



# Environmental Monitoring Report

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Project Number: 41603-023  
November 2016  
Period: January 2016 – June 2016

## IND: Bihar Urban Development Investment Program - Tranche 1

Submitted by

Bihar Urban Infrastructure Development Corporation Limited, Patna, Bihar

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**Asian Development Bank**



## Bihar Urban Infrastructure Development Corporation Ltd

( A Govt. of Bihar Undertaking )

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BUIDCo/PMU (ADB Project) Yo – 29/13 (Part-iii) - 337

Date: 08/11/2016.

To,

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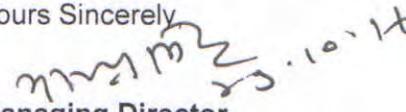
**Sub – Submission of Revised "Semi Annual Environment Safeguard Monitoring Report" for the period of Jan-June, 2016**

Sir,

Please find herewith the Revised Semi Annual Environment Safeguard Monitoring Report for the BUDIP, for period of Jan-June, 2016, for your information and necessary action.

Encl: - Reports.

Yours Sincerely

  
Managing Director  
BUIDCo, Patna.

# Semi-Annual Environmental Monitoring Report

**Project No. 41603**  
**Period Covering January to June 2016**  
**Loan – 2861-IND**

**October 2016**

**IND: Bihar Urban Development Investment  
Program– Project 1**

Prepared by Bihar Urban Infrastructure Development Corporation Ltd. Urban Development Department for the Government of Bihar and the Asian Development Bank. This environmental monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area

**Bihar Urban Infrastructure Development Corporation Ltd**



**Bihar Urban Development Investment Program  
TRANCHE 1  
ADB Loan 2861-IND**

**SEMI ANNUAL ENVIRONMENT MONITORING  
REPORT  
(Period January to June 2016)**

**October 2016**

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## ABBREVIATIONS

ADB	Asian Development Bank
BSPCB	Bihar State Pollution Control Board
BUDIP	Bihar Urban Development Investment Program
BUIDCo	Bihar Urban Infrastructure Development Corporation
CB	capacity building
CPHEEO	Central Public Health and Environmental Engineering Organization (MoUD, GoI)
DBO	design-build-operate (contract)
DPR	detailed project report
DSC	Design and Supervision Consultant
EARF	Environment Assessment Review Framework
EIA	Environmental Impact Assessment
ESMC	Environment and Social Management Coordinator
FFA	Framework Financing Agreement (between India and ADB, 31 January 2013)
FS	Feasibility study
GIS	Geographical Information System
IEE	Initial Environmental Examination
IPF	Indigenous People Framework
MFF	multi-tranche financing facility
MoEFCC	Ministry of Environment, Forest and Climate change
NGO	non-governmental organization
NRW	non-revenue water
O&M	operation and maintenance
OHT	overhead (storage) tank
PD	Project Director
PHED	Public Health Engineering Department
PIU	Project Implementation Unit
PMC	Program Management Consultant
PMU	Project Management Unit
PPMS	Project Performance Monitoring System
PPTA	project preparatory technical assistance
PUC	Pollution Under Control
RF	Resettlement Framework
SAR	Sub-project appraisal report (feasibility study)
SC	Steering Committee
SIP	system improvement plan
SPCB	State Pollution Control Board
SPUR	Support Program for Urban Reform
STP	Sewage treatment plant
Sw	Solid waste
SWM	Solid waste management
TC	Town Committee
UDHD	Urban Development and Housing Department
ULB	Urban Local Body- <i>municipal corporation</i>
ws	Water supply
WTP	Water treatment plant
ww	Wastewater (or sewage)

## I. INTRODUCTION

### A. Background

1. The Bihar Urban Development Investment Program (BUDIP) is expected to improve the urban environment and living conditions in targeted urban areas. It will: (i) improve and expand urban infrastructure and services in urban areas; and (ii) strengthen urban institutional, management, and the financing capacity of the institutions, including the urban local bodies (ULBs). The project will be implemented in two urban areas: Bhagalpur, and Gaya in the state of Bihar. The improvement in urban infrastructure will include rehabilitation, improvement, and expansion of: (i) water supplies; and (ii) sewerage and sanitation. Due to requirement of huge investment, the Govt. of Bihar have availed external funding assistance in order to address the situation and improve the basic service levels. ADB agreed to co-finance implementation of certain components of the road map in Bihar's two largest towns (other than the state capital Patna), i.e. in Bhagalpur, and Gaya. The project will be implemented using a multi-tranche financing facility.
2. On 31 January 2012, the Government of India (GoI) and the ADB concluded a framework financing agreement (FFA) for a multi-tranche financing facility (MFF) for the Bihar Urban Development Investment Program (BUDIP). On 29<sup>th</sup> March 2012 ADB approved the MFF and on 13<sup>th</sup> April 2012 it approved the loan for the first tranche under the MFF. On 25<sup>th</sup> March 2013 the Loan Agreement between GoI and ADB for Tranche 1 of BUDIP (Loan 2861-IND) was signed. The loan became effective on 6 June 2013.
3. The overall BUDIP undertaking is scheduled over a nine year period. The first loan 2861-IND is for 5 year period. Loan closing date is 30<sup>th</sup> June 2017. The total value of BUDIP is \$286 million. The MFF is for a loan amount not exceeding \$200 million. Loan 2861-IND is for an amount of \$65 million. BUIDCO requested ADB to surrender \$ 8 million loan savings towards future tranches. This has been accepted & the loan amount for Tranche 1 now revised as \$ 57 million.
4. The Program is carried out by the Govt. of Bihar (GoB) acting through the State's Urban Development and Housing Department (UDHD) and its Bihar Urban Infrastructure Development Corporation Ltd (BUIDCO).
5. Location of project towns is shown in the **Figure 1**.



Figure 1: Location of project towns

**B. Project and Report Purpose**

6. Sub projects under **Tranche 1** has been classified by ADB as environmental assessment category B (some negative impacts but less significant than category A) and the impacts of subprojects were assessed through Initial Environmental Examination (IEE), prepared according to ADB Safeguard Policy (SPS 2009).

7. This report is the “Semi Annual Environment Monitoring Report” for the period **January to June 2016** to describe the present compliance (both regulatory & implementation) status. Implementation of the mitigation measures, monitoring and reporting as per EMP of the IEE has been considered.

**C. Project Profile Tranche 1**

8. For Tranche 1 selection of contractor has been done & Letter of Acceptance has been issued for the sub project, “Rehabilitation, Construction, Operations, Maintenance and Management of Bhagalpur Water Supply Project 1 (BWSP1)”. Contract has been signed with M/S Pan India & Ranhill Pvt Ltd, Mumbai on 11.07.2014 and contract commenced on 01.10.2014. Now the revised Service Improvement Plan (SIP) Operations submitted by the contractor have been approved. The contractor took over the existing assets /manpower from BMC on 1<sup>st</sup> July 2015 and started the operation & maintenance of existing water supply system of Bhagalpur Town. Contractor also submitted the SIP work part 2, which includes new construction work. That SIP is approved. Also updated IEE has been disclosed on ADB website

9. There is only 1 sub project under **Tranche1**.

**Table 1: Sub Project status under Tranche 1 of BUDIP**

Town	Code	Sub project
<b>Water Supply System (WS)</b>		
Bhagalpur	BH/WS/01	Rehabilitation, Construction, Operations, Maintenance and Management of Bhagalpur Water Supply Project 1 (BWSP1) – DBO contract

10. The Scope of Services for BH/WS/01 includes design, rehabilitation of the existing Barari Water Works (BWW) and the existing transmission and feeder networks, construction of new overhead tanks (OHTs) and rehabilitation of OHTs, optimizing the existing distribution network and construction of new distribution pipelines as required including metered household connections, disconnection of unauthorized water connection and operation, maintenance and management (O&M) of the water supply system.

11. Contractor will be responsible for production of water from the existing Barari Water works as well as from Tube wells and supply to Town until Construction & Commissioning BWSP2 i.e new system of WTP, Intake well and Transmission mains. Once the BWSP2 is in operation, the old Tube wells will be decommissioned.

12. List of sub projects under Tranche 2 will be finalized with advancement of the Program.

13. **Table 2** shows the status of sub project awarded and physical progress.

**Table 2: Status of Sub-project Awarded/Implementation under Tranche-1 (Upto 30<sup>th</sup> June 2016)**

Location	Component, name of the sub project (Code No.)	Starting date of Implementation	Projected months of completion (as per Work order)	Schedule date of completion (Extended date of completion)	Physical progress (%) as on 30 <sup>th</sup> June 2016
Bhagalpur Town	Water Supply- Rehabilitation, Construction, Operations, Maintenance and Management of Bhagalpur Water Supply Project 1 (BWSP1) –	01.10.2014	96 months	01.10.2022	3.0% • <b>Operation &amp; Maintenance:</b> Contractor has started the pipe leakage maintenance work

Location	Component, name of the sub project (Code No.)	Starting date of Implementation	Projected months of completion (as per Work order)	Schedule date of completion (Extended date of completion)	Physical progress (%) as on 30 <sup>th</sup> June 2016
	DBO contract (BH/WS/01)				and Rehabilitation work of Consumer service center CSC of Bhagalpur Municipal Corporation, BMC <ul style="list-style-type: none"> <li>• <b>Construction – pipe laying and OHT – just stated</b></li> </ul>

## II. IMPLEMENTATION STATUS

### A. Major works and progress

14. Tranche 1 of the Bhagalpur water supply sub-project is a DBO contract where the contractor during the first year has prepared a service improvement plan (SIP) and designs for the distribution network, overhead tanks and renovation of the existing water treatment plant (WTP). 3.5 years are allowed for construction. DBO contractor took over operation and management of the entire water supply system after half a year from contract commencement date and will remain responsible for this till contract end in 8 years. DBO contractor is responsible for updation of Initial Environmental Examination in case of change in design or location.

15. Now the revised Service Improvement Plan (SIP) for Operations of existing water supply system submitted by the contractor and said plan has been approved. The contractor took over the existing assets /manpower from BMC on 1<sup>st</sup> July 2015 and started operation & maintenance of existing water supply system of Bhagalpur Town. Contractor also submitted the SIP work for part 2 (new construction) which was also approved.

16. **Table 3** shows the work progress status for the sub project.

17. Monitoring and reporting on Environmental safeguard has just been commenced through compliance monitoring format for new construction phase.

18. The tentative implementation status of the running project is attached as **Appendix 1**.

19. **Appendix 2** shows photo illustration of project locations related to environment safeguard.

**Table 3: Major Works under Sub project and Progress – Tranche 1**

Location	Component, Name of Sub Projects (Code No.)	List of major works under the sub project	Type of works continued at present
Bhagalpur Town	Rehabilitation, Construction, Operations, Maintenance and Management of Bhagalpur Water Supply Project 1 (BWSP1) – DBO contract (BH/WS/01)	<ul style="list-style-type: none"> <li>✓ Refurbishment of 3 nos. WTP at Barari</li> <li>✓ Laying of Distribution pipeline Approx. 460 km DI type</li> <li>✓ Construction of 19 nos. of Overhead Water Storage Reservoirs at               <ul style="list-style-type: none"> <li>• Within Corner of University campus (Land belongs to University)</li> <li>• North side land of Constable Training School</li> <li>• Mahashay Deodi in Champanagar</li> <li>• Abir Mishra Lane in Nathnagar</li> <li>• Within Jaglal High school at Company Bagh</li> <li>• BMC Godown Tatarapur (near Tin shed)</li> <li>• South side open space of municipality office- Shifted to Lajpat Park</li> <li>• Within Campus of Road Construction Division Bhagalpur, behind Rural Development Department premises, Adampur</li> <li>• Barahpur Eidgah</li> <li>• Sector 1, Housing Board office, Barari</li> <li>• Anandanagar colony near Central Jail</li> <li>• Near Medical staff Quarter, Surkikal</li> <li>• Open land in north of temple, Sarbajanak Warshaliganj, Thakuarbari, Warshaliganj</li> <li>• Agricultural Market Complex, Baghbari</li> <li>• Open land to the west of the tube well, Aliganj Katghat, Hussainabad</li> <li>• Shahganji / Maulana Chowk Maidan near existing OHT at Shahganj</li> <li>• Mughalpara Kawali Maidan, Hussainabad</li> <li>• Sikandpur</li> <li>• Maniksarkar</li> </ul> </li> <li>✓ Rehabilitation of 4 Overhead Water Storage Reservoirs: Ghosala, CTS, Ghantaghar and Ishakchak</li> <li>✓ 33 KvA Electric substation at WTP</li> <li>✓ Construction of Customer Service Centre 2 locations</li> <li>✓ Metered House connection- approx 68,000 nos.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Service Improvement Plan (SIP) for Operations of existing water supply system submitted by the contractor and said plan has been approved.</li> <li>✓ The contractor took over the existing assets /manpower from BMC on 1<sup>st</sup> July 2015 and started operation &amp; maintenance of existing water supply system of Bhagalpur Town.</li> <li>✓ Operation of Customer Service Center is also commenced</li> <li>✓ Contractor also submitted the SIP work part 2 for new construction, which was also approved.</li> <li>✓ Physical construction work just started for pipe laying and OHT               <ul style="list-style-type: none"> <li>- 170.5 m DI pipe laying done, rest under progress</li> </ul> </li> </ul>

**B. Compliance of Safeguard Loan Covenants**

20. The loan agreement for BUDIP Project 1 was signed in 25<sup>th</sup> March 2013 and available in ADB website (<http://www.adb.org/projects/documents/loan-agreement-bihar-urban-development-investment-program-project-1>). The status of compliance of ADB’s major Loan Covenants related to Safeguard issues is shown below:

**Table 4: Compliance to Loan Agreements (Environmental Safeguards)**

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
Environment		
3	<p>The Borrower shall ensure or cause the EA to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project, and all Project facilities comply with (a) all applicable laws and regulations of the Borrower and the State relating to environment, health, and safety; (b) the Environmental Safeguards; (c) the Environment Assessment &amp; Review Framework (EARF); and (d) all measures and requirements set forth in the respective IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report</p>	<p><b>Under compliance</b></p> <p>Document is prepared/ or under preparation by complying all relevant State and National Laws, Safeguard Policy Statement (SPS 2009) of ADB, Environment Assessment Review Framework (EARF) for Tranche-1 program. Same will be followed for subsequent Tranches.</p> <p>Initial Environmental Examination (IEE), Environment Management Plan (EMP) report prepared and approved by ADB for Bhagalpur (Water supply Package: BWSP 1). IEE report for the package has been updated after finalization of DPR and submitted to ADB for approval. Approval has been received and revised report disclosed in the ADB website. In case of any change of further scope and locations IEE will be revised subsequently.</p> <p>All measures and requirements as prescribed in IEE/EIA and EMP will be considered during implementation.</p> <p>Corrective or preventive action plans will be reflected in Environment Monitoring Report and project implementation authority will be taken care.</p>
Human and Financial Resources to Implement Safeguards Requirements		
7.	<p>The Borrower shall cause the State to make available necessary budgetary and human resources to fully implement the EMPs</p>	<p><b>Under Compliance</b></p> <p>Budgetary provisions have been included in EMP of Tranche 1 sub project.</p> <p>Environment and Social Management Coordinator of Program Management Unit is in place</p> <p>Human resource (project consultant, i.e Environmental Specialist of PMC) for monitoring of EMPs is in place for regular compliance.</p> <p>Safeguard office of Program Implementation Unit (PIU) also placed initially. But on report</p>

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
		date i.e 30 <sup>th</sup> June 2016 post is vacant due to resignation of concerned official
Safeguards – Related Provisions in Bidding Documents and Works Contracts		
8.	<p>The Borrower shall cause the State to ensure that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <p>(a) comply with the measures and requirements relevant to the contractor set forth in the IEEs, the EMPs, and any corrective or preventative actions set out in a Safeguards Monitoring Report;</p> <p>(b) make available a budget for all such environmental measures;</p> <p>(c) provide the PMU with a written notice of any unanticipated environmental risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEEs, the EMPs;</p> <p>(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and</p> <p>(e) fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.</p>	<p><b>Under compliance</b></p> <p>(a) Initial approved draft IEE, EMP for BWSP1 is attached in Bidding documents. This process will be followed for all the sub projects.</p> <p>Revised IEE after design approved by ADB and that report is available with contractor</p> <p>In case of further any change of scope, revised IEEs, EMPs will be prepared and corrective measures will be disclosed to contractor and same will be reflected in the “Environment Monitoring Report”</p> <p>(b) IEE indicates budgetary provisions for implementation of EMP.</p> <p>(c) With the development of sub project and implementation, in case of additional impacts/risks due to change in scope/area, that will be reflected in the revised IEEs, EMPs and Environment Monitoring Report and accordingly project Executing Agency will inform the Construction Agency for taking relevant corrective measures.</p> <p>(d) Haul roads will be marked properly (by avoiding residences and agricultural land) before commencement of transportation of materials.</p> <p>(e) Pathways, land which are likely to be affected for a short period during implementation of the sub project will be restored by concerned construction agency before acceptance of the work. Restoration status will be reflected in post construction monitoring report</p>
Safeguards Monitoring and Reporting		
10	<p>The Borrower shall cause the State to do the following:</p> <p>(a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</p>	<p><b>Under compliance</b></p> <p>(a) This is 6<sup>th</sup> semi-annual Safeguards Monitoring Report prepared upto June 2016. ADB disclosed in their website upto 5<sup>th</sup> semi-annual monitoring report (i.e ending December 2015)</p>

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
	<p>(b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEEs, the EMPs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and</p> <p>(c) report any breach of compliance with the measures and requirements set forth in the EMPs, promptly after becoming aware of the breach.</p>	<p>(b) With the development of project and implementation, in case of additional impacts/risks due to change in scope/area, will be reflected in revised IEEs, EMPs and accordingly Executing Agency (EA) will inform the ADB along with corrective action plan which will be reflected in the Monitoring Report.</p> <p>(c) in case of any breach of compliance with the measures and requirements set forth in the EMP; EA will promptly inform ADB and suitable corrective action plan will be planned.</p>
Prohibited List of Investments		
11	The Borrower shall ensure or cause the State to ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	<p><b>Complied</b></p> <p>Under Tranche -1, there is no violation of prohibited investment activities as per ADB SPS (2009) Appendix 5.</p> <p>Same will be followed in subsequent project.</p>
Labor Standards		
13.	The Borrower shall cause the State to ensure that Works contracts follow all applicable labor laws of the Borrower and the State and that these further include provisions to the effect that contractors (i) carry out HIV/AIDS awareness programs for labor and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; (ii) follow and implement all statutory provisions on labor (including not employing or using children as labor, equal pay for equal work), health, safety, welfare, sanitation, and working conditions; and (iii) maximize employment of women and local poor and disadvantaged persons for construction purposes, provided that the requirements for efficiency are adequately met. Such contracts shall also include clauses for termination in case of any breach of the stated provisions by the contractors.	<p><b>Complied in document and under compliance during implementation</b></p> <p>Provision are included (as per EMP &amp; BID document) to carry out HIV/AIDS awareness programs for construction contractor, application of all relevant labour laws for health and safety including child labour law and engagement of local labours (preferably from economically backward group) covering women labours.</p> <p>In case of any breach of provision, necessary corrective measures as per contract clauses shall be taken.</p> <p>All activities including awareness program will be reflected in "Monitoring Report".</p>

**C. Implementation Arrangement**

21. The Urban Development and Housing Department (UDHD) of Government of Bihar is the Executing Agency (EA) for the Project, which will receive strategic directions from a state-level Steering Committee. The Project Management Unit (PMU) within BUIDCo has an Environment and Social Management Coordinator (ESMC). Bihar Urban Infrastructure Development Corporation (BUIDCo), a company fully owned by GOB, which specializes in

implementation of investment projects, will house the Project Management Unit (PMU) at state-level (Patna). PIU field offices have been set up in each project town to manage the implementation of sub-projects. In addition, Town Committees have been set up in each project town for periodical review of subproject progress, facilitate smooth implementation and finalize proposals for any legal, operational and financial changes required, in discussion with the PMU and UDHD.

22. The PMU, with support from PIU field offices will ensure mitigation of negative environmental and social impacts due to the subproject, if any. The PMU will be assisted by Program Management Consultants (PMC) who will provide project management support, assure the technical quality of design and construction, prepare IEE/EIA/RP/IPP reports and provide advice on policy reforms.

Responsibilities of Environment and Social Management coordinator (ESMC) of Project Management Unit (PMU)

23. Environment and Social Management Coordinator within BUIDCo as PMU is to address environmental and social safeguards issues. The ESMC is being assisted by the PMC on environmental and social issues. The ESMC oversee implementation the EARF/RF/IPF by the PIU/implementing NGO. The PMU endorse subproject IEEs/EIAs and RPs/IPPs prepared by the Project Management Consultants and have financing and monitoring responsibilities. It will co-ordinate with national and state agencies to resolve inter-departmental issues, if any. It will also monitor physical and non-physical activities under the investment plan and will monitor implementation of safeguards plans and guide PIU as and when necessary.

