



L&T Construction
Water & Effluent Treatment

Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)

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Site Specific Environmental Management Plan


SITE SPECIFIC ENVIRONMENTAL MANAGEMENT PLAN

WBDWSIP BANKURA-PKG-02A
INDPUR BLOCK

LOCATION- MAUKURI OHSR (ZONE -12)

REV	DATE	PREPARED BY	CHECKED BY	APPROVED BY DSISC	ARRPROVED BY PIU
0	13.11.2019	D. B. Tal	[Signature]	[Signature] TEAM LEADER DSISC- Bankura WBDWSIP	[Signature] Assistant Engineer-1 PIU Bankura WBDWSIP, PSE Dia Govt. of West Bengal



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List of Attachments (OHSR Site)


Attachment O1: Details of construction Work sites and Site Layout Plan
Attachment O2: Details of construction camp sites
Attachment O3: List of clearances & statutory requirements
Attachment O4: Contractor's OHS Policy & Organization
Attachment O5: Utility shifting/relocation
Attachment O6: Details of Construction Materials
Attachment O7: Spoil Management Plan

List of Attachments (Pipelaying Works)

Attachment P1: Details of construction Work sites and Map of distribution network
Attachment P2: Details of construction camp sites
Attachment P3: List of clearances & statutory requirements, Gram panchayat and other Authorities
Attachment P4: Contractor's OHS Policy & Organization
Attachment P5: Utility shifting/relocation
Attachment P6: Details of Construction Materials
Attachment P7: Spoil Management Plan
Attachment P8: Traffic Management Plan

List of Appendices (OHSR and Pipelaying Works)

Appendix 1: Labor License
Appendix 2: Workman Compensation
Appendix 3- Risk Policy
Appendix 4: Tie up Letter with local Hospital
Appendix- 5- Certificate of Fitness and PUC
Appendix 6- Contractor's EHS Policy Statement
Appendix 7: Permission letter from Gram Panchayat
Appendix 8: Procedure for on-site Grievance Redress Mechanism
Appendix 9: Procedure for information disclosure prior to start of works

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Package Area	WBDWSIP/DWW/NCB/BK/02A/2018-19, (Zone - 12, OHSR Maukuri) Under PIU Bankura
Package title	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block
	SEMP is as per requirement of the Draft IEE covering package no. WBDWSIP/DWW/NCB/BK/02A/2018-19
Contractor	Larsen & Toubro Ltd.
Date of Notice to proceed	27/05/2019
Date of works commencement for particular site	02/03/2020
Contract period	Construction: 3 Years; O&M: 2 Years
SEMP Component	Construction of Overhead Service Reservoir – 300 KL
Demolition Work	No demolition activity involved
Project Description	Individual household water supply schemes for the project Gram Panchayets
Indicative Budget for EMP Implementation for the entire package	INR 40,25,000/-
Project Components	As per project detailed design
Gram Panchayat:	Indpur G.P, Indpur Block
Land Status	Private land and Transfer is under process
OHSR Capacity	300 KL
Location	

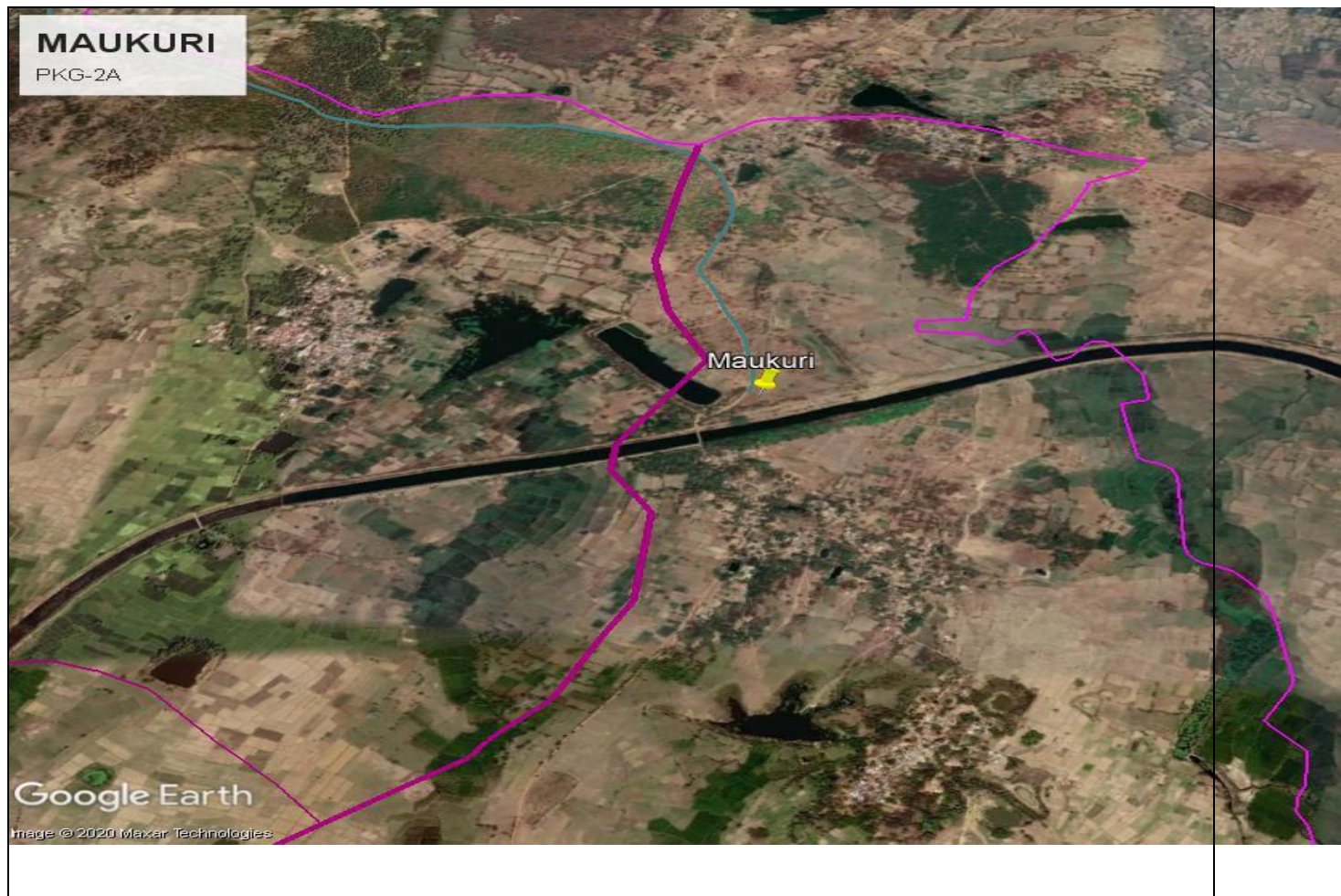


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Details of contractors on-site-personnel and workers	Zone- 12 OHSR (Maukuri)
Project Manager	Mr. Kishore Kumar Sarkar; 7005681502
Site Engineer	Mr. Sumit Kumar Adhikary; 7209305972
Site Supervisor	Mr. Vijay Zore Dhau ;7350992659
EHS Supervisor	Mr. Tirthraj Gupta- 9939691579
Archeological supervisor	NA
Skilled / semi-skilled workers	4 skilled, 5 semi skilled (Planned)
Unskilled workers	6 unskilled workers (Planned)
Women workers	Nil
Workers – local / migrant	15 local workers (Planned)
Details of facilities:	
Construction camps, (no's and locations)	Labor camp not yet established




