

# **Bihar State Highways Roads Project BSHP – I, SH-68**

**Bihar State Road Development Corporation Limited**  
*(A Government of Bihar Undertaking)*

*Annual  
Environmental Management Plan  
Implementation Monitoring Report for  
Shivganj - Baidrabad Road (SH-68)*

**January to December, 2012**



***Fighting Poverty in Asia and the Pacific***



**EMPLOYER**



**CONSULTANT**



**CONTRACTOR**

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<b>Project</b>	:	Bihar State Highway Project, Package – I
<b>Sub Project</b>	:	Shivganj - Rafigunj - Goh - Uphara - Devkund - Baidrabad Road (SH-68)
<b>Location</b>	:	Arwal and Aurangabad District, Bihar
<b>Date</b>	:	Updated till December 31, 2012
<b>Supervision consultant/ Monitoring Agency</b>	:	URS Scott Wilson India Private Limited
<b>Implementing Agency</b>	:	Bihar State Road Development Corporation Limited
<b>Contractor</b>	:	MBL

### 1. Statutory Compliance Inspection Monitoring:

<b>Statutory Environmental Requirements</b>	<b>Compliance Status</b>
Approval for Tree Cutting	The permission for tree cutting is under process at MoEF, Bhubaneswar. Approval is awaited.
Consents to Operate	Applied to Bihar State Pollution Control Board, Patna for renewal of the "consent to operate" for Shivganj and Goh Camp – renewed consents are obtained
HMP	Obtained
WMM	Obtained
Batching Plant	Obtained
Stone Crushers	Not applicable, the Contractor is procuring stone aggregate from market
NOC for fuel Station	License has been obtained from the district authority
PUC Certificates	PUC certificates are available with contractor
Labour License	Obtained, valid till February 26, 2013

### 2. Contractor(s) Environmental Awareness:

<b>Contractor(s) Environmental Awareness</b>	<b>Yes/ No</b>	<b>Action Required</b>	<b>Contractor Response/ Comment</b>
Contractor(s) aware of mitigation measures?	Yes	Mitigation measures to be strictly followed.	Willing to implement the mitigation measures suggested in the EMP and IEE.
Contractor (s) have a copy of EMP	Yes	Ground implementation of measures suggested in Contract document work specifications, relevant IRC Codes and the MoEF notifications.	Willing to comply with the mitigation measures mentioned in the EMP and IEE. Also agreeable to accept the regulatory requirements updated time to time.

### 3. Mitigation Measures Compliance Inspection:

<b>Impact /Mitigation Measure (from EMP)</b>	<ul style="list-style-type: none"> <li>▪ Regulatory permits/license</li> <li>▪ Impact on ambient air, noise, water and soil quality</li> <li>▪ Water and Soil Contamination</li> <li>▪ Waste Management</li> <li>▪ Surface water hydrology</li> <li>▪ Flora and Fauna</li> <li>▪ Health and safety of the construction workers</li> <li>▪ Rehabilitation of temporary lands, acquired for the borrowing of soil and establishment of the construction camps.</li> <li>▪ Traffic safety</li> </ul>
<b>Mitigations Implemented (Yes/No)</b>	Yes, partly implemented
<b>Mitigations Effective</b>	3 (Fair)
<b>Impact (Observed/Location)</b>	No adverse impacts observed during the site visits
<b>Action Required</b>	<ul style="list-style-type: none"> <li>▪ Obtain renewed “consents to operate” from Bihar State Pollution Control Board</li> <li>▪ Obtain “consents to operate” from Bihar State Pollution Control Board for Shivganj camp.</li> <li>▪ Fugitive emissions from the operation of the construction equipments need attention</li> <li>▪ Submit renewed Pollution Under Control Certificates (PUCs)</li> <li>▪ Secondary containment for the petroleum product storage and handlings</li> <li>▪ Obtain license to store LPG cylinders if exceeds 100kg at a time, under Rule 44 of Gas Cylinders Rules, 2004.</li> <li>▪ Proper disposal of used/waste oil and acid-lead batteries.</li> <li>▪ Housekeeping at the construction camps need to be improved</li> <li>▪ Restore the surface hydrological flow</li> <li>▪ Ensure adequate supply of Personal Protective Equipment (PPE) and encourage workers to use these equipments.</li> <li>▪ Establish an accident reporting mechanism</li> <li>▪ Preparation of redevelopment/closure plan for borrows area in compliance with the terms and condition agreed with landowners.</li> <li>▪ Obtain post rehabilitation letter of satisfaction from respective landowner</li> <li>▪ Warning and informatory traffic signs are to be displayed.</li> </ul>
<b>Contactors Response/ Comment</b>	<ol style="list-style-type: none"> <li>1. Applied to Bihar State Pollution Control Board, Patna for renewal of the “consent to operate” for Shivganj and Goh Camp – renewed consents are awaited.</li> <li>2. Waste oil are used in different work and its report maintained</li> <li>3. Used Batteries are sending back to agencies for</li> </ol>

	<p>reused or recycled.</p> <p>4 Housekeeping at the both construction camp i.e. Shivganj and Goh is improved, water stagnant area is filled with stone dust, and Iron bar is properly stored.</p> <p>Implementing EMP as given in the IEE and advised &amp; suggested , time to time by DGM/Manager ( PIU) , Environment specialist, Resident Engineers and Team Leader of Supervision Consultant</p>
<b>Endorsed by</b>	
<b>Monitoring Agency</b>	URS Scott Wilson India Private Limited
<b>Implementing Agency</b>	Bihar State Road Development Corporation Limited

**\*Mitigation effective Rating Criteria (Indicative example)**

1	Very Good	All required mitigations implemented
2	Good	Majority of required mitigations implemented
3	Fair	Some mitigation implemented
4	Poor	Few mitigation implemented
5	Very Poor	Very little mitigation implemented

**4. Water Quality Monitoring:**

a) Drinking water quality

<b>Parameter</b>	pH, BOD, COD, Total Dissolved Solid, Total Suspended Solid, Dissolved Oxygen, Oil and Grease, Turbidity, Total Hardness, and Total Coliform
<b>Date/Location</b>	April 2, 2012: camp at Shivganj
<b>Measured by</b>	Envirotech East (P) Limited, Kolkata
<b>Monitoring Equipment/ Method</b>	The grab samples of water were collected as per IS 3025: 1964. The samples for chemical analysis were stored in the polyethylene bottles, whereas samples for the bacteriological analysis were preserved in sterilized bottles.
<b>Results</b>	In all samples, the measured parameters were within the prescribed limit for drinking water (IS: 10500).
<b>Standard</b>	Drinking water standards as per IS: 10500
<b>% Exceedence</b>	Nil
<b>Action Required</b>	Ground water quality to be monitored at Goh camp.
<b>Frequency</b>	Quarterly, except for the monsoon season
<b>Responsibility</b>	Contractor
<b>Budget</b>	Budgetary provision in BOQ
<b>Contractor Responses/Comments</b>	
<b>Endorsed by</b>	
<b>Monitoring Agency</b>	URS Scott Wilson India Private Limited
<b>Implementing Agency</b>	Bihar State Road Development Corporation Limited

## 5. Air Quality Monitoring:

<b>Parameter</b>	SPM, RPM, SO <sub>2</sub> , NO <sub>x</sub>
<b>Date/Location</b>	April 2, 2012 at construction camps in Shivganj, Rafiganj, Goh and Telpa
<b>Measured by</b>	Envirotech East (P) Limited, Kolkata
<b>Monitoring Equipment/Method</b>	PM <sub>10</sub> : Respirable Dust Sampler method (IS: 5182 Part 4: 2006) SO <sub>2</sub> : Improved West and Geake method (IS: 5182 Part 2: 2001) NO <sub>x</sub> : Jacob and Hochheiser modified (NaOH-NaAsO <sub>2</sub> ) method (IS: 5182 Part 6: 2001)
<b>Result</b>	At all locations, the monitored parameters were within prescribed limit of NAAQS, except RMP and SPM
<b>Standard</b>	National Ambient Air Quality Standards (2009)
<b>% Exceedence</b>	Nil
<b>Action Required</b>	Ambient air quality parameters to be monitored as National Ambient Air Quality Standards (2009)
<b>Frequency</b>	Quarterly, except for the monsoon season
<b>Responsibility</b>	Contractor
<b>Budget</b>	budgetary provision in BOQ
<b>Contractor Responses/Comments</b>	
<b>Endorsed by</b>	
<b>Monitoring Agency</b>	URS Scott Wilson India Private Limited
<b>Implementing Agency</b>	Bihar State Road Development Corporation Limited

## 6. Noise Level Monitoring

<b>Parameter</b>	Noise level in day and night L <sub>eq</sub> dB(A)
<b>Date/Location</b>	April 2, 2012 at construction camps in Shivganj, Rafiganj, Goh and Telpa.
<b>Measured by</b>	Envirotech East (P) Limited, Kolkata
<b>Monitoring Equipment/Method</b>	Data logger Sound Level Meter (Pulsar make, Model 30)
<b>Result</b>	Noise levels were within the prescribed limit of MoEF.
<b>Standard</b>	The Noise Pollution (Regulation And Control) Rules, 2000, rule 3(1) and 4(1))
<b>% Exceedence</b>	Nil
<b>Action Required</b>	Noise levels should be reported as per the Noise Pollution (Regulation And Control) Rules, 2000 However, the ambient air qualities in respect to noise were acceptable, but protection against the effects of noise to the machine operators and helpers should be provided in case of longer exposure.
<b>Frequency</b>	Quarterly, except for the monsoon season

<b>Responsibility</b>	Contractor
<b>Budget</b>	Budgetary provisions in BOQ.
<b>Contractor Response/Comments</b>	
<b>Endorsed by</b>	
<b>Monitoring Agency</b>	URS Scott Wilson India Private Limited
<b>Implementing Agency</b>	Bihar State Road Development Corporation Limited

#### 7. Environmental Incidents during Reporting Period

<b>Environmental Incidents (accidents, spills complaints)</b>	None reported
<b>Date/Location</b>	
<b>Reported by</b>	
<b>Description/Location</b>	
<b>Action Taken</b>	
<b>Further Action required</b>	
<b>Endorsed by</b>	
<b>Implementing Agency</b>	
<b>Monitoring Agency</b>	

#### 8. Summary of Actions required and follow-up:

<b>Action Required</b>	<ul style="list-style-type: none"> <li>▪ Mobilize agency to conduct environmental monitoring as per EMP</li> <li>▪ Obtain renewed “consents to operate” from Bihar State Pollution Control Board</li> <li>▪ Fugitive emissions from the operation of the construction equipments need attention</li> <li>▪ Submit renewed Pollution Under Control Certificates (PUCs)</li> <li>▪ Provide secondary containment for the petroleum product storage and handlings</li> <li>▪ Obtain license to store LPG cylinders if exceed 100kg, under Rule 44 of Gas Cylinders Rules, 2004.</li> <li>▪ Proper disposal of used/waste oil and acid-lead batteries and record to be maintained.</li> <li>▪ Housekeeping at the construction camps need to be improved</li> <li>▪ Restore the surface hydrological flow</li> <li>▪ Ensure adequate supply of Personal Protective Equipment (PPE) and encourage workers to use these equipments.</li> <li>▪ Establish an accident reporting mechanism</li> <li>▪ Preparation of redevelopment/closure plan for borrows area in compliance with the terms and condition agreed with land owners.</li> <li>▪ Obtain post rehabilitation letter of satisfaction from respective landowner</li> <li>▪ Warning and informatory traffic signs are to be displayed.</li> </ul>
<b>Timeframe</b>	Within a Month
<b>Responsible parties</b>	Contractor, Supervision Consultant.

<b>Follow-up (to be completed if inspection/monitoring indicate action are required)</b>	Follow-up on the action items by the Environmental Specialist, Resident Engineer and Team Leader of the Supervision Consultant
<b>Required Action Taken</b>	In progress

**9. Follow up actions:**

- Checking of the progress in obtaining NOCs (Consents to operate) for Stone Crushers
- Secondary containment for the petroleum product storage and handlings
- Obtain license to store compressed gas in cylinders under Rule 44, Gas Cylinders Rules, 2004.
- Proper disposal of solid and hazardous wastes.
- Personal Protective Equipment (PPE) and encourage workers to use these equipment.
- Redevelopment/closure plan for borrows area in compliance with the terms and condition agreed with land owners. Post monsoon inspection of borrow area with respect to rehabilitation

**10. Conclusions**

- The overall EMP compliance at the construction camps were satisfactory and require regular attention.
- The renewable of consent to operate required for HMP and DG Set were completed;
- Issues relating to the solid and Hazardous waste disposal are yet to be addressed by the contractor.
- The contractor has appointed an Environmental, Health and Safety Officer
- The environmental pollution monitoring was conducted in the second quarter only the monitoring results indicates that the air, water and noise quality were within the compliance levels.

**11. Recommendations for a better compliance to EMP Implementation:**

Subject to the extent of environmental non-compliance, strict actions are required for the better implementation of EMP. The work must be stopped in case of regulatory and safety non-compliances.