Program Management Consultants (PMC)

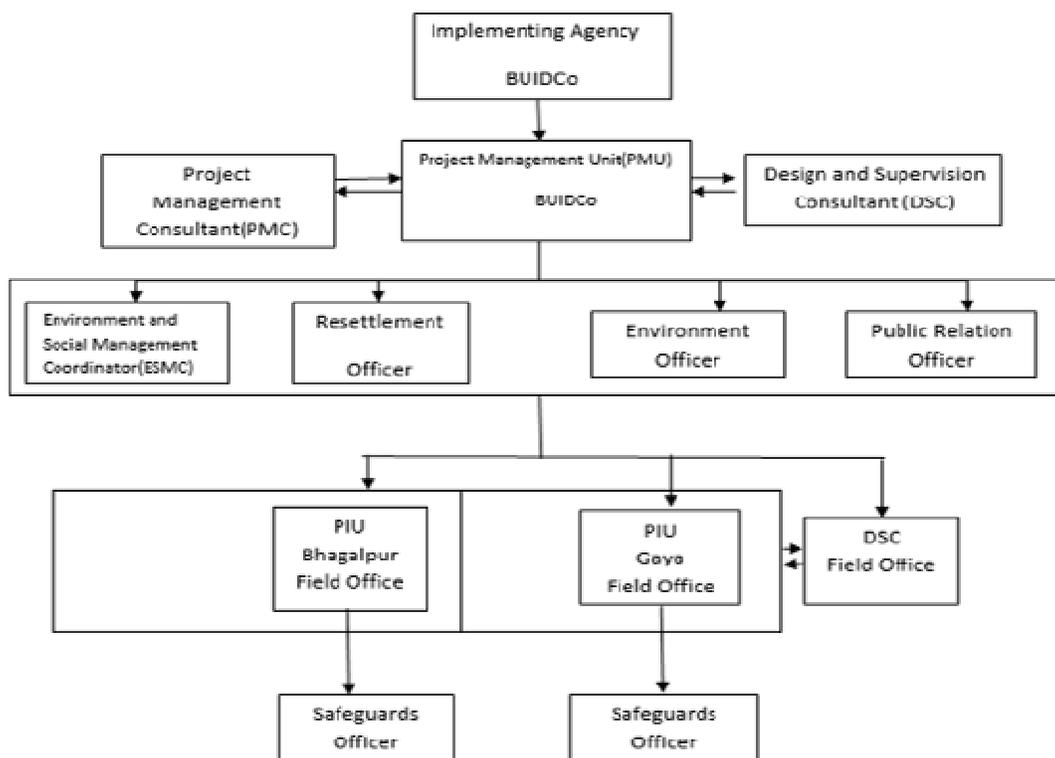
24. The Program Management Consultants (PMC) has an Environment Specialist (ES) and Resettlement/Social Development Specialist who is responsible for the preparation of IEE/EIA and RP/IPP reports respectively. The Environment Specialist and Resettlement/Social Development Specialist of PMC will review and finalize all reports in consultation with the ESMC of PMU. The Environment Specialist (ES) and Resettlement/Social Development Specialist of PMC submit periodic monitoring and implementation reports to PMU, who will take follow-up actions, if necessary.

25. The ESMC of PMU will endorse/submit periodic monitoring reports received from PMC to the Program Director, PMU who will then submit these to ADB. The monitoring report will focus on the progress of implementation of the IEE/EIA and EARF, RP/RF and IPP/IPF, issues encountered and measures adopted, follow-up actions required, if any, as well as the status of compliance with subproject selection criteria, and relevant loan covenants. The PMU will seek GoB clearance for submission and disclosure of the environmental and social monitoring report to ADB.

Project Implementation Unit (PIU)

26. The PIU is primarily tasked with the day-to-day implementation of safeguards plans. The PIU shall have safeguard officer at town level. He/she is responsible for implementing and monitoring safeguards compliance activities. Safeguard officer is undertaking surveys and record their observations throughout the construction period to ensure that safeguards and mitigation measures are provided as intended. It will be responsible for obtaining statutory clearances and obtaining NOCs from government agencies/other entities and entering into agreements with them for use of their land. It will also co-ordinate for obtaining right of way clearances with related State and National agencies. The PIU will be responsible for delivery of entitlements to APs.

27. Safeguard implementation arrangement for the program is shown below.



**Figure 2: Safeguards Implementation Arrangement**

28. **Table 5** shows the details of the environmental safeguards team.

**Table 5: Details of BUDIP Environmental Safeguard Team**

Designation	Name and Contact Details
PMU, Environmental & Social Management Coordinator	Name: Dr. Lata Choudhary Office Address: BUIDCo, 3 <sup>rd</sup> Floor, Maurya Tower, Maurya Lok Complex, Budh Marg, Patna – 800 001, Bihar Phone: 094 7061 0480 Email: <a href="mailto:esmcinpmu.buidco@gmail.com">esmcinpmu.buidco@gmail.com</a>
PIU, Safeguard officer, Bhagalpur	Resign & Vacant
PIU, Safeguard officer, Gaya	No staff
PMC, Environment Specialist	Name: Dr. Ardhendu Mitra Office Address: BUDIP-PMC, BUIDCo, 3 <sup>rd</sup> Floor, Maurya Tower, Maurya Lok Complex, Budh Marg, Patna – 800 001, Bihar Phone: 098 3041 5953 Email: <a href="mailto:ardhendumitra@gmail.com">ardhendumitra@gmail.com</a>
PMC, Environment Expert – Non key	Name: Dr. Anil Kumar Patni Office Address: BUDIP-PMC, BUIDCo, 3 <sup>rd</sup> Floor, Maurya Tower, Maurya Lok Complex, Budh Marg, Patna – 800 001, Bihar Phone: 076 3152 8472 Email: <a href="mailto:patnianil@gmail.com">patnianil@gmail.com</a>
DSC, Environment Expert	Vacant

**III. ENVIRONMENTAL PROCEDURE REVIEW****A. Environmental Legislation and Pollution Control Acts**

29. The Government of India has formulated various policy guidelines; acts and regulations aimed at the sustenance of environment in general, which are briefly summarized and applicable acts with the programs, are mentioned as below.

Sl. No.	Sources	Legislation
1	Water Pollution	The Water (Prevention and Control of Pollution) Act, 1974, as amended in 1988
2	Air Pollution	The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987
3	Noise Pollution	The Noise Pollution (Regulation and Control) Rules, 2000
4	Environment	The Environment (Protection) Act, 1986
5	Public Liability	The Public Liability Insurance Act, 1991 The Public Liability Insurance Rules, 1991
6	Conservation, construction and reuse in and around the protected monuments	The Ancient Monuments and Archaeological Sites and Remains Act, 1958, and the rules, 1959
7	Hazardous waste / Solid waste	<ul style="list-style-type: none"> <li>➤ Hazardous Waste (Management and Handling) Rules, 1989</li> <li>➤ Manufacture, Storage and Import of Hazardous Chemical Rules, 1989</li> <li>➤ Emergency Planning Preparedness and Response for Chemical Disasters Rules, 1995</li> <li>➤ Hazardous Microorganisms and Genetically Modified Organisms (Manufacture, Use Import Expert and Storage) Rules, 1999</li> <li>➤ Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016</li> <li>➤ Solid Waste Management Rules, 2016</li> </ul>
8	EIA Notification	The Ministry of Environment and Forests has revised the EIA notification, 1994, and issues the revised EIA notification on 14th September 2006
9	Use and Management of Explosive	The Explosives Act, 1884 and The Explosives Rules, 1983

**B. Environmental Legal Requirement**

30. The specific requirements to ensure compliance by these components and subprojects are shown in **Table 6**.

**Table 6: Action Required Ensuring Subprojects Comply with National Environmental Laws**

Component	Applicable Legislation	Compliance	Action Required
1. All components that require acquisition of forest land	Forest (Conservation) Act 1980; Wildlife (protection) Act 1972	Approval from State Principal Chief Conservator of Forest Government of Bihar and Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India	Tree felling permission
2. Water Treatment Plant (WTP) – Surface water	Water (Prevention and Control of Pollution) Act 1974	Consent to Establish (CTE) and Consent to Operate (CTO) from Bihar State Pollution Control Board (BSPCB), Government of Bihar	Based on project review and site inspection, Bihar State Pollution Control Board (BSPCB) provides CTE before construction, and stipulates the disposal

Component	Applicable Legislation	Compliance	Action Required
			standards to be met during operation. After completion of construction, Consent to Operate (CTO) will be issued confirming compliance with the CTE conditions, if any
		Renewal of CTO during operation of surface Water Treatment Plant (WTP)	Based on the performance of the WTP and its compliance with the disposal standards CTO to be renewed every year.

**C. Compliance with Environmental Regulations**

31. Before implementation (construction) of the project compliance with environmental policy, law and legislation is necessary.

32. **Table 7** provides the status of compliance of subprojects to national and state laws, rules, policies and regulations applicable to BUDIP Tranche 1. Consent to establish (CTE) is obtained for rehabilitation of Water Treatment Plant at Bhagalpur, which attached as **Appendix 3**.

**Table 7: Status of Compliance with National and State Legal Requirements**

Town	Package No.	Components	National and State Legal Requirement	Status (upto 30.06.2016)	Conditions of the Clearance/NOCs
<b>1. Water Supply System Subproject</b>					
Bhagalpur	<b>BH/WS/01</b>	Rehabilitation, Construction, Operations, Maintenance and Management of Bhagalpur Water Supply Project 1 (BWSP1) – DBO contract (BH/WS/01)	Water (Prevention and Control of Pollution) Act, 1974/ Consent to Establish (CTE) for rehabilitation of WTP from Bihar State Pollution Control Board Consent to operate will be required before operation The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987 Also for setting up hot mix plant, batching plant and use of diesel generator Consent to Establish (CTE) and Consent to Operate (CTO)	Online proposal for CTE rehabilitation of WTP submitted to Pollution Control Board on 27.11.2015 and hard copy with fees submitted to Bihar State Pollution Control Board on 01.12.2015 CTE of WTP was obtained Bihar State Pollution Control Board on 9 <sup>th</sup> March 2016 and condition provided in CTE.	<b>Appendix 3</b> shows CTE with condition Renewal of CTE will be required after expiry of validity Obtaining of CTO for the running WTP before renovation work is under process.

**IV. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN**

33. **EMP Compliance Status:** Field activities for new construction have just started under the **Tranche 1**. Application of EMP has been commenced as per final approved IEE report. Compliance status for application of mitigation measures against impacts on air, water, soil environment, and social and safety aspects is shown in **Table 8**.

**Table 8: Pre construction/ design phase activities – Compliance status**

Sr. No	Activity	Management/Mitigation	Responsible for Mitigation /	Responsible for Monitoring and supervision	Frequency	Compliance Status/ Explanation
1.	Legislation, permits and agreements	In all instances- covering Environment & Forest, BUIDCo, implementation agency, contractors and consultants must remain in compliance with relevant local and national legislation.	SO- PIU, E-DSC	ES- PMC, ESMC- PMU, EE- PMU	Prior to moving onto site and Quarterly during construction	<b>Under Compliance</b> Consent to establish obtained for rehabilitation of WTP.
		Proof of compliance to Air Act & Noise Act must be forwarded by the contractor to PMU/PMC/PIU (in relation to hot mixing, batch mix plants, diesel generators, etc. if any)	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	Prior to moving onto site and Quarterly during construction	<b>Partially complied</b> Base line monitoring has been done. Work just started. During construction monitoring will be carried out shortly
		Forest land clearance, NOC from BMC. for tree cutting	SO-PIU, DSC	ES- PMC, ESMC- PMU, EE- PMU	Prior to moving onto site and Quarterly during construction for compliance	<b>Under Compliance</b> Permission for 4 nos. Tree felling at TMU campus OHT location – to be obtained
		A copy of the EMP must be kept on site during the construction period	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	At all times	<b>Complied</b>
2.	Access to site <sup>1</sup>	Access to site at all water storage reservoir and WTP location will be via existing roads. The Contractor will need to ascertain the existing condition of the roads and repair damage due to construction. Site management plant and alignment of approach road to site needs to be followed	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	Prior to moving onto site and monthly	To be comply with development of activity. Roads for construction access will be planned and approved by the Engineer  Presently WTP site is

<sup>1</sup> Access to site and traffic management shall be done in accordance to the directions of Engineer

Sr. No	Activity	Management/Mitigation	Responsible for Mitigation /	Responsible for Monitoring and supervision	Frequency	Compliance Status/ Explanation
		The Local Traffic Department must be informed at least a month in advance if the traffic in the area will be affected (if any)	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	Prior to moving onto site and quarterly	approachable through existing road (Complied)
		The location of all affected services must be identified and confirmed.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	Prior to moving onto site and quarterly	
		All roads for construction access must be planned and approved by the Engineer and its Environmental Specialist ahead of construction activities. They shall not be created on an ad-hoc basis.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	Prior to moving onto site and during construction - quarterly	
		No trees, shrubs or groundcover may be removed or vegetation stripped without the prior permission of the Engineer/Environmental Specialist	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	Before and during construction- semi annually	
3.	Setting up of construction camp <sup>2</sup>	Choice of site for the Contractor's camp requires the Engineer's/ ES permission and must take into account location of local residents, businesses and existing land uses, including flood zones and slip / unstable zones. A site plan must be submitted to the Engineer for approval.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	During surveys and preliminary investigations and prior to moving onto the site	<b>To be comply</b> Work just started, only local labours are involved (Ref. labour engaged status in <b>Appendix 11</b> ) Labour camp under construction as per specification with all facilities and approval of Environment Specialist
		The construction camp may not be situated on a floodplain or on slopes greater than 1:3 (Horizontal : Vertical ratio). Preferable slope 1:1 (plain land) or 1:2 (marginal slope)	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During surveys and preliminary investigations and prior to moving onto the site- quarterly monitoring	
		Private land needs to be avoided. If no option NOC from pvt party will be	SO-PIU, E-DSC,	ES- PMC, EE- PMU	During site establishment and ongoing –	

<sup>2</sup> Careful planning of the construction camp can ensure that time and costs associated with environmental management and rehabilitation are reduced.

Sr. No	Activity	Management/Mitigation	Responsible for Mitigation /	Responsible for Monitoring and supervision	Frequency	Compliance Status/ Explanation
		required	Contractor		monthly inspections	
		In most cases, on-site accommodation will not be required. The construction camp can thus be comprised of: <ul style="list-style-type: none"> <li>• site office</li> <li>• designated first aid area</li> <li>• separate eating areas</li> <li>• storage areas</li> <li>• batching plant (if required)</li> <li>• refueling areas (if required)</li> <li>• maintenance areas (if required)</li> <li>• crushers (if required)</li> </ul>	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	During set-up and monthly	
		The camp must be properly fenced and secured	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site establishment and ongoing – monthly inspections	
		The Contractor shall make adequate provision for temporary toilets (gender specific) for the use of their employees during the Construction Phase. Such facilities, which shall comply with local authority regulations, shall be maintained in a clean and hygienic condition. Their use shall be strictly enforced.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site establishment and ongoing – weekly inspections	
		Bins shall be provided at convenient intervals for disposal of waste within the construction camp.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site set-up and ongoing- weekly	
4.	Establishing equipment lay-down and storage area <sup>3</sup>	Choice of location for equipment lay-down and storage areas must take into account distances to adjacent land uses, general onsite topography and water erosion potential of the soil.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	During site set-up	<b>To comply</b> Equipment yet to mobilize. Proper storage of

<sup>3</sup> Storage areas can be hazardous and unsightly and can cause environmental pollution if not designed and managed carefully.

Sr. No	Activity	Management/Mitigation	Responsible for Mitigation /	Responsible for Monitoring and supervision	Frequency	Compliance Status/ Explanation
		Impervious surfaces must be provided where necessary.				fuels, lubricants done. Equipment lay-down area planned
		Storage areas shall be secured so as to minimize the risk of crime. They shall also be safe from access by children / animals etc.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site set-up and monthly	
		Residents living adjacent to the construction site must be notified of the existence of the hazardous storage area.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	During site set-up and monthly	
		Equipment lay-down and Storage areas must be designated, demarcated and fenced if necessary.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site set-up and monthly	
		Fire prevention facilities must be present at all storage facilities.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site set-up and monthly	
		Proper storage facilities for the storage of oils, paints, grease, fuels, chemicals and any hazardous materials to be used must be provided to prevent the migration of spillage into the ground and groundwater regime around the temporary storage areas.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site set-up and monthly	
		These storage facilities (including any tanks) must be on an impermeable surface that is protected from the ingress of storm water from surrounding areas in order to ensure that accidental spillage does not pollute local soil or water resources.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site set-up and monthly	
		Fuel tanks must meet relevant specifications and be elevated so that leaks may be easily detected.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site set-up and monthly	
		Staff dealing with these materials / substances must be aware of their potential impacts and	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site set-up and monthly	

Sr. No	Activity	Management/Mitigation	Responsible for Mitigation /	Responsible for Monitoring and supervision	Frequency	Compliance Status/ Explanation
		follow the appropriate safety measures.				
5.	Materials management – sourcing <sup>4</sup>	Prioritize sites already permitted by the Mining Department	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	On receipt of natural materials	<b>Under compliance</b> Only pipes are procured. Other materials will be procured as per BID condition
		Contractors shall prepare a source statement indicating the sources of all materials (including sands, natural gravels, crushed stone, asphalt, clay liners, etc), and submit these to the Engineer for approval prior to commencement of any work.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	On award of contract and continued quarterly	
		If other sites are necessary, inform construction contractor that it is their responsibility to verify the suitability of all material sources and to obtain the approval of DSC	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	On receipt of natural materials and continued quarterly	
6.	Education of site staff on general and environmental conduct <sup>5</sup>	Ensure that all site personnel have a basic level of environmental awareness training.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	During staff induction and ongoing monthly monitoring	<b>Complied</b> Site Safety training arranged more or less on regular basis for operator and construction staff.  Awareness program from PMU/ PMC arranged on regular basis <b>Appendix 2</b> shows training Photographs and <b>Appendix 4</b> shows sample Training
		Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	During staff induction, followed by ongoing weekly	
		All employees must undergo safety training and wear the necessary protective equipments (e.g helmets, gloves, gumboots, nose mask, ear plugs as per type of work) and clothing.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	During staff induction, followed by monthly monitoring	
		A general regard for the social and ecological well-being of the site and adjacent areas is expected	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE-	During staff induction, followed by ongoing	

<sup>4</sup> Materials must be sourced in a legal and sustainable way to prevent offsite environmental degradation.

<sup>5</sup> These points need to be made clear to all staff on site before the subproject begins.

Sr. No	Activity	Management/Mitigation	Responsible for Mitigation /	Responsible for Monitoring and supervision	Frequency	Compliance Status/ Explanation
		<p>of the site staff. Workers need to be made aware of the following general rules:</p> <ul style="list-style-type: none"> <li>• no alcohol/drugs on site;</li> <li>• prevent excessive noise;</li> <li>• construction staff are to make use of the facilities provided for them, as opposed to ad hoc alternatives (e.g. fires for cooking, the use of surrounding bushes as a toilet facility);</li> <li>• no fires permitted on site;</li> <li>• trespassing on private/commercial properties adjoining the site is forbidden;</li> <li>• other than pre-approved security staff, no workers shall be permitted to live on the construction site; and</li> <li>• no worker may be forced to do work that is potentially dangerous or that he/she is not trained to do.</li> </ul>		PMU	monthly monitoring	document
7.	Social impacts <sup>6</sup>	<p>Open liaison channels shall be established between the contractors and interested and affected parties such that any queries, complaints or suggestions can be dealt with quickly and by the appropriate person(s).</p> <p>Road closure (if any) together with the proposed detour needs to be communicated via advertising, pamphlets, radio broadcasts, road signage, etc.</p>	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	Prior to moving onto site and ongoing monthly	<p><b>Under compliance</b></p> <p>Caution tape placed during maintenance work permanent barricade around excavated area Photo attached as <b>Appendix 2.</b></p>
			SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- PMU, EE- PMU	Prior to moving onto site and ongoing monthly	

<sup>6</sup>It is important to take notice of the needs and wishes of those living or working adjacent to the site. Failure to do so can cause disruption to work.

Sr. No	Activity	Management/Mitigation	Responsible for Mitigation /	Responsible for Monitoring and supervision	Frequency	Compliance Status/ Explanation
		Advance road signage indicating the road detour and alternative routes (if required). Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/ complaints.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC-PMU, EE-PMU	Prior to moving onto site and ongoing monthly	
		Storage facilities and other temporary structures on site shall be located such that they have as little visual impact on local residents as possible.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC-PMU, EE-PMU	During surveys and preliminary investigations and site set-up. Monthly monitoring	
8.	Conservation of the natural environment <sup>7</sup>	No vegetation may be cleared without prior permission from the Engineer.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC-PMU, EE-PMU	During site setup and quarterly	Complied
		Trees that are not to be cleared shall be marked beforehand with danger tape. The PIU/ES-PMC /Engineer (DSC) must be given a chance to mark vegetation that is to be conserved before the Contractor begins clearing the site.	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC-PMU, EE-PMU	During site set-up and as per requirement	
9	Set-up of waste management procedure	The excavation and use of rubbish pits on site is forbidden.	SO-PIU, E-DSC, Contractor	ES- PMC, EE-PMU	Monthly monitoring	Under Compliance Contractor has to submit Spoil management plan for Excavated earth
		Burning of waste is forbidden.	E- DSC, Contractor	ES- PMC, EE-PMU	Monthly monitoring	
10	Social and Cultural Resources	(i) Consult Archaeological Survey of India (ASI) or concerned dept. of Tripura Govt. to obtain an expert assessment of the archaeological potential of the site; (ii) Consider alternatives if	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC-PMU, EE-PMU	During site set-up and ongoing quarterly	Not required till date

<sup>7</sup> Alien plant encroachment is particularly damaging to natural habitats and is often associated with disturbance to the soil during construction activities. Care must be taken to conserve existing plant and animal life on and surrounding the site.

Sr. No	Activity	Management/Mitigation	Responsible for Mitigation /	Responsible for Monitoring and supervision	Frequency	Compliance Status/ Explanation
		<p>the site is found to be of medium or high risk;                      (iii) Develop a protocol for use by the construction contractors in conducting any excavation work, to ensure that any chance finds are recognised and measures are taken to ensure they are protected and conserved.</p>				
11	Core Labour Standard (CLS)- safety and compliance	<p>Monitoring compliance with national labor laws and regulations, provided that these national laws are consistent with CLS. DSC will ensure that bidding and contract documents include specific provisions requiring contractors to comply with all: (i) applicable labor laws and core labor standards on: (a) prohibition of child labor as defined in national legislation for construction and maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity or caste; and (c) elimination of forced labor; and (ii) the requirement to disseminate information on sexually transmitted diseases including HIV/AIDS to employees and local communities surrounding the project sites.</p>	SO-PIU, E-DSC, Contractor	ES- PMC, ESMC- EE- PMU, PMU	During site set-up and ongoing quarterly	Work just started. Labour license attached as <b>Appendix 5</b>
12	Occupational health & safety	<p>Comply with IFC EHS Guidelines on Occupational Health and Safety- ref. <a href="http://www.ifc.org/ifcext/enviro.nsf/Content/Environmental%20Guidelines">www.ifc.org/ifcext/enviro.nsf/Content/Environmental Guidelines</a>)                      Mitigation measures as mentioned during construction phase to be</p>	Contractor	SO-PIU, ES- PMC, ESMC- EE- PMU, PMU	During site set-up and ongoing monthly.	Work just started for new construction <b>Under compliance</b>

Sr. No	Activity	Management/Mitigation	Responsible for Mitigation /	Responsible for Monitoring and supervision	Frequency	Compliance Status/ Explanation
		followed				
13	Security and safety	Lighting on site is to be set out to provide maximum security and to enable easier policing of the site, without creating a visual nuisance to local residents or businesses.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	During site set-up and continued monthly	Work just started. Materials pipe stored within secured area of WTP campus <b>Under compliance</b>
		Material stockpiles or stacks, such as, pipes must be stable and well secured to avoid collapse and possible injury to site workers / local residents.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	Monthly	
		Flammable materials shall be stored as far as possible from adjacent residents / businesses.	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	Monthly	
		All interested and affected parties shall be notified in advance of any known potential risks associated with the construction site and the activities on it. Examples are: <ul style="list-style-type: none"> <li>• stringing of power lines</li> <li>• earthworks / earthmoving machinery on steep slopes above houses / infrastructure</li> <li>• risk to residences along haulage roads / access routes</li> </ul>	SO-PIU, E-DSC, Contractor	ES- PMC, EE- PMU	Week prior to activity and monthly to be continued	

DSC: Design and Supervision Consultant, E: Engineer, EE: Environmental Engineer, ES: Environment Specialist, ESMC: Environment & Social Management Coordinator, PIU: Project Implementation unit, PMC: Project Management Consultant, PMU: Project Management Consultant, SO: Safeguard Officer

**Table 9: Management of Construction and Workforce Activities:- Construction phase—compliance status**

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
1	Climatic impact	<ul style="list-style-type: none"> <li>✓ Seasonal climatic variations will be considered during scheduling of construction activities in the area.</li> <li>✓ Consideration of suitable season (non monsoon)</li> </ul>	E- DSC, Contractor	SO-PIU/ ES- PMC, ESMC- PMU, EE – PMU	Quarterly monitoring	<b>Under compliance</b> Work just started. Scheduling of work done as per seasonal condition

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		/lien period) for major construction activity ✓ Excavations and other clearing activities will only be done during agreed working times and permitted weather conditions. ✓ Storm water control (through drainage, diversion) during construction phase as per the method approved by the Engineer.				
2.	Maintenance of construction camp and work site	The Contractor must monitor and manage drainage of the camp site to avoid standing water and soil erosion.	E- DSC, Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Weekly inspection	<b>Under compliance</b>  Work Just Started Work camp under construction and which will be maintained as per stipulated EMP condition
	Run-off from the camp site must not discharge into neighbors' properties.	E- DSC, Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Weekly inspection		
	Toilets are to be maintained in a clean state and shall be moved to ensure that they adequately service the work areas.	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Weekly inspection		
	Drinking water facility needs to be maintained at camp and work site	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Weekly inspection		
	The Contractor is to ensure that open areas or the surrounding bushes are not being used as toilet facility.	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Weekly inspection		
	The Contractor shall ensure that all litter is collected from the work and camp areas daily.	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Weekly inspection		
	Bins and shall be emptied regularly and waste shall be disposed of at the pre-approved site.	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Weekly inspection		
	Eating areas shall be regularly serviced and cleaned to ensure the highest possible standards of hygiene and cleanliness.	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Weekly inspection		
	The Contractor shall ensure that his camp and working areas are kept clean at all times.	E- DSC, Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Weekly monitoring		
3.	Staff conduct	The Contractor must monitor the performance of construction workers to	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring.	<b>Under compliance</b> Work just

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		ensure that the points relayed during their induction have been properly understood and are being followed.		PMU		started Worker's performance will be monitored under provision of applicable rules
		The rules that are explained in the worker conduct section, must be followed at all times	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring.	
4.	Dust and air pollution <sup>8</sup>	Consult with DSC/PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials;	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring.	<b>Partially complied</b> Work just started Base line monitoring done. During construction air quality not done. Needs to be monitored as per EMP.
		Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather;	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring.	
		Avoiding the need to stockpile on site	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring.	
		Use tarpaulins to cover sand and other loose material when transported by trucks	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring.	Pollution under Control Certificate of vehicles collected
		Fit all heavy equipment and machinery with air pollution control devices which are operating correctly and regular servicing of the vehicles& equipments off site in order to limit gaseous emissions	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring.	Excess earth transported with cover
		Excess earth and other windblown loads in transit will be kept covered	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring.	
		No fires are allowed on site	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Ongoing monthly monitoring.	
5	Noise Level	➤ Plan activities in consultation with DSC/PIU so that activities with the greatest potential to generate noise are	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring	<b>Partially complied</b> No such noise

<sup>8</sup> Main causes of air pollution during construction are dust from vehicle movements and stockpiles, vehicle emissions and fires.

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		<p>conducted during periods of the day which will result in least disturbance;</p> <ul style="list-style-type: none"> <li>➤ Require horns not be used unless it is necessary to warn other road users or animals of the vehicle's approach;</li> <li>➤ Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor;</li> <li>➤ Ensure that machinery is in a good state of maintenance.</li> <li>➤ Monitor noise levels in potential problem areas, and</li> <li>➤ Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicle/s.</li> </ul>				<p>producing machinery mobilized at site PPE utilized as per requirement.</p> <p>Work just started Base line monitoring done. During construction noise level monitoring not done. Needs to be monitored as per EMP.</p>
6	Storm water	<p>Earth, stone and rubble is to be properly disposed of so as not to obstruct natural water pathways over the site i.e. these materials must not be placed in storm water channels, drainage lines</p> <p>During construction, unchanneled flow must be controlled to avoid soil erosion.</p>	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring	To be complied as per requirement and following EMP
			E- DSC, Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring	
7	Water quality <sup>9</sup>	Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or	Contractor	SO-PIU/ES-PMC, EE – PMU	Regular monitoring - monthly	<p><b>Partially complied</b></p> <p>During</p>

<sup>9</sup>Water quality is affected by the incorrect handling of substances and materials. Soil erosion and sediment is also detrimental to water quality. Mismanagement of polluted run-off from vehicle and plant washing and wind dispersal of dry materials into rivers and watercourses are detrimental to water quality.

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		plastic sheets				construction Water quality monitoring for River water done. Results enclosed in <b>Appendix 6.</b> Regular monitoring of Tube well water (supply water) for standard parameters needs to be done
		Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with BMC/PIU on designated disposal areas	Contractor	SO-PIU/ES-PMC, EE – PMU	Regular monitoring - monthly	
		Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies	Contractor	SO-PIU/ES-PMC, EE – PMU	Regular monitoring - monthly	
		Place storage areas for fuels and lubricants away from any drainage leading to water bodies	Contractor	SO-PIU/ES-PMC, EE – PMU	Regular monitoring - monthly	
		Dispose any wastes generated by construction activities in designated sites	Contractor	SO-PIU/ES-PMC, EE – PMU	Regular monitoring - monthly	
		Conduct surface quality inspection according to the Environmental Management Plan (EMP)	Contractor	SO-PIU/ES-PMC, EE – PMU	Quarterly monitoring	
8.	Conservation of natural environment – terrestrial flora	As the work front progresses the Contractor is to check that vegetation clearing has the prior permission of the DSC/PIU Engineer and Environmental Specialist of PMC.	E- DSC, Contractor	SO-PIU/ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring	To be complied if tree felling required
		Minimize removal of vegetation and disallow cutting of trees (particularly at Customer service area at Barari) as far as possible through design modification	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring	
		Require to plant three (3) native trees for every one (1) that is removed	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Monthly monitoring	
		Prohibit employees from poaching wildlife, bird hunting, and cutting of trees for firewood	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Ongoing monitoring. Monthly monitoring	
		Non removal of trees of religious importance	Contractor	SO-PIU/ ES-PMC, ESMC-PMU, EE – PMU	Quarterly monitoring.	
9.	Materials management	Stockpiles shall not be situated such that they obstruct natural water pathways.	E- DSC, Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring. Location as directed by the engineer	<b>Under compliance</b> Work just started. Only pipes are procured after approval of DSC and
		Stockpiles shall not exceed 2m in height unless otherwise	E- DSC, Contractor	PIU/ES-PMC, ESMC- PMU,	Monthly monitoring	

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		permitted by the concerned Engineer.		EE –PMU	Location as directed by the engineer and ES-PMC	PIU
		All concrete mixing must take place on a designated, impermeable surface.	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	
		Verify suitability of all material sources and obtain approval of PIU & DSC	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	
10.	Landscape and Aesthetics including Waste management	Refuse must be placed in the designated skips / bins which must be regularly emptied.	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	<b>Under compliance</b>
		Prepare and implement Waste Management Plan	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	Utilization of excess earth for repairing work done. Demolition waste utilized for land development
		In addition to the waste facilities within the construction camp, provision must be made for waste receptacles to be placed at intervals along the work front.	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	
		Littering on site is forbidden and the site shall be cleared of litter at the end of each working day.	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	Material storage not started
		Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas for improvement of aesthetic environment. Recycling is to be encouraged by providing separate receptacles for different types of wastes (including demolition waste) and making sure that staff is aware of their uses.	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	Spoil management plan and waste manage plan will be applied as per EMP (Attached as <b>Appendix 7</b> )
		All waste must be removed from the site and transported to a disposal site or as directed by the Engineer.	E-DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	
		Waste from toilets shall be disposed of regularly and in a responsible manner.	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Weekly monitoring.	
		Hazardous waste disposal must be carried out by the Contractor in a responsible manner	E- DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	
		Storage areas will be properly fenced off	E- DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		Top soil needs to be utilised by farmers for nutrient value	E- DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	
		Coordinate with DSC-PIU for beneficial uses of excess excavated soils or immediately dispose to designated areas	E- DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	
		Recover used oil and lubricants and reuse or remove from the sites	E- DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	
		Request DSC/PIU to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work	E- DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	
11	Occupational Health and Safety	<p>World bank Environmental, Health, and Safety (EHS) Guidelines - EHS Guidelines for water &amp; sanitation will be followed. Specifically,</p> <p>(i) Develop and implement site-specific Health and Safety (H and S) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use Personal Protective Equipment like helmet, gumboot, safety belt, gloves, nose musk and ear plugs; (c) H and S Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents;</p> <p>(ii) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;</p> <p>(iii) Provide medical insurance coverage for workers;</p> <p>(iv) Secure all installations from unauthorized intrusion and accident risks;</p> <p>(v) Provide supplies of potable drinking water;</p> <p>(vi) Provide clean eating areas where workers are not</p>	E-DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Ongoing Weekly	<p>Site-specific Health and Safety (H&amp;S) Plan under implementation. Plan attached as <b>Appendix 8</b>.</p> <p>Use of PPE by worker - noted</p> <p>H &amp; S training arranged for the labourer on regular basis.</p> <p>Records of trainings conducted attached as <b>Appendix 4</b></p> <p>Drinking water and first aid box available at site.</p> <p>Site photo enclosed in <b>Appendix 2</b>.</p> <p>All risk Insurance for the project and worker compensation arranged. Available</p>

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		<p>exposed to hazardous or noxious substances;</p> <p>(vii) Provide H and S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers;</p> <p>(viii) Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted;</p> <p>(ix) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;</p> <p>(x) Ensure moving equipment is outfitted with audible back-up alarms;</p> <p>(xi) Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; and</p> <p>(xii) Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.</p>				<p>insurance from the contractor attached as <b>Appendix 9.</b></p> <p>Work just started. No accident reported till date</p> <p>Overall compliance is satisfactory</p>
12	Community Health & Safety	<p>Plan routes to avoid times of peak-pedestrian activities.</p> <p>Liase with DSC- PIU in identifying risk areas on route cards/maps</p>	<p>E-DSC and Contractor</p> <p>E-DSC and Contractor</p>	<p>PIU/ES-PMC, ESMC- PMU, EE –PMU</p> <p>PIU/ES-PMC, ESMC- PMU, EE –PMU</p>	<p>Ongoing Weekly</p> <p>Ongoing Weekly</p>	<p><b>Under compliance</b></p> <p>Caution tape placed around excavated</p>

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.	E-DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Ongoing Weekly	<p>area</p> <p>Permanent barricade arranged.</p> <p>Traffic Management Plan not required now but prepared <b>(Appendix 10)</b></p>
		Provide road signs and flag persons to warn of dangerous conditions, in case of location near the road.	E-DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Ongoing Weekly	
		Provide protective fencing around open trenches, and cover any open trench with metal planks during non-construction hours	E-DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Ongoing Weekly	
		Maintaining accident register and arrangement of emergency response plan for community	E-DSC and Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Ongoing Weekly	
13	Traffic accessibility & impact	<p>Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;</p> <p>Schedule transport and hauling activities during non-peak hours;</p> <p>Locate entry and exit points in areas where there is low potential for traffic congestion;</p> <p>Keep the site free from all unnecessary obstructions;</p> <p>Drive vehicles in a considerate manner;</p> <p>Coordinate with Govt. Traffic Department for temporary road diversions and with for provision of traffic aids if transportation activities cannot be avoided during peak hours; and</p> <p>Notify affected sensitive receptors by providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints</p>	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	<p>Traffic Management Plan not required till date. Work just started. <b>(Appendix 10</b> shows draft traffic management plan)</p> <p>Signages are placed at location (See Photographs, <b>Appendix 2)</b></p>

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
14	Social impacts <sup>10</sup>	Contractor's activities and movement of staff to be restricted to designated construction areas.	PIU, Contractor	PIU/ ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	<p><b>Under compliance</b></p> <p>Work Just started</p> <p>Movement of staff restricted to designated construction areas</p> <p>Access of locals will be maintained during pipe laying</p> <p>The Neighbors will be informed in writing of disruptive activities for pipe laying at least a week beforehand.</p> <p>A complaints register is housed at the site office.</p>
		The conduct of the construction staff when dealing with the public or other stakeholders shall be in a manner that is polite and courteous at all times.	PIU, Contractor	PIU/ ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	
		Disruption of access for local residents, commercial establishments, institutions, etc. must be minimized and must have the Engineer's permissions.	PIU, Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	
		The work plan for the construction and laying of pipelines will be devised in such a way to ensure that the construction period is minimized. Affected persons will be assisted in moving to the other side of the road and returning after construction work is completed. Where they are not required to shift, their access road will be ensured by the contractor. The construction period will be minimized and is estimated to be less than 30 days per section of work. Compensation will be provided to impacted person (all deals under Resettlement Plant)	PIU, Contractor	PIU/ ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	
		Provide walkways and metal sheets where required to maintain access for people and vehicles.	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	
		Increase workforce in front of critical areas such as educational institutions, places of worship, business establishment and health care establishments to shorten the duration of impacts.	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	
		Consult businesses and institutions regarding	PIU, Contractor	PIU/ES-PMC, EE –PMU	At least 1 week prior	

<sup>10</sup> Regular communication between the Contractor and the interested and affected parties is important for the duration of the contract.

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		operating hours and factoring this in work schedules.			to the activity taking place. Monthly monitoring	
		The Contractor is to inform neighbors in writing of disruptive activities at least a week beforehand.	PIU, Contractor	PIU/ES-PMC, EE –PMU	At least a week prior to the activity taking place. Monthly monitoring	
		Lighting on the construction site shall be pointed downwards and away from oncoming traffic and nearby houses.	Contractor	PIU/ES-PMC, EE –PMU	Monthly	
		The site must be kept clean to minimize the visual impact of the site.	Contractor	PIU/ES-PMC, EE –PMU	Weekly monitoring.	
		Machinery and vehicles are to be kept in good working order for the duration of the project to minimize noise nuisance to neighbors.	Contractor	PIU/ES-PMC, EE –PMU	Monthly monitoring.	
		Notice of particularly noisy activities must be given to residents / businesses adjacent to the construction site. Examples of these include: <ul style="list-style-type: none"> <li>• noise generated by jackhammers, diesel generator sets, excavators, etc.</li> <li>• drilling</li> <li>• dewatering pumps</li> </ul>	PIU, Contractor	PIU/ES-PMC, EE –PMU	Monthly monitoring	
		A complaints register (refer to the Grievance Redressal Mechanism) shall be housed at the site office.	E- DSC, Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring.	
15	Cultural environment	All the staff and labourers of the Contractor be informed about the possible items of historical or archaeological value	E- DSC, ES-PMC, contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	Not required till date
		If something of this nature be uncovered, ASI or State Department of Archaeology shall be contacted and work shall be stopped immediately.	E- DSC, ES-PMC, Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Monthly monitoring	All the staff and labourers be informed about the possible items of historical or archaeological value

	Issues	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
16	Environment Safeguard/safety Officer	Contractor shall appoint one Environment Safeguard/ Safety Officer who shall be responsible for assisting contractor in implementation of EMP, community liaison, consultations with interested/affected parties, reporting and grievance redressal on day-to-day basis.	Contractor	PIU/ES-PMC, ESMC- PMU, EE –PMU	Person to be appointed before start of construction activities and remain available throughout the project duration.	<b>Complied</b> One Environment Safeguard/ Safety Officer already placed at Bhagalpur

**Monitoring method- Through field check, document check, visual observation, generation of air, water & noise level data**

ASI = Archeological Survey of India, BSPCB= Bihar State Pollution Control Board, DSC: Design and Supervision Consultant, E: Engineer, EE: Environmental Engineer, ES: Environment Specialist, ESMC: Environment & Social Management Coordinator, PIU: Project Implementation unit, PMC: Project Management Consultant, PMU: Project Management Consultant, SO: Safeguard Officer

**Table 10: Post Construction Activities and Operation- Compliance status**

	Activities	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
1.	Construction camp	All structures comprising the construction camp are to be removed from site or handed over to the property owner/ community as per mutual agreement (if established on private/community land).	Contractor	SO - PIU, ES-PMC, EE –PMU	Subproject completion	To be comply after completion of construction work
		The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up.	Contractor	SO - PIU, ES-PMC, EE –PMU	Subproject completion	
		The Contractor must arrange the cancellation of all temporary services.	Contractor	SO - PIU, ES-PMC, EE –PMU	Subproject completion	
		All vegetation that has been cleared (as per requirement) during construction is to be removed from site or used as much as per the re-vegetation specification	Contractor	SO - PIU, ES-PMC, EE –PMU	Subproject completion	
		The Contractor is to water and maintain all planted vegetation until the end of the defects liability period and is to	Contractor	SO - PIU, ES-PMC, EE –PMU	Subproject completion	

	Activities	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/Supervision	Frequency	Compliance Status/ Explanation
		submit a method statement regarding this to the Engineer.				
3.	Land rehabilitation	All surfaces hardened due to construction activities are to be ripped and imported materials thereon removed.	Contractor	SO - PIU, ES-PMC, ESMC- PMU	Subproject completion	To be comply after completion of construction activity
		All rubble is to be removed from the site to an approved disposal site. Burying of rubble on site is prohibited.	Contractor	SO - PIU, ES-PMC, ESMC- PMU	Subproject completion	
		The site is to be cleared of all litter.	Contractor	SO - PIU, ES-PMC, ESMC- PMU	Subproject completion	
		Surfaces are to be checked for waste products from activities such as concreting or asphaltting and cleared in a manner approved by the Engineer.	Contractor	SO - PIU, ES-PMC, ESMC- PMU	Subproject completion	
		The Contractor is to check that all watercourses are free from building rubble, spoil materials and waste materials.	Contractor	SO - PIU, ES-PMC, ESMC- PMU	Subproject completion	
4.	Materials and infrastructure	Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated otherwise by the Engineer.	Engineer-DSC, Contractor	SO - PIU, ES-PMC, EE –PMU	Subproject completion	To be comply All excess materials and infrastructure will be removed
		All residual stockpiles must be removed to spoil or spread on site as directed by the Engineer.	Engineer-DSC, Contractor	SO – PIU, ES-PMC, EE –PMU	Subproject completion	
		The Contractor must repair any damage that the construction work has caused to neighboring properties.	Contractor	SO-PIU, ES-PMC	As directed by the Engineer.	
5.	General	A meeting is to be held on site between the Engineer, ES- PMC and the Contractor to approve all remediation activities and to ensure that the site has been restored to a condition approved by the Engineer.	Engineer-DSC, SO-PIU, ES-PMC, Contractor	PIU, ES-PMC, ESMC- PMU	On completion of the construction and maintenance phases-monthly monitoring	To be done during operation and after completion of work

	Activities	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/ Supervision	Frequency	Compliance Status/ Explanation
		Temporary roads must be closed and access across these blocked.	Engineer-DSC, SO-PIU, ES-PMC, Contractor	SO – PIU, ES-PMC, EE –PMU	On completion of construction	
		Refill and re-compact trenches soil and backfilled sand will be removed to expose the leaking junction or pipe	Engineer-DSC, SO-PIU, ES-PMC, Contractor	PIU, ES-PMC, ESMC- PMU	On completion	
		Cover or wet excavated material to prevent dusts	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	Monthly monitoring	
		All areas where temporary services were installed are to be rehabilitated to the satisfaction of the Engineer	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	On completion of construction	
		Maintaining low noise at pumping station of WTP under O & M	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	Quarterly during operation	
6	Hazardous chemical & waste management	Store of common salt, dry, and dark conditions for no more than one month	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	Monthly during Operation	Under compliance during O & M of old plant, as per EMP To be continued after renovation of the plant
		Use equipment constructed of corrosion-resistant materials	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	Monthly during Operation	
		Minimize the amount of disinfection materials for using in chlorinator	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	Monthly during Operation	
		Material safety data sheet to be maintained at chlorine/ common salt storage area	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	Monthly during Operation	Presently maintained. To be continued
		Regular laboratory testing for dosing and residual chlorine	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	Monthly during Operation	Complied only for residual chlorine
		Develop and implement a prevention program that includes identification of potential hazards, written operating procedures, training, maintenance,	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	During Operation – quarterly	

	Activities	Management/Mitigation	Responsible for Mitigation	Responsible for Monitoring/Supervision	Frequency	Compliance Status/ Explanation
		and accident investigation procedures				
		Disposal of WTP sludge at approved location	Engineer-DSC and Contractor	SO – PIU, ES-PMC, EE –PMU	During Operation – monthly	To be comply
7	Water quality assessment and maintained – Health & safety	<ul style="list-style-type: none"> <li>Undertake regular monitoring and maintenance of water supply infrastructure.</li> <li>Quality of drinking water will be checked regularly at WTP locations and water storage sites</li> </ul>	Contractor, SO- PIU	ES-PMC, EE –PMU	Monthly monitoring - During Operation	<p><b>Partially complied</b> during O &amp; M of old plant</p> <p>Regular monitoring for all parameters of supply water and tube well supply water is required</p>
8	Social and Cultural Resources	<ul style="list-style-type: none"> <li>Consult the city authorities to identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity;</li> <li>Complete work in these areas quickly;</li> <li>Consult municipal authorities, custodians of important buildings, cultural and tourism authorities and local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as religious and cultural festivals</li> </ul>	Contractor, SO- PIU	ES-PMC, EE –PMU	Monthly monitoring during operation	To be comply as per requirement during operation period

ASI = Archeological Survey of India, BSPCB= Bihar State Pollution Control Board, DSC: Design and Supervision Consultant, E: Engineer, EE: Environmental Engineer, ES: Environment Specialist, ESMC: Environment & Social Management Coordinator, PIU: Project Implementation unit, PMC: Project Management Consultant, PMU: Project Management Consultant, SO: Safeguard Officer

## V. ENVIRONMENTAL MONITORING AND EVALUATION

34. For effective monitoring, selected environmental parameters have been identified as indicators which will be qualitatively and quantitatively measured and compared over a period of time in order to assess/ensure the compliance of EMP. The environmental

performance indicators are physical, biological and social characteristics identified as most important in affecting the environment at critical locations all along the subproject locations. The parameters identified as performance indicators are:

- Air, noise and water quality
- Compliance to EMP
- Compliance to local/state/national environmental regulations

35. During year 2015 baseline air and noise quality monitoring has been carried out for all selected project sites. The results have been reported in SEMR covering period June to December 2015 and that report already disclosed on ADB website. Parameters are well below the standard level. Now physical construction work just started by the contractor and air and noise monitoring results are to be submitted by contractor, shortly. Value of all air quality parameters are within the standard levels.

**Table 11: Ambient air quality monitoring result**

Status of Ambient Air Quality of Bhagalpur					
S.No	Site name	Main Pollutants 2015 (µg/m <sup>3</sup> )			
		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>
		CPCB standard 100	CPCB standard 60	CPCB standard 80	CPCB standard 80
1	Tilakmanjhi Chowk	79	36	24	52
2	Collectriate	68	31	17	39
3	Mahashay Deorhy	64	28	14	46
4	Barari Housing	74	26	21	44
5	Thakurbari	69	28	23	56
6	Constable Training School, CTS	61	24	12	46
7	Mount Assisi School	56	19	12	30
8	T.M. University	78	45	24	56
9	S.M. College	59	24	19	43
10	Sadar Hospital	87	56	26	41
11	WTP Barari	76	34	18	41
12	Beside WTP boundary-Transmission Rising main route	84	32	16	44
<b>Average</b>		<b>71.2</b>	<b>31.9</b>	<b>18.8</b>	<b>44.8</b>

(BUDIP project data, Date of sampling: 2.11.15 to 5.11.15, done during earlier report period)

36. Water quality monitoring for River water has been carried out for raw, treated water. It is noted that raw water is unsafe for direct consumption. Treated water is safe for human consumption. **Appendix 6** shows water quality testing result.

37. The noise level measurements have been carried out during last semi annual period (July to December 2015) as a part of primary baseline data generation activity to establish ambient noise levels in the project area and surroundings. The measured noise levels have been provided in **Table 12** below. It is noted from the data below that noise levels are well within the stipulated limits. The generation of noise is mainly due to commercial and human activities.

**Table 12: Base Line Ambient Noise Level Monitoring Data at Project Location Sites and Surroundings**

	Monitoring Locations	Noise Level in dB (A)			
		Day Time 6 AM- 10 PM		Night Time 10 PM—6 AM	
		Leq in dB(A)	Standard (dB(A))	Leq in dB(A)	Standard (dB(A))
1.	Tilakmanjhi Chowk	62.6	65	52.4	55

	Monitoring Locations	Noise Level in dB (A)			
		Day Time 6 AM- 10 PM		Night Time 10 PM—6 AM	
		Leq in dB(A)	Standard (dB(A))	Leq in dB(A)	Standard (dB(A))
2.	Collectorate	63.1	65	51.6	55
3.	Mahashay Deorhy	62.7	65	54.3	55
4.	Barari Housing	53.4	65	44.1	55
5.	Thakurbari	64.7	65	51.8	55
6.	Constable Training School, CTS	63..8	65	54.3	55
7.	Mount Assisi School	49.2	50	39.1	40
8.	T.M. University	48.6	50	39.7	40
9.	S.M. College	48.7	50	41.8	40
10.	Sadar Hospital	48.6	50	38.2	40
11	WTP Barari	61.6	65	54.7	55
12	Beside WTP boundary- Transmission Rising main route	64.2	65	52.9	55
	<b>Average</b>	<b>57.0</b>	<b>50-65</b>	<b>47.9</b>	<b>40-55</b>

(BUDIP project data, Date of sampling: 2.11.15 to 5.11.15, done during earlier report period)

38. “During construction” monitoring will be carried out as per Environment Management and Monitoring Plan. Contractor’s have monitoring budget (**Appendix 12**) as per EMP.

39. A performance monitoring blank fact sheet has been prepared to facilitate tracking and quick reference on environmental monitoring of **Tranche 1** subproject package (**Tables 13 and 14**).

**Table 13: Performance Fact Sheet for Required Environmental Consents/Clearances of BUDIP**

Package Number	Name of Contractor	EMP Part of contract Document(Yes / No)	Environmental Consents / Clearances Required						
			Tree Cutting	Crusher	Batching Plant	Hot Mix Plant	Diesel Generator Set	Pollution Under Control (PUC) Certificates for Contractor's Vehicles	
1	Improvement of Water supply system at Bhagalpur (BWSP1)	PAN India	Yes	Expected 4 nos. tree cutting	Not required	Construction work just started. Consent will be required before establishment of Batching plant	Construction work just started. Consent will be required before establishment of hot mix plant	Construction work just started. Consent will be required in case of placement of generator for the project work	Obtained

**Table 14: Performance Fact Sheet for EMP Implementation of BUDIP Tranche 1**

Package Number	Name of Contractor	EMP Part of contract Document(Yes / No)	Contractor Social/ Environment Person	Overall Status of EMP Implementation	Field Monitored as per EMP													
					Source of Materials	Camp Sites	Landscape and Aesthetics	Air Quality	Noise Level	Traffic	Ecological Resources – Terrestrial	Accessibility	Water Quality	Occupational Health & safety	Community Health & safety	Socio cultural resources	Employment generation	
1	Improvement of Water supply system at Bhagalpur (BWSP1)	PAN India Infra projects Pvt. Ltd.- Ranhill Utilities Sdn. Bhd.	Yes	Nominated- Mr. Rukshar Alam	Complied	Approved sources	Under construction at Zero mile	Work just started-maintained	Base line done. During construction not done-Partially complied	Base line done. During construction not done-Partially complied	Work not started To be maintained	No tree felling done	Yes Available	Partially complied	Yes Complied	Yes Complied	No impact Work just started	Yes Locals employed

## VI. CONSULTATIONS AND DISCLOSURES CONDUCTED

40. As per approved IEE, consultations and disclosure will be a continuous process throughout Project 1 implementation involving public consultations and focus group discussions. However, during updation of IEE report local level public consultation has been conducted at proposed project locations. Now construction work started by the contractor and consultations were carried out at Barari with local people, pedestrian, etc. **Appendix 13** shows detail of public consultation.

41. The indicative schedule for consultations and disclosure is presented in **Table 15**.

**Table 15: Indicative Schedule for Consultations and Disclosure**

Type of Consultation/ Disclosure	Target Date	Location	Target Participants	Responsible Person and Source of Funds
Local level consultation	Weekly – to be continued	At all construction locations	General public, shop keepers, pedestrian population	Construction supervisor, Environment & safety officer of contractor Project budget – continuous process
Consultation – safety issues, implementation of EMP	By 30 <sup>th</sup> June 2016	At PIU Office and project site office Barari	DSC Supervisor Engineer, PIU Engineer, PMC environment expert, Environment safeguard officer of contractors	Construction Manager, Environment safeguard officer of contractor and PIU & DSC

42. Field level training program has been arranged for contractor's environment safeguard officer & DSC Site Engineer on safety and environment.

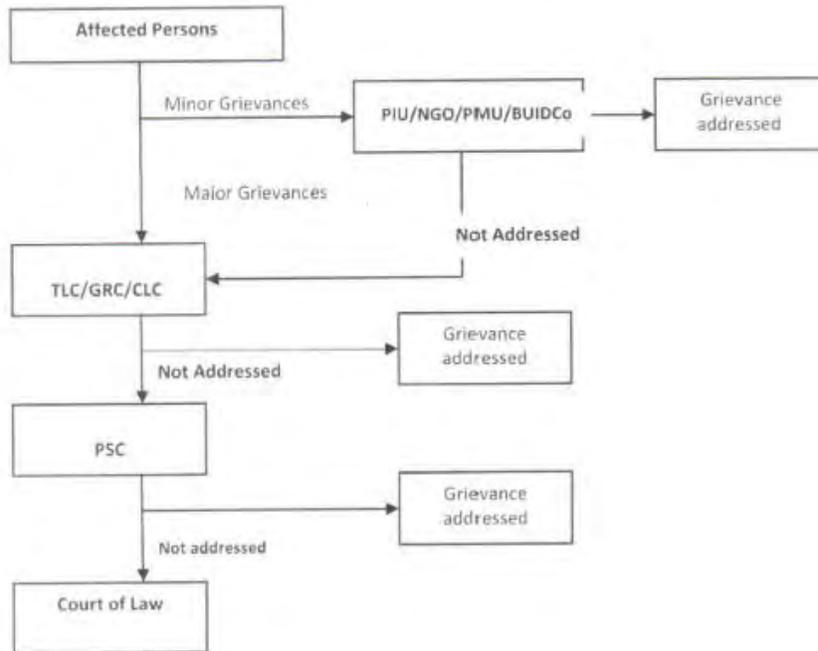
43. Meetings were held on 24<sup>th</sup> February & 9<sup>th</sup> March 2016 at the Bihar Pollution Control Board (BPCB) office related to consent of establish and consent to operate in which Member Secretary, Environmental Engineer of BPCB were present.

44. Seven community orientation programs (COP) has been conducted for Bhagalpur sub project town. Altogether 519 (Representative from community 429, Councillors 24, 66 Officials) persons attended those orientation program. COP has been conducted on 12<sup>th</sup> February, 25<sup>th</sup> March, 29<sup>th</sup> April, 28<sup>th</sup> May and 18<sup>th</sup> June 2015. A Minutes of Meeting for the COP is already disclosed in last semi annual environment monitoring report.

45. During this report period on 3<sup>rd</sup> & 4<sup>th</sup> March 2016 a safeguard training has been conducted by PMC's Environment Specialist at Barari for BWSP1 contractor on implementation of EMP at Barari WTP location. A joint site visit on 9<sup>th</sup> & 10<sup>th</sup> May 2016 was also conducted by PMC and PMU Environment & social Management Coordinator for safeguard monitoring.

## VII. GRIEVANCE REDRESSAL

46. A project Grievance Redressal Mechanism (GRM) have been established as per Environment and Social Assessment Review Framework to receive, evaluate and facilitate the resolution of affected people's concerns, complaints and grievances about the social and environmental performance at the level of the Project. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project. The grievance redressal mechanism and procedure is depicted in **Figure 3** below. **Appendix 14** shows the sample Grievance Registration Form and Action taken report in English and Hindi (local language). **Appendix 15** shows grievance records and action taken from contractor's end.



CLC-City Level Committee, ESMC-Environment and Social Management Coordinator, GRC-Grievance Redress Mechanism, NGO-Non Government Organization, PSC-Program Steering Committee

**Figure 3: Grievance Redressal Mechanism**

47. GR committee set up notification has been done for BUDIP on 27.05.2015.

**VIII. FINDINGS AND RECOMMENDATIONS**

48. Urbanization has increased at a rapid pace in India over the recent years, much faster than the increase in urban infrastructure facilities to support them. Also, pressure of population has been more on larger towns/cities putting enormous pressure on the resources of municipalities so much so that most are unable to keep up with the provision of even basic services and infrastructure resulting in irregular availability of water, sanitation and public amenities. In extreme cases, this has aggravated risks to public health and safety. Bihar is no exception and the 2 towns selected under this program are in direct need of upgradation of such urban infrastructure facilities which includes augmentation of water supply and sewerage network.

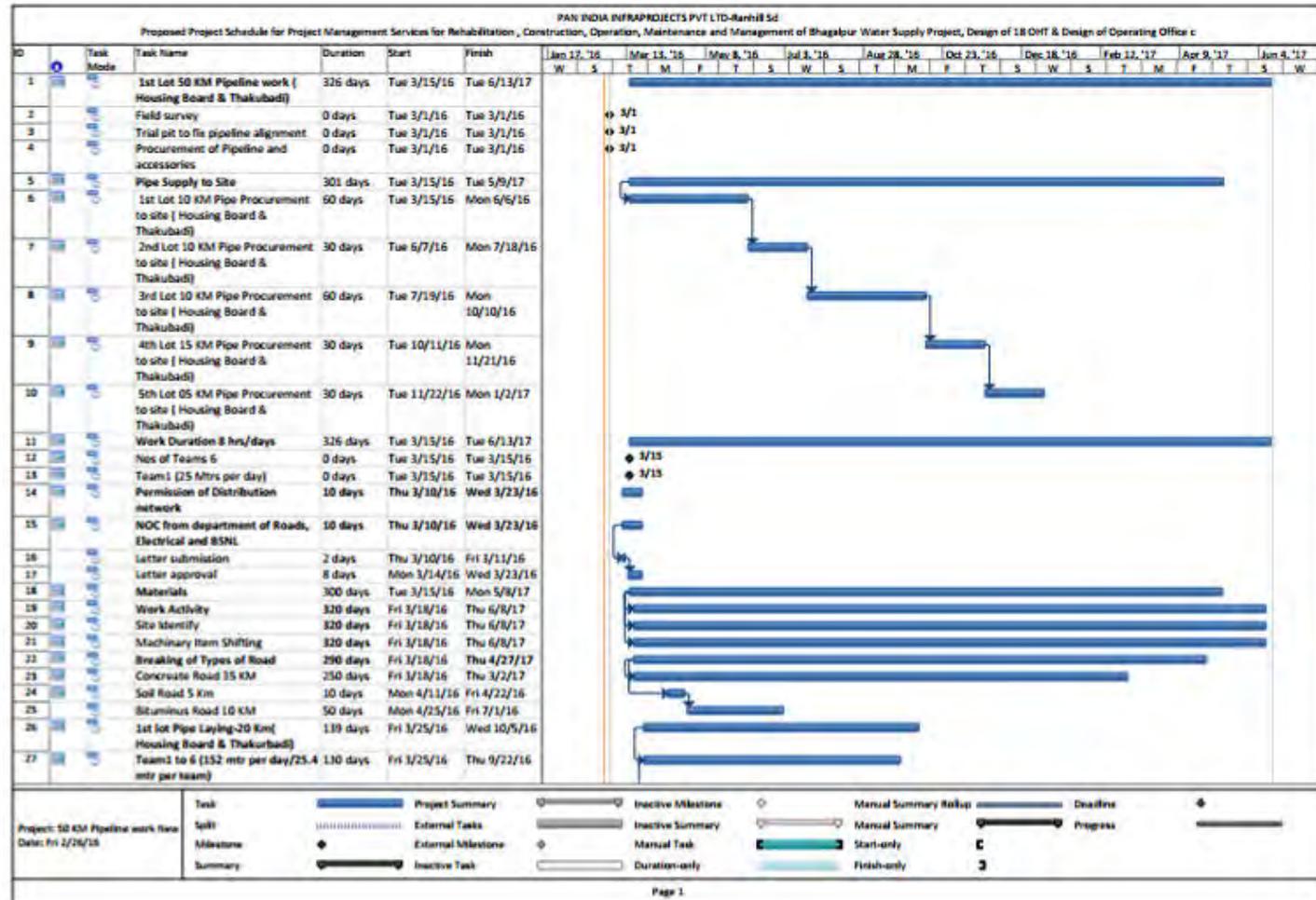
49. Experience from ADB-funded urban projects show complex social, economic, legal, institutional, and management issues in urban development – largely derived from realities of urban life in developing countries like India. Urban projects typically consist of a variety of infrastructure such as roads, water, sewerage, solid waste, and slum improvement/upgrading activities. This is important to mention in this context that the final detailed engineering design in each sub project of BUDIP will be prepared keeping in mind to avoid or minimize social and environmental impact as far as possible. However, since all the developments foreseen are city/town centric, it is difficult to avoid any impact whatsoever in densely populated towns or cities.

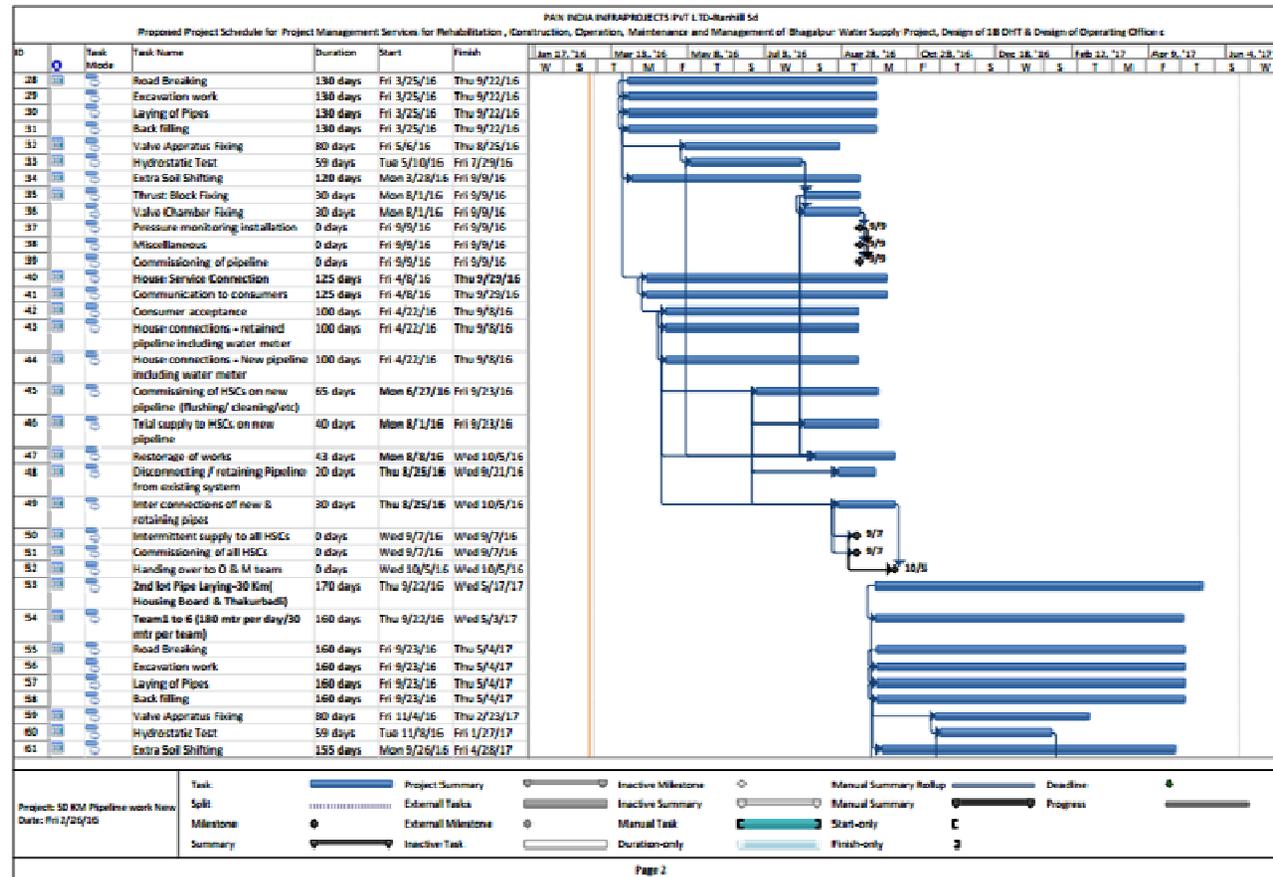
50. With the development of project the action plan will be considered for timely and satisfactory environmental compliance. Sample suggestion & action plan format is shown in **Table 16**.

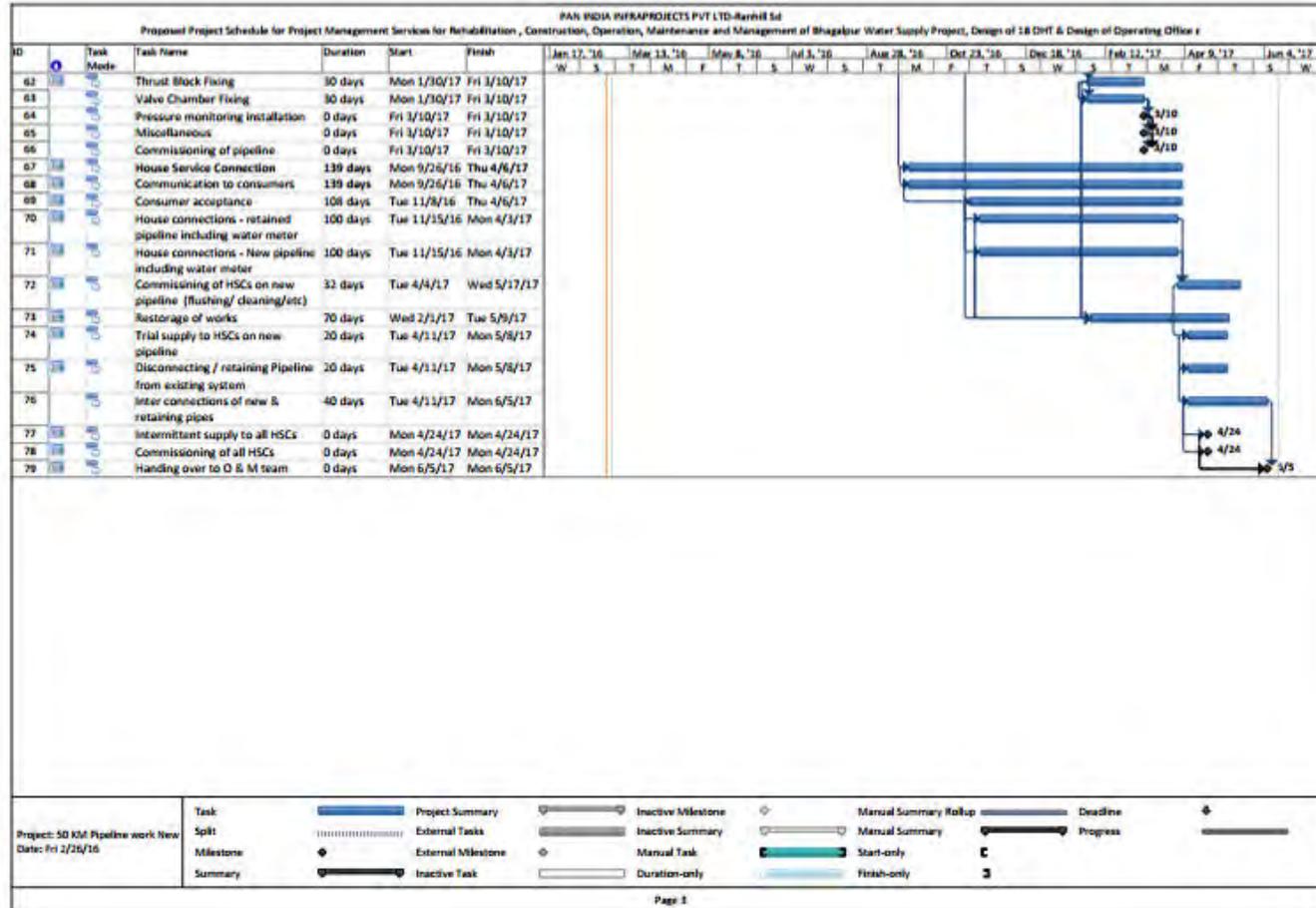
**Table 16: Corrective Action Plan**

<b>Non-compliance/ Partial compliance</b>	<b>Action Required</b>	<b>Responsible</b>	<b>Target Date</b>	<b>Indicator of Compliance</b>
During construction air quality	Regular monitoring as per EMP	Contractor	15 <sup>th</sup> August 2016 and continued	Site observation and Report
During construction noise level	Regular monitoring as per EMP	Contractor	15 <sup>th</sup> August 2016 and continued	Site observation and Report
High noise level at Raw water intake & clear water pump house.	Noise monitoring at pump house for present O & M work	Contractor	15 <sup>th</sup> August 2016 and continued	Site observation and Report
Tube well water Analysis record not found	Regular Tube well and supply water analysis	Contractor	15 <sup>th</sup> August 2016 and continued	Site observation and Report

### APPENDIX 1: IMPLEMENTATION SCHEDULE







**APPENDIX 2: PHOTO ILLUSTRATION**



**O & M work -Sedimentation Tank Cleaning**



**O & M work- Mechanical Filter cleaning**



**Sedimentation Tank silt removal**



**Laboratory Analyses going on**



**Waste disposal container at office**



**Leak repairing work going on at Housing Board area**



Leak repairing work going on at Budanath temple



Leak repairing work going on at Kachhari Chowk



New pipe laying work going on



Pipe laying work continued



Repairing work done after pipe laying



Proper hard barricading



Proper signage at working location



Proper signage indicate parking area



First aid box – noted at working area



Safeguard training of contractors by PMC



Health and safety training for labourers



Mock drill for worker

APPENDIX 3: CTE for BARARI WTP

 **BIHAR STATE POLLUTION CONTROL BOARD**  
BELTRON Bhuban, Shastrri Nagar, Patna - 800 023

Ref. No. PT (NOC)-2470/15/ Patna, dated:-

**'CONSENT-TO-ESTABLISH' (NOC)**

**UNDER SECTIONS 25/26 OF THE WATER (PREVENATION AND CONTROL OF POLLUTION) ACT, 1974 AND 21 OF THE AIR (PREVENTION AND CONTROL OF POLLUTION) ACT, 1981**

**REFERENCE:**

- (i) Name and address of the Proponent: Additional Program Director, ADB Project, BUIDCo, 303, Maurya Tower, Budh Marg, Patna on behalf of Municipal Commissioner, Bhagalpur Municipal Corporation (Project-M/s Barari Water Treatment Plant), Bhaglpur; and
- (ii) Application No.38949, dated: 01.12.2015 of the proponent for refurbishment of existing Barari Water Treatment Plant on the Plot No-1062, 1100, Khata No-863, Mauza-Mayagarij, P.O.-Barari, Dist-Bhagalpur for capacity: 20,000 MT/day, with D.G. Sets. Raw water shall be withdrawn from intake point, Barari Water Works at Ganga River.

**AFTER CONSIDERING**

- (i) The facts stated in their application;
- (ii) Bihar State Pollution Control Board's Notification No. 26 dated 08.11.2003;
- (iii) Provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981.

**NOC IN FAVOUR OF THE PROPONENT AT THE SAID SITE IS HEREBY ACCORDED SUBJECT TO THE FOLLOWING CONDITIONS:**

- (i) The proponent shall obtain 'Consent-to-Operate' under section 25 & 26 of The Water Act, 1974 and Section 21 of The Air Act, 1981 prior to commissioning of the plant from Bihar State Pollution Control Board. They shall also comply with the provisions of the Water Cess (Prevention and Control of Pollution) Rules, 1977;
- (ii) They shall comply with the provisions (whichever applicable) made under The Environment (Protection) Rules, 1986 and notifications issued there under;
- (iii) The effluent (Domestic or Trade) and emission shall conform to the standard prescribed under The Rules;
- (iv) Ground water shall not be abstracted without prior permission of competent authority: Central Ground Water Board;
- (v) They shall ensure maximum utilization of the backwash water in the process to minimize quantity of discharge;
- (vi) They shall submit sludge management plan with chemical characteristics and the potential risk to human and environment, specially in respect of heavy metals, volatile organic compounds and pesticides;
- (vii) The Proponent shall procure D.G. Set with a valid Type Approval Certificate and conformity of Production Certificate from the

Page 1 of 2



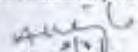
- manufacturer as specified in the Environment (Protection) Amendment Rule, 2003, vide G.S.R. 520(E), dated 1<sup>st</sup> July, 2003;
- (viii) The D.G. Set should be provided with an integral acoustic enclosure and the maximum permissible sound pressure level for new D.G. set shall be 75 dB(A) at 1 meter from the enclosure surface;  
They shall meet the noise level outside the premises, within the Ambient Air quality standards;
  - (ix) The minimum height of stack for exhaust emission to be provided with D.G. Set shall be as prescribed by CPCB guidelines; and
  - (x) Green belt around the plant shall be provided and developed to maintain the ecology of the area.

**NOTE:**

1. Bihar State Pollution Control Board reserves the option to revise or add other conditions, if necessary, for protection of Environment in general and for Pollution Control in particular;
2. The present NOC should not be construed as an assurance for the grant of 'Consent-to-Operate' the proposed plant but shall be subject to compliance of all the conditions indicated above;
3. The NOC, granted, shall be valid for a period of six months from the date of issue; and
4. Issued under the instructions of the Competent Authority.

Sd/-  
(A. K. Ojha)  
Member Secretary

Memo No.:- 7-26/9. Patna, dated:- 09.3.16  
Copy forwarded to: Additional Program Director, ADB Project, BUIDCo, 303, Maurya Tower, Budh Marg, Patna / Municipal Commissioner, Bhagalpur Municipal Corporation (Project-M's Barati Water Treatment Plant), Bhagalpur /Regional Officer, Begusarai / Concern AEE, Patna for favour of information and necessary action.

  
(A. K. Ojha)  
Member Secretary  
9

## APPENDIX 4

### FIELD LEVEL TRAININGS CONDUCTED DURING REPORTING PERIOD

During site visit on 03.03.2016, 09.05.2016 & 18.06.2016 field level training has been conducted by Environmental specialist of PMC at Barari WTP Office.

The issues discussed like,

- Preparation of site specific EMP
- Labour and Office Camp site management- requirement of proper sanitation and solid waste management
- Disposal / utilization of overburden earth , spoil materials after work
- Storage of construction materials
- Occupational and public safety during construction
- Traffic management during laying of pipes (as per requirement)
- Requirement of Pollution Under Control (PUC)/ No Objection Certificate (NOC) from concerned department and renewal of the same before expiry
- Requirement of baseline monitoring data- inclusion of air quality parameters like PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> and HC in monitoring program

EMP application requirement and methodology have also been discussed.

Instruction is given to supervisor engineer of DSC and environmental safeguard officer of construction contractor to arrange weekly consultation/ training program particularly on safety and other safeguard issues for labours.

Instruction has been given to contractor,

- Submission of air, noise, water quality data as per EMP
- Monthly monitoring report by 5<sup>th</sup> of the next month
- Submission of valid PUC, revised and applicable traffic management & spoil management plan

**FIELD LEVEL TRAININGS BY SAFEGUARD OFFICER CONTRACTOR**

Contractor's Safeguard officer started training program for their staffs. A Sample Mock Drill Training Report is given below:

<b>Training</b>	<b>Topic covered</b>
Fall of person Mock Drill	Work at height, use of safety belt, proper base and approach, life line ,first aid, emergency conditions
Fire Fighting	Use of fire extinguishers, first aid, emergency contact numbers
Snakebite Mock Drill	Sounding of emergency alarm, first aid, emergency vehicle.
Road safety	Use of signage boards during construction, helpline no, Traffic department involvement
First AID	Use of First Aid ,wash hand properly after first aid
Tool Box	How board will display, digging, use of PPE, display of sign board. proper barricading of site
EHS Induction	Use of all safeguards tools during construction at site.
Housekeeping at WTP	For clean purpose

**Safety Performance Report for the Month of May 2016**

<b>S. No</b>	<b>Safety Specific Training</b>	<b>Status</b>	<b>Man Hours</b>
1	Trainings		
	Tool Box Talk	6 Nos.	25
	Induction	3 Nos.	22
	Fire drill	1 No	20
	First Aid	1 No	21
2	Housing Keeping at Barari	Regular	
3	Safe Man Day Achieving during month May-2016	8746	
4	Safe Man Hours Achieved during month May-2016	69968	
5	Total safe man days achieved (July 2015-May 2016)	80588	
6	Total safe man Hours achieved (July 2015-May 2016)	644704	

**Annexure VIII:**

**Mock Drill Report**

Site/Office/Plant/Pumping Station	WTP Barari
Location	Assembly Point
Date of Mock drill	28/04/2016
Type of Mock Drill	Chemical Reaction
Drill Coordinator	Rukhsar Alam

**Details of Drill:**

**Incident Control Team**

Nominated main controller: Mr. Debomoy Bhattacharji  
 Incident controller: Mr. Parthav Chaudhuri  
 Incident Action Team: Mr. R. Alam, Mr. Nagendra  
 Victim: Mr. Vikas Kumar  
 Shouting Person: Mr. Sintu Kumar

1. Training Part:
  - a) Type of Chemical Used.
  - b) How to handle the chemicals.
  - c) How to support in emergency with first AID.
  - d) Emergency Team Members details
2. Mr. Vikas Kumar was shifting the chlorine in chlorine dosing tank.
3. Unfortunately that time he did not used nose mask.
4. Mr. Sintu Kumar saw him and shouted Vikas got unconscious .... Vikas got unconscious ..... Vikas got unconscious.
6. Mr. Nagendra Kumar gave first Aid to Victim.
7. During this period nominated main controller and incident controller came in action and reached at location.
8. Incident controller called for emergency vehicle available at site and guided to the action team for father shifting to the hospital.
9. The Employees are counted and got correct.
10. Emergency declared under control.

**Time Management**

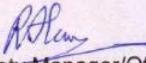
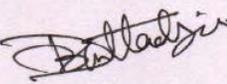
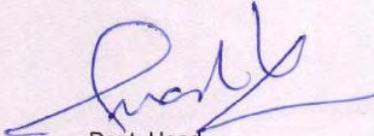
Sr. No.	Aspect	Time	Remarks
1.	Time of incident	4:25 pm	
1.	Sounding of emergency alarm	4:26 pm	Shouting
2.	Arrival of persons to control the emergency	4:28 pm	
3.	First Aid Provided	4:29 pm	
4.	Arrival of emergency team at the location of incidence	4:30 pm	
5.	Arrival of emergency vehicle at the location of incidence	4:32 pm	
6.	Departure of emergency vehicle	4:34 pm	
7.	Assembly of persons	4:36 pm	
8.	Emergency declared under control	4:39 pm	

**Resource Availability**

Sr. No.	Aspect	Observation	Remarks
1.	Site Map	N.A.	
2.	Emergency Contact Numbers	YES	
3.	Tele communication System	YES	
4.	Fire extinguishers	YES	
5.	Fire buckets	NA	Process
6.	Water for fire fighting	YES	
7.	First Aid Kit	YES	

Remarks of Manager Conducting Mock Drill	
Response Time	Late/Quick / Very Quick ✓
Actions of Response Team	Unsatisfactory/ Satisfactory / Good ✓
Availability of Stores	Inadequate / Adequate ✓
Overall Performance	Average /Good / V Good ✓
Head Count	Matched / did not match ✓

**Mock Drill performance remarks (By PM):**  
.....  
.....

 Safety Manager/Officer	 Nominated main controller
	 Dept. Head

**APPENDIX 5: Labour License**

**FORM-II**  
[See rule 18(1)]  
Government of Bihar  
**CERTIFICATE OF REGISTRATION**

Ref— 70      Date— 12.05.2015      Fee – Rs.200/-  
T.C. No 109 ,date -12.05.2015

Office of the Registering officer

A Certificate of Registration Containing the following particulars is hereby granted under sub- section (2) of section 7 of the Contract Labour (Regulation & Abolition) Act, 1970, and the rules made there under , to Pan India Infraproject Pvt. Ltd. Ranhill Utilities SDN BHD Consortium ,Add- Anandvilla.Bashi kunj, Dr, R P Road, Bhagalpur, Bihar

Nature of works carried on the establishment	Names and Addresses of contractors	Nature of work in which Contract Labour is employed or is to be employed	Maximum number of Contract Labour to be employed on any day through each Contractor	Other particulars relevent to the employment of Contract Labour
	2	3	4	5
Rehabilitation Construction Operation Maintainace & Managment of Bagalpur water Supply Project 1	Sai Geo Technical Engineers Add – 22 Indraprasha App. 826 , Shalimar Garden New Delhi-110024	Rehabilitation Construction Operation Maintainace & Managment of Bagalpur water Supply Project 1	Above 100 (One hundred )	-----

Signature of Registering officer  
With Seal.



APPENDIX 6 – Water Quality data

Ref No. PRRJGGP/MTP/002/15-16  
Date of Sampling- 15/03/2016

Govt of Bihar  
**Regional Water Testing Laboratory**  
Public Health Engineering Department,  
Bhagalpur

Sample Collected By – Staff B.W.W  
Source of Sample – Surface Water (The Ganga River)

PHYSICO-CHEMICAL & BACTERIOLOGICAL TEST REPORT

Sl. No.	Address		Source	Physico-Chemical and Bacteriological Parameters																	
	Block	Panchayat		Location	pH	Turb.	EC	TDS	TH	Ca	Mg	Cl	Alka	Fe	NO <sub>3</sub>	SO <sub>4</sub>	F	As	Bacteriological	Remarks	
1	Baran Water Works, Bhagalpur.		Raw	8.18	134	988	478	289	67	21.8	97	180	0.08	23.06	19.84	5.10			+	Unsafe	
2			Treated -Old	7.47	3.2	948	452	213	65	20	95	173	0.07	28	13	3.15			-ve	Safe	
3			Treated -New	7.67	2.8	937	449	281	69	19	108	170	0.09	21	12.5	0.18			-ve	Safe	
Permissible Limit in absence of alternate source				6.5 - 8.5	5		500	300	75	30	250	200	0.3	45	200	1	0.01				
Desirable Limit				NR	NR		2000	600	200	100	1000	600	1	NR	400	1.5	0.05				Absent

Memo No. 18/2016

Copy forwarded to: 1. Executive Engineer, P.H. Division Bhagalpur East, Bhagalpur for kind information and necessary action  
2. Pan India Infraproject Pvt. Ltd. Bhagalpur, for kind information and necessary action.

Date: 18.03.16

Lab. Assistant  
Regional Water Testing Laboratory  
Bhagalpur

Chemist  
Regional Water Testing Laboratory  
Bhagalpur

Ref No. : PRH/BGP-W/PR/095/2015-16  
Date of Sampling: 28.03.2016

Govt Of Bihar  
**Regional Water Testing Laboratory**  
Public Health Engineering Department,  
Bhagalpur

Sample Collected By: - Staff S.W.W  
Source of Sample - - Surface Water (The Ganga River)

**PHYSICO-CHEMICAL & BACTERIOLOGICAL TEST REPORT**

Sl. No.	Block	Parochial Location	Source	Physico-Chemical and Bacteriological Parameters																
				pH	Turb.	EC	TDS	TH	Ca	Mg	Cl	Alka.	Fe	NO <sub>3</sub>	SO <sub>4</sub>	F	As	Bacteriological	Remarks	
1			Raw	8.32	147	824	437	287	58	23.8	118	167	0.08	26.4	26.9	0.23	BDL		Unsafe	
2		Baran Water Works, Bhagalpur	Treated - Old	7.35	3.1	812	448	245	54	21.4	108	171	0.08	27.1	25.2	0.21	BDL	+	Safe	
3			Treated - New	7.48	2.9	798	407	267	57	20.1	115	183	0.07	24.6	21.9	0.19	BDL	-ve	Safe	
			Permissible Limit in absence of alternate source	6.5-8.5	5	-	500	300	75	30	30	350	200	0.3	45	200	1	0.01		Safe
			MR	NR	NR	-	2000	600	100	100	1000	500	1	NR	400	1.5	0.05		Assent	

Memo No. 11 *47* *510*

Copy forwarded to: - 1. Executive Engineer, P.H. Division Bhagalpur East, Bhagalpur for kind information and necessary action.  
2. Pan India Infraproject Pvt. Ltd, Bhagalpur, for kind information and necessary action.

Date: 31.03.16

*11/05/16*  
Lab. Assistant  
Regional Water Testing Laboratory  
Bhagalpur

*11/05/16*  
Chemist 13.14  
Regional Water Testing Laboratory  
Bhagalpur

Ref No. PRR/OSP-WTP/03/02/2016-17  
Date of Sampling- 11.04.2016

Govt. of Bihar  
**Regional Water Testing Laboratory**  
Public Health Engineering Department,  
Bhagalpur

Sample Collected By - Staff (S/WW)  
Source of Sample - Surface Water (The Ganga River)

PHYSICO-CHEMICAL & BACTERIOLOGICAL TEST REPORT

Sl. No	Block	Panchayat	Location	Source	Physico-Chemical and Bacteriological Parameters													Bacteriological	Remarks	
					pH	Turb.	EC	TDS	TH	Ca	Mg	Cl	Alka.	Fe	NO <sub>3</sub>	SO <sub>4</sub>	F			As
1				Raw	8.28	112.0	670.0	423.0	248.0	51.0	23.5	112.0	186.0	0.09	27.43	21.80	0.10	NDL	+	Trace
2				Treated - New	7.12	3.1	856.0	415.0	351.0	47.0	22.2	109.0	170.0	0.07	26.70	23.40	0.16	BDL	-ve	Safe
3				Treated - Old	7.28	3.1	883.0	467.0	237.0	49.0	21.8	110.0	173.0	0.08	28.20	20.10	0.17	BDL	-ve	Safe
				Desirable Limit	6.5 - 8.5	5	500	500	300	75	30	250	200	0.3	45	200	1	BDL	-ve	
				Permissible limit in absence of alternative source	NR	NR	2000	300	200	100	1000	600	NR	NR	400	1.5	0.05		Absent	

Nemo No. 12/21/Slp

Date: 18.04.16

Copy forwarded to: - 1. Executive Engineer, P.H. Division Bhagalpur East, Bhagalpur for kind information and necessary action.  
2. Pan India Infoprojects Pvt. Ltd. Bhagalpur, for kind information and necessary action.

*(Signature)*  
Lab. Assistant  
Regional Water Testing Laboratory  
Bhagalpur

*(Signature)*  
Chemist  
Regional Water Testing Laboratory  
Bhagalpur

Ref.No.: FRRH/SGP-WTP/011/2016-17  
Date of Sampling- 29.04.2016

Govt. Of Bihar  
**Regional Water Testing Laboratory**  
Public Health Engineering Department,  
Bhagalpur

Sample Collected By - Staff B.W.W  
Source of Sample - Surface Water (The Ganga River)

**PHYSICO-CHEMICAL & BACTERIOLOGICAL TEST REPORT**

Sl. No.	Address		Source	Physico-Chemical and Bacteriological Parameters																Remarks			
	Block	Panchayat		Location	Raw	Treated - New	Treated - Old	Permissible Limit in absence of alternate source	pH	Turb.	EC	TDS	TH	Ca	Mg	Cl	Alka.	Fe	NO <sub>3</sub>		SO <sub>4</sub>	F	As
1				8.05	95.0	756.0	417.0	219.0	48.0	19.0	137.0	163.0	0.08	31.39	35.79	0.23	BDL	+					Unsafe
2	Barari	Water Works	Bhagalpur	7.45	2.5	730.0	427.0	228.0	42.0	21.7	128.0	158.0	0.05	28.50	31.80	0.19	BDL	-ve					Safe
3				7.53	2.8	744.0	412.0	206.0	51.0	17.2	131.6	159.0	0.07	28.81	28.70	0.21	BDL	-ve					Safe
				6.5 - 8.5	5		500	300	75	30	250	200	0.3	45	200	1	0.01						Safe
				NR	NR		2000	600	200	100	1000	600		NR	400	1.5	0.05						Absent

Memo No. 13 LA No

Copy forwarded to:-

1. Executive Engineer, P.H. Division Bhagalpur East, Bhagalpur for kind information and necessary action.
2. Pan India Infraproject Pvt. Ltd, Bhagalpur, for kind information and necessary action.

Date: 25.05.2016

Lab. Assistant  
Regional Water Testing Laboratory  
Bhagalpur

Chemist  
Regional Water Testing Laboratory  
Bhagalpur

## APPENDIX 7: SPOIL MANAGEMENT

Sites should be located and prepared before the need for disposal areas arise. The spoil should be disposed of in a way that will prevent erosion. Disposal sites should be maintained periodically, depending on the season and type of material. Temporary disposal sites, or stockpiles, are useful when materials can be reused for other maintenance or construction activities. Stockpiles also require periodic maintenance to ensure no discharge into the stream system.

The primary Goals for this are:

- Maintain public safety and open roads for the travelling public.
- Prevent or minimize delivery of sediment and chemicals to streams.
- Prevent or minimize the interruption of normal runoff into streams.
- Protect aquatic and riparian habitat.

### Spoil Disposal:

Spoil disposal includes site selection, site permitting, maintaining the site to control erosion, and the temporary or final closure of the disposal site.

#### Selection, Disposal Site Maintenance and Disposal Site Closure

This action involves disposing excess materials from excavations, others at designated long-term disposal sites. Once the materials are properly disposed off the site should be maintained on a regular basis.

#### PIRH Best Spoil Management Practices:

- Avoid placing excess spoils into stream courses and adjacent riparian zones where it could potentially result in sediment delivery to streams.
- Drains spoil piles to prevent the concentration of flow and to prevent rill and gully erosion.
- Spread material not to be re-used in compacted layers and generally conforming to the local topography.
- Separate organic material (e.g., roots, stumps) from the dirt fill and store separately. Place this material in long-term, upland storage sites, as it cannot be used for fill. Leave all organic material that can safely remain in adjacent riparian zones. Make stored woody debris available to others as large wood for placement in streams for habitat improvement.
- Store “clean” material in a short-term disposal site (stockpile) if it will likely be re-used for fill or shoulder widening projects. Verify if material can be used for shoulder widening.
- Where feasible, recycle asphalt material in embankments and shoulder backing. Place these materials where they will not enter the stream system. Asphalt that is 5 years old is considered “inert” (that is, all oils washed off).
- Encourage stockpiling and reusing concrete materials when possible.

#### Quantification of Spoil materials – 1<sup>st</sup> phase,

Description	For 50 Km Pipe Line	For 3 Nos. OHSR	Total
Total Excavation	22000 Cum	7200 Cum	29200 Cum.
Refilling of Trenches (70%)	15400 Cum.	5040 Cum	20440 Cum.
Disposal of Balance Materials	6600 Cum.	2160 Cum	8760 Cum.

**Transportation of Spoil Materials:** Transportation will be done by dumper fully covered with tarpaulin.

**Disposal Site:** Disposal site is near Barari WTP as suggested and recommended by BMC / Client. The following is the detail of disposal site:

**SOLID/ CONSTRUCTION WASTE MANAGEMENT**

Sr. No.	Solid Waste	Location	Quantity in a Month Kg (approx.)	Quantity in a year in KG (approx.)	Storage area	Source of transport	Dispose Method
1.	Chemical Bags	WTP	90	1080	Scrape Yard /Bins at WTP	Hand Trolley	Resale
2	Daily used Poly Bags	WTP	7.5	90	Garbage bins	Hand Trolley	BMC container
3	Food bags	Housing board/ Thakurbari/TMU	22.5	270	Garbage bins	Hand Trolley	BMC container
4	Food bags	Distribution Line	7.5	90	Garbage bins	Hand Trolley	BMC container
5	Labor Camp (Under construction)	Zero Miles	60	720	Garbage bins	Hand Trolley	BMC container

Sr. No.	Name of Site	Latitude/Longitude	Ownership	Photographs	Google Map
1.	Barari near WTP	25.26407310111203/ 87.01335673825383	Govt. Land		

## **APPENDIX 8: SITE-SPECIFIC HEALTH AND SAFETY PLAN**

(Subject to revise by-annually)

### **Objective & Summary - HS Plan**

#### **1 PURPOSE**

This Health & Safety Plan has been prepared to provide a framework for PAN India Infra projects Pvt. Ltd.- Ranhill Utilities Sdn. Bhd. Consortium personnel to plan and develop a program, to achieve the objective contained in the project Health and Safety Policy at BUDICo. Project

Our H&S Program sets our requirements for the protection of health and life. It also provides guidelines to eliminate, where possible damage of and to equipment while carrying out specific work task.

#### **2 SCOPE**

The Health and Safety Plan reflect the high priority that PIRH Senior Management place upon the Health and Safety at work.

- Protect the Health & Safety of all persons engaged at work site.
- Comply with the relevant statutory and Contractual Health and Safety requirements.
- Ensure the Health & Safety of all persons is not affected by the work.
- Provide trained, experienced and competent personnel and supervision.
- Provide and maintain plant, places and systems of work that are safe and without risk to health.
- Provide all personnel with adequate information, instruction, training and supervision.
- Effective control, Co-ordinate and monitor the activities of all personnel on the Project, including contractors, in respect of Health, Safety and Security.
- Establish effective communication on Health & Safety matters with all relevant parties involved in the Project works.
- Ensure that all construction – planning takes into account the Health and Safety of all persons that may be affected by the work.

### 3. COMMITMENT

#### 3.1 QH&S Policy of the Company



### 3.2 H&S objective & target

The setting of Health and Safety objectives and the achieving of these objectives shall form part of the Project Health and Safety Performance Measurement.

To encourage line management to take ownership of Health and Safety matters, personal objectives shall be set for all within line management responsibilities. These objectives shall be set by the individual manager and shall be specific, measurable, achievable, realistic and time-bound.

To assist in the setting of objectives and measuring of performance a management plan listing all line Management health and Safety objectives shall be developed. Regular monitoring of the setting of Health and Safety objectives shall be undertaken to establish the effectiveness of the system, reviews shall be carried out as and when required.

#### OBJECTIVE

- Provide Safe Working Environment
- Ensure Safety of all workers, visitors and machinery within our site
- Prevent loss or damage to property resulting from our activities
- Comply legislative and Client Safety rules in our site
- Provide 100% awareness of risk involved in the activity by imparting required training.
- Inform all relevant persons with the detail of all method statements and Risk assessments that may affect their Health and Safety
- Motivate the employee / workers to identify the Hazard involved in the activity & report them.
- Motivate the workforce by rewarding the workforce.
- Maintaining & updating the checklist for all the concerned activity.

#### TARGET

- Fatality – Zero
- Lost Time Injury – Zero
- Man Days Lost – Zero
- Legal Grievance – Zero
- Fire Incident – Zero
- Vehicle Transport Injury – Zero
- Usage of PPE – 100%
- H&S Training – 100%
- H&S Audit – Once in 6-Month
- Maintaining & Updating Checklist – Weekly

### 4.0 RESPONSIBILITY FOR SAFETY

Safety is a fundamental to the operations of Utility projects and its primary objective is to have an accident free project execution. It is everyone's responsibility to understand the requirements for working safely and protecting themselves and others. To achieve this goal the following accountabilities are expressed, to assist all personnel in understanding their more specific responsibilities.

- ZERO HARM
- Improve existing work method from safety point of view
- Fulfilling Legal & Contractual Requirement

- Adherence to 100% PPE Usage
- Hired vehicle – Checklist to be filled as per client's requirement & get it approved
- Prepare SOP as per site condition
- Identify Hazard & take CAPA
- Daily Walk around
- Adequate Welfare facilities such as Drinking water, rest shelter & good accommodation
- First Aid Facilities – Including Doctor, Male Nurse & Ambulance as per the Legal law
- Root cause analysis for all the incident
- Imparting Training to entire staff & workers
- To follow all the relative procedures of client while working at site
- All Electrical equipment to be clearly marked with inspection date & check
- Installation of adequate platform /scaffolding & ladder while working at height

Register of inspection for lifting tool, critical equipment & tools

#### 4.1. Responsibilities

##### **Chief Executive Officer:**

- Organization Structure
- Planning of Business Expansion
- Growth of the Company
- Defining QEHS Policy & Objectives of company
- Evaluate Report of QEHS Management System for effectiveness & improvement
- Document and Data Control
- Corrective and Preventive action
- Control of QEHS Records
- Planning new product
- Allocation of resources
- Exploration of New Businesses
- Presiding over QEHS Management Issues
- Provide resources required for QEHS System

##### **Business Head / Circle In-charge:**

- Overall control of technical related matters
- Overall direction towards QEHS Management System
- Technical Services for Circles/Operation.
- New Products Development & Services

##### **Safety / H&S Officer:**

- Ensure the Safety & Statutory requirements are planned.
- Proper use of pertinent documents related to Safety & Statutory requirements in circle & office area.
- Maintain Quality Records

- Initiate action to prevent occurrence of any non-conformity relating to safety and statutory requirement in circle & office area. Identify and record related problems, thereafter initiate /recommend solution and verify the implementation.
- Corrective & Preventive action in circle & office area related to Safety & Statutory requirements.
- Compliance to Safety and Statutory requirements
- Training of Self, circle & office personnel
- Objectives
- Risk Hazard Analysis
- Medical Check-up
- Accident/Incident Investigation
- Reporting Near misses
- Emergency response and mock drills.
- Arranging Safety Committee Meetings
- Liaison with all external agencies for Safety and Health.
- Establishing, Implementation and Maintenance of Quality and EHS Management System in accordance with ISO-9001: 2008, ISO 14001: 2004 & ISO 18001: 2007 in ESSEL UTILITIES.
- Initiate action to prevent occurrence of any non-conformity in Quality System. Identify and record related problems, thereafter initiate/recommend solution and verify the implementation.
- Prepare report on the QEHS System Performance and conduct management review meeting.
- Reporting on the performance of the QEHS System to the Top Management
- Review for the improvement of the QEHS System
- Document and Data Control
- Internal QEHS management system Audits
- Corrective and Preventive action
- Control of Records
- Liaison with external certification body on matters relating to the QEHS System
- Training and awareness on QEHS management system.
- Ensuring promotion of awareness of customer requirements throughout the organization.
- Aspect – Impact / Risk Hazard Analysis
- Objectives of Quality Health, Safety & Environmental Program

**SITE ENGINEER:**

Site Engineers are directly responsible for the implementation of the safety norms at site and to ensure all their personnel understand and comply with BUIDCo. & PIRH H&S procedures that relate to their job activities.

- Directly responsible for maintaining safe working conditions, utilization of safe practices, the safety of personnel under their control and the safety of others affected by the activities of their personnel.
- To ensure that safety induction along with require job specific training has been given to the site personnel working under them.
- To inform Safety Officer regarding any new activity being started in their area and to ensure that Prep/Toolbox Talks prior to the start of the particular work by him.

- Participate in the investigation of all near miss incidences and accidents, to ensure timely action may be taken to prevent recurrence.
- Provide continuous site inspection in his area of responsibility to identify and correct any unsafe conditions.
- Daily Pep / Toolbox Talks will be conducted at all work locations prior to commencement of any work. A separate Toolbox Talk will be conducted before start up of any specific works.
- PIRH Site engineer shall ensure their workforce are complying with all applicable project safety rules and regulations/procedures.
- Site engineer shall inform and advise their workforce of forthcoming hazardous activities, to enable the Employees involved of those hazards.
- Conduct pre-task evaluations of work scope & area.
- Conduct specific equipment and PPE inspections.
- Participate in Daily and Weekly walk around inspection and close out outstanding issues.
- Correct all safety deficiencies as per the Weekly Area Safety Assessments and Area Discrepancy Logbook.
- Ensure employee participation in H&S programs / tasks.
- Enforce project policies and procedures.
- Monitor the behavior of the people and provide coaching to change the attitude and behaviors
- Assist in accident investigations.
- Ensure compliance to permit conditions.
- Ensure each individual is trained and competent for the task they are to undertake
- Ensure appropriate procedures / method statements are in place for all applicable work activities
- Ensure require permit has been taken, displayed at work locations and implemented.

#### **EMPLOYEES / WORKER**

- Undergo the mandatory “H&S induction training” and other skill oriented Job specific H&S trainings.
- Follow company H&S rules as briefed during the H&S inductions.
- Follow company H&S rules.
- Use and maintain PPE properly
- Comply with Health and Safety procedures applicable to their place and nature of work
- Participate in tool box talks and H&S trainings
- Report all incidents / accidents / near-misses
- Shall use the correct tools and equipment for job.
- Shall do nothing to endanger themselves or fellow workers.
- Shall ensure that tools and equipment are kept in good condition.
- Shall refrain from horseplay and abuse of safety devices, equipment and welfare facilities.
- Shall report any accident, near miss or hazardous condition to his Supervisors immediately.
- Shall be made familiar with the requirement of the BUIDCo. Requirements PIRH H&S plan, safety rules and take note of any special safety precautions in restricted areas.
- Shall obey all posted warning signs.

## **5 HEALTH**

### **5.1 HEALTH CHECK UP FOR ALL EMPLOYEES**

Medical examination of all worker / employee shall be carried out by PIRH before worker shall be appointed for the site activities. Medical examination of all workers shall be carried out by authorized Qualified medical practitioner (M.B.B.S. - Doctor) after verification of all require investigation report supporting document only. If worker not suitable construction activities by his medical report than such worker should not appointed and allowed to do any work in entire project. A worker who recovered from major dieses or injury, medical re-examination shall be carried out before allowing work at site.

Complete records of medical examination of all workers shall be maintained by PIRH for BUIDCo. inspection, and Medical fitness certificate is not necessary for the visitors.

### **5.2 DRINKING WATER**

Only laboratory third party tested and approved drinking water shall be provided and used by the PIRH at construction sites, accommodation camp and site offices. Water quality shall be monitor from source and outlet on monthly basis & test report shall be pasted on drinking water tank and report to be submitted to BUIDCo. on regular basis. Make in every place where construction work is in progress, effective arrangement to provide and maintained sufficient supply of drinking water for whole day. Drinking water shall not be stored within six meters of any washing, urinal or latrine.

Water supplies shall be conveniently located especially for areas of elevated temperatures, high physical activity, and cold or dry environments. Drinking water supplies shall be clearly marked especially where non-drinking water is also available. Energy drink shall be arranged according to site temperature and humidity condition. All the energy drinks shall be distributed to workforce after approval from BUIDCo. site management.

### **5.3 WASHING FACILITIES**

In every work place adequate and suitable facilities for washing shall be provided and maintained. Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

### **5.4 SITE HOUSEKEEPING**

Sweep up and remove daily all kind of waste e.g. debris, packing material, cotton waste, oil spillage, welding rods, grinding wheels, etc. leave clear space around storage and ensure unobstructed access to firefighting purpose and emergency evacuation. PIRH shall ensure good housekeeping at site by regular monitoring of the worksites by supervision and providing training and importance of housekeeping. Waste container provided for at site and office area for collecting the waste generated and separate housekeeping team to be deployed to maintain good housekeeping. Workers to remove the work generated waste from their responsible area.

- Daily before start of work & completion of job housekeeping to be done on regular basis.

- Ensure proper illumination at the workplace.
- Ensure proper signage for Traffic Routes & Aisle.
- Good Housekeeping means a Good business. It plays a vital role in prevention of accidents at work site. Therefore housekeeping should be followed at work site like any other operational activity.
- The cleaning of work site should be done every day at the end of work to be available hazard free on the next day during job commencement.
- The PIRH shall be responsible for ensuring that the work Sites are kept clean and tidy and that all scrap materials and tools are removed from the Sites periodically.
- Wastes shall be segregated, and labelled at source based on colour coding.
- Temporary waste storage are to be clearly barricaded, identified with suitable Labelling, should have impermeable floor and covered to avoid ingress of rain and sunlight.
- Disposal of solid waste generated by due to work shall be in line with BUIDCo. procedure for solid waste management. Special precautions to be taken in case of hazardous waste storage and disposal.
- At the completion of the work Contractor shall clear the site of all debris, leftovers, tools and materials.
- In case of failure to clear any debris, leftovers etc., which may cause housekeeping hazards, the contractor shall be liable for penal charges as per contractual obligations.
- Contractor is responsible for placing an adequate number of waste bins at strategic locations ( e.g. eating places, water coolers and toilets)
- No material or equipment shall be placed / parked on roads. No service cables, waterlines or hydrant hose shall be routed across roads.
- Keep all passageways, staircases, landings, and means of escape clear and unobstructed.
- Hazardous chemicals, flammables, oils, to be stored only on impermeable floor (e.g. Concrete, sheet metal, HDPE etc.) With terms to contain spillage and avoid soil/water pollution. Storage should be away from other raw material, passageway and labour accommodation, with adequate barricades to avoid unauthorized entry and protection from sun and rains.
- Do not leave tools on the floor, or in a location where they could be easily dislodged. Provide proper storage, such as tool boxes or containers for tools and equipments
- Do not obstruct lighting, ventilation, electrical power points, and fire fighting equipment.
- Keep the floor of workplace tidy.

## 5.5 TOILET FACILITIES

Latrines shall be provided in every work place on the following scale: There shall be at least one latrine and urinal for every 25 workers. Every latrine shall be so partitioned off as to secure privacy and shall have a proper door and fastenings.

The latrine and urinal shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times. Sewage waste shall be disposed properly according to AMC waste management plan.

## 5.6 EATING FACILITIES

Meals shall be consumed only in the designated PIRH provided dining room/Shelter with proper facilities of drinking water and seating arrangements. Proper waste disposal facilities shall be provided. Waste shall be removed

immediately from the site after the lunch period and the area kept neat and clean at all times. No camp fire/bonfire allowed at site and within the BUIDCo. premises

## **5.7 WORKING HOURS**

During the course of work, we shall be working 7 days a week, 8 hours a day (Monday to Saturday), 8 hours in Sunday. Normally the work shall be carried out during daylight hours. If during the course of the project night work is required, all support facilities such as the lighting shall be provided in order to keep the safe working conditions.

If require, shift duty of 10 hours shall be implemented to avoid more than work day duties and night shift procedure shall be implemented .The above working hours shall must comply statutory regulation as well as BUIDCo. procedure.

## **5.8 SMOKING**

The rules in effect at the Work site and contractors corporate guidelines shall determine the project policy towards smoking. Smoking shall not be allowed in at site. Failure to adhere to this requirement may result in immediate removal of the offending personnel.

## **5.9 HEAT STRESS**

## **5.10 FIRST AID FACILITY / CLINIC**

# **6 PLANNING & PREPAREDNESS**

## **6.1 PURPOSE**

This procedure is to establish, implement and maintain an EHS Management system for dealing with emergency situations to minimize hazards to ESSEL UTILITIES activities

## **PROCEDURE**

- Safety Officer to identify potential hazardous and emergency situations for the activities of different department in consultation with concern HOD's & prevent or mitigate associated adverse OH&S consequences.
- Safety Officer to make all concerned personnel aware of all the aspects and conditions that may lead to emergency situations. The Safety officer shall prepare the mock audit plan at the start of every financial year considering his experience and hazards situations arising from risk hazard analysis in consultation with the O & M Head. He will periodically conduct the mock audit as per the plan. Corrective Actions shall be initiated based on the findings emerging from the mock audit report.
- In the onsite emergency plan, all the emergency conditions, preparedness and response plan is described.
- A detailed safety manual is prepared describing the infrastructure facilities. This safety manual also describes the procedures and formats related to safety aspects.
- Safety Officer to carry out periodic mock drills of accident or emergency situations where practicable and keep records.
- Contractors and his employees are trained for emergency situations

## 6.2 TYPE OF EMERGENCY

Foreseeable emergencies would include, but not necessarily be limited to:

Fire  
Electric Shock  
Fall from height  
Hit by vehicle  
Snake Bite  
Major Spillage / Leakage of Oil / Chemicals  
Gas Leakage from Cylinder  
Medical Emergency

## 6.3 EMERGENCY RESPONSE TEAM

Emergency response team comprises:

- Main controller:
- Incident controller:
- Incident Action Team Members:
- Site Supervisors

Names of persons identified at the site are given in **Annexure I**.

### ***Annexure-1***

#### **EMERGENCY RESPONSE TEAM**

##### **6.3.1 EMERGENCY RESPONSE TEAM FOR WTP**

Emergency response team comprises

- **Nominated Main Controller** Mr. Shashi Mohan (GM)
- **Incident controller:** Mr. Rakesh Kumar (Admin)
- **Incident Action Team Members:** Mr. Debomoye Bhattacharji (Site In charge)  
Mr. Rukhsar Alam (EHS),  
  
Mrs. Rani Chaube (PR),  
  
Mr. Ravi Ranjan Kumar (HR)  
  
Mr. Partha Chaudhuri (Store)
- **Site Supervisors:** Mr. Rizwan Alam (GET)

##### **6.3.2 EMERGENCY RESPONSE TEAM FOR BMC**

Emergency response team :

- **Nominated Main Controller** Mr. Shashi Mohan (GM)
- **Incident controller:** Mr. Rakesh Kumar (Admin.)
- **Incident Action Team Members:** Mr. Rukhsar Alam  
Mr. A.K. Pandeya (Site In charge), Mr. Rupesh Sahaye (CSC)  
Mrs. Rani Chaube (PR), Mr. Ravi Ranjan Kumar (HR)

Mr. Abhinav Shrivastav (Site In Charge),

- **Site Supervisors:** Mr. Adhishes(GET), Mr. Kushagra(GET)

**6.3.3 EMERGENCY RESPONSE TEAM FOR PROJECT OFFICE**

SL. NO.	NAME	DESIGNATION	DEPARTMENT	CONTACT NO.
1.	Mr. Shashi Mohan Singh	G M Operation	O&M	7544008700
2.	Mr. Arvind Kr Pandeya	Manager O&M	O&M	7631900046
3.	Mrs. Rani Choubey	Manager (P R)	(Public Relation)	7631900048
4.	Mr. D. Bhattacharjee	Deputy Manager O&M	O&M	7631900044
5.	Mr. Sushil Kr Singh	Asst. Manager	SCM	7631900052
6.	Mr. Rukhsar Alam	Asst. Manager	EHS	7631900055
7.	Mr. Partha Pratim Choudhuri	Deputy Manager	Store & Logistic	7631900060
8.	Mr. Pare Srinivasa	Sr. Executive	IT	7631900042
9.	Mr. Abhinav Shrivastava	Sr. Executive O&M	O&M	7631900043
10.	Mr. Rupesh Sahay	Sr. Executive	Customer Service	7631900050
11.	Mr. Rakesh K. Singh	Executive	Admin In charge	7631900047
12.	Mr. Ravi Ranjan	Asst. Manager HR	HR	7631900059
13.	Mr. Rizwan Alam	GET	O & M	7631900056
14.	Mr. Adhishesh	GET	O & M	7631900058
15.	Mr. Kushagr	GET	O & M	7631900057
16.	Mr. Rakesh Kumar	Manager	O & M	7631900045
17.	Customer Care	(Toll Free)		18001215660
18.	Police			100

19 Fire Brigade	101
20 Ambulance	102

Emergency response team :

- **Nominated Main Controller** Mr. Shashi Mohan (GM)
- **Incident controller:** Mr. Rakesh Kumar (Admin.),
- **Incident Action Team Members:** Mr. Rukhsar Alam (EHS),  
Mr. Ravi Ranjan Kumar (HR) Rakesh Kumar  
(Manager)

Mrs. Rani Chaube (PR) Mr. Shusil Singh (SCM)

- **Site Supervisors:** N. A.

## 7 RESPONSIBILITIES OF KEY PERSONNEL

### Responsibility of the Main Controller

- Control and direct the overall situation from the incident control center
- Coordinate action with the Incident Controller
- Call out and brief the public emergency services if required
- Direct the evacuation of people and stop work activities if required
- Call in key operational personnel
- Continually review and assess possible developments
- Ensure casualties are receiving appropriate attention
- Communicate with officers of the public emergency services
- Maintain a record of the accident or emergency
- Issue statements to employees and the public media
- Control the return to normal operations after the emergency

### **FIRE EXTINGUISHER CHART**

Sl. No	Location	Type	Capacity
1.	Project Office	BC -CO2	4.5 KG
2.	Old Pump House	BC -CO2	4.5 KG
3.	Intake well Wet	BC -CO2	4.5 KG
4.	Intake well Dry	BC -CO2	4.5 KG
5.	New Pump House	BC -CO2	4.5 KG
6.	Mechanical Pump House	BC -CO2	4.5 KG
7.	Kotawali Pump House	BC -CO2	4.5 KG
8.	WTP Barari Office	ABC	4 KG
9.	BMC Office	ABC	4 KG
10.	Guest House	ABC	4 KG

### **GENERAL SAFETY**

#### **GENERAL GUIDELINE:**

- All contractors shall ensure that PIRH H&S standards and procedures and/or CLIENT's requirements shall be strictly adhered

- Subcontractor Management is expected to actively and adequately promote safe working performance on the part of their employees.
- Subcontractors must ensure that their employees are competent and qualified to carry out their specific tasks. Necessary documents pertaining to the qualifications and certification must be submitted for evaluation and approval from PIRH H&S Departments.
- All necessary PPE's shall be provided by the PIRH. All such items should comply with PIRH specifications.
- All PIRH should ensure that their workers have been given safety Induction by PIRH Safety officer.
- All PIRH should ensure that the non conformities found during the monthly audits by the SO are closed within the stipulated period. Copies of Non-conformity reports and confirmation of closure of non-conformities shall be furnished to CLIENT.
- PIRH should arrange for all site facilities of their workers viz. First Aid, drinking water, toilets, waste bins & rest room on suitable location at the site.
- PIRH should deploy a qualified/experienced safety supervisor at site who will work in close co-ordination with PIRH Safety Officer and will be responsible for implementation of safety norms at site. The credentials of the safety supervisors must be submitted to the PIRH H&S department for approval.
- PIRH should ensure that all the equipments and tools and tackles (Crane, Hydra, slings, shackles etc) being used at site is duly certified by competent authorities. A copy of these certificates should be submitted to PIRH H&S Dept. for verification, approval and records.
- All subcontractors will be issued a copy of OCP's. All works should be carried out in compliance to them.
- All penalties (Whether worker or subcontractor) will be deducted from the bills of the subcontractor.

#### **SAFETY COMMITTEE MEETINGS**

- Safety Committee members shall be cross-functional and representation from HR, O&M, Vigilance, MMG, SCM, Commercial, Collections. Also representative from key subcontractors to be included.
- Selection of Advisor, Chairman, Secretary and Co-coordinator for smooth working is advisable.
- Work with local HR to announce this safety committee formation and its member composition to the entire business including to subcontractor staff.
- Setup Safety Committee meeting calendar (monthly)
- Safety Committee meeting will be conducted every month and will be communicated by displaying on notice board or by e-mail.
- Select a day and time every month where the Safety committee meets
- Safety Committee round will be taken prior to start the safety meeting.
- Conduct Safety Committee Meeting on scheduled date and Minutes of meeting to be noted, reviewed and displayed.
- Display the names of existing Safety Committee members on the notice board

#### **FORMATION OF THE PROJECTS EHS COMMITTEE**

NAME OF THE PROJECT- BWSP

#### **CIRCULAR**

#### **COMMITTEE**

The following EHS Committee is constituted with immediate effect:

**Alternate Chairman:** Mr. Shashi Mohan  
**Members:** Mr. Debomoe Bhattacharji  
Mr. A. K. Pandeya  
Mr. Abhinav Shrivastava  
Mr. Ravi Ranjan Kumar  
Mr. Rakesh Kumar  
Mr. Rakesh Singh  
Mrs. Rani Chaube  
Mr. Partha Chaudhari  
Mr. Shushil Kumar  
Mr. Rupesh Sahaye

**Secretary:** Mr. Rukhsar Alam

**Periodicity:** The committee will meet at least once in a month.

**Agenda:** Secretary will circulate agenda of the meeting at least two days in advance of the schedule date of the meeting.

**Circulation:** Gist of the meeting will be minuted in the standard format and the circulated to the following under the signature of the secretary—

- |  |            |
|--|------------|
| 1. Chairman                              | 2. Members |
| 3. Invitees- Vendor and / sub-contractor | 4. GM-EHS  |
| 5. Other concerned                       |            |

#### **Basic Site Safety Rules**

- Observe and obey the safety rules, safety instructions, safety signs and symbols which are displayed in the relevant and prominent locations.
- No personnel shall be allowed to enter the site without CLIENT's mandatory H&S induction training.
- Head protection (safety Helmet) and Safety shoe shall be worn on job sites at all times by all trades.
- Eye protection will be worn when there are potentials of hazards from flying objects or particles, chemicals, arcing, glare, or dust.
- Protective gloves or clothing shall be worn when required to protect against a hazard.
- Working above 2 meter or more, full body harness with double lanyard and shock absorber shall be worn (it is mandatory when working from unprotected high places below 2 m). Always keep your lanyard as tight as possible
- Keep your mind on your work at all times. No horseplay on the job.
- The use of illegal drugs or alcohol or being under the influence of the same on the project shall be cause for termination. Inform your supervisor if taking strong prescription drugs that warn against driving or using machinery.
- Do not distract the attention of fellow workers. Do no engage in any act which would endanger another employee.
- A good job is a clean job, and a clean job is the start of a safe job. So keep your working area free from rubbish and debris.
- Do not use a compressor to blow dust or dirt from your clothes, hair, or hands.
- Never work at height if you are afraid to do so, if you are subject to dizzy spells, or if you are apt to be nervous or sick.
- Know where firefighting equipment is located and be trained on how to use it.

- Lift correctly - with legs, not the back. If the load is too heavy GET HELP. Control your weight. Approximately twenty percent of all construction related injuries result from lifting materials.
- All the vehicles must have Reverse horn and speed limit at site is 15 Km/hr. Vehicle drivers should have valid Indian driving license, 3 years experience, and Mandatory third party defensive driving training and mobile phone should not be used while driving. Two wheeler riders must wear the crash helmet.
- Do not use power tools and equipment until you have been properly instructed in the safe work methods and become authorized to use them.
- be sure that all guards are in place. Do not remove, displace, damage, or destroy any safety device or safeguard furnished or provided for use on the job, nor interfere with the use thereof.
- Do not enter an area which has been barricaded.
- If you must work around power shovels, trucks, and dozers, make sure operators can always see you. Barricades are required for cranes.
- Never oil, lubricates, or fuel equipment while it is running or in motion.
- Before servicing, repairing, or adjusting any powered tool or piece of equipment, disconnect it, lock out the source of power, and tag it out.
- Trenches over five feet deep must be sloped or step cutting or shored as required. Excavated or other material shall not be stored nearer than three feet from the edge of the excavation.
- Use the "four and one" rule when using a ladder. One foot of base for every four feet of height.
- Portable ladders in use shall be equipped with safety feet unless ladder is tied, blocked or otherwise secured. Ladders must extend three feet above landing on supporting object for proper use. Keep ladder bases free of debris, hoses, wires, materials, etc.
- Scaffold planks shall be properly lapped, cleaved or otherwise secured to prevent shifting.
- Use only extension cords of the three-pin type. Use ground fault circuit interrupters at all times (ELCB/RCCB) and when using tools in wet atmosphere (e.g. outdoors) or with any temporary power supply. Check the electrical grounding system daily.
- Never throw anything "overboard." Someone passing below may be seriously injured.
- Know what emergency procedures have been established for your job site. (Location of emergency phone, first aid kit, stretcher location, fire extinguisher locations, evacuation plan, etc.)
- Every accident and near miss evens must be immediately report to the Safety dept.
- Smoking is strictly prohibited at workplace.
- Any Openings made in the floor and ground should be covered or Barricaded with caution board
- Never enter a manhole, well, shaft, tunnel or other confined space which could possibly have a non respirable atmosphere because of lack of oxygen, or presence of toxic or flammable gas, or has a possibility of engulfment by solids or liquids. Make certain a qualified person tests the confined area with an appropriate detector before entry, that the necessary safety equipment is worn. Standby person may be required to be stationed at the entrance.

## 8. Records

To ensure consistency in collecting data as per requirements, formats have been prescribed. These formats are uniquely numbered and controlled. The approval of these formats is with the approval of respective procedures. The data collected are filed safely and stored in appropriate places and are accessible to all concerned as per the master list EIL/ISO/QEHS/FOR/GEN/17

**APPENDIX 9: SCANNED COPY OF CONTRACTOR'S INSURANCE FOR VEHICLES/WORKERS**

THE NEW INDIA ASSURANCE CO. LTD.  
(Wholly owned by the Govt. of India)



**CONTRACTOR'S ALL RISKS INSURANCE POLICY**

<b>Insured's Name</b>	BIHAR URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD PATNA A/C PAN INDIA INFRA		
<b>Insured's Details</b>		<b>Issuing Office Details</b>	
<b>Customer ID</b>	: PO38640163	<b>Office Code</b>	: DOMBIVILI DO (170700) (170700)
<b>Address</b>	: 20TH FLOOR, A WING, MARATHON FUTUREX N M JOSHI MARG, LOWER PAREL, MUMBAI MAHARASHTRA, 400012	<b>Address</b>	: RAGHUKUL HEIGHTS.ABOVE JAOLI BANK 1ST FLOOR, DR. RAJENDRA PRASAD ROAD, DOMBIVALI (E),421201
<b>Phone No</b>	:	<b>Phone No</b>	: 02512862639 / 02512862646 / 02512862674
<b>E-mail/Fax</b>	: /	<b>E-mail/Fax</b>	: nia.170700@newindia.co.in / 02512862638
<b>PAN No</b>	:	<b>S.Tax Regn. No</b>	: AAACN4165CST178

<b>Policy Details</b>			
<b>Policy Number</b>	: 17070044150300000003	<b>Business Source Code</b>	
<b>Period of Insurance</b>	: From:22/12/2015 02:46:46 PM To: 21/06/2019 11:59:59 PM	<b>Dev.Off. level/Broker/Corp. Agent</b>	: AMICUS INSURANCE BROKING SERVICES PVT. LTD (2D10077204) BROKER SITE 120500 (SI00033897)
<b>Date of Proposal</b>	: 22-Dec-15	<b>Agent/Bancassurance</b>	:
<b>Prev. Policy no.</b>	:	<b>Phone No</b>	: NA / NA
<b>Client Type</b>	: Non-Corporate	<b>E-mail/Fax</b>	: /

<b>Premium</b>	<b>Service Tax</b>	<b>Total</b>	<b>Receipt No. &amp; Date:</b>
3219652	466850	3686502	17070081150000030064 - 31/12/15

\* Premium subject to adjustment on completion of the Project

<b>Location of Contract site</b>	Risk Address : 1 ENTIRE BHAGALPUR CITY, NA, BHAGALPUR, BIHAR, INDIA, 812001
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<b>Principal(s)/ Contractor/ sub-contractor Details</b>		
<b>Sl. No.</b>	<b>Name</b>	<b>Address</b>
1	PAN INDIA INFRA PROJECTS PRIVATE LIMITED	20TH FLOOR, A WING, MARATHON FUTUREX N M JOSHI MARG, LOWER PAREL, MUMBAI

<b>Sl. No.</b>	<b>Description of Contract Works</b>
1	1) Rehabilitation, Construction, Operations, Maintenance & Management of Bhagalpur Water Supply Project I (BWSP1) under ICB Contract Package No: BH/WS/01 (ADB Loan 2861 IND) 2) NA 3) NA

<b>Sl. No.</b>	<b>Period of Insurance</b>
1	Period of Insurance From : 22/12/2015 02:46:46 PM To : 21/06/2019 11:59:59 PM plus 12 months maintenance period

<b>Co-Insurance Details</b>			
<b>Sl. No.</b>	<b>Company</b>	<b>Site</b>	<b>Co-Insurance %</b>
1	NEW INDIA ASSURANCE CO. LTD.	DOMBIVILI DO (170700)	70
2	RELIANCE GENERAL INSURANCE CO. LTD.	CL1001 Corporate Office	30

**Section I - Material Damage :**

<b>1. 1. Contract works ( Permanent and Temporary works including all materials to be incorporated therein )</b>				
<b>Sl. No.</b>	<b>1.1 ) Contract price</b>	<b>1.2 ) Materials or items supplied by the Principal</b>	<b>2) Any other works and installations not included in 1.1 and 1.2 above (e.g. camp, colony, stores etc. as per list enclosed)</b>	<b>Total Project Sum Insured</b>
1	2235294976	0	0	2235294976

<b>3. Contractors Plant and Machinery (Memo 4) as per list enclosed</b>								
<b>Item No.</b>	<b>Quantity</b>	<b>Description of Items (Type, Manufacture, Capacity)</b>	<b>Year of Manufacture</b>	<b>Sum Insured (In `)</b>	<b>Risk Code</b>	<b>Excess due to AOG Perils</b>	<b>Excess due to Other than AOG Perils</b>	<b>Excess for Boom Section</b>

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4. Add on Covers			
1.Owners Surrounding Property			
Sl. No.	Limit of Indemnity	Excess	
1	Upto 10% of SI Without Flexa	Policy Excess	
2.Additional Custom Duty			
Sl.	No. Limit of Indemnity	Excess	
1	0	5 % of Additional Duty	
3. Removal of Debris per occurrence			
Sl.	No. Limit of Indemnity	Excess	
1	250000000	Policy Excess	
4. Professional Fees			
Sl.	No. Limit of Indemnity	Excess	
1	5000000	Policy Excess	
5. Expediting Cost including Air Freight & Express Freight			
Sl.	No. Limit of Indemnity	Excess	
1	Up to 30% of net claim amount	Policy Excess	
6. Offsite Storage/ Fabrication			
Sl. No.	Limit of Indemnity	Excess	
1	20000000	Policy Excess	
7a. On Increased Replacement Value which may have to be paid on replacement of Item 1.1			
Sl. No.	Limit of Indemnity	Excess	
1	335294246.4	Policy Excess	
7b. On Increased Replacement Value which may have to be paid on replacement of Item 1.2			
Sl. No.	Limit of Indemnity	Excess	
1	0	Policy Excess	
7c. On Increased Replacement Value which may have to be paid on replacement of Item 1.3			
Sl. No.	Limit of Indemnity	Excess	
1	0	Policy Excess	
8. Automatic Reinstatement clause			
Sl. No.	Limit of Indemnity	Excess	
1	Up to 10% of SI	Policy Excess	
9. Loss minimisation expenses			
Sl. No.	Limit of Indemnity	Excess	
1	1000000	Policy Excess	
10. Cover for valuable documents			
Sl. No.	Limit of Indemnity	Excess	
1	0	Policy Excess	
11. Design Defect Cover			
Sl. No.	Limit of Indemnity	Excess	
1	DE-3 of Munich Re	5 times Policy Excess	
Section II - Third Party Liability :			
Sl. No.	Limit of indemnity in respect of any one accident or series of accidents arising out of one event	Total limit of Section II during policy period	Any One Person
Excesses for Section I and II :			

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Sl. No.	1. For Storage & Construction claims	2. For Maintenance period claims	3. For Major peril claims as per Memo 8 of Section I	Terrorism Claims
1	5% of Claim Amount subject to Minimum of ₹ 15000 each claim	5% of Claim Amount subject to Minimum of ₹ 50000 each claim	5% of Claim Amount subject to Minimum of ₹ 50000 each claim	0.5 % of Total Sum Insured subject to minimum of ₹ 1,00,000/- for each and every claim

Excesses For Specific AddOn Covers :		
Sl. No.	Description Of Cover	Excess
	Terrorism Covered	Terrorism Premium
	NO	0
	Risk Serial No.	Earth Quake Cover
	1	YES
	Risk Serial No.	STFI Cover
	1	YES

Installment Details			
Installment Number	Installment Date on or before	Installment Amount (₹)	
		Premium	Service Tax
1	22/12/2015	396265	57458
2	22/03/2016	235285	34116
3	22/06/2016	235282	34116
4	22/09/2016	235282	34116
5	22/12/2016	235282	34116
6	22/03/2017	235282	34116
7	22/06/2017	235282	34116
8	22/09/2017	235282	34116
9	22/12/2017	235282	34116
10	22/03/2018	235282	34116
11	22/06/2018	235282	34116
12	22/09/2018	235282	34116
13	22/12/2018	235282	34116

ENDORSEMENTS ATTACHED TO & FORMING PART OF THE POLICY		
Sl. No.	Endorsement Number	Endorsement Title
1	CAR 001	Pipeline Construction
2	CAR 002	Exclusion of Loss of Stabilising Fluid
3	CAR 003	Road Construction
4	CAR 004	Piling Construction
5	CAR 005	Abandonment of Shafts
6	CAR 006	Crops, Forests, Cultivated Areas
7	CAR 007	Existing underground cables
8	CAR 008	Contract works time schedule
9	CAR 009	Temporary access Roads
10	CAR 010	Special conditions concerning the construction of Dam and Water Reservoir
11	CAR 011	Special conditions concerning safety measures with respect to Precipitation, Flood and Inundation
12	CAR 012	Breakage of glass
13	ENG 004	Escalation
14	ENG 005	Air Freight
15	ENG 007	Additional Customs Duty
16	ENG 001	Coinsurance
17	ENG 011	Deletion of earthquake (Fire & Shock) Perils in EQ ZONE I & II

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18	PR 001	Cross Liability
19	PR 002	Limited Maintenance Visits Cover
20	PR 003	Extended Maintenance Cover
21	PR 005	Installment Facility
22	PR 007	Expenses related of Freight, Insurance, Customs Duty
23	PR 008	Exclusion of transit losses
24	PR 009	Refund for early completion
25	PR 010	Deletion of Maintenance cover
26	PR 011	Extension of policy period
27	PR 012	Change in commencement date
28	PR 013	Mid-term increase in SI
29	PR 014	Cancellation of policy
30	PR 015	Professional Fees
31	LR 001	Cover Extra charges-OT,Night Work,Work Public Holidays,Exp Frght incl Air Frght
32	LR 002	Special conditions concerning Fire Fighting Facilities
33	LR 003	72 hours Clause
34	LR 004	Professional Fees Clause
35	LR 005	Clearance & Removal of Debries Clause
36	LR 006	50:50 Clause
37	LR 007	Cover for Increased Customs Duty
38	LR 008	Loss minimisation expenses
39	LR 009	Owners Surrounding Property
40	LR 010	Automatic Reinstatement
41	LR 011	Cover for Cross Liability
42	LR 012	Waiver of Subrogation
43	LR 013	Cover for manufacturers risk
44	LR 014	Extended maintenance cover
45	LR 015	Cover for 'valuable documents'
46	LR 016	Cover for Offsite Storage
47	LR 017	Waiver of Contribution
48	LR 018	Continuity of cover
	ENG 003	Exclusion of terrorism damage

In witness whereof the undersigned being duly authorised by the Insurers and on behalf of the Insurers has (have) hereunder set his (their) hand(s) on this 01st day of January,2016.

For and on behalf of  
The New India Assurance Company Limited

Duly Constituted Attorney(s)

**IRDA Registration Number: 190**



**Employees Compensation Insurance Policy Schedule**

<b>Policy Number:</b> 1101352711000485	<b>Proposal No:</b> P091115100854
<b>Insured:</b> PAN INDIA INFRAPROJECTS PVT LTD	<b>Period of Insurance:</b> From 10/09/2015 to 09/09/2016 (both days inclusive)
<b>Address:</b> 513/A, 5th floor, Kohinoor City, Kiroi Road, L.B.S. Marg, Kurla (W), Mumbai, Maharashtra- 400070	<b>Policy issuing office address:</b> Reliance General Insurance Co. Ltd. 570, Rectifier House, Naigaum Cross Road, Next to Royal Industrial Estate, Wadala (W), Mumbai – 400031
<b>Business:</b> Water distribution work	<b>Policy issuing servicing address:</b> 570 , Rectifier House Naigum Cross Road Wadala (W), Mumbai, Maharashtra- 400031
<b>Details of previous policy (if renewal):</b>	<b>Date of proposal &amp; declaration:</b> 10/09/2015
<b>Previous policy No :</b> NA	

**Laws:** The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Law / Act	Limit of indemnity	Coverage
(a) Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured as per act for any death/PPD/TTD/PTD arising out of an accident.	Yes
(b) The Fatal Accidents Act, 1855	Subject otherwise, to the terms, conditions & Exclusions of the Policy,	Yes
(c) Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy,	Yes

Premium Details	Amount (Rs)
Net Premium	4,115.00
Service Tax*	576.00
Sales Tax**	0.00
<b>Total Premium (Rs)</b>	<b>4,691.00</b>

Consolidated Stamp duty Paid vide GRAS GRN No. MH006126164201415E dated 02 March 2015

\* Not Applicable for the State of Jammu & Kashmir  
Service Tax Regn. No. : AABCR6747BST001

\*\* Applicable for the state of Jammu & Kashmir - Sales Tax Registration No. 01101051414

Details of Employees Covered					
Description of work done by Employees	Declared Number of Employees	Declared Wages during the Period of Insurance	Place/Places of Employment	Endt No.	Class. No.
Engaged in water distribution work Workers	23	60,14,603/-	All Over Bhagalpur, Bihar	62	193
<b>Total</b>	<b>23</b>	<b>60,14,603/-</b>			

**Subject to following clauses:**

**Conditions:**

- Medical Extension - INR 50,000/- Per person, subject to Maximum of Rs. 12,00,000/- in the annual Aggregate.
- This policy would be governed by;
  1. The Employee's Compensation Act, 1923 and subsequent amendments of the said Act prior to the date of issue of the Policy
  2. Common Law (Payment under common law shall not exceed the payment under WC act)
  3. Fatal Accident 1855
- Including Cover for Contractors & sub Contractors workers – Subject to maintaining the proper attendance register at work site and all the relevant information about the name of contractors/sub contractors and their employees and furnishing the information at the time of claim and whenever require by the insurer.
- Attendance register should be maintained in the places of employment mentioned and need to be submitted when required by insurer.
- Warranted that no tunneling work/ underground work and/ or blasting is carried out at the work site

11BRG285/AMICUS INSURANCE BROKING SERVICES PVT LTD

Intermediary Code/Name

Intermediary Contact No.

Intermediary E-mail ID



reliancegeneral.co.in  
1800 3009

- Excluding losses / damage due to war, Civil war, Nuclear energy and radio active effects
- Excluding Occupational Diseases
- The workman having been under the influence of liquor or drugs is excluded.
- The willful disobedience by the workman of orders and rules expressly given to secure the safety of the workmen is excluded.
- **Endorsement No :62 -It is hereby understood and agreed that any glazing work in connection with:**
  - a) Roofs of railway stations;
  - b) Any building of more than one floor in which the maximum height at which the work has to be done is more than 9 Metres from the ground level.
  - c) Any building of one floor only in which the maximum height at which the work has to be done is more than 9 Metres from the ground level is expressly excluded from the indemnity granted under this Policy.

**Exclusion:**

As per standard WC policy wordings.

In witness whereof the policy has been signed at Indore on 28.09.2015

Warranted that in case of dishonor of premium cheque(s) the company shall not be liable under the policy and the contract shall be void ab-initio"

**For: Reliance General Insurance Co Ltd.**

A handwritten signature in black ink, appearing to read "Munish Kumar", written over a horizontal line.

**Authorised Signatory**



reliancegeneral.co.in  
1800 3009

**Forming A Part of Policy No. 1101352711000485**

Employees Compensation Endorsement 345 (Erstwhile Tariff)

Coverage for Medical Expenses:

In consideration of the payment of an additional premium it is hereby understood and agreed that this Policy subject to its terms provisions and conditions is extended to indemnify the Insured in respect of the reasonable medical surgical and hospital expenses (including cost of conveyance to hospital) incurred by the Insured for treatment of injury to which the indemnity granted under this policy applies had disablement exceeded three days.

Provided always that the liability of the Company under this endorsement shall be limited to **INR 50,000/-** in respect of each Employee per person per accident, and the aggregate liability of the Company for all accidents during the Period of Insurance to **Rs.12,00,000/-**

**For: Reliance General Insurance Co Ltd.**

A handwritten signature in black ink, appearing to be "Munish Kumar", written over a horizontal line.

**Authorised Signatory**



Attached to and Forming A Part Of Policy No. 1101352711000485

EMPLOYEES COMPENSATION POLICY

WHEREAS the INSURED by Proposal which shall be the basis of this contract and deemed to be incorporated herein has applied to the RELIANCE GENERAL INSURANCE COMPANY LIMITED (hereinafter called the "Company") for the insurance hereinafter contained for the Business described in the Schedule and has paid or agreed to pay the premium stated in the Schedule as consideration for such insurance.

NOW THIS POLICY WITNESSETH, subject to the terms exceptions and conditions contained herein or endorsed hereon, that if at any time during the Period of Insurance any Employee of the Insured shall sustain personal Injury by accident arising out of and in the course of his employment in the Business, for which the Insured is liable to pay compensation under any Law(s) specified in the Schedule, then Company shall indemnify the Insured upto the Limit of Indemnity against all sums for which the Insured shall be so liable, including costs and expenses for defending any claim for such compensation incurred with the Company's consent.

PROVIDED ALWAYS that in the event of any change in the Law(s) or the substitution of other legislation therefore, this Policy shall remain in force but the liability of the Company shall be limited to such sum as the Company would have been liable to pay if the Law(s) had remained unaltered.

DEFINITIONS

Certain words used in this Policy and shown in bold are defined hereunder and shall have such meaning wherever they appear in this Policy.

**Business** means the Business of the Insured as specified in the Schedule in respect of which this Policy is issued.

**Injury** means physical bodily injury including death resulting from such Injury arising out of an accident but does not include any mental sickness, disease, Occupational Disease or illness, unless caused by such physical bodily injury.

**Insured** means the person or organization specified in the Policy Schedule but does not include their Contractors or Sub Contractors.

**Occupational Disease** means any disease listed under Schedule III of the Employees' Compensation Act, 1923 contracted by an Employee due to employment in the Business.

**Wages** means the remuneration payable to an Employee by the Insured for the employment in the Business and includes any privilege or benefit which is capable of being estimated in money other than a travelling allowance or the value of any travelling concession or a contribution paid by the employer of an employee towards any pension or provident fund or a sum paid to an employee to cover any special expenses entailed on him by the nature of his employment;

**Employee** means such person or persons in direct employment under the Insured in the Business covered under this Policy, but shall not include any person employed under a Contractor or Sub-Contractor of the Insured unless specifically shown as covered in the Schedule.

**Schedule** means the Schedule attached to and forming part of this Policy.

**Period of Insurance** means the period for which this insurance is availed by the Insured as specified in the Schedule, unless cancelled earlier.

**Limit of Indemnity** means the maximum amount of indemnity as specified in the Schedule that will be provided under this Policy by the Company in respect of



- a) any particular claim by an Employee and
- b) all claims arising out of all accidents for any number of Employees during  
the Period of Insurance.

Limit of Liability means the maximum amount of indemnity specified in the Schedule that will be provided under this Policy by the Company in respect of

- a) any particular claim by an Employee and
- b) claims arising out of all accidents for any number of Employees during the  
Period of Insurance.

EXCLUSIONS

- a) This Policy shall not cover liability of the Insured:
- b) For Injury caused to Employee by accident directly or indirectly caused by or arising from or in consequence of or attributable to war, invasion, act of foreign enemy, hostilities (whether war be declared or not) civil war, mutiny, insurrection, rebellion, revolution or military or usurped power, nuclear weapons material, ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste form the combustion of nuclear fuel.
- c) For Occupational Diseases contracted by an Employee
- d) For interest and/or penalty imposed on the Insured under any law or otherwise.
- e) Under any Law for medical expenses in connection with treatment of any Injury sustained by an Employee
- f) For persons employed in the Business under a Contractor or Sub-contractor of the Insured unless specifically covered in the Schedule
- g) For Injury sustained by person whilst in the employ of the Insured otherwise than in the Business and/or who has is not declared for insurance under this Policy
- h) Assumed by agreement which would not have attached in the absence of such agreement
- i) For any sum which the Insured would have been entitled to recover from any party but for an agreement between the Insured and such party.
- j) For any accident occurring whilst the Employee is under the influence of Intoxicating liquor or drugs.
- k) For any incapacity or death of an Employee resulting from his/her deliberate self-injury or the deliberate aggravation of an accidental Injury.

CONTITIONS

1. **The Contract:** This Policy and the Schedule shall be read together as one contract and any word defined herein and shown in bold shall bear such specific meaning wherever it may appear in the Policy or the Schedule
2. **Due Observance:** The due observance and fulfillment of the terms, conditions and endorsements of this Policy so far as they relate to anything to be done or not to be done by the Insured shall be condition precedent to any liability of the Company to make any payment under this Policy.
3. **Mis-representation/Non-Disclosure:** This Policy shall be void in the event of any mis-representation or non-disclosure in the Proposal and the Insured is deemed to warrant the truth and accuracy of the statements and answers in the Proposal which form the basis of this Policy.



4. **Written Communication** : Every notice or communication to be given or made Under this Policy shall be delivered in writing to the Company.
5. **Safeguards**: The Insured shall take reasonable precautions to prevent accidents and disease and shall comply with all statutory obligations, manufacturer's recommendations and other safety regulations in conduct of the Business.
6. **Claim Intimation**: In the event of any occurrence which may give rise to a claim under this Policy the Insured shall as soon as possible, and in any case within a period of thirty days of such occurrence, give notice thereof to the Company in writing with full particulars. Every letter claim writ summons and process shall be notified to the Company immediately on the receipt. Notice shall also be given to the Company immediately the Insured shall have knowledge of any impending prosecution inquest or fatal enquiry in connection with any such occurrence as aforesaid.
7. **Company's Rights After Loss**: No admission offer promise or payment shall be made by or on behalf of the Insured without the consent of the Company which shall be entitled, without being obliged to do so, if it so desires to take over and conduct in his name the defence or settlement of any claim or to prosecute in his name for its own benefit any claim for indemnity or damages or otherwise and shall have full discretion in the conduct of any proceedings and in the settlement of any claim and the Insured shall give all such information and assistance as the Company may require.
8. **Duty to Declare Employees & Wages**: It is clearly agreed and understood that the Insured shall be bound at all times to declare all Employees and Wages payable in respect of such Employees on the basis of which the Premium for this Policy is calculated.
9. In case of increase in Employees or Wages subsequent to insurance, Insured shall keep the Company intimated and obtain Endorsement by payment of necessary additional premium. The Insured shall as and when required by the Company permit inspection of its records to verify the Wages and Employees and shall also provide duly authenticated copies thereof if so required the Company.
10. **Average**: Notwithstanding anything contained hereinabove,
  - a) If the number of Employees (whether on duty or otherwise) employed by the Insured on the date of accident is higher than the number covered under this Policy, the Company shall be indemnify Insured's liability arising out of such accident, only in such proportion that the number of Employees covered bears to the Employees found employed on the date of accident:-
  - I. If the amount of Wages declared for this insurance for all Employees is less than the actual Wages paid until date of accident, the Company shall be liable to indemnify on any claim only in proportion that the Wages declared bears to the Wages paid. For the purpose of this clause, the Wages declared shall be calculated proportionately for the period from commencement of Policy until date of accident for comparison with the actual wages paid during such period to determine applicability of this clause.
  - II. If the liability of the Insured for any claim by an Employee is determined on the basis of Wages higher than covered under this Policy, the Company shall be liable to indemnify only in proportion that the Wages covered under the Policy for the Employee/Employees bears to the Wages on the basis of which Insured is held liable. For the purpose of this clause, the Wages covered in respect of any Employee shall be deemed to be the average wage per Employee in the category under which the Employee falls as specified in the Schedule, unless actual Wages paid at the time of accident is substantiated by submission of documentary evidence to the Company.
  - b) If more than one of the above clauses is found applicable in respect of a claim, only such clause under which the liability of the Company is least shall be applied.
11. **Maintenance of record of Employees/Wages**: The Insured undertakes to maintain an accurate record of the Employees and Wages in respect of the Business throughout the Period of Insurance, in compliance with all statutory requirements or otherwise, and allow the Company to inspect such records during or upon expiry of this Policy.

13. **Cancellation:** The Company or the Insured may cancel this Policy by sending at least 15 days written notice to the other party at his last known address and in such event the premium shall be adjusted in accordance with Condition 9 above.
14. **Forfeiture:** If the Insured shall make any claim or connive in the making of any claim, knowing the claim to be false or fraudulent, the Policy shall become void and all claims will stand forfeited.
15. **Arbitration:**
  - a) If any dispute or difference shall arise as to the quantum to be paid under this Policy (liability being otherwise admitted) in respect of any claim, such difference shall independently of all other question be referred to the decision of a sole arbitrator to be appointed in writing by the parties to or if they cannot agree upon a single arbitrator to a panel of three arbitrators to be appointed in accordance with the provision of the Arbitration and Conciliation Act, 1996. The arbitration shall be governed by India Law. The venue of arbitration shall be within India.
  - b) It is clearly agreed and understood that no reference to arbitration can be made if the Company has either not admitted or has disputed liability in respect of any claim under or in respect of this Policy.
  - c) In the event that these arbitration provisions shall be held to be invalid then all such disputes or differences shall be referred to the exclusive jurisdiction of the Indian Courts.
  - d) It is further expressly agreed and declared that if the Company shall disclaim liability in respect of any claim and is not within 12 calendar months from the date of such disclaimer be made the subject matter of a suit or proceeding before a Court of law or any other forum, it shall for all purposes be deemed to have been abandoned and shall not thereafter be recoverable hereunder.
16. **Law and Jurisdiction :** It is hereby declared and agreed that this contract of Insurance and all claims there under shall be governed by Indian Law and any legal proceeding in respect thereof shall be raised a competent court of India. All claims shall be paid in Indian Rupees only.

## APPENDIX 10: TRAFFIC MANAGEMENT PLAN

(Subject to revise by-annually)

All construction traffic travelling to either of the proposed way or directly to the pipeline working area via the routes described. These preferred routes have been determined to limit the impact of the construction traffic on the surrounding area and in particular to ensure that there is no detrimental impact on the town of Bhagalpur. Local residents in Bhagalpur Town will be kept informed of construction programming and progress. Regular contact with local residents will be maintained during the mobilisation, construction and demobilisation periods. Where possible construction traffic will be controlled to ensure that deliveries to the way and to the pipeline working area will be spread across the day to minimise the impact of traffic to local residents, in particular during the highway peak hours. Construction site workers will be carried from the chosen compound to the pipeline working area by minibus to reduce the number of vehicle trips and these trips will be undertaken outside of the highway peak with workers taken from the compound to the pipeline working area. There may be a small number of trips made to the pipeline working area and associated for the purpose of inspection and maintenance. Where possible these visitors will be transported from the compound by minibus / cars / jeeps, but where this is not possible there may be an occasion where these trips are made directly to the pipeline working area by private motor vehicle.

Parking management plan will be developed to include the following features:

- Parking restrictions on all areas outside of the specified designated parking zones.
- Preferential parking for vehicles carrying more than one occupant; and
- The establishment of a car share database within the parking permit system;

### Local Signage Strategy

Temporary signs will be erected during the mobilisation, construction and demobilisation periods to direct construction traffic along the assigned routes and staff and the construction traffic drivers will be thoroughly briefed on the route that they are required to use to avoid inappropriate use of local roads by construction traffic.

On both main road approaches to the chosen signs to the Traffic Signs Regulations and General Directions (Side Road Ahead) and (Works Access) will be erected. Where appropriate these signs will also be erected on local roads adjacent to pipeline working area where construction traffic is required to enter to drop off materials during the construction phase of the pipeline.

In 1st Phase (i.e. 50 Km length) the mostly road is having 4.5 mtr. Width with both side earthen shoulder mainly are Factory Road, Baniya Toli Lane, Barari Road, Feri Road, Vikarmshila Setu Road, Burning Ghat Road, Rahmat Hussain lane, Surya Mohan Path, Pani Kal Road, Janta Flat Road, MIG Road etc.

The Pipe line will be executed in earthen shoulder on shoulder of the road i.e. RCC Road / Bituminous road. The PIRH will follow the traffic rule and execution will be started after getting the permission from authority. The following segments will be following during execution of pipe line.

### MAINTENANCE OF DIVERSIONS AND TRAFFIC CONTROL DEVICES

Signs, lights, barriers and other traffic control devices, as well as the riding surface of diversion shall be maintained in a satisfactory condition till such time they are required as directed by the PIRH. The temporary travelled way shall be kept free of dust by frequent applications of water, if necessary. PIRH will follow the typical traffic diversion and typical signage as below during execution of work.

- Barricading

- Men at work
- Keep Left
- Go slow
- Flag men
- Narrow signs
- Lantern(Amber Blinker)
- Traffic control Lights
- Cones

Safety jackets and helmets should be provided to all the workers/ Engineers working on the road. Fixed mobile solid barricades must be placed between the workmen and traffic or pedestrian and traffic.

**APPENDIX 11: SUMMARY OF LABOURERS**

<b>Package No.</b>	<b>Contractor</b>	<b>Total Number of Employees</b>	<b>No of Female Employees</b>	<b>No. of Local Employees</b>
Improvement of Water supply system at Bhagalpur (BWSP1)	M/S Pan India & Ranhill Pvt Ltd, Mumbai	Staff: 30 Distribution O & M Worker: 13 WTP O & M Worker: 23 EPC Worker:22  Total- 88	01	Approx 58

**APPENDIX 12: ENVIRONMENT, HEALTH AND SAFETY BUDGET 2016-17  
CONSTRUCTION**

Component	Description	Number	Cost per Unit (INR)	Cost (INR) Year 2016-17	Source of Funds
Air	Once in six months during construction works at all the water reservoir locations. WTP location and pipe laying locations as identified by Engineer of DSC & Environmental Specialist of PMC	3 OHSR locations and multiple locations at pipe line laying work area in 1 <sup>st</sup> one year. (12 samples)	10,000 per sample	1,20,000	Covered under engineering design and cost- by contractor
Noise	Once in six months during construction works at all the water reservoir locations, WTP location and pipe laying locations as identified by Engineer of DSC & Environmental Specialist of PMC	3 OHSR locations and multiple locations at pipe line laying work area in 1 <sup>st</sup> one year. (12 samples)	1500 per sample	18000	Covered under engineering design and cost- by contractor
Sludge Monitoring	Once in six months during construction work at WTP Barari	Approx 4 samples	2000 per samples	8,000	Covered under engineering design and cost by contractor
Tree plantation at Barari WTP	As per BSPCB norms		15000	15000	Covered under engineering design and cost by contractor

## APPENDIX 13: PUBLIC CONSULTATION ON ENVIRONMENTAL ISSUES DURING PIPE LAYING WORK AT BARARI

### Subproject: Improvement of Water supply system in Bhagalpur City

**Date & Time:** 24.06.2016

Various issues related to the proposed subproject were discussed at various locations of the subproject corridor. Discussions were held with the parties directly and indirectly affected by the subproject execution as well as the general public of the subproject area. The problems faced by them along with their suggestions/concerns were recorded and the same have been given due consideration during formulation of the project design, IEE and EMP.

The participants, in general were in favour of this subproject. However, they were concerned about the permanent and temporary impacts which are expected to arise during construction stage such as traffic related issues, loss of access and increase in air pollution due to dust emissions. People are ready to extend all types of support during execution of the project. The details of the public consultation are detailed below:

#### Issues discussed- Pipe line laying at Barari

- Access road is very narrow and this is also used for general public so health & safety measures discussed
- Air Pollution issue discussed
- Vehicle Movements and safety of local public
- Water quality issue
- People are interested to get water 24×7.
- People are interested to do work on project area



Consultation during Pipe laying work at Barari

List of the participants in Public Consultation

Subproject Name: BWSP-1

Location: ~~Chandernagar~~ Barari

Date: 24/6/16-

Sl. No.	Name & Address	Occupation	Signature
1	RD Karn	business	- Karn
2	Suman Kumar	"	Suman Kumar
3	Guddu	"	खोदी
4	Soni	Labor	असह पति
5	Sanjay Kumar	Self Business	संजय कुमार पात
6	Pankaj Yadav	Self Business	पंकज यादव
7	Rakesh Mandal	Private Guard	Rakesh Mandal
8	Dilip Kumar	Student	दिलीप कुमार
9	Ajai Kumar	"	Ajai Kumar
10			
11			

**APPENDIX 14: SAMPLE GRIEVANCE REGISTRATION FORM**

(To be available in Hindi and English or local language, if any)

The **Bihar Urban Development Investment Program (BUDIP)** welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing \*(CONFIDENTIAL)\* above your name. Thank you.

<b>Date</b>		<b>Place of registration</b>			
<b>Contact Information/Personal Details</b>					
<b>Name</b>		<b>Gender</b>	<b>Male</b> <b>Female</b>	<b>Age</b>	
<b>Home Address</b>					
<b>Village / Town</b>					
<b>District</b>					
<b>Phone no.</b>					
<b>E-mail</b>					
<b>Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your grievance below:</b>					
If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					

**FOR OFFICIAL USE ONLY**

<b>Registered by: (Name of official registering grievance)</b>	
<b>If – then mode:</b>	
<input type="checkbox"/> <b>Note/Letter</b> <input type="checkbox"/> <b>E-mail</b> <input type="checkbox"/> <b>Verbal/Telephonic</b>	
<b>Reviewed by: (Names/Positions of Official(s) reviewing grievance)</b>	
<b>Action Taken:</b>	
<b>Whether Action Taken Disclosed:</b>	<input type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b>
<b>Means of Disclosure:</b>	

परिशिष्ट 1: शिकायत पंजीकरण फार्म का नमूना  
(हिंदी, और उर्दू में उपलब्ध कराया जायेगा)

बिहार शहरी विकास निवेश कार्यक्रम (BUDIP) परियोजना के कार्यान्वयन से सम्बंधित शिकायतें, सुझाव, प्रश्नों और टिप्पणियों का आमंत्रित करती हैं। हम लोगों से अनुरोध करते हैं कि वे अपना नाम और संपर्क सूत्र कि जानकारी प्रदान करे ताकी स्पष्टीकरण एवं जवाब के संबंध में आपसे संपर्क कर सके ।

अगर आप अपने व्यक्तिगत विवरण को गोपनीय रखना चाहते हैं तो कृपया अपने नाम के ऊपर “गोपनीय / confidential) लिखे / टंकित करे । धन्यवाद।

तारीख		पंजीकरण का स्थान			
संपर्क करने संबंधी जानकारी / व्यक्तिगत विवरण					
नाम		लिंग	पुरुष महिला	आयु	
घरकापता					
शहर					
जिला					
फोन नं.					
ईमेल					
शिकायत / सुझाव / टिप्पणी / प्रश्न: नीचे अपनी शिकायत का विवरण ( यथा कौन, क्या, कहां और कैसे) का उल्लेख करें:					
अगर संलग्नक / नोट / पत्र के रूप में हैं तो कृपया यहाँ टिक करें:					
हम आपसे टिप्पणी / शिकायत संबंध जानकारी प्रेषित करने हेतु कैसे संपर्क कर सकते हैं ।					
कार्यालय उपयोग के लिए					
पंजीकृतकर्ता: (अधिकृत व्यक्ति का नाम जिन्होंने शिकायत पंजीकृत किया हो)					
शिकायत प्राप्ति का जरिया:					
<input type="checkbox"/> नोट / पत्र <input type="checkbox"/> ईमेल <input type="checkbox"/> मौखिक / टेलीफोन					
समीक्षक: (अधिकारी का नाम एवं पद)					
कार्रवाई कि गयी:					
की गई कार्रवाई को उद्घाटित किया गया:			<input type="checkbox"/> हां <input type="checkbox"/> नहीं		
प्रकटीकरण का जरिया:					

**APPENDIX 15: FILLED GRIEVANCE REDRESSAL FORMAT**

**Work: Phase 1- O & M of WTP, leak repair under BWSP-1**

**Grievance Redressal Register at Customer Service Centre**

S.No	Date	Complaint through (phone/ letter/ site)	Name of complainer	Complaint details	Action taken by Contractor/ PMU/DSC	Date – case resolved (days required)	Remarks – further action if any
1	01.04.2016- 30.04.2016	Phone	Public	Water contamination, pipe leakage, valve leakage Stand post tap missing, ,No water supply,	Contractor	Day to Day case resolved	Customer Service Centre at BMC Office is registered complaints every day and resolved.