: 170325_14080099_0 **Date: 25/03/17**

Name & Address of Client	M/s. Brahmaputra Infrastructure Ltd, Palashbari,(Brahmaputra River Under Water Works),Vill-Sadilapur, Dist-Kamrup,Assam
Sample Description	Water collected from the Brahmaputra River downstream of Palashbari
Date of Sampling	20/03/16
Sample collected by	M/s. En-vision Enviro Technologies North East

SN	Parameters	Unit	Result	Method	Desirable limit
1	p^H	--	7.8	Potentiometric	6.5-8.5
2	Temperature	^0C	23	Thermometer	---
3	TDS	mg/L	212.4	Dried at 105^0C	500
4	DO	mg/L	7.5	Azide Modification	---
5	BOD	mg/L	3.9	3 days Incubation at 27oC	---
6	COD	mg/L	61.2	Dichromate Reflux	---
7	TSS	mg/L	375.6	Gravimetric	---
8	Oil & Grease	mg/L	0.7	Gravimetric	---

NOTE: TSS Total Suspended Solids, BOD Biochemical Oxygen Demand, COD Chemical Oxygen Demand, DO Dissolved Oxygen, TDS Total Dissolved Solids

The desirable limits are for drinking water only as per IS 10500:2012(Second revision).

For En-vision Enviro Technologies North East, Guwahati

(Quality Control Manager)

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WATER ANALYSIS REPORT

Rep.No: 170325_14080099_0 **Date: 25/03/17**

Name & Address of Client	M/s. Brahmaputra Infrastructure Ltd, Palashbari,(Brahmaputra River Under Water Works),Vill-Sadilapur, Dist-Kamrup,Assam
Sample Description	Water collected from the Brahmaputra River upstream of Palashbari
Date of Sampling	20/03/17
Sample collected by	M/s. En-vision Enviro Technologies North East

SN	Parameters	Unit	Result	Method	Desirable limit
1	p^H	--	6.9	Potentiometric	6.5-8.5
2	Temperature	^0C	22	Thermometer	---
3	TDS	mg/L	178.5	Dried at 105^0C	500
4	DO	mg/L	8.7	Azide Modification	---
5	BOD	mg/L	4.2	3 days Incubation at 27oC	---
6	COD	mg/L	43.6	Dichromate Reflux	---
7	TSS	mg/L	355.8	Gravimetric	---
8	Oil & Grease	mg/L	0.5	Gravimetric	---

NOTE: TSS Total Suspended Solids, BOD Biochemical Oxygen Demand, COD Chemical Oxygen Demand, DO Dissolved Oxygen, TDS Total Dissolved Solids

The desirable limits are for drinking water only as per IS 10500:2012 (second revision).

For En-vision Enviro Technologies North East, Guwahati

M/s En-vision Enviro Technologies North East

(Quality Control Manager)

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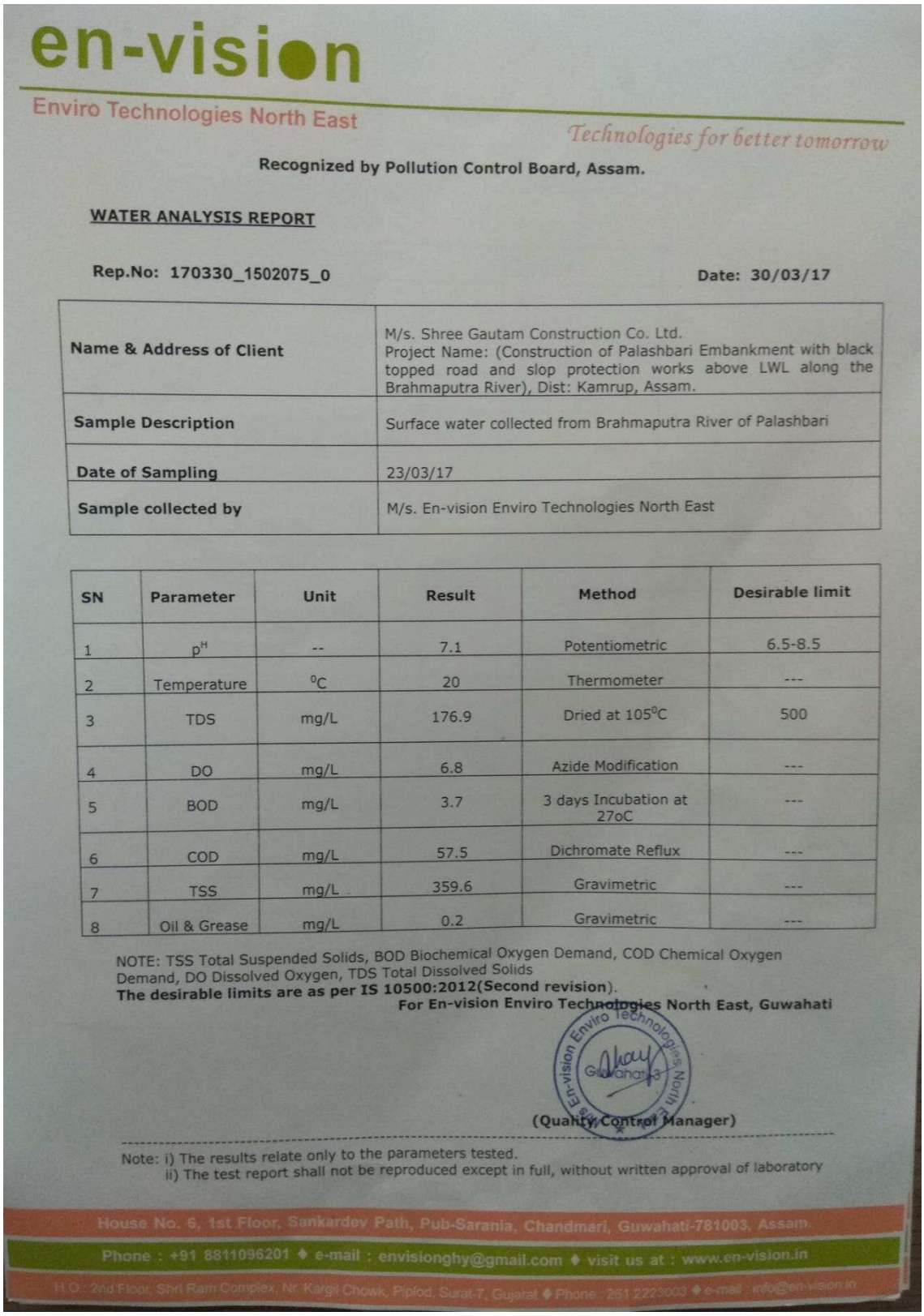
Quality of Surface water – Palasbari Embankment



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WATER ANALYSIS REPORT

Rep.No: 170330_1502075_0 **Date: 30/03/17**

Name & Address of Client	M/s. Shree Gautam Construction Co. Ltd. Project Name: (Construction of Palashbari Embankment with black topped road and slop protection works above LWL along the Brahmaputra River), Dist: Kamrup, Assam.
Sample Description	Surface water collected from Brahmaputra River of Palashbari
Date of Sampling	23/03/17
Sample collected by	M/s. En-vision Enviro Technologies North East

SN	Parameter	Unit	Result	Method	Desirable limit
1	p^H	--	7.1	Potentiometric	6.5-8.5
2	Temperature	^0C	20	Thermometer	---
3	TDS	mg/L	176.9	Dried at 105^0C	500
4	DO	mg/L	6.8	Azide Modification	---
5	BOD	mg/L	3.7	3 days Incubation at 27oC	---
6	COD	mg/L	57.5	Dichromate Reflux	---
7	TSS	mg/L	359.6	Gravimetric	---
8	Oil & Grease	mg/L	0.2	Gravimetric	---

NOTE: TSS Total Suspended Solids, BOD Biochemical Oxygen Demand, COD Chemical Oxygen Demand, DO Dissolved Oxygen, TDS Total Dissolved Solids

The desirable limits are as per IS 10500:2012(Second revision).

For En-vision Enviro Technologies North East, Guwahati

En-vision Enviro Technologies North East Guwahati-13

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Quality of Drinking Water -Palasbari Apron (BIL)

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WATER ANALYSIS REPORT

Rep.No: 170325_14080099_0

Date: 25/03/17

Name & Address of Client	M/s. Brahmaputra Infrastructure Ltd, Palashbari,(Brahmaputra River Under Water Works),Vill-Sadilapur, Dist-Kamrup, Assam
Sample Description	Drinking Water
Date of Sampling	20/03/17
Sample collected by	M/s. En-vision Enviro Technologies North East.

Sl No.	Parameters	Unit	Result	Reference Method	IS 10500: 2012	
					Acceptable limit	Permissible limit
1	p^H	---	6.83	Potentiometric	6.5-8.5	No relaxation
2	Turbidity	NTU	BDL	Nephelometric	1.0	5.0
3	TDS	mg/L	87.3	Dried at 105^0 C	500	2000
4	DO	mg/L	5.1	Azide Modification	----	----
5	Total hardness	mg/L	63.8	EDTA Titrimetric	200	600
6	Calcium	mg/L	42.9	EDTA Titrimetric	75	200
7	Magnesium	mg/L	21.6	EDTA Titrimetric	30	100
8	Total Alkalinity	mg/L	58.7	Titrimetric	200	600
9	Chloride	mg/L	27.8	Argentometric	250	1000
10	Sulphate	mg/L	11.6	Turbidimetric	200	400

Cont...

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Sl No.	Parameters	Unit	Result	Reference Method	IS 10500: 2012	
					Acceptable limit	Permissible limit
11	Nitrate	mg/L	5.4	Spectrophotometric	45	No relaxation
12	Fluoride	mg/L	0.38	SPADNS Method	1.0	1.5
13	Residual Chlorine	mg/L	BDL	Iodometric	0.2	1.0
14	Copper	mg/L	0.0187	Flame AAS	0.05	1.5
15	Iron(as Fe)	mg/L	0.2659	Flame AAS	0.3	No relaxation
16	Cadmium	mg/L	BDL	Flame AAS	0.003	No relaxation
17	Lead	mg/L	BDL	Flame AAS	0.01	No relaxation
18	Zinc	mg/L	0.3465	Flame AAS	5	15
19	Total Chromium	mg/L	0.0023	Flame AAS	0.05	No relaxation
20	Manganese	mg/L	0.0317	Flame AAS	0.1	0.3
21	Selenium	mg/L	0.0035	Flame AAS	0.01	No relaxation
22	BOD	mg/L	8.7	Incubation 3 days, 27°C	----	----
23	COD	mg/L	37.9	Dichromate Reflux	----	----

All the measurement methods conform to IS 10500:2012 &World Health Organization (WHO) Guidelines.

For En-vision Enviro Technologies North East, Guwahati

(Quality Control Manager)

Note: i) The results relate only to the parameters tested.
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Appendix 2: Monthly Environmental Report (Sample copy)

Monthly Environment Report of Palasbari Apron contractor – July, 2017

Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program

Tranche-1	Sub Project
Contractor : Brahmaputra Infrastructure Limited.	Project No : 38412
Date of Agreement :	Contract Period :
Target Date of Completion : August 2017	Extended upto :
Name of the Environmental Inspector : Nilutpal Mahanta.	Month : July Year: 2017

Monthly Environmental Report

Sl		Status	Remarks
1	**Environment**		
1.1	**Sources of materials**		
1.1.a	Use quarry sites and sources permitted by Government	Yes.	Royalty paid.
1.1.b	Verify suitability and approval by SIO	Yes	
1.1.c	Submission of monthly documentation of all material sources		
1.2	**Air**		
1.2.a	Spray water on dry surface to reduce dust in the air	Yes.	
1.2.b	Use tarpaulins to cover sand and other loose materials where transported by vehicles	Yes.	
1.2.c	Clean wheels and undercarriage of vehicles while leaving the site	Yes.	
1.2.d	Certificates on Vehicular Emission of all the vehicles used in the site	Yes.	Document attached.
1.2.e	Checked air quality by PCB approved lab		Document attached.
1.3	**Noise**		
1.3.a	Plan activities in consultation with SIO, community to reduce noise level		
1.3.b	Provide information to public about work schedule	Yes.	Sign board placed.
1.3.c	Horns not used, unless essential	Yes	
1.3.d	Minimize the noise by silencers	Yes	
1.3.e	Do not allow workers to an exposure of 80 dBA or above without ear plug	Yes.	Equipment more than 120dBA are not used.
1.3.f	Use of heavy vehicles from to	Yes	
1.3.g	Use of Generators KV from to	Yes	
1.3.h	Checked Noise level by PCB approved lab	Yes	
1.4	**Surface water quality**		
1.4.a	Avoid stockpiling of earth fill, especially during monsoon unless covered by tarpaulin or plastic sheets	Yes.	

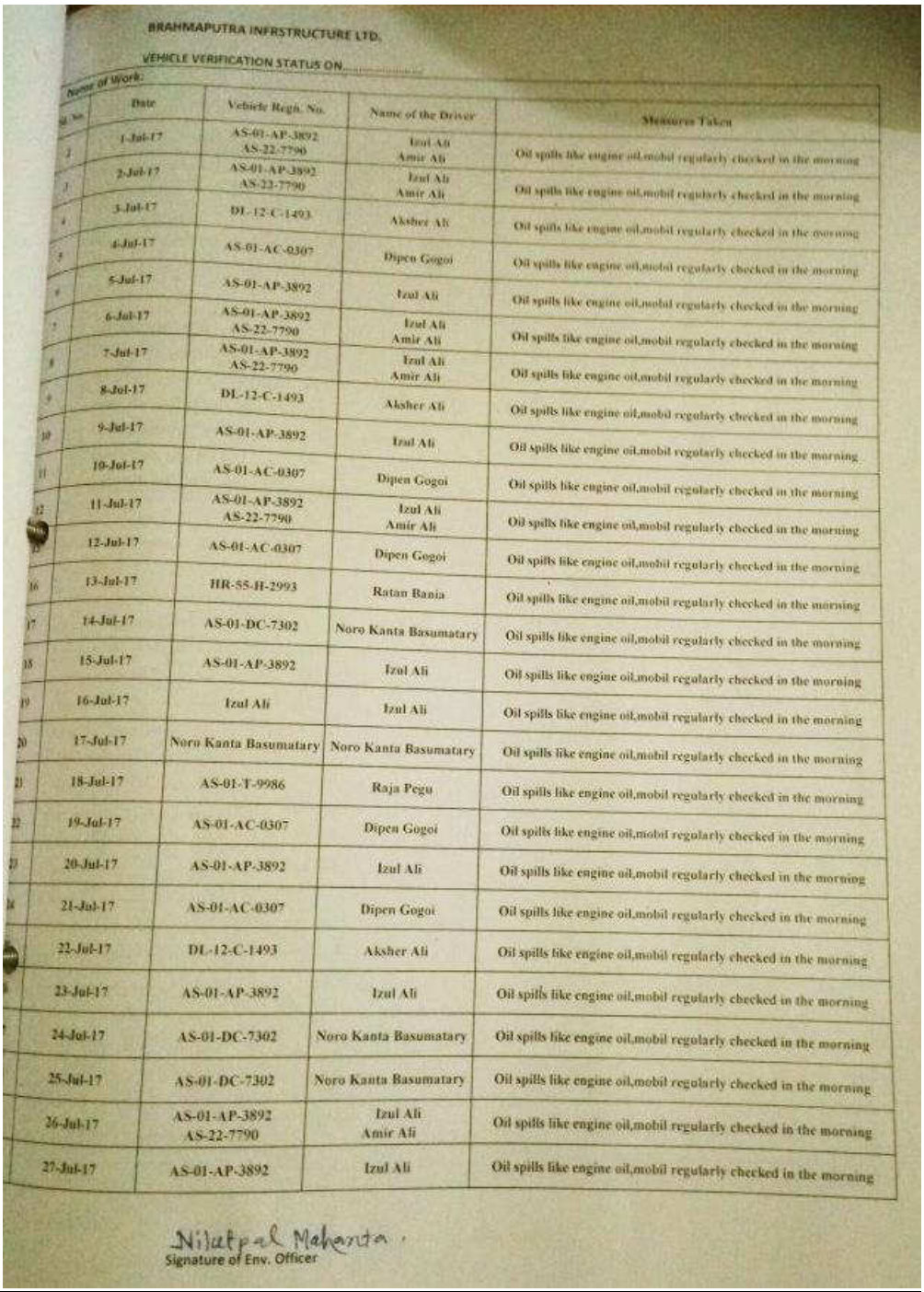
1

1.4.b	Install temporary silt traps or sedimentation basins along the drainage leading to water bodies	N/A	
1.4.c	Store fuel and lubricants away from the drains	Yes.	Distance more than 150
1.4.d	Checked surface water quality by PCB approved lab	Yes.	Test reports attached.
1.5	**Land Use**		
1.5.a	Has the contractor preserved the top soil for replacement after construction	N/A	
1.5.b	Status of the surface vegetation on the construction site prior to the initiation of the work (Detail report with number of trees cut and initial photographs of the area)		Not trees has been cut
1.5.c	Borrow pit – Rehabilitation of the borrow pit was done	N/A	
1.6	**Pollution**		
1.6.a	Spills of oils on the site and on river regularly checked	Yes.	
1.6.b	Necessary measures taken to stop it	Yes.	
1.6.c	What measures taken to remove the Used engine oils	Yes.	Carefully disposed.
1.6.d	Surface discharges monitored	Yes.	
1.7	**Disruption of Agricultural activities**		
1.7.a	Any agricultural activity in the flood embankment	No	
1.7.b	Any measures taken to minimize the impact on agricultural activity in the flood embankment	N/A	
1.7.c	Land used outside the flood embankment belongs to WRD or private	Private	
1.7.d	If private agricultural land is used proper compensation is made by the Contractor at current market value	No	
2	**Access routes (River)**		
2.a	Whether the Navigation routs are blocked ?	No	
2.b	How interference with the riverine traffic is minimized ?		Negligible traffic created.
2.c	All the floating equipments following navigation standards applicable in India.	Yes	
2.d	All the floating equipments following safety standards applicable in India.	Yes	
2.e	Any dredging operation done ?	No	
3	**Road**		
3.a	All the access roads inspected for their appropriateness for moving	Yes.	

	construction equipments		
3.b	If found inappropriate, strengthened by Contractor	Yes.	
3.c	Due to the movement of the heavy vehicles, the access road is degraded more than normal use	Yes.	
3.d	Contractor repaired the degraded access road	Yes.	
3.e	Access road for the fringe community is used / blocked and alternate route provided	No	Not blocked.
3.f	Conduct the work during light traffic	Yes.	
4	**Excavation and filling of Earth in Slope Protection**		
4.a	Whether the area has been surveyed, inspected and approved by the SIO after the identification of excavation and filling site	Yes.	
4.b	Whether contractor has submitted a map indicating the area of earth excavation and filling activities showing the earth cut and fill areas, based on the baseline survey.	Yes.	
5	**Sand Excavation**		
5	Whether the sand excavation area was approved by the SIO in writing	Yes.	Copy enclosed varified by SIO
5.b	Whether contractor has submitted a map indicating the area of planned sand excavation	Yes.	
5.c	Whether the sand excavation area is close to the work site or to char inhabitants	No	Selected site have no human settlement.
6	**Site Installations**		
6.a	Protection of trees for their preservation	Yes.	
6.b	Whether temporary roads were constructed ?	No	
6.c	Whether environmental friendly waste disposal system properly monitored and executed in the work sites ?	Yes.	
7	**Labour Camps**		
7.a	Consult SIO and fringe community for establishing the temporary office shed, camp and plant	Yes.	
7.b	Minimize the removal of vegetation and donot allow cutting of trees	Yes	
7.c	Provide safe drinking water to the camp inhabitants	Yes.	Filter installed.
7.d	Sanitation facility to the camp inhabitants	Yes.	Temporary toilet have been made.

7.e	Solid waste management practiced in the camps	Yes.	
7.f	Report SIO and fringe community before vacating the camp after the work	N/A	
8	**Agricultural Land and Crop Loss**		
8.a	Any loss or damage of agricultural land and crops due to project construction activities	N/A	
9	**Homestead Loss**		
9.a	Any home stead loss (including loss of trees, ponds, shifting of any other installations)	No	Addressed by RAP
10	**Drainage from Adjacent Area**		
10.a	Natural drainage system blocked or disrupted	No	
11	**Wildlife**		
11.a	Sighting of Dolphin (National Aquatic Animal)	Yes.	
12	**Fish productivity**		
12.a	Fish productivity increased or decreased (survey in the boat ghats)	No	Not much change noticed.
12.b	Landing facility- Change of Boat Ghats	Yes.	
13	**Display Materials**		
13.a	Signs like "Only Staff", "Restricted Area" displayed in relevant area	Yes.	
13.b	Safety (including traffic signs), notice board is available	Yes.	
14	**Health and Safety**		
14.a	Provision of First Aid and medical service available	Yes.	
	Provide GPS coordinates for most of the descriptions so that map can be prepared.		
15	*Additional comments or actions required*		

Signature by Environmental Inspector Nilotpal Mahanta. Date 1st August 2017 Contact Details Talataani, B.T. site camp.	Accepted/ Approved by SIO Date : Contact Details



BRAHMAPUTRA INFRSTRUCTURE LTD.

VEHICLE VERIFICATION STATUS ON.....

Name of Work:

Sl. No.	Date	Vehicle Regn. No.	Name of the Driver	Measures Taken
2	1-Jul-17	AS-01-AP-3892 AS-22-7790	Izul Ali Amir Ali	Oil spills like engine oil,mobil regularly checked in the morning
3	2-Jul-17	AS-01-AP-3892 AS-22-7790	Izul Ali Amir Ali	Oil spills like engine oil,mobil regularly checked in the morning
4	3-Jul-17	DL-12-C-1493	Aksher Ali	Oil spills like engine oil,mobil regularly checked in the morning
5	4-Jul-17	AS-01-AC-0307	Dipen Gogoi	Oil spills like engine oil,mobil regularly checked in the morning
6	5-Jul-17	AS-01-AP-3892	Izul Ali	Oil spills like engine oil,mobil regularly checked in the morning
7	6-Jul-17	AS-01-AP-3892 AS-22-7790	Izul Ali Amir Ali	Oil spills like engine oil,mobil regularly checked in the morning
8	7-Jul-17	AS-01-AP-3892 AS-22-7790	Izul Ali Amir Ali	Oil spills like engine oil,mobil regularly checked in the morning
9	8-Jul-17	DL-12-C-1493	Aksher Ali	Oil spills like engine oil,mobil regularly checked in the morning
10	9-Jul-17	AS-01-AP-3892	Izul Ali	Oil spills like engine oil,mobil regularly checked in the morning
11	10-Jul-17	AS-01-AC-0307	Dipen Gogoi	Oil spills like engine oil,mobil regularly checked in the morning
12	11-Jul-17	AS-01-AP-3892 AS-22-7790	Izul Ali Amir Ali	Oil spills like engine oil,mobil regularly checked in the morning
13	12-Jul-17	AS-01-AC-0307	Dipen Gogoi	Oil spills like engine oil,mobil regularly checked in the morning
16	13-Jul-17	HR-55-H-2993	Ratan Bania	Oil spills like engine oil,mobil regularly checked in the morning
17	14-Jul-17	AS-01-DC-7302	Noro Kanta Basumatary	Oil spills like engine oil,mobil regularly checked in the morning
18	15-Jul-17	AS-01-AP-3892	Izul Ali	Oil spills like engine oil,mobil regularly checked in the morning
19	16-Jul-17	Izul Ali	Izul Ali	Oil spills like engine oil,mobil regularly checked in the morning
20	17-Jul-17	Noro Kanta Basumatary	Noro Kanta Basumatary	Oil spills like engine oil,mobil regularly checked in the morning
21	18-Jul-17	AS-01-T-9986	Raja Pegu	Oil spills like engine oil,mobil regularly checked in the morning
22	19-Jul-17	AS-01-AC-0307	Dipen Gogoi	Oil spills like engine oil,mobil regularly checked in the morning
23	20-Jul-17	AS-01-AP-3892	Izul Ali	Oil spills like engine oil,mobil regularly checked in the morning
24	21-Jul-17	AS-01-AC-0307	Dipen Gogoi	Oil spills like engine oil,mobil regularly checked in the morning
	22-Jul-17	DL-12-C-1493	Aksher Ali	Oil spills like engine oil,mobil regularly checked in the morning
	23-Jul-17	AS-01-AP-3892	Izul Ali	Oil spills like engine oil,mobil regularly checked in the morning
	24-Jul-17	AS-01-DC-7302	Noro Kanta Basumatary	Oil spills like engine oil,mobil regularly checked in the morning
	25-Jul-17	AS-01-DC-7302	Noro Kanta Basumatary	Oil spills like engine oil,mobil regularly checked in the morning
	26-Jul-17	AS-01-AP-3892 AS-22-7790	Izul Ali Amir Ali	Oil spills like engine oil,mobil regularly checked in the morning
	27-Jul-17	AS-01-AP-3892	Izul Ali	Oil spills like engine oil,mobil regularly checked in the morning

Nilutpal Mahanta.
Signature of Env. Officer

Checking of vehicles (Oil lockage and overall vehicle condition)

Monthly Environment Report of DTP Dyke contractor – July, 2017

Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program			
Tranche	1	Sub Project	: Dibrugarh , DTP DYKE
Contractor	: Jugal Kishore Mahanta	Project No	:
Date of Agreement	: 18 /10/ 2013	Contract Period	: 18 Month
Target Date of Completion	: ----------	Extended upto	: N/A
Name of the Environmental Inspector	: Rupjyoti Goswami	Month and Year	: July , 2017

Monthly Environmental Report

SL		Status	Remarks
1	**Environment**		
1.1	**Sources of Materials**		
1.1.a	Use quarry sites and sources permitted by Government	Yes.	Environmental clearance from Contingent Authority (SEIAA) (submitted.)
1.1.b	Verify suitability and approval by SIO	Yes.	After joint verification with the Revenue circle office, Dib., District Forest office,Dib. and WR Division, Dib, the Borrow Pit sites are used. Copy of NOC for excavations of soil is submitted.
1.1.c.	Submission of monthly documentation of all material sources. .	-----	
1.2	**Air**		
1.2.a	Spray water on dry surface to reduce dust in air.	No.	Not Applicable for this Month.
1.2.b	Use tarpaulins to cover sand and other loose materials where transported by vehicles.	Yes.	
1.2.c	Clean wheels and undercarriage of vehicles while leaving the site.	Yes.	
1.2.d	Certificates on Vehicular Emission of all the vehicles used in the site.	Yes.	Certificate of PUC submitted.
1.2.e	Checked air quality by PBC approved Lab.	Yes.	
1.3	**Noise**		
1.3.a	Plan activities in consultation with SIO, community to reduce noise level.	Yes.	We try to minimize the noise level by using silencers.
1.3.b	Provide information to public about work schedule.	Yes.	
1.3.c	Horns not used, unless essential.	Yes.	
1.3.d	Minimize the noise by silencers.	Yes.	
1.3.e	Do not allow workers to an exposure of 80dBA or above without ear plug.	Yes.	Does not arise.
1.3.f	Use of heavy vehicles from 01/07/2017 to 31/07/2017.	No.	No use of havey vehicles.
1.3.g	Use of Generators KV _____ from _____ to	----	No use of generator.
1.3.h	Checked Noise level by PBC approved lab.	Yes.	
1.4	**Surface water quality**		
1.4.a	Avoid stockpiling of earth fill, especially during monsoon unless covered by tarpaulin or plastic sheets.	Yes.	

1.4.b	Install temporary silt traps or sedimentation basins along the drainage leading to water bodies.	Yes.	
1.4.c	Store fuel and lubricants away from the drains.	Yes.	
1.4.d	Checked surface water quality by PCB approved lab.	Yes.	
1.5	**Land Use**		
1.5.a	Has the contractor preserved the top soil for replacement after construction?	No.	We use the top soil for leveling the low position of (country side) near embankment.
1.5.b	Status of the surface vegetation on the construction site prior to the initiation of the work (Detail report with number of trees cut and initial photographs of the area.	-----	The trees falling on the chest and slope of the embankment are handed over to the forest Department.
1.5.c	Borrow pit – Rehabilitation of the borrow pit was done.	-----	Borrow pit areas are private land. The owners of Land of borrow pit areas will use it for fishery purpose.
1.6	**Pollution**		
1.6.a	Spills of oils on the site and on river regularly checked.	Yes.	N/A for this month.
1.6.b	Necessary measures taken to stop it.	Yes.	Checked regularly.
1.6.c	What measures taken to remove the used engine oils?	-----	Kept in storage (container with cover) place and send it to Contractor's special store room.
1.6.d	Surface discharges monitored.	Yes.	
1.7	**Disruption of Agricultural activities**		
1.7.a	Any agricultural activity in the flood embankment?	No.	No agricultural land is used for flood embankment. So it needs not any measures taken to minimize the impact on agricultural activity.
1.7.b	Any measures taken to minimize the impact on agricultural activity in the flood activity?	-----	
1.7.c	Land used the flood embankment belongs to WRD or private.	-----	
1.7.d	If private agricultural land is used proper compensation is made is made by the contractor at current market value.	-----	
2	**Access routes (River)**		
2.a	Whether the Navigation routs are blocked?	-----	Not Applicable
2.b	How interference with the riverine traffic is minimized?	-----	Not Applicable
2.c	All the floating equipments following navigation standards application in India.	-----	Not Applicable
2.d	All the floating equipments following safety standards applicable in India.	-----	Not Applicable.
2.e	Any dredging operation done?	No.	
3	**Road**		
3.a	All the access roads inspected for their appropriateness for moving construction equipments.	Yes.	
3.b	If found inappropriate, strengthened by Contractor.	Yes.	
3.c	Due to the movement of the heavy vehicle, the access road is degraded more than normal use.	Yes.	Repaired the degraded access road regularly.
3.d	Contractor repaired the degraded access road.	Yes.	

3.e	Access road for the fringe community is used / blocked and alternate route provided.	-----	Not arise situation.
3.f	Conduct the work during light traffic.	Yes.	
4	**Excavation and filling of Earth in Slope Protection**		
4.a	Whether the area has been surveyed, inspected and approved by the SIO after the identification of excavation and filling site.	Yes.	
4.b	Whether the contractor has submitted a map indicating the area of earth excavation and filling activities showing the earth cut and fill areas, based on the baseline survey.	Yes.	Google map submitted.
5	**Sand Excavation**		
5.a	Whether the sand excavation area was approved by the SIO in writing.	------	Not Arise.
5.b	Whether contractor has submitted a map indicating the area of planned sand excavation.	------	
5.c	Whether the sand excavation area is close to the work site or to char inhabitants.	------	
6	**Site Installations**		
6.a	Protection of trees for their preservation.	Yes.	
6.b	Whether temporary roads were constructed?	No	
6.c	Whether environmental friendly waste disposal system properly monitored and executed in the work sites ?	Yes.	
7	**Labour Camps**		
7.a	Consult SIO and fringe community for establishing the temporary office shed, camp and plant.	Yes.	Most of the work done by Machinery and we use very small number of Labor in the worksite and they are Local so no Labor camp is required in the site.
7.b	Minimize the removal of vegetation and do not allow cutting of trees.	Yes.	
7.c	Provide safe drinking water to the camp inhabitants.	Yes.	
7.d	Sanitation facility to the camp inhabitants.	Yes.	
7.e	Solid waste management practiced in the camps.	Yes.	
7.f	Report SIO and fringe community before vacating the camp after the work.	------	Not Arise.
8	**Agricultural Land and Crop Loss**		
8.a	Any loss or damage of agricultural land and crops due to project construction activities.	-----	Not Arise.
9	**Homestead Loss**		
9.a	Any home stead loss (including loss of trees, ponds, shifting of any other installations)	-----	Trees uprooted by Forest Department.
10	**Drainage from Adjacent Area**		
10.a	Natural drainage system blocked or disrupted.	No.	
11	**Wildlife**		
11.a	Sighting of Dolphin (National Aquatic Animal)	No.	

12	**Fish productivity**		
12.a	Fish productivity increased or decreased (survey in the boat ghats)	----	Not affect any fish productivity.
12.b	Landing facility – Change of Boat Ghats	No	
13	**Display Materials**		
13.a	Sings like " Only Staff ", "Restricted Area " displayed in relevant area.	Yes.	But N/A for this month.
13.b	Safety (including traffic sings) , notice board is available.	Yes.	But N/A for this month.
14	**Health and Safety**		
14.a	Provision of First Aid and medical service available.	Yes.	
	Provide GPS coordinates for most of the descriptions so that map can be prepared.		
15	**Additional comments or actions required:**		

Signature by Environmental Inspector Rupjyoti Goswami Environment Inspector For Jugal Kishore Mahanta Date: 10/08/2017 Contact Details: 9864897283	Accepted / Approved by SIO Date: Contact Details:

Name of the Work: Raising, Strengthening, Up gradation & construction of road works for Dibrugarh Town Protection (DTP) Dyke in Dibrugarh District.
Name of Contractor: Jugal Kishore Mahanta

Attendance Register

1. Environmental Inspector
2. Safety Officer

Month and Year : JULY , 2017.

Date		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Sign. Env. Inspector	At Site	Sign	S	Sign	Sign	Sign	Sign	Sign	Sign	S							S							S							S	
	At Office		U N							U N	Sign	Sign	Sign	Sign	Sign	Sign	U W	Sign	Sign	Sign	Sign	Sign	Sign	U N	Sign	Sign	Sign	Sign	Sign	Sign	U N	Sign
Sign. Safety Officer	At Site		D A Y	Sign	Sign	Sign				D A Y							D A Y	Sign	Sign	Sign	Sign	Sign	Sign	D A Y							D A Y	
	At Office	Sign					Sign	Sign	Sign		Sign	Sign	Sign	Sign	Sign	Sign									Sign	Sign	Sign	Sign	Sign	Sign		Sign

EMPLOYEE	At site	At office	Leave	Holidays	Total (days)
Environmental Inspector	7	19	—	5	31
Safety Officer	9	17	—	5	31

Amitabh Hazarika

Signature of Project Manager.

Monthly Environment Report of DTP Dyke contractor – March, 2017

Assam Integrated Flood and Riverbank Erosion Risk Management Investment Program	
Tranche 1	Sub Project : Dibrugarh , DTP DYKE
Contractor: Jugal Kishore Mahanta	Project No:
Date of Agreement : 18 /10/ 2013	Contract Period : 18 Month
Target Date of Completion : ----------	Extended upto:
Name of the Environmental Inspector : RupjyotiGoswami	Month and Year : **March , 2017 .**

Monthly Environmental Report

SL		Status	Remarks
1	**Environment**		
1.1	**Sources of Materials**		
1.1.a	Use quarry sites and sources permitted by Government	Yes.	Environmental clearance from Contingent Authority (SEIAA) (Submitted with Monthly Environmental Report, Letter no :JKM/RSR_DTP/2013-14/23)
1.1.b	Verify suitability and approval by SIO	Yes.	After joint verification with the Revenue circle office, Dib., District Forest office, Dib. And WR Division, Dib, the Borrow Pit sites are used. Copy of NOC for excavations of soil is submitted. (Monthly Environmental Report, Letter no :JKM/RSR_DTP/2013-14/23)
1.1.c.	Submission of monthly documentation of all material sources.	Yes.	
1.2	**Air**		
1.2.a	Spray water on dry surface to reduce dust in air.	Yes.	
1.2.b	Use tarpaulins to cover sand and other loose materials where transported by vehicles.	Yes.	
1.2.c	Clean wheels and undercarriage of vehicles while leaving the site.	Yes.	
1.2.d	Certificates on Vehicular Emission of all the vehicles used in the site.	Yes.	PUC of vehiclessubmitted.
1.2.e	Checked air quality by PBC approved Lab.	Yes.	Copy of Test Report enclosed.
1.3	**Noise**		
1.3.a	Plan activities in consultation with SIO, community to reduce noise level.	Yes.	We try to minimize the noise level by using silencers.
1.3.b	Provide information to public about work schedule.	Yes.	
1.3.c	Horns not used, unless essential.	Yes.	
1.3.d	Minimize the noise by silencers.	Yes.	

1.3.f	Use of heavy vehicles from 01/03/2017 to 31/03/2017.	Yes.	05 no heavy vehicles like Dumper, JCB,Roller etc. are used in site this Month.
1.3.g	Use of Generators KV _____from_____ to	----	No use of generator.
1.3.h	Checked Noise level by PBC approved lab.	Yes.	Copy of Test Report enclosed.
1.4	**Surface water quality**		
1.4.a	Avoid stockpiling of earth fill, especially during monsoon unless covered by tarpaulin or plastic sheets.	Yes.	Yes.
1.4.b	Install temporary silt traps or sedimentation basins along the drainage leading to water bodies.	Yes.	Yes.
1.4.c	Store fuel and lubricants away from the drains.	Yes.	
1.4.d	Checked surface water quality by PCB approved lab.	Yes.	Copy of Test Report enclosed.
1.5	**Land Use**		
1.5.a	Has the contractor preserved the top soil for replacement after construction?	No.	We use the top soil for leveling the low position of (country side) near embankment.
1.5.b	Status of the surface vegetation on the construction site prior to the initiation of the work (Detail report with number of trees cut and initial photographs of the area.	-----	The trees falling on the chest and slope of the embankment are handed over to the forest Department.
1.5.c	Borrow pit – Rehabilitation of the borrow pit was done.	-----	Borrow pit areas are private land. The owners of Land of borrow pit areas will use it for fishery purpose.
1.6	**Pollution**		
1.6.a	Spills of oils on the site and on river regularly checked.	Yes.	Copy of Register enclosed.
1.6.b	Necessary measures taken to stop it.	Yes.	Checked regularly.
1.6.c	What measures taken to remove the used engine oils?	-----	Kept in storage(container with cover) place and send it to Contractor's special store room.
1.6.d	Surface discharges monitored.	Yes.	
1.7	**Disruption of Agricultural activities**		
1.7.a	Any agricultural activity in the flood embankment?	No.	No agricultural land is used for flood embankment. So it needs not any measures taken to minimize the impact on agricultural activity.
1.7.b	Any measures taken to minimize the impact on agricultural activity in the flood activity?	-----	
1.7.c	Land used the flood embankment belongs to WRD or private.	-----	
1.7.d	If private agricultural land is used proper compensation is made is made by the contractor at current market value.	-----	
2	**Access routes (River)**		
2.a	Whether the Navigation routs are blocked?	-----	Not Applicable
2.b	How interference with the riverine traffic is minimized?	-----	Not Applicable

2.c	All the floating equipment's following navigation standards application in India.	-----	Not Applicable
2.d	All the floating equipment's following safety standards applicable in India.	-----	Not Applicable.
2.e	Any dredging operation done?	No.	
3	**Road**		
3.a	All the access roads inspected for their appropriateness for moving construction equipments.	Yes.	
3.b	If found inappropriate, strengthened by Contractor.	Yes.	
3.c	Due to the movement of the heavy vehicle, the access road is degraded more than normal use.	Yes.	Repaired the degraded access road regularly.
3.d	Contractor repaired the degraded access road.	Yes.	
3.e	Access road for the fringe community is used / blocked and alternate route provided.	-----	Not arise situation.
3.f	Conduct the work during light traffic.	Yes.	
4	**Excavation and filling of Earth in Slope Protection**		
4.a	Whether the area has been surveyed, inspected and approved by the SIO after the identification of excavation and filling site.	Yes.	
4.b	Whether the contractor has submitted a map indicating the area of earth excavation and filling activities showing the earth cut and fill areas, based on the baseline survey.	Yes.	Google map submitted. .(Monthly Environmental Report, Month- January Letter no :JKM/RSR_DTP/2013-14/23)
5	**Sand Excavation**		
5.a	Whether the sand excavation area was approved by the SIO in writing.	------	Not Arise.
5.b	Whether contractor has submitted a map indicating the area of planned sand excavation.	------	
5.c	Whether the sand excavation area is close to the work site or to char inhabitants.	------	
6	**Site Installations**		
6.a	Protection of trees for their preservation.	Yes.	
6.b	Whether temporary roads were constructed?	No	
6.c	Whether environmental friendly waste disposal system properly monitored and executed in the work sites ?	Yes.	
7	**Labour Camps**		
7.a	Consult SIO and fringe community for establishing the temporary office shed, camp and plant.	Yes.	Most of the work done by Machinery and we use very small number of Labor in the worksite and they are Local so no Labor camp is required in the site.
7.b	Minimize the removal of vegetation and do not allow cutting of trees.	Yes.	

7.c	Provide safe drinking water to the camp inhabitants.	Yes.	
7.d	Sanitation facility to the camp inhabitants.	Yes.	
7.e	Solid waste management practiced in the camps.	Yes.	
7.f	Report SIO and fringe community before vacating the camp after the work.	------	Not Arise.
8	**Agricultural Land and Crop Loss**		
8.a	Any loss or damage of agricultural land and crops due to project construction activities.	-----	Not Arise.
9	**Homestead Loss**		
9.a	Any home stead loss (including loss of trees, ponds, shifting of any other installations)	-----	Trees uprooted by Forest Department.
10	**Drainage from Adjacent Area**		
10.a	Natural drainage system blocked or disrupted.	No.	
11	**Wildlife**		
11.a	Sighting of Dolphin (National Aquatic Animal)	No.	
12	**Fish productivity**		
12.a	Fish productivity increased or decreased (survey in the boat ghats)	----	Not affect any fish productivity.
12.b	Landing facility – Change of Boat Ghats	No	
13	**Display Materials**		
13.a	Sings like " Only Staff ", "Restricted Area " displayed in relevant area.	Yes.	
13.b	Safety (including traffic sings) , notice board is available.	Yes.	
14	**Health and Safety**		
14.a	Provision of First Aid and medical service available.	Yes.	Enclosed copy of Medical service available

Provide GPS coordinates for most of the descriptions so that map can be prepared.

15	**Additional comments or actions required:**

Signature by Environmental Inspector	Accepted / Approved by SIO
Rupjyoti Goswami Environment Inspector For Jugal Kishore Mahanta Date: 12/04/2017 Contact Details: 9864897283	Date: Contact Details:

Name of Work: Raising, strengthening & up gradation and construction of Road Works for Dibrugarh Town Protection (DTP) Dykealong the Brahmaputra River in Dibrugarh.

Name of Contractor: Jugal Kishore Mahanta

Attendance Register

1. Environmental Inspector
2. Safety officer

Month and Year : March , 2017

Date		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Sign. Env. Inspector	At Site	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	At office																															
Sign. Safety Officer	At Site	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	HOLI	HOLI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	At office																															

	At site(days)	At office(days)	Leave(days)	Holidays	**Total(days)**
Environmental Inspector	29	—	—	2	31
Safety Officer	29	—	—	2	31

Amitabh Hazarika

Signature of Project Manager,

Name of Work: Raising, strengthening & up gradation and construction of Road Works for Dibrugarh Town Protection (DTP) Dyke along the Brahmaputra River in Dibrugarh.

Name of Contractor: Jugal Kishore Mahanta.

Water sprinkling Register

Month and Year : March , 2017

Date		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Working Days	Morning	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	↑	↑	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Evening	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Raining Day													HOLI	HOLI																		
No work																																
Signature Environment Inspector		Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	↓	↓	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs	Ejs

Amitabh Hazarika

Signature of Project Manager

Name of Work: Raising, strengthening & up gradation and construction of Road Works for Dibrugarh Town Protection (DTP) Dyke along the Brahmaputra River in Dibrugarh.

Name of Contractor: Jugal Kishore Mahanta

Register for Leakage of fuel ,lubricants and Grease

Month and Year :March , 2017

Date / Vehicle	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
AS01BC 9710 DUMPER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AS01BC 9711 DUMPER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AS01BC 9712 DUMPER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AS01BC 9713 DUMPER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	HOLI	HOLI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AS23D 2503 WATER TANKER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Signature Environmental Inspector																													

Amitabh Hazarika

Signature of Project Manager

Name of Work: Raising, strengthening & up gradation and construction of Road Works for Dibrugarh Town Protection (DTP) Dyke along the Brahmaputra River in Dibrugarh.

Name of Contractor: Jugal Kishore Mahanta

Register for Leakage of fuel ,lubricants and Grease

Month and Year : March, 2017

Date / Vehicle	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ROLLER 10 Ton	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AS23AC 5194 EXCAVATOR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	HOLI	HOLI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AS23AC 5195 EXCAVATOR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Signature Environmental Inspector																															

Amitabh Hazarika

Signature of Project Manager

Appendix 3: PUC of the vehicles

DTP Dyke – work completed in the month of January, 2017
(PUC of the vehicles were valid upto 16th February, 2017)

Name of Work: Raising, strengthening & up gradation and construction of Road Works for Dibrugarh Town Protection (DTP) Dyke along the Brahmaputra River in Dibrugarh.

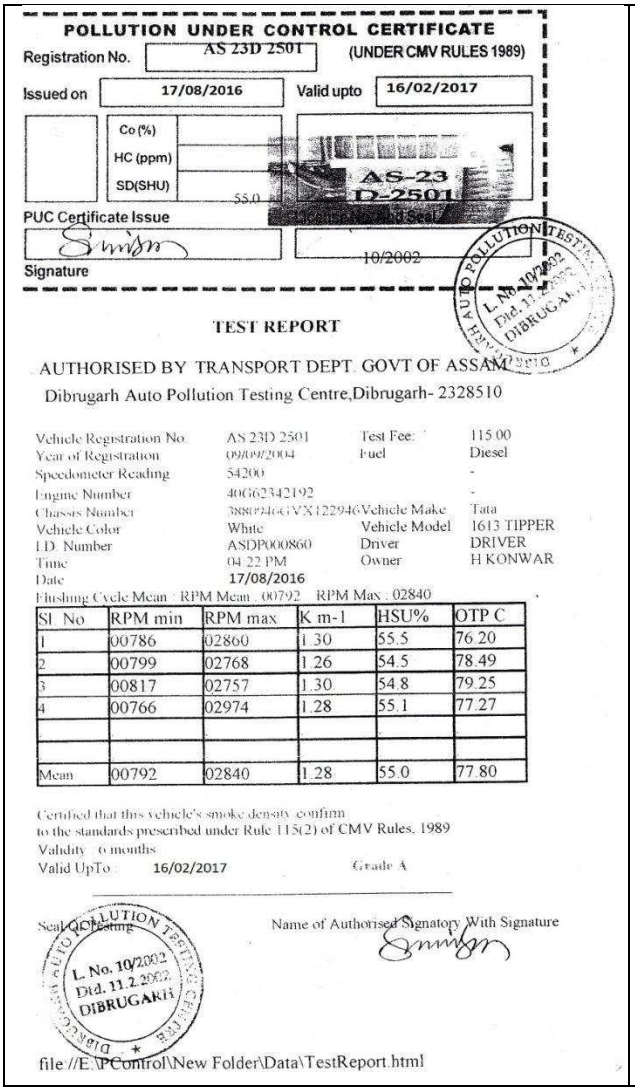
Name of Contractor: Jugal Kishore Mahanta.

SUB: List of Vehicles with PUC

Registration No, Vehicle type	Date of Registration	Date of Issue of last PUC	Due date	Remarks
Dumper AS01BC 9701	01-10-2009	17-08-2016	16-02-2017	
Dumper AS01BC 9702	01-10-2009	17-08-2016	16-02-2017	
Dumper AS01BC 9705	01-10-2009	17-08-2016	16-02-2017	
Dumper AS01BC 9707	01-10-2009	17-08-2016	16-02-2017	
Dumper AS01BC 9708	01-10-2009	17-08-2016	16-02-2017	
Dumper AS01BC 9709	01-10-2009	17-08-2016	16-02-2017	
Dumper AS01BC 9710	01-10-2009	17-08-2016	16-02-2017	
Dumper AS01BC 9711	01-10-2009	17-08-2016	16-02-2017	
Dumper AS01BC 9712	01-10-2009	17-08-2016	16-02-2017	
Dumper AS01BC 9713	01-10-2009	17-08-2016	16-02-2017	
Water Tanker AS23D 2501	29-09-2004	17-08-2016	16-02-2017	
Water Tanker AS23D 2503	29-09-2004	17-08-2016	16-02-2017	
Excavator AS23AC 5192	10-03-2011	17-08-2016	16-02-2017	
Excavator AS23AC 5193	10-03-2011	17-08-2016	16-02-2017	
Excavator AS23AC 5194	10-03-2011	17-08-2016	16-02-2017	
Excavator AS23AC 5195	10-03-2011	17-08-2016	16-02-2017	

R. Goswami
Environment Inspector
For Jugal Kishore Mahanta

Sample PUCs (All PUCs were attached with the Monthly Environment reports)



POLLUTION UNDER CONTROL CERTIFICATE

Registration No. AS 23D 2501 (UNDER CMV RULES 1989)

Issued on 17/08/2016 Valid upto 16/02/2017

Co (%)
HC (ppm)
SD(SHU) 55.0

AS-23 D-2501

PUC Certificate Issue

Signature 10/2002

TEST REPORT

AUTHORISED BY TRANSPORT DEPT. GOVT OF ASSAM

Dibrugarh Auto Pollution Testing Centre,Dibrugarh- 2328510

Vehicle Registration No.	AS 23D 2501	Test Fee:	115.00
Year of Registration	09/09/2004	Fuel	Diesel
Speedometer Reading	54200		-
Engine Number	400362342192		-
Chassis Number	388024G1VX122946	Vehicle Make	Tata
Vehicle Color	White	Vehicle Model	1613 TIPPER
I.D. Number	ASDP000860	Driver	DRIVER
Time	04.22 PM	Owner	H KONWAR
Date	17/08/2016		

Flushing Cycle Mean : RPM Mean : 00792 RPM Max : 02840

Sl. No	RPM min	RPM max	K m-1	HSU%	OTP C
1	00786	02860	1.30	55.5	76.20
2	00799	02768	1.26	54.5	78.49
3	00817	02757	1.30	54.8	79.25
4	00766	02974	1.28	55.1	77.27
Mean	00792	02840	1.28	55.0	77.80

Certified that this vehicle's smoke density confirm to the standards prescribed under Rule 115(2) of CMV Rules, 1989

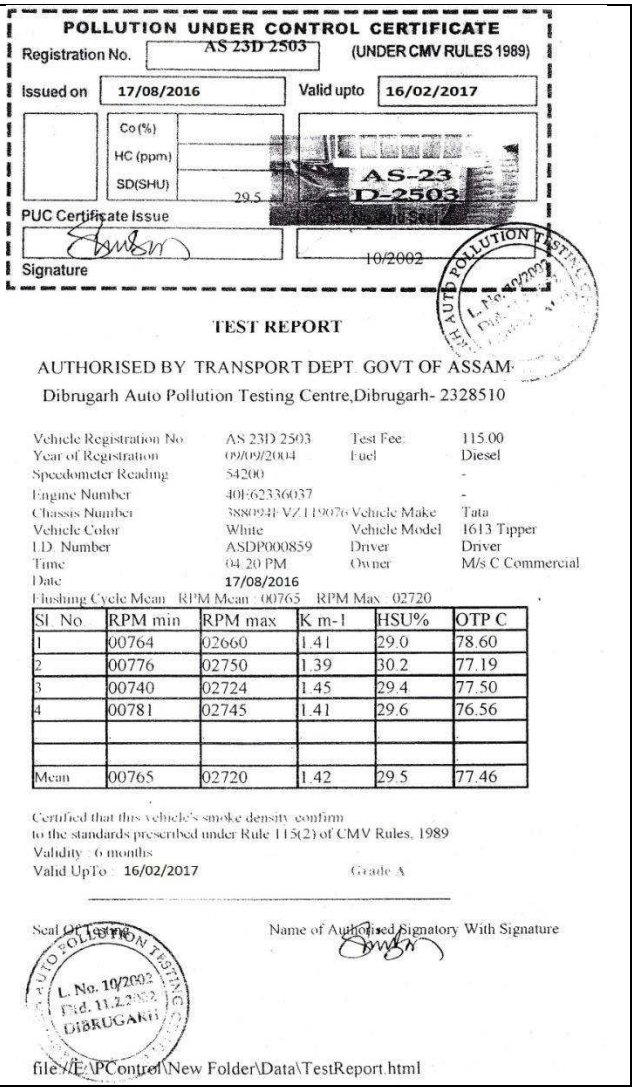
Validity : 6 months

Valid UpTo : 16/02/2017 Grade A

Seal Of Testing

Name of Authorised Signatory With Signature

file://E:\PControl\New Folder\Data\TestReport.html



POLLUTION UNDER CONTROL CERTIFICATE

Registration No. AS 23D 2503 (UNDER CMV RULES 1989)

Issued on 17/08/2016 Valid upto 16/02/2017

Co (%)
HC (ppm)
SD(SHU) 29.5

AS-23 D-2503

PUC Certificate Issue

Signature 10/2002

TEST REPORT

AUTHORISED BY TRANSPORT DEPT. GOVT OF ASSAM

Dibrugarh Auto Pollution Testing Centre,Dibrugarh- 2328510

Vehicle Registration No.	AS 23D 2503	Test Fee:	115.00
Year of Registration	09/09/2004	Fuel	Diesel
Speedometer Reading	54200		-
Engine Number	40E62336037		-
Chassis Number	388094F VZ119076	Vehicle Make	Tata
Vehicle Color	White	Vehicle Model	1613 Tipper
I.D. Number	ASDP000859	Driver	Driver
Time	04.20 PM	Owner	M/s C Commercial
Date	17/08/2016		

Flushing Cycle Mean : RPM Mean : 00765 RPM Max : 02720

Sl. No	RPM min	RPM max	K m-1	HSU%	OTP C
1	00764	02660	1.41	29.0	78.60
2	00776	02750	1.39	30.2	77.19
3	00740	02724	1.45	29.4	77.50
4	00781	02745	1.41	29.6	76.56
Mean	00765	02720	1.42	29.5	77.46

Certified that this vehicle's smoke density confirm to the standards prescribed under Rule 115(2) of CMV Rules, 1989

Validity : 6 months

Valid UpTo : 16/02/2017 Grade A

Seal Of Testing

Name of Authorised Signatory With Signature

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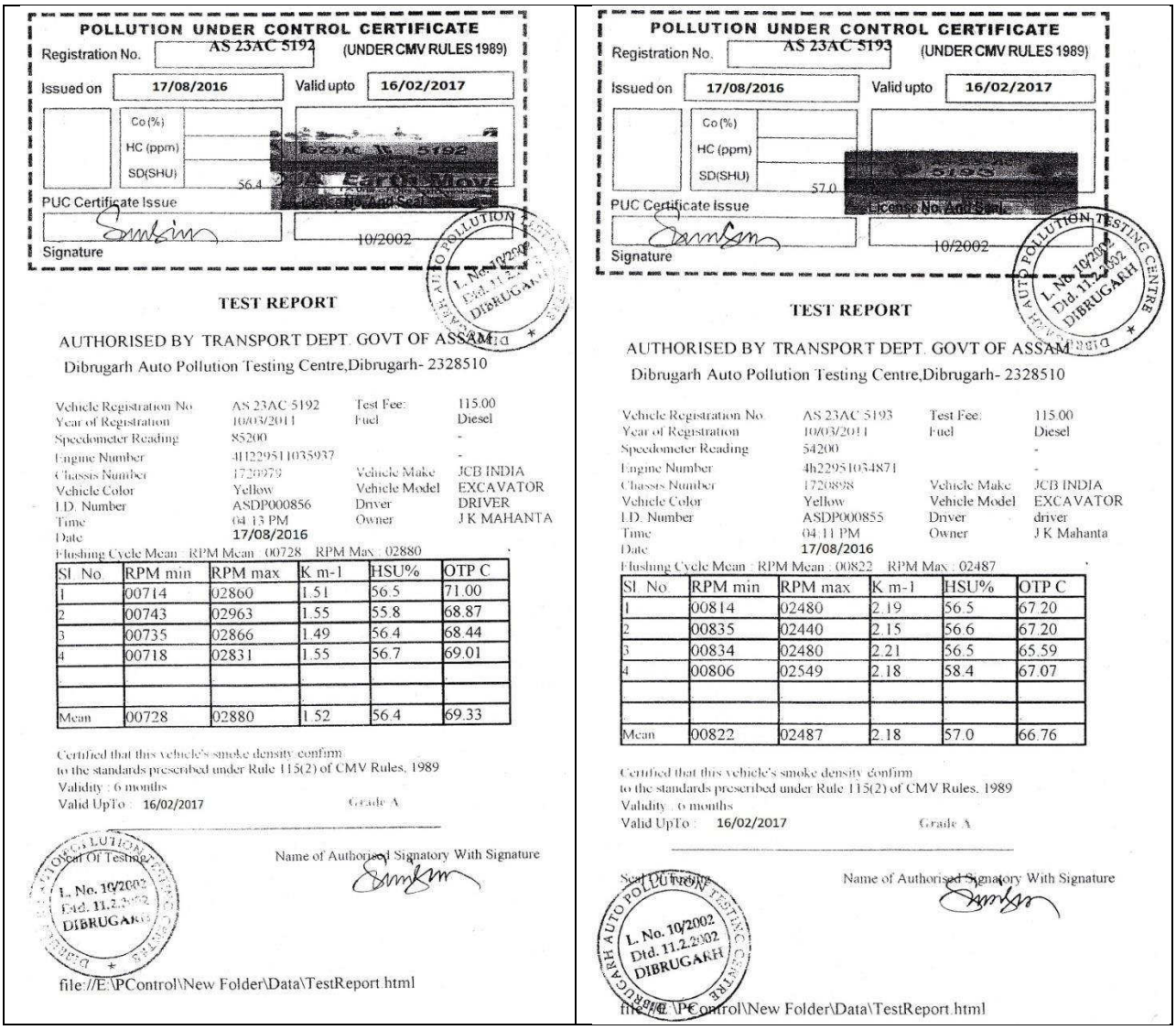

POLLUTION UNDER CONTROL CERTIFICATE

Registration No. AS 23AC 5192 (UNDER CMV RULES 1989)

Issued on 17/08/2016 Valid upto 16/02/2017

Co (%)
HC (ppm)
SD(SHU) 56.4

PUC Certificate Issue

Signature

10/2002

TEST REPORT

AUTHORISED BY TRANSPORT DEPT. GOVT OF ASSAM

Dibrugarh Auto Pollution Testing Centre,Dibrugarh- 2328510

Vehicle Registration No	AS 23AC 5192	Test Fee:	115.00
Year of Registration	10/03/2011	Fuel	Diesel
Speedometer Reading	85200		-
Engine Number	4H1229511035937		-
Chassis Number	1720979	Vehicle Make	JCB INDIA
Vehicle Color	Yellow	Vehicle Model	EXCAVATOR
I.D. Number	ASDP000856	Driver	DRIVER
Time	04.13 PM	Owner	J K MAHANTA
Date	17/08/2016		

Flushing Cycle Mean : RPM Mean : 00728 RPM Max : 02880

Sl. No	RPM min	RPM max	K m-1	HSU%	OTP C
1	00714	02860	1.51	56.5	71.00
2	00743	02963	1.55	55.8	68.87
3	00735	02866	1.49	56.4	68.44
4	00718	02831	1.55	56.7	69.01
Mean	00728	02880	1.52	56.4	69.33

Certified that this vehicle's smoke density confirm to the standards prescribed under Rule 115(2) of CMV Rules, 1989

Validity : 6 months

Valid UpTo : 16/02/2017 Grade A

Seal Of Testing

Name of Authorised Signatory With Signature

L. No. 10/2002 Dtd. 11.2.2002 DIBRUGARH

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POLLUTION UNDER CONTROL CERTIFICATE

Registration No. AS 23AC 5193 (UNDER CMV RULES 1989)

Issued on 17/08/2016 Valid upto 16/02/2017

Co (%)
HC (ppm)
SD(SHU) 57.0

PUC Certificate Issue

Signature

10/2002

TEST REPORT

AUTHORISED BY TRANSPORT DEPT. GOVT OF ASSAM

Dibrugarh Auto Pollution Testing Centre,Dibrugarh- 2328510

Vehicle Registration No	AS 23AC 5193	Test Fee:	115.00
Year of Registration	10/03/2011	Fuel	Diesel
Speedometer Reading	54200		-
Engine Number	4h2295103487l		-
Chassis Number	1720898	Vehicle Make	JCB INDIA
Vehicle Color	Yellow	Vehicle Model	EXCAVATOR
I.D. Number	ASDP000855	Driver	driver
Time	04.11 PM	Owner	J K Mahanta
Date	17/08/2016		

Flushing Cycle Mean : RPM Mean : 00822 RPM Max : 02487

Sl. No	RPM min	RPM max	K m-1	HSU%	OTP C
1	00814	02480	2.19	56.5	67.20
2	00835	02440	2.15	56.6	67.20
3	00834	02480	2.21	56.5	65.59
4	00806	02549	2.18	58.4	67.07
Mean	00822	02487	2.18	57.0	66.76

Certified that this vehicle's smoke density confirm to the standards prescribed under Rule 115(2) of CMV Rules, 1989

Validity : 6 months

Valid UpTo : 16/02/2017 Grade A

Seal Of Testing

Name of Authorised Signatory With Signature

L. No. 10/2002 Dtd. 11.2.2002 DIBRUGARH

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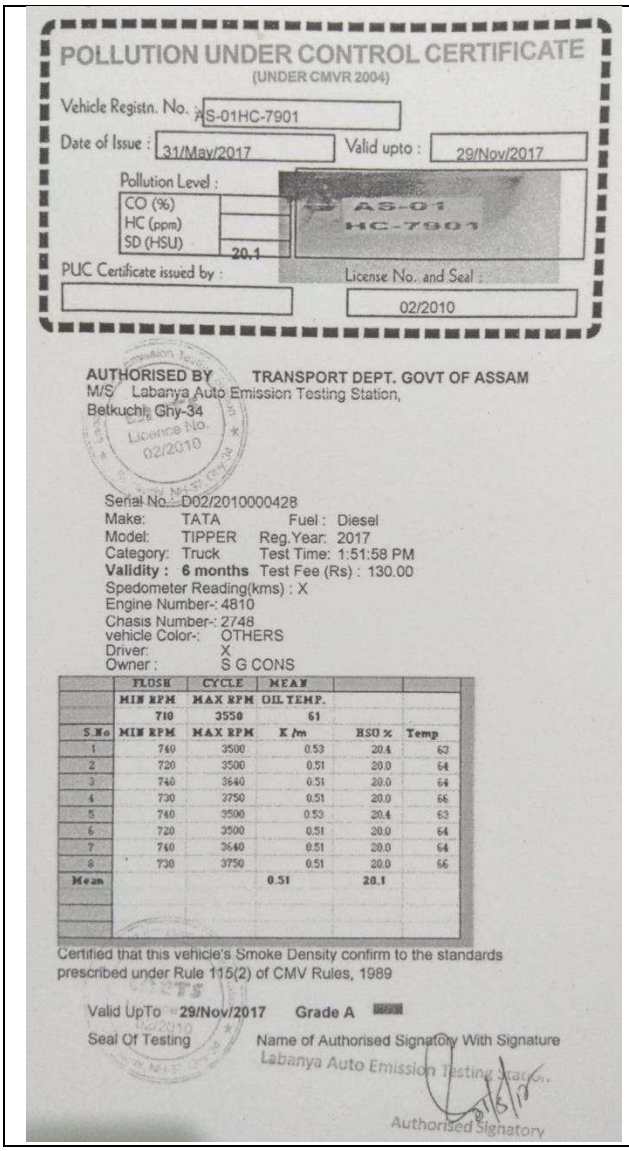
PUC of the vehicles of Palasbari Apron contractor (BIL)



POLLUTION UNDER CONTROL CERTIFICATE
(UNDER CMVR 2004)

Vehicle Registn. No. : AS-01HC-7901
Date of Issue : 31/May/2017 Valid upto : 29/Nov/2017
Pollution Level :
CO (%)
HC (ppm)
SD (HSU) 20.1
PUC Certificate issued by :
License No. and Seal : 02/2010

AUTHORISED BY TRANSPORT DEPT. GOVT OF ASSAM
M/S Labanya Auto Emission Testing Station,
Betkuchi, Ghy-34

Serial No.: D02/2010000428
Make: TATA Fuel : Diesel
Model: TIPPER Reg.Year: 2017
Category: Truck Test Time: 1:51:58 PM
Validity : 6 months Test Fee (Rs) : 130.00
Spedometer Reading(kms) : X
Engine Number-: 4810
Chasis Number-: 2748
vehicle Color-: OTHERS
Driver: X
Owner : S G CONS

	FLOSH	CYCLE	MEAN		
	MIN RPM	MAX RPM	OIL TEMP.		
	710	3550	61		
S.No	MIN RPM	MAX RPM	K /m	HSU %	Temp
1	740	3500	0.53	20.4	63
2	720	3500	0.51	20.0	64
3	740	3640	0.51	20.0	64
4	730	3750	0.51	20.0	66
5	740	3500	0.53	20.4	63
6	720	3500	0.51	20.0	64
7	740	3640	0.51	20.0	64
8	730	3750	0.51	20.0	66
Mean			0.51	20.1	

Certified that this vehicle's Smoke Density confirm to the standards prescribed under Rule 115(2) of CMV Rules, 1989

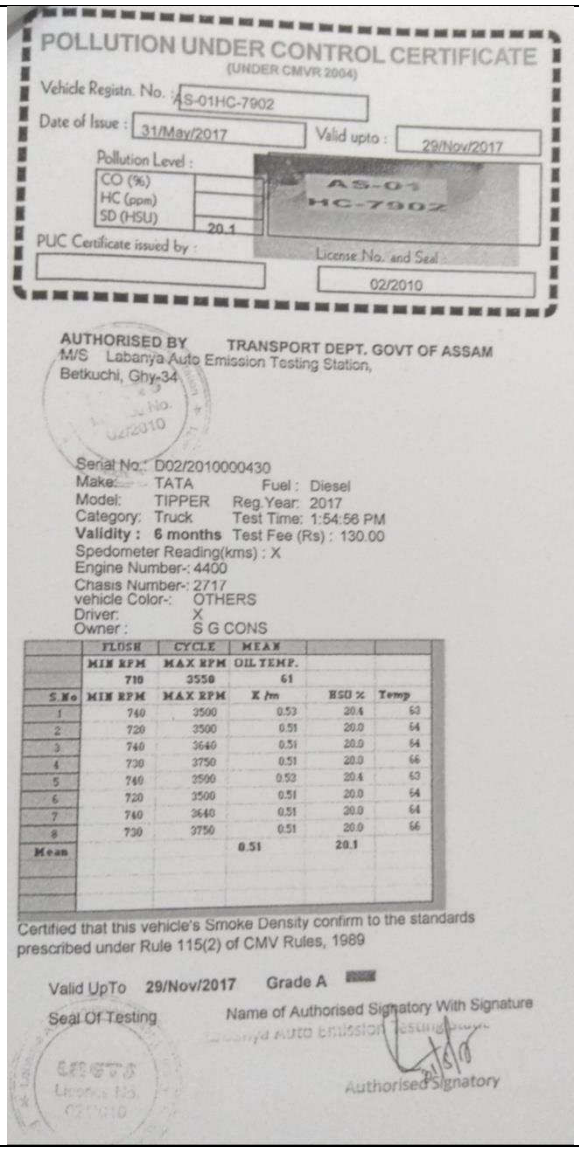
Valid UpTo **29/Nov/2017** Grade A

Seal Of Testing

Name of Authorised Signatory With Signature

Labanya Auto Emission Testing Station

Authorised Signatory



POLLUTION UNDER CONTROL CERTIFICATE
(UNDER CMVR 2004)

Vehicle Registn. No. : AS-01HC-7902
Date of Issue : 31/May/2017 Valid upto : 29/Nov/2017
Pollution Level :
CO (%)
HC (ppm)
SD (HSU) 20.1
PUC Certificate issued by :
License No. and Seal : 02/2010

AUTHORISED BY TRANSPORT DEPT. GOVT OF ASSAM
M/S Labanya Auto Emission Testing Station,
Betkuchi, Ghy-34

Serial No.: D02/2010000430
Make: TATA Fuel : Diesel
Model: TIPPER Reg.Year: 2017
Category: Truck Test Time: 1:54:56 PM
Validity : 6 months Test Fee (Rs) : 130.00
Spedometer Reading(kms) : X
Engine Number-: 4400
Chasis Number-: 2717
vehicle Color-: OTHERS
Driver: X
Owner : S G CONS

	FLOSH	CYCLE	MEAN		
	MIN RPM	MAX RPM	OIL TEMP.		
	710	3550	61		
S.No	MIN RPM	MAX RPM	K /m	HSU %	Temp
1	740	3500	0.53	20.4	63
2	720	3500	0.51	20.0	64
3	740	3640	0.51	20.0	64
4	730	3750	0.51	20.0	66
5	740	3500	0.53	20.4	63
6	720	3500	0.51	20.0	64
7	740	3640	0.51	20.0	64
8	730	3750	0.51	20.0	66
Mean			0.51	20.1	

Certified that this vehicle's Smoke Density confirm to the standards prescribed under Rule 115(2) of CMV Rules, 1989

Valid UpTo **29/Nov/2017** Grade A

Seal Of Testing

Name of Authorised Signatory With Signature

Authorised Signatory

PUC of the vehicles of Palasbari Embankment contractor (SGCCL)

Appendix -4: Work execution

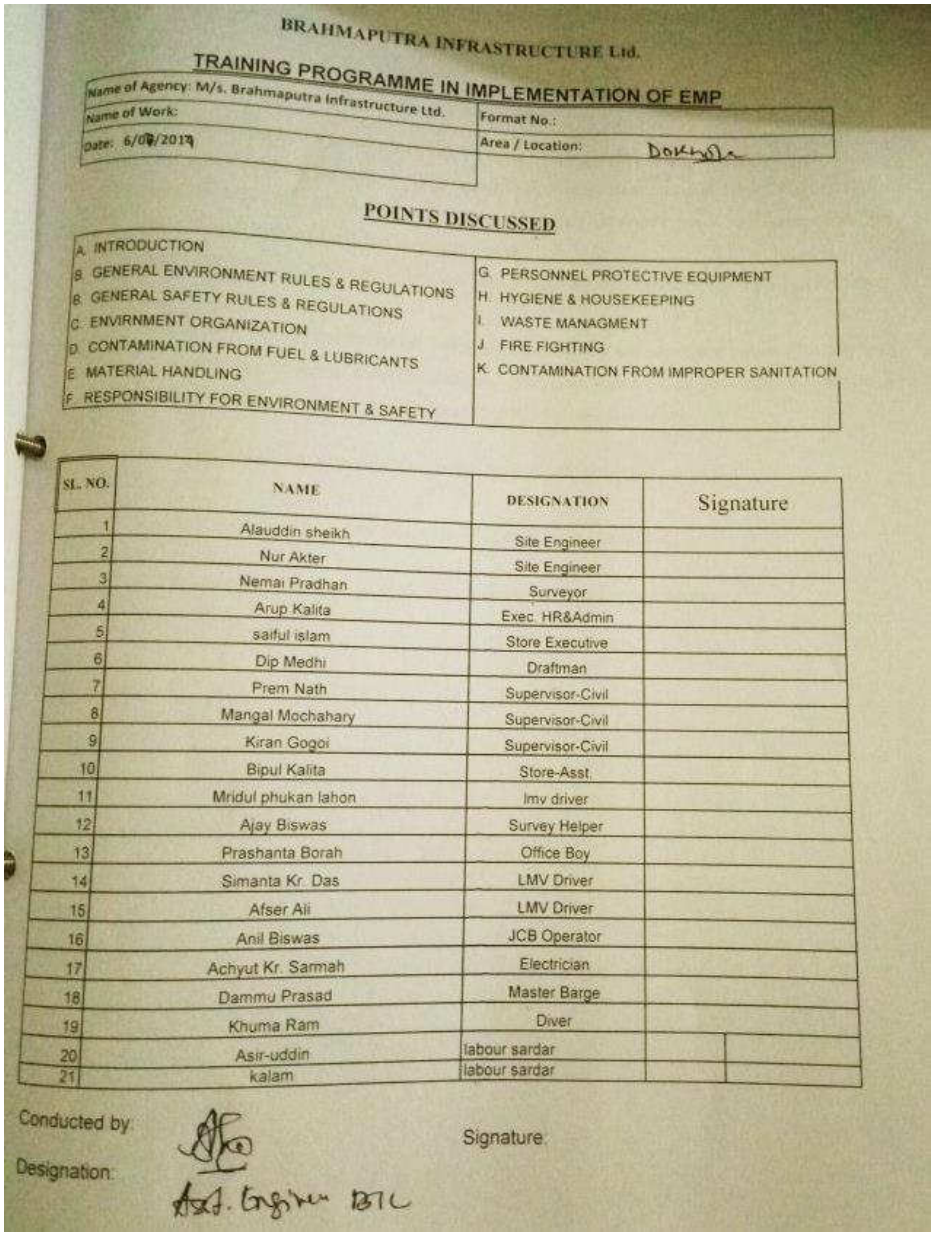



Palasbari



DTP Dyke

A. Training on implementation of EMP (Palasbari) :



BRAHMAPUTRA INFRASTRUCTURE Ltd.

TRAINING PROGRAMME IN IMPLEMENTATION OF EMP

Name of Agency: M/s. Brahmaputra Infrastructure Ltd. | Format No.:

Name of Work:

Date: 6/07/2017 | Area / Location: Dokmoka

POINTS DISCUSSED

A. INTRODUCTION
B. GENERAL ENVIRONMENT RULES & REGULATIONS
B. GENERAL SAFETY RULES & REGULATIONS
C. ENVIRNMENT ORGANIZATION
D. CONTAMINATION FROM FUEL & LUBRICANTS
E. MATERIAL HANDLING
F. RESPONSIBILITY FOR ENVIRONMENT & SAFETY
G. PERSONNEL PROTECTIVE EQUIPMENT
H. HYGIENE & HOUSEKEEPING
I. WASTE MANAGMENT
J. FIRE FIGHTING
K. CONTAMINATION FROM IMPROPER SANITATION

SL. NO.	NAME	DESIGNATION	Signature
1	Alauddin sheikh	Site Engineer	
2	Nur Akter	Site Engineer	
3	Nemai Pradhan	Surveyor	
4	Arup Kalita	Exec. HR&Admin	
5	saiful islam	Store Executive	
6	Dip Medhi	Draftman	
7	Prem Nath	Supervisor-Civil	
8	Mangal Mochahary	Supervisor-Civil	
9	Kiran Gogoi	Supervisor-Civil	
10	Bipul Kalita	Store-Asst.	
11	Mridul phukan lahon	lmv driver	
12	Ajay Biswas	Survey Helper	
13	Prashanta Borah	Office Boy	
14	Simanta Kr. Das	LMV Driver	
15	Afser Ali	LMV Driver	
16	Anil Biswas	JCB Operator	
17	Achyut Kr. Sarmah	Electrician	
18	Dammu Prasad	Master Barge	
19	Khuma Ram	Diver	
20	Asir-uddin	labour sardar	
21	kalam	labour sardar	

Conducted by:

Designation: Asst. Engineer BTC

Signature:

July, 2017

B. Medical Camps

All togather 1 health checkup camps were conducted in association with the local Govt. Hospitals. Doctor gave brief lecture on the following topics :

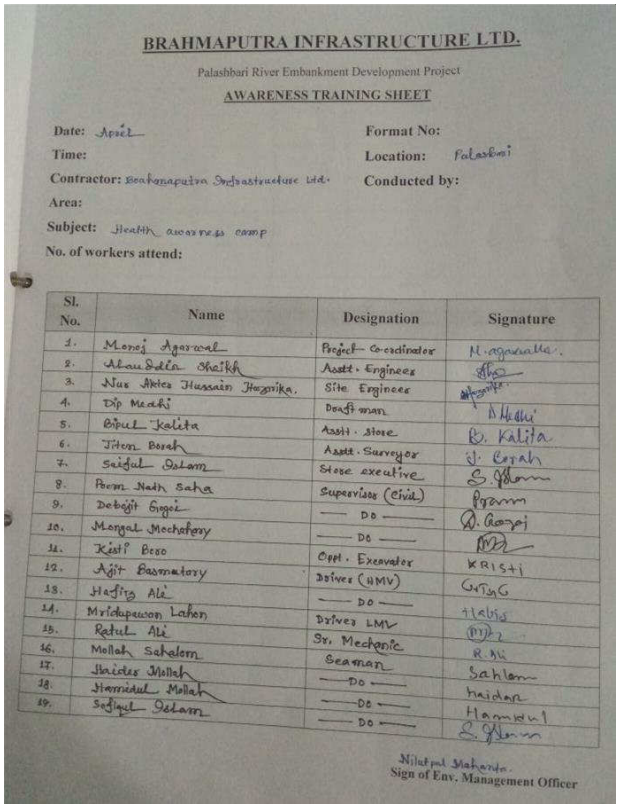
1. Basic of sanitation

2. About emergency contact numbers during emergency
3. AIDS awareness
4. Common STDs, etc.

AIDS awareness camp Palasbari (11.01.2017)

C. Health Awareness Camp

Organised by Palasbari Apron Contractor (BIL)



BRAHMAPUTRA INFRASTRUCTURE LTD.

Palashbari River Embankment Development Project

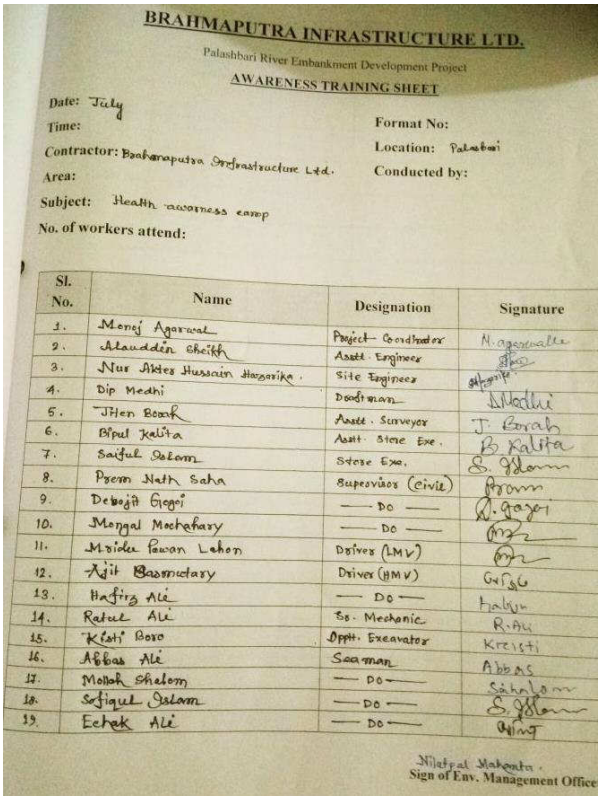
AWARENESS TRAINING SHEET

Date: April
Format No:
Time:
Location: Palashbari
Contractor: Brahmaputra Infrastructure Ltd.
Conducted by:
Area:
Subject: Health awareness camp
No. of workers attend:

Sl. No.	Name	Designation	Signature
1.	Manoj Agarwal	Project- Co-ordinator	M.agarwalla.
2.	Alauddin Sheikh	Asstt. Engineer	
3.	Nur Aktes Hussain Hazarika.	Site Engineer	
4.	Dip Medhi	Draftsman	
5.	Bipul Kalita	Asstt. Store	B. Kalita
6.	Jiten Borah	Asstt. Surveyor	J. Borah
7.	Saiful Islam	Store executive	S. Islam
8.	Prem Nath Saha	Supervisor (Civil)	Prem
9.	Debojit Gogoi	—— DO ——	D. Gogoi
10.	Mongal Mechahary	—— DO ——	
11.	Kisti Boro	Oppt. Excavator	KRISTI
12.	Ajit Basmatary	Driver (HMV)	GURUG
13.	Hafiz Ali	—— DO ——	Hafiz
14.	Mridupawan Lahon	Driver LMV	
15.	Ratul Ali	Sr. Mechanic	R.Ali
16.	Mollah Sahalom	Seaman	Sahlam
17.	Haidar Mollah	—— DO ——	Haidar
18.	Hamidul Mollah	—— DO ——	Hamidul
19.	Sofiqul Islam	—— DO ——	S. Islam

Nilutpal Mahanta.
Sign of Env. Management Officer

April, 2017



BRAHMAPUTRA INFRASTRUCTURE LTD.

Palashbari River Embankment Development Project

AWARENESS TRAINING SHEET

Date: July
Format No:
Time:
Location: Palashbari
Contractor: Brahmaputra Infrastructure Ltd.
Conducted by:
Area:
Subject: Health awareness camp
No. of workers attend:

Sl. No.	Name	Designation	Signature
1.	Manoj Agarwal	Project- Coordinator	M.agarwalla
2.	Alauddin Sheikh	Asstt. Engineer	
3.	Nur Aktes Hussain Hazarika.	Site Engineer	
4.	Dip Medhi	Draftsman	
5.	Jiten Borah	Asstt. Surveyor	J. Borah
6.	Bipul Kalita	Asstt. Store Exe.	B. Kalita
7.	Saiful Islam	Store Exe.	S. Islam
8.	Prem Nath Saha	Supervisor (civil)	Prem
9.	Debojit Gogoi	—— DO ——	D. Gogoi
10.	Mongal Mechahary	—— DO ——	
11.	Mridu Pawan Lahon	Driver (LMV)	
12.	Ajit Basmatary	Driver (HMV)	GURUG
13.	Hafiz Ali	—— DO ——	Hafiz
14.	Ratul Ali	Sr. Mechanic	R.Ali
15.	Kisti Boro	Oppt. Excavator	KRISTI
16.	Abbas Ali	Seaman	Abbas
17.	Mollah Shalom	—— DO ——	Sahalom
18.	Sofiqul Islam	—— DO ——	S. Islam
19.	Echak Ali	—— DO ——	

Nilutpal Mahanta.
Sign of Env. Management Officer

July, 2017