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Table 1: Anticipated Impacts and Mitigation Measures – Pre-construction Environmental Management Plan


Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
Utilities	Electric poles and wires, water lines within proposed project area of OHSR site.	<ul style="list-style-type: none"> Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction phase; and Require construction contractors to prepare a contingency plan to include actions to be taken in case of unintentional interruption of services. Require contractors to prepare spoils (waste) management plan and traffic management plan. 	<ul style="list-style-type: none"> Contingency Plan has been developed by informing to emergency services like WBSEDCL, Telecommunication, local administration and police etc. First, we are digging the trial pit manually, if any obstruction arise the same is removed as per direction of end user The construction work to continue without disturbing the existing pipeline and electric poles. Spoil Management Plan is included in 	<ul style="list-style-type: none"> Contractor, PIU 	<ul style="list-style-type: none"> DSISC observation at site and document checking 	<ul style="list-style-type: none"> Project cost

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
			Attachment 07 with this SEMP.			
Construction work camps, stockpile areas, storage areas, and disposal areas.	Conflicts with local community; disruption to traffic flow and sensitive receptors.	<ul style="list-style-type: none"> • Prioritize areas within or nearest possible vacant space in the project location; • If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems; • Do not consider residential areas; • Take extreme care in selecting sites to avoid direct disposal to water body which will 	<ul style="list-style-type: none"> • Construction camp will be established n a vacant land nearby to OHSR site (Photo and site plan given in Attachment 01). • For construction camp, storage area will be established away from water body. • Spoil generated from construction activity will be re-used for labelling/ backfilling. • Disposal area will be selected at barren, infertile land nearest to the project zone as per 	• Contractor, PIU	• DSISC observati on at site	• Project cost

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		inconvenience the community. <ul style="list-style-type: none"> For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m away from surface water bodies; (c) no residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive locations like settlements, ponds/lakes or other water bodies. 	suggestion of PIU. <ul style="list-style-type: none"> Employees will be trained for storage and handling of materials which can potentially cause soil contamination and water contamination; Oil/Lubricant and chemical storage area will be provided with concrete floor and metal tray. Solid waste managed according to the suggested hierarchy: reuse, and disposal to designated areas; 			

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
Sources of Materials	Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	<ul style="list-style-type: none"> Obtain construction materials only from government approved quarries with prior approval of PIU. On a monthly basis documentation on material obtained from each source (quarry/borrow pit) should be submitted. In case of involvement of new quarries/ borrow areas, prior steps will follow for all clearances and permissions as required under law. 	<ul style="list-style-type: none"> No involvement of any new borrow area or quarry is anticipated. Materials collected from- Cement- Ambuja, Nuvoco and Ultratech Reinforcement- Tata Steel, SAIL, RINL Coarse Aggregates- Pachami quarry. Fine Aggregates- River Damodar. Mentioned source are government approved. 	Contractor, PIU	DSISC observation at site and document checking	Project cost
Consents, permits, clearances, no objection certificates (NOCs), etc.	Failure to obtain necessary consents, permits, NOCs, etc can result to design revisions and/or stoppage of works.	<ul style="list-style-type: none"> All necessary consents, permits, clearance, NOCs, etc prior to award of civil works should be obtained. All necessary approvals for construction to be obtained before start of construction. 	<ul style="list-style-type: none"> Already done land requisition, electric connection, water source etc. Tree felling requirement for this site is not anticipated. 	Contractor and PIU	DSISC observation at site and document checking	Project cost

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		<ul style="list-style-type: none"> Acknowledge in writing and report on compliance consents, permits, clearance, NOCs etc. obtained. 	<ul style="list-style-type: none"> Made provision for detailed design drawing and documented all conditions Please refer Attachment O-3 for list of relevant permits and clearances. 			




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Table 2: Anticipated Impacts and Mitigation Measures – Construction Environmental Mitigation Plan


Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
Environmental Management Plan (EMP) Implementation Training	Irreversible impact to the environment, workers, and community	<ul style="list-style-type: none"> Project manager and all key workers will be required to undergo training on EMP implementation including spoils/waste management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc. 	<ul style="list-style-type: none"> EMP implementation training session is being planned for all workers and community. 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation
Air Quality	Emissions from construction vehicles, equipment, and machinery used for	<ul style="list-style-type: none"> Comply with the air pollution / dust control measures for construction activities stipulated by the “Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009” 	<ul style="list-style-type: none"> Only vehicles having valid PUC certificate will be engaged in the project. Sprinkling and dust screen arrangement will be made and will be used when 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
	installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons.	<ul style="list-style-type: none"> • Damp down the soil and any stockpiled material on site by water sprinkling; • Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks; • Provide a dust screen/high compound wall around the construction sites (OHSRs) • Clean wheels and undercarriage of haul trucks prior to leaving construction site/quarry • Control dust generation while unloading the loose material (particularly aggregate, soil) at the site by sprinkling water and unloading inside the barricaded area • Stabilize surface soils where loaders, support equipment and 	required. <ul style="list-style-type: none"> • Workers will be instructed to always use dust mask while working in the trench. • Site will be access controlled to prevent trespassing. • Excavated earth piles will be maintained in such a way to minimize dust rising. • Air quality monitoring for base line data completed. Air quality Monitoring has been conducted at following five places - Gobindapur, Raghunathpur, 			

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		<p>vehicles will operate by using water and maintain surface soils in a stabilized condition</p> <ul style="list-style-type: none"> • Apply water prior to levelling or any other earth moving activity to keep the soil moist throughout the process • Control access to work area, prevent unnecessary movement of vehicle, public trespassing into work areas; limiting soil disturbance will minimize dust generation • Ensure that all the construction equipment and machineries are fitted with pollution control devises, which are operating correctly, and have a valid pollution under control (PUC) certificate. 	<p>Chaukighata, Nayekhir (Indpur),Gunnath (Araldih). as per environmental monitoring plan recommended in the IEE.</p>			
Surface water	Mobilization	<ul style="list-style-type: none"> • All earthworks be conducted 	<ul style="list-style-type: none"> • There is no as such 	Contractor	PIU and	Project cost for

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quality	of settled silt materials, and chemical contamination from fuels and lubricants during construction can contaminate nearby surface water quality. Ponding of water in the pits / foundation excavations	during the dry season to prevent the problem of soil run-off during monsoon season; <ul style="list-style-type: none"> • Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; • Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, only designated disposal areas shall be used; • Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; • Place storage areas for fuels and lubricants away from any drainage leading to water bodies; • Store fuel, construction chemicals etc., on an impervious 	surface water body near OHSR site. <ul style="list-style-type: none"> • Surface water quality monitoring for baseline data has been conducted in 5 locations - Gobindapur, Raghunathpur, Chaukighata, Nayekhir (Indpur),Gunnath (Araldih) as per environmental monitoring plan recommended in the IEE. • Locations for fuels and lubricants store will be away from drainage path and 		DSISC observation at site and document checking	implementation of mitigation

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		<p>floor, also avoid spillage by careful handling</p> <ul style="list-style-type: none"> • Dispose any wastes generated by construction activities in designated sites; and • Conduct surface quality inspection according to the Environmental Management Plan (EMP). • Create a temporary drainage channel around the work area to arrest the entry of runoff from upper areas into the work area(ix) Pump out the water collected in the pits / excavations to a temporary sedimentation pond; dispose of only clarified water into drainage channels/streams after sedimentation in the temporary ponds 	<p>spill kits have been obtained.</p> <ul style="list-style-type: none"> • All excavated soils are expected to be utilized on-site only. No excess spoil anticipated. 			

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		<ul style="list-style-type: none"> Consider safety aspects related to pit collapse due to accumulation of water 				
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<ul style="list-style-type: none"> Plan activities in consultation with PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and use portable street barriers to minimize sound impact to surrounding sensitive receptor; and 	<ul style="list-style-type: none"> Noise quality monitoring for baseline data has been conducted at following five places - Gobindapur, Raghunathpur, Chaukighata, Nayekhir (Indpur), Gunnath (Araldih). as per environmental monitoring plan recommended in the IEE. Consultation made with local communities in 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

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		<ul style="list-style-type: none"> Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; Consult 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. 	<p>advance of the work to identify and avoid working at sensitive times, such as religious and cultural festivals.</p> <ul style="list-style-type: none"> No building found at risk from vibration damage. 			
Landscape and aesthetics – waste generation	Impacts due to excess excavated earth, excess construction materials, and solid waste	<ul style="list-style-type: none"> Prepare and implement a Construction Waste Management Plan As far as possible utilize the debris and excess soil in construction purpose, for example for raising the ground 	<ul style="list-style-type: none"> Excavated earth will be utilized for backfilling purpose. Spoil management plan has been developed. (Attachment-O-7) 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

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	such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	level or construction of access roads etc., <ul style="list-style-type: none"> • Stockpiles, lubricants, fuels, and other materials should be located away from steep slopes and water bodies; • Avoid stockpiling any excess spoils at the site for long time. Excess excavated soils should be disposed of to approved designated areas immediately; • If disposal is required, the site shall be selected preferably from barren, infertile lands; site should be located away from residential areas, forests, water bodies and any other sensitive land uses • Domestic solid wastes should be properly segregated in biodegradable and non-biodegradable for collection and 				

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
		<p>disposal to designated solid waste disposal site; create a compost pit at workers' camp sites for disposal of biodegradable waste; non-biodegradable / recyclable material shall be collected separately and sold in the local recycling material market</p> <ul style="list-style-type: none"> • Residual and hazardous wastes such as oils, fuels, and lubricants shall be disposed of in disposal sites approved by local authorities/West Bengal Pollution Control Board (WBPCB); • Prohibit burning of construction and/or domestic waste; • Ensure that wastes are not haphazardly dumped thrown within and around the project site and adjacent areas; provide 				

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 20 of 102 Original Issue Date :
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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
		proper collection bins, and create awareness to use the dust bins. <ul style="list-style-type: none"> Conduct site clearance and restoration to original condition after the completion of construction work; PIU to ensure that site is properly restored prior to issuing of construction completion certificate 				
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<ul style="list-style-type: none"> Minimize removal of vegetation and disallow cutting of trees, by adopting best site layout and pipeline alignments If tree-removal will be required, obtain tree-cutting permit and Plant 5 native trees for every one that is removed. 	<ul style="list-style-type: none"> Tree removal is not required for OHSR site. 	Contractor, PIU	DSISC observation at site and document checking	Project cost for implementation of mitigation
Accessibility	Traffic problems and conflicts near project	<ul style="list-style-type: none"> Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the 	<ul style="list-style-type: none"> Transportation and hauling activities have been planned 	Contractor	PIU and DSISC observation at site and	Project cost for implementation of mitigation

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
	locations and haul road	immediate vicinity of delivery sites <ul style="list-style-type: none"> Schedule transport and hauling activities during non-peak hours; Locate entry and exit points in areas where there is low potential for traffic congestion; Drive vehicles in a considerate manner Notify affected public by public information notices, providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints. 	during non-peak hours. <ul style="list-style-type: none"> Demarcation/ collection of detail of ROW is under process. 		document checking	
Socio-Economic - Employment	Generation of temporary employment and increase in local revenue	<ul style="list-style-type: none"> Employ local labour force as far as possible Comply with labour laws 	<ul style="list-style-type: none"> Local labours will be employed, on priority, whenever available. 	Contractor	PIU and DSISC observation at site and document checking	Contractor costs

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
Occupational Health and Safety	Occupational hazards which can arise during work	<ul style="list-style-type: none"> • Comply with all national, state and local core labour laws • Develop and implement site-specific occupational health and safety (OHS) 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) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; • Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout 	<ul style="list-style-type: none"> • Based on L&T's OHS Plan, a site specific OHS plan has been developed. • Site OHS plan is attached at Attachment –O-4. • All workers will be provided with and made to use Personal Protective Equipment like helmet, gumboot, reflective jacket, gloves, nose mask and ear plugs; • H&S Training for all site personnel will be arranged and it will be continued; • H&S orientation training will be 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
		the site; <ul style="list-style-type: none"> • Provide medical insurance coverage for workers; • Secure all installations from unauthorized intrusion and accident risks; • Provide supplies of potable drinking water; • Provide clean eating areas where workers are not exposed to hazardous or noxious substances; • Provide health and safety 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; 	provided 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 injuries to fellow workers <ul style="list-style-type: none"> • Documented procedures will be followed for all site activities; • Work-related accidents will be recorded; • Bottled water will be provided at site. • First Aid box will be provided at working sites 			

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		<ul style="list-style-type: none"> • 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; • Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; • Ensure moving equipment is outfitted with audible back-up alarms; • 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. 	<ul style="list-style-type: none"> • Clean eating areas will be provided to workers; • Moving equipment will be maintained with audible back-up alarms 			

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		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;				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	<ul style="list-style-type: none"> • Restrict construction vehicle movements to defined access roads and demarcated working areas (unless in the event of an emergency) • Enforce strict speed limit (20-30 kph) for playing on unpaved roads, construction tracks • Night-time haulage will be by exception only, as approved by the PIU to minimize driving risk and disturbance to communities • Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to 	<ul style="list-style-type: none"> • Safety signage and demarcation of work area will be maintained. • Night time haulage will be avoided. • Construction of OHSR is site-specific, no disruption of traffic due to construction activity. • Water sprinkler will be used regularly to control dust during dry season. 	Contractor		Cost for implementation of mitigation measures responsibility of contractor.

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 26 of 102 Original Issue Date :
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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
		improve safety and provide directions <ul style="list-style-type: none"> • All drivers will undergo safety and training • Public access to all areas where construction works are on-going will be restricted through the use of barricading and security personnel • Warning signs, blinkers will be attached to the barricading to caution the public about the hazards associated with the works, and presence of deep excavation • The period of time when the pipeline trench is left open will be minimized through careful planning • Control dust pollution – implement dust control measures 	<ul style="list-style-type: none"> • Access road will be maintained with proper safety measures. • Vehicles and equipments will be checked regularly for better performance. 			

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		as suggested under air quality section <ul style="list-style-type: none"> • Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. • Provide road signs and flag persons to warn of on-going trenching activities. 				
Labour camp areas	Conflicts with local community; temporary air, water and noise pollution, unsanitary and poor living	<ul style="list-style-type: none"> • Provide proper temporary accommodation with proper materials, adequate lighting and ventilation, appropriate facilities for winters and summers; ensure conditions of liveability at work camps are maintained at the highest standards possible at all times; • Minimize removal of vegetation 	<ul style="list-style-type: none"> • Labour camp not yet established. The proposed camp site/ a rented house will have all the basic facilities like kitchen, drinking water, toilet, first aid box, light, fan etc. LPG will be provided for cooking. 	<ul style="list-style-type: none"> • Contractor, PIU 	<ul style="list-style-type: none"> • DSISC observati on at site 	<ul style="list-style-type: none"> • Project cost

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
	conditions for workers	and disallow cutting of trees <ul style="list-style-type: none"> • Ensure conditions of liveability at work camps are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be allowed as accommodation for workers • Camp shall be provided with proper drainage, there shall not be any water accumulation • Provide drinking water, water for other uses, and sanitation facilities for employees 	Use of firewood prohibited at camp. <ul style="list-style-type: none"> • Kitchen wastes will be collected in a dustbin and is disposed outside from area to designated disposal location. • Housekeeping will be maintained regularly to keep the area clean and hygienic. 			

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		<ul style="list-style-type: none"> Prohibit employees from cutting of trees for firewood; contractor should be providing proper facilities including cooking fuel (oil or gas; fire wood not allowed) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; provide a compost pit for biodegradable waste, and non-biodegradable / recyclable waste shall be collected and sold in local market 				
Chance Finds	There are no protected properties in the subproject sites. However, in case of	<ul style="list-style-type: none"> Consult Archaeological Survey of India (ASI) or West Bengal State Archaeology Department to obtain an expert assessment of the archaeological potential of the site Include state and local 	<ul style="list-style-type: none"> Protocol will be maintained if such incident occurs. If there is any such finding, action will be taken up as per requirement. 	Contractor		Contractor cost

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	chance finds, contractors will be required to follow a protocol as defined in the mitigation measures.	archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available. <ul style="list-style-type: none"> In case of chance finds, works must be stopped immediately until such time chance finds are cleared by experts 				
Submission of EMP implementation report	Unsatisfactory compliance to EMP	<ul style="list-style-type: none"> Appointment of (I) Environment, Health and Safety (EHS) Supervisor to ensure EMP implementation Timely submission of monitoring reports including pictures. 	<ul style="list-style-type: none"> EHS supervisor has been appointed. For timely submission of monitoring report instruction has been given to contractor. 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation measures



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Table 3: Construction Phase Environmental Monitoring Plan for Entire Package

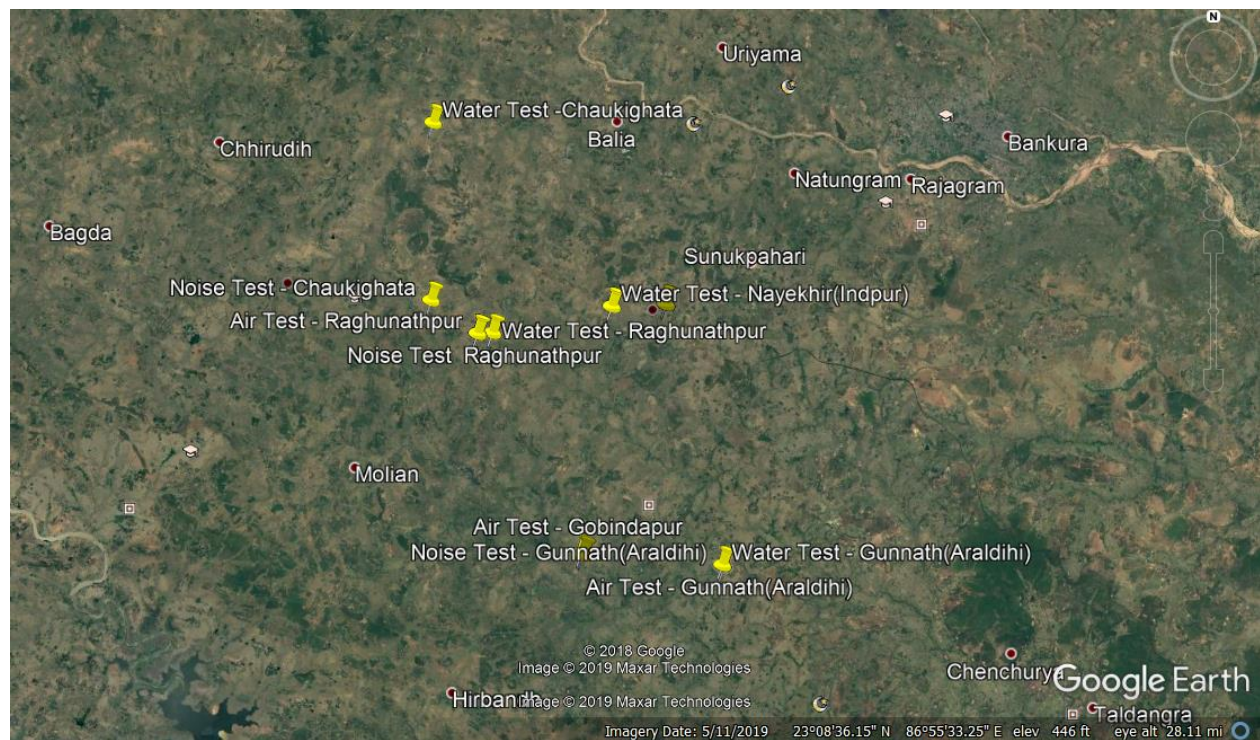
Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency	Locations*	Cost as per budget (in Rs.)
Ambient air quality	5 locations (to be selected during implementation to represent the overall project area)	PM ₁₀ , PM _{2.5} , NO ₂ , SO ₂ , CO	Once before start of construction. Yearly 3-times except monsoon period during construction (3-year period considered)	(Gobindapur, Raghunathpur, Chaukighata, Nayekhir(Indpur), Gunnath(Araldih)).	250,000/-
Ambient noise	10 locations (same as air quality monitoring)	Day time and night time noise levels (24 hours)	Once before start of construction. Yearly 3-times except monsoon period during construction (3-year period considered)	(Gobindapur, Raghunathpur, Chaukighata, Nayekhir(Indpur), Gunnath(Araldih)).	150,000/-
Surface water quality	5 locations (to be selected during implementation)	pH, Oil and grease, Cl, F, NO ₃ , TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity	Once before start of construction. Yearly 3-times except monsoon period during construction (3-year period considered)	(Gobindapur, Raghunathpur, Chaukighata, Nayekhir(Indpur), Gunnath(Araldih)).	250,000/-
Soil Quality	5 locations (including construction camps, workers camp)	pH, Elect. Conductivity (at 250C), Moisture (at 1050C), Texture (silt, clay, sand), Calcium (as CaO), Magnesium (as Mg), Permeability, Nitrogen (as N), Sodium (as Na), Phosphate (as PO ₄), Potassium (as K), Organic Matter, oil and grease	Once before start of construction. Yearly 3-times except monsoon period during construction (3-year period considered)	Sampling will be conducted shortly	250,000/-


 L&T Construction Water & Effluent Treatment	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 32 of 102 Original Issue Date :
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Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency	Locations*	Cost as per budget (in Rs.)
Ground water quality	5 locations	As per IS 10,500,2012	Once before start of construction. Yearly 3-times except monsoon period during construction (3-year period considered)	Gobindapur, Raghunathpur, Chaukighata, Nayekhir(Indpur), Gunnath(Araldih). Gunnath(Araldih).	300,000/-

Note- Mention locations had been selected for Baseline data. Sampling were done, report pending. During construction locations are changeable with progress of work. Present locations as mentioned in mitigation tables are base line monitoring conducted as per EMP provision. The exact locations of these monitoring are reported in SEMR over google earth image. For all the packages conduct of these monitoring is responsibility of concerned Contractor and cost for such already budgeted in the IEE

Monitoring Locations-



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List of Attachments

- Attachment O1: Details of construction Work sites
- Attachment O2: Details of construction camp sites
- Attachment O3: List of clearances & statutory requirements
- Attachment O4: Contractor's OHS Policy & Organization
- Attachment O5: Utility shifting/relocation
- Attachment O6: Details of Construction Materials
- Attachment O7: Spoil Management Plan



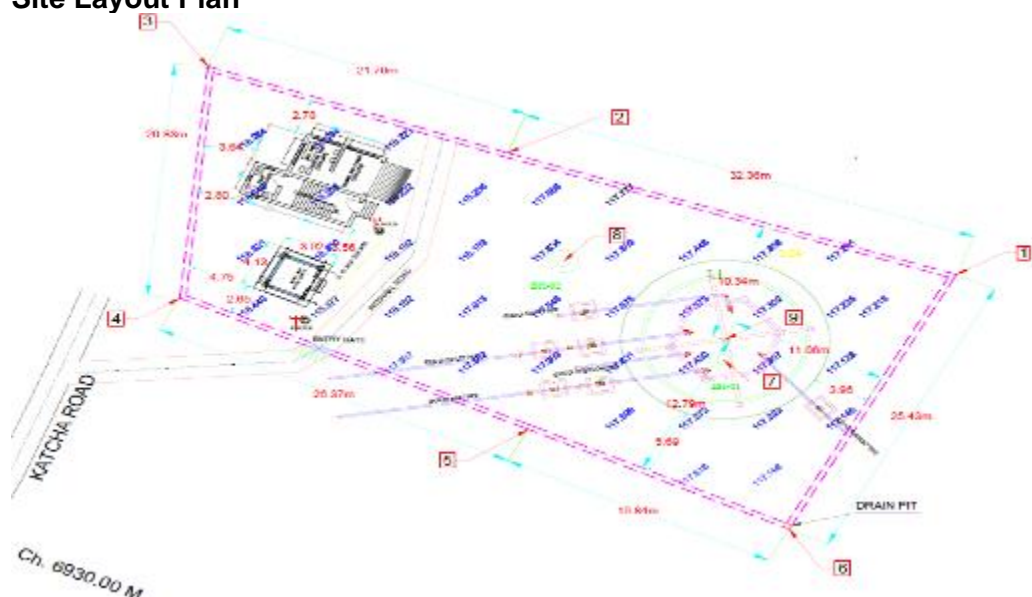
L&T Construction
Water & Effluent Treatment


Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference **Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)**

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Attachment O1: Details of construction Work sites

1. Zone 12: OHSR construction Site	
Location- Maukuri	
A	Material storage (Planned) <ul style="list-style-type: none"> • Cement • Steel • Fine Aggregate • Coarse Aggregate • Shuttering Material • Shuttering Oil
B	Plant & Machinery (Planned) <ul style="list-style-type: none"> Concrete Mixer – 1 No Needle Vibrator – 2 Nos Steel Cutter – 1 No JCB- 1 No Truck- 1 No.
C	Site office – will be set up once construction starts
D	Laboratory – will be set up once construction starts
E	Security cabin – will be set up once construction starts
F	Labor welfare facilities at Site (Planned) <ul style="list-style-type: none"> • Labor rest area- • Toilets • Drinking water • First Aid Box.
G	Site Layout Plan 

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 35 of 102 Original Issue Date :
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H	Site photographs
Original site photographs	
	OHSR site before Construction

Attachment O2: Details of construction camp sites

1.	Not yet established
Location- Maukuri	

Attachment O3: List of clearances & statutory requirements


Sl. No.	Project related	Status
A	Construction/work related	
1	Possession of land	Unavailable
2	Notice to Proceed from PIU	Available
B	Labour Safety / Welfare Related	
1	Labour license	Obtained [Refer Appendix 1]
2	Workmen Compensation	Obtained [Refer Appendix 2]
3.	Risk policy	Obtained [Attached in Appendix 3]
C	Safety / liability safety related	
1	Medical Insurance	Tie-up with local hospital made Attached in Appendix 4
D	Others	

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1	Fitness certificate for vehicles, equipment used in construction	Available
2	Pollution under control (PUC) certificates for vehicles and equipment	Obtained [Refer Appendix 5]
3	Driving licenses for drivers	Available
4	Insurance for vehicles / equipment, as required	Available

Attachment O4: Contractor's OHS Policy & Organization

1	Contractor agency has a EHS policy	Yes/ No
A	If yes, provide policy details 1. Policy statement: 2. EHS organization & responsibilities:	Yes [Refer Appendix 6] Yes
B	List safety risks anticipated in the project Work area - OHSR • Trips and falls • Head injury from falling objects • Confined work space • Slope failure / trench collapse • Accidents from open excavations	NA
C	List of personal protection equipment provided to workers • Boots- 15 Nos. • Gloves-5 no. • Helmet-15 nos. • Safety jacket- 15 nos. • Goggles- 4 nos.	Yes
D	Preventive Measures	
	• Orientation of all workers on EHS	Toolbox talk will be conducted.
	• Work permit system	Yes – for work at height
	• Toolbox/safety meetings (how often will this be conducted, what are the minimum topics)	Twice Weekly on work at height, firefighting, first-aid, housekeeping, etc.
	• Safety signages	Displayed on site
	• Barricades (more than 1 m deep requires hard barricading)	Yes
2	Contractor emergency procedure	

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A	<ul style="list-style-type: none"> In case of accident, first aid treatment to injured labor/person shall be provided. In case hospitalization is required, concerned site in-charge will immediately take necessary action for hospitalization and he will inform to our Project Manager. Details of accident shall be reported in accident register and the same shall be informed to client also. 	
B	Contact information, staff and responsibilities for emergency situations	
	Designation	Staff name & contact
Site Engineer	Mr. Sumit Kumar Adhikary Mob: 7209305972	Emergency responsibility Site Engineer shall be responsible for arranging of first aid treatment and other necessary action required in case of emergency. He will also be responsible for informing to EHS Supervisor.
EHS Supervisor	Mr. Tirthraj Gupta: Mob: 9983320757	EHS Supervisor should assess the emergency situation and accordingly instruct the Site Engineer of appropriate actions. Depending on the gravity of the situation, he should also inform Project Manager Representative.
Project Manager Representative	Mr. Kishore Kumar Sarkar Mob:7005681502	Project Manager Representative shall be responsible for taking all necessary action and decisions.
C	Reporting procedure in case of work accidents <ul style="list-style-type: none"> Details of accidents shall be recorded in accident register. Copy of accident register shall be submitted to client at the end of every month. In case of any major accident's client shall be informed immediately. 	Yes
D	Mandatory Reporting to Authorities	Yes
E	Prohibited Acts and Penalties for Violations	Yes

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 38 of 102 Original Issue Date :
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Attachment O5: Utility shifting/relocation

Sl. No.	List work sites that require utility shifting, relocation, temporary shut off	Remarks
1	Area work sites (OHSR)	Not Required

Attachment O6: Details of Construction Materials

Sl. No	Material	Approximate quantity required for project	Source	Indicate if source has all necessary government clearances
1	Steel	32.3 MT	Approved supplier SAIL, RINL & TATA	-
2	Cement	101.813 MT	Approved supplier Nuvoco, UltraTech & Ambuja.	-
3	Sand	103.44 Cum	From approved quarries at Damodar River	Yes
4	Aggregate	130.665 Cum	From approved quarries at Pachami	Yes



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Water & Effluent Treatment


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Attachment O7: Spoil Management Plan

SPOIL MANAGEMENT PLAN(SMP)					
WBDWSIP BANKURA-INDPUR					
LOCATION- MAUKURI OHSR (ZONE -12)					
REV	DATE	PREPARED BY	CHECKED BY	APPROVED BY DSISC	ARRPROVED BY PIU
0	13.11.19				

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 40 of 102 Original Issue Date :
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1. INTRODUCTION OF SMP:

SMP is to describe how the project will manage the spoil generated and reuse related to design and construction works. This is an integral part of EMP. The objective of SMP is to reuse of spoil from works.

2. SCOPE:

This Spoil Management Plan developed for **OHSR site in Zone (12)**. For the OHSR site. We do not anticipate any excess Spoil for disposal as all excavated material will be reuse at site only.

3. LEGAL AND OTHER REQUIREMENTS:

In this project, there is no legal litigation at site for land and working area or site. Disposal of spoil will be confirming the Environmental Protection Rules and Regulations of Govt. of India and the State Govt.

4. ROLES AND RESPONSIBILITY:

SITE ENGINEER:

- Will strictly work as per drawing.
- Will stay at site during activity is going on.
- Will see excess earth is kept at a particular place after completion of backfilling.
- Will ensure quality of the work by discussing daily about the type of activity on that day with the workmen.
- Will check site drain outlets are not blocked due to excavated earth on the drain.

SAFETY PERSONNEL:

- Will constant Job specific Tool Box Talk with Supervisor and Workmen.
- Will check excavated earth kept away from top.
- Will check if any underground pipeline is there or live electric cable their water should be sprayed to avoid dust hazard from excavation.
- Necessary Safety signage, Cones to be used.
- Vehicles reverse horn etc to be checked will ensure zero tolerance in safety.

WORKER:

- They will start activity only after Tool Box Talk done.
- They will wear job specific safety items before start of work.
- During working inside the excavated trench, they should use ladder for easy access.
- They should barricade the area of activity with Safety barricading tape.
- Worker should be skilled to carry out the work.

It is the responsibility of the Engineers and all department head to implement this procedure and ensure that delegated staff and worker under their supervision carry it out in this project. Major roles and responsibilities are mentioned below:

- Excavated earth should be utilized like refilling at site only.
- Traffic movement should not be obstructed by dumping soil during the work.



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- No low land, pond, ditch etc. will be filled up by extra soil outside the work place.
- Ensuring no accident occurs during rainy season by excavated earth during or finished the work.
- All the drains, outlet should be free from excavated earth.

5. IDENTIFICATION AND ASSESSMENT OF SPOIL ASPECTS AND IMPACTS:

In this project, places will be identified jointly along with design engineer for utilization. Main places where the excavated earth can be utilized are the trench of pipes and backfilling location.

6. SPOIL VOLUMES AND CHARACTERISTICS:

In this project, approx. Generation of excavated earth will be approx. **567.58 cum.**

As per report from soil expert, excavated earth is cohesive in nature.

7. SPOIL REUSES OPPORTUNITIES, IDENTIFICATION AND ASSESMENT:

In this project, there is **111.042 cum** of excess excavated earth; total excavated earth should be reuse as per plan.

8. ON SITE SPOIL MANAGMENT APPROACH:

In this project, no need of the approach as there is no extra soils for disposal.

9. SPOIL TRANSPORTATION METHODOLOGY:

In this project, no need for spoil transport as there is no extra soils for disposal.

10. MONITORING, REPORTING, REVIEW AND IMPROVEMENTS:

Monitoring, Reporting and all necessary improvements will be done as per requirements.

SPOIL DETAILS

Sl. No.	Zone	Name Of Structure	Excavation Total Qty (C.U.M)	Back Filling Total Qty (C.U.M)	Reuse Excess Qty (C.U.M)
1.	12	Boundary wall	180.833	148.541	32.292
2.	12	OHSR	386.75	288	78.75
Total=			567.58	436.541	111.042



L&T Construction
Water & Effluent Treatment

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SITE SPECIFIC ENVIRONMENTAL MANAGEMENT PLAN


WBDWSIP BANKURA-INDPUR

LOCATION- MAUKURI PIPELINE (ZONE -12)


REV	DATE	PREPARED BY	CHECKED BY	APPROVED BY DSISC	ARRPROVED BY PIU
0	13.11.19		 	 	 



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 L&T Construction Water & Effluent Treatment	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19 (Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 43 of 102 Original Issue Date :
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Package No.				WBDWSIP/DWW/NCB/BK/02A/2018-19, (Zone - 12, Pipe laying Maukuri) Under PIU Bankura						
Package title				Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block						
				SEMP is as per requirement of the Draft IEE covering package no. WBDWSIP/DWW/NCB/BK/02A/2018-19						
Contractor				Larsen & Toubro Ltd.						
Date of Notice to proceed				27/05/2018						
Date of particular works commencement				05/01/2020						
Contract period				Construction: 3 Years; O&M: 2 Years						
SEMP Component				Laying of 16236 m of pipeline as detailed below.						
Demolition Work				No demolition activity involved						
Project Description				Individual household water supply schemes for the project Gram Panchayats						
Household Connection				2129 (Estimated HH Connection)						
Non-Household Connection				All Commercial, Educational, Religious and Health institutions will get potable water from this project. Numbers are not identified						
Indicative Budget for EMP Implementation for the entire package				INR 40,25,000/-						
Project Components				As per project detailed design						
Gram Panchayat (GP):				Indpur G.P, Indpur Block						
Water Distribution Pipe Length (m) Summary										Total Length
Zone ID	Pipe Diameters(mm)									
	DN 75*	DN 90*	DN 110*	DN 140*	DN 200*	DI 200	DI 250	350	400	
Zone - 12	-	9571	2611	1481	2548	-	25	0	0	16236
Map of Distribution Network - Refer Attachment P1										

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 44 of 102 Original Issue Date :
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Details of contractors on-site-personnel and workers	Zone-12 Pipeline Works Maukuri
Project Manager	Mr. Kishore Kumar Sarkar; 7005681502
Site Engineer	Mr. Rakesh Ahirwar; 9131093014
Site Supervisor	Mr. Vijay Zore Dhau; 7350992659
EHS Supervisor	Mr. Tirthraj Gupta-9304331136
Archeological supervisor	NASS
Skilled / semi-skilled workers	1 skilled and 0 Semi-skilled
Unskilled workers	5
Women workers	Nil
Workers – local / migrant	Local-6 / Migrant from same state-Nil
Details of facilities	
Construction camps, (no's and locations)	No labour accommodation, as all the labours are locals coming from their houses




 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block. of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 45 of 102 Original Issue Date :
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Table 1: Anticipated Impacts and Mitigation Measures – Pre-construction Environmental Mitigation Plan


Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
Utilities	Electric poles and wires, water lines within proposed project area of OHSR site.	<ul style="list-style-type: none"> Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction phase; and Require construction contractors to prepare a contingency plan to include actions to be taken in case of unintentional interruption of services. Require contractors to prepare spoils (waste) management plan and traffic management plan. 	<ul style="list-style-type: none"> Contingency Plan has been developed by informing to emergency services like WBSEDCL, Telecommunication, local administration and police etc. First, we are digging the trial pit manually, if any obstruction arises the same is removed as per direction of end user The pipe laying work to continue without disturbing the existing water pipelines and electric poles and overhead HT line. Flagman deployed on-site with Red and Green flags to control traffic and activity side by side. Please refer Attachment P7 and P8 of this SEMP for site specific spoil management plan and traffic management plans. 	Contractor, PIU	DSISC observation at site and document checking	Project cost

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block. of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 46 of 102 Original Issue Date :
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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
Construction work camps, stockpile areas, storage areas, and disposal areas.	Conflicts with local community; disruption to traffic flow and sensitive receptors.	<ul style="list-style-type: none"> • Prioritize areas within or nearest possible vacant space in the project location; • If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems; • Do not consider residential areas; • Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. • For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m away from surface water bodies; (c) no residential 	<ul style="list-style-type: none"> • Material store has been established in a vacant land at Danga stockyard (Photo given in Attachment P1). • For construction camp, storage area has been established away from water body. • Spoil generated from construction activity has been re-used for labelling/ backfilling. • Disposal area has been selected at barren, infertile land nearest to the project zone as per suggestion of PIU. • Employees are trained for storage and handling of materials which can potentially cause soil contamination and water contamination; • Oil/Lubricant and chemical storage area is provided with concrete floor and metal tray. • Solid waste managed according to the suggested hierarchy: reuse, and disposal to designated areas; 	<ul style="list-style-type: none"> • Contractor, PIU 	<ul style="list-style-type: none"> • DSISC observation at site 	<ul style="list-style-type: none"> • Project cost

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block. of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 47 of 102 Original Issue Date :
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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
		areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive locations like settlements, ponds/lakes or other water bodies.				
Sources of Materials	Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	<ul style="list-style-type: none"> Obtain construction materials only from government approved quarries with prior approval of PIU. On a monthly basis documentation on material obtained from each source (quarry/borrow pit) should be submitted. In case of involvement of new quarries/ borrow areas, prior steps will follow for all clearances and permissions as required under law. 	<ul style="list-style-type: none"> No involvement of any new borrow area or quarry is anticipated. Materials collected from- Cement- Ambuja, Nuvoco and Ultratech Reinforcement- Tata Steel, SAIL, RINL Coarse Aggregates- Pachami quarry. Fine Aggregates- River Damodar. Mentioned source are government approved. 	<ul style="list-style-type: none"> Contractor, PIU 	<ul style="list-style-type: none"> DSISC observation at site and document checking 	<ul style="list-style-type: none"> Project cost
Consents, permits, clearances, objection certificates (NOCs), etc.	Failure to obtain necessary consents, permits, NOCs, etc can result to design revisions and/or stoppage of works.	<ul style="list-style-type: none"> All necessary consents, permits, clearance, NOCs, etc prior to award of civil works should be obtained. All necessary approvals for construction to be obtained 	<ul style="list-style-type: none"> Already done land requisition, electric connection, water source etc. Tree felling is not required for this site as there are no trees in the path of pipe laying Made 	<ul style="list-style-type: none"> Contractor and PIU 	<ul style="list-style-type: none"> DSISC observation at site and document checking 	<ul style="list-style-type: none"> Project cost

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
		before start of construction. • Acknowledge in writing and report on compliance consents, permits, clearance, NOCs etc. obtained.	provision for detailed design drawing and documented all conditions • Please refer Attachment P3 for list of relevant permits and clearances.			
Asbestos Cement Pipes	Health risk due to exposure to asbestos materials	• Obtain details on location of underground Asbestos Cement pipes • Locate the new piper carefully to avoid encountering AC pipes • Leave the Asbestos Cement pipes undisturbed in the ground.	• Pipe laying will be continued without disturbing existing pipeline as suggested in IEE. No Asbestos pipe found till now.	• Contractor in coordination with PIU and PMC	• Detailed construction drawings showing alignment of AC pipes	• No cost required. • Mitigation measures are part of terms of reference (TOR) of PIU and DSISC




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Table 2: Anticipated Impacts and Mitigation Measures – Construction Environmental Mitigation Plan


Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
Environmental Management Plan (EMP) Implementation Training	Irreversible impact to the environment, workers, and community	<ul style="list-style-type: none"> Project manager and all key workers will be required to undergo training on EMP implementation including spoils/waste management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc. 	<ul style="list-style-type: none"> EMP implementation training session has been planned for all workers and community. 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation
Air Quality	Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides,	<ul style="list-style-type: none"> Comply with the air pollution / dust control measures for construction activities stipulated by the "Direction of West Bengal Department of Environment under the Air Act, 1981 Direction No. EN/3170/T-IV-7 /001/2009 dated: 10 December 2009" Damp down the soil and any stockpiled material on site by water sprinkling; 	<ul style="list-style-type: none"> Only vehicles having valid PUC certificate have been engaged in the project. Sprinkling and dust screen arrangement have been made and will be used when required. Workers has been instructed to always use dust mask while working in the trench. Initiate site clearance and excavation work only after barricading of the site 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
	particulate matter, nitrous oxides, and hydrocarbons.	<ul style="list-style-type: none"> • Use tarpaulins to cover the loose material (soil, sand, aggregate etc.,) when transported by trucks; • Provide a dust screen/high compound wall around the construction sites (OHSRs) • Clean wheels and undercarriage of haul trucks prior to leaving construction site/quarry • Control dust generation while unloading the loose material (particularly aggregate, soil) at the site by sprinkling water and unloading inside the barricaded area • Stabilize surface soils where loaders, support equipment and vehicles will operate by using water and maintain surface soils in a stabilized condition • Apply water prior to levelling or any other earth moving activity to keep the soil moist 	<p>is done.</p> <ul style="list-style-type: none"> • Confine all the material, excavated soil, debris, equipment, machinery (excavators, cranes etc.), to the barricaded area. • Limit the stocking of excavated material at the site; remove the excess soil from the site immediately to the designated disposal area. • Undertake the work section wise Conduct work sequentially - excavation, pipe laying, backfilling; conduct pipe testing section-wise (for a minimum length as possible) so that backfilling, stabilization of soil can be done. Remove the excavated soil of first section to the disposal site; as the work progresses, sequentially, by the time second section is excavated, the first section will be ready for back filling, use the freshly excavated soil for back filling, this will avoid stocking of material, and minimize the dust. • Backfilled trench at any completed section after removal of barricading 			

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block. of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 51 of 102 Original Issue Date :
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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
		<p>throughout the process</p> <ul style="list-style-type: none"> Control access to work area, prevent unnecessary movement of vehicle, public trespassing into work areas; limiting soil disturbance will minimize dust generation Ensure that all the construction equipment and machineries are fitted with pollution control devises, which are operating correctly, and have a valid pollution under control (PUC) certificate. 	<p>will be the main source of dust pollution. The traffic, pedestrian movement and wind will generate dust from backfilled section. Road restoration shall be undertaken immediately.</p> <ul style="list-style-type: none"> Air quality monitoring for base line data completed. Air quality Monitoring has been conducted at following five places - Gobindapur, Raghunathpur, Chaukighata, Nayekhir (Indpur),Gunnath (Araldhi). as per environmental monitoring plan recommended in the IEE. 			
Surface water quality	<p>Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during construction can contaminate nearby surface water quality.</p> <p>Ponding of water in</p>	<ul style="list-style-type: none"> All earthworks be conducted during the dry season to prevent the problem of soil run-off during monsoon season; Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; Prioritize re-use of excess 	<ul style="list-style-type: none"> Pipe laying work will be restricted to dry season only. Temporary drainage channel will be created around the work area to arrest the entry of runoff from upper areas into the work area. Water accumulated in the pits / excavations will be pumped out to a temporary sedimentation pond ensuring disposal of only clarified water into drainage 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block. of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 52 of 102 Original Issue Date :
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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
	the pits / foundation excavations	spoils and materials in the construction works. If spoils will be disposed, only designated disposal areas shall be used; <ul style="list-style-type: none"> • Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; • Place storage areas for fuels and lubricants away from any drainage leading to water bodies; • Store fuel, construction chemicals etc., on an impervious floor, also avoid spillage by careful handling • Dispose any wastes generated by construction activities in designated sites; and • Conduct surface quality inspection according to the Environmental Management Plan (EMP). • Create a temporary 	channels/streams after sedimentation in the temporary ponds <ul style="list-style-type: none"> • Safety aspects will be taken care of to prevent the pit collapse due to accumulation of water. • Surface water quality monitoring for baseline data has been conducted in 5 locations - Gobindapur, Raghunathpur, Chaukighata, Nayekhir (Indpur),Gunnath (Araldih). as per environmental monitoring plan recommended in the IEE. • Locations for fuels and lubricants store is away from drainage path and spill kits have been obtained. • All excavated soils are expected to be utilized on-site only. No excess spoil anticipated. 			

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block. of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 53 of 102 Original Issue Date :
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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
		drainage channel around the work area to arrest the entry of runoff from upper areas into the work area(ix) Pump out the water collected in the pits / excavations to a temporary sedimentation pond; dispose of only clarified water into drainage channels/streams after sedimentation in the temporary ponds <ul style="list-style-type: none"> Consider safety aspects related to pit collapse due to accumulation of water 				
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	<ul style="list-style-type: none"> Plan activities in consultation with PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; Horns should not be used unless it is necessary to warn other road users or 	<ul style="list-style-type: none"> Noise quality monitoring for baseline data completed at following five places - Gobindapur, Raghunathpur, Chaukighata, Nayekhir (Indpur),Gunnath (Araldih). as per environmental monitoring plan recommended in the IEE. Consultation made with local communities in advance of the work 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

 L&T Construction <i>Water & Effluent Treatment</i>	Design and Construction of Intermediate Pumping Station, ground storage reservoirs, overhead reservoirs, water distribution network and metering works in Indpur block including secondary transmission mains to Indpur and Taldangra block. of reference Contract no. WBDWSIP/DWW/NCB/BK/02A/2018-19(Contract Package No: WBDWSIP/DWW/NCB/BK/02A/2018-19)	Doc. No. L&T/ SEMP /01 Last Revision No. 00 Last Revision Date : 00 Page 54 of 102 Original Issue Date :
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Field/Issues (1)	Anticipated Impact (2)	Recommended Mitigation Measures (3)	Actions Taken/ Status (4)	Responsibility of Implementation (5)	Monitoring of mitigation (6)	Cost and source of fund (7)
		<p>animals of the vehicle's approach;</p> <ul style="list-style-type: none"> Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and use portable street barriers to minimize sound impact to surrounding sensitive receptor; and Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; Consult local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as 	<p>to identify and avoid working at sensitive times, such as religious and cultural festivals.</p> <ul style="list-style-type: none"> No building found at risk from vibration damage. 			

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		religious and cultural festivals.				
Landscape and aesthetics – waste generation	Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	<ul style="list-style-type: none"> • Prepare and implement a Construction Waste Management Plan • As far as possible utilize the debris and excess soil in construction purpose, for example for raising the ground level or construction of access roads etc., • Stockpiles, lubricants, fuels, and other materials should be located away from steep slopes and water bodies; • Avoid stockpiling any excess spoils at the site for long time. Excess excavated soils should be disposed of to approved designated areas immediately; • If disposal is required, the site shall be selected preferably from barren, infertile lands; site should be located away from 	<ul style="list-style-type: none"> • Excavated earth is utilized for backfilling purpose. • Spoil management plan has been developed. (Attachment-P-7) 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

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		residential areas, forests, water bodies and any other sensitive land uses <ul style="list-style-type: none"> Domestic solid wastes should be properly segregated in biodegradable and non-biodegradable for collection and disposal to designated solid waste disposal site; create a compost pit at workers' camp sites for disposal of biodegradable waste; non-biodegradable / recyclable material shall be collected separately and sold in the local recycling material market Residual and hazardous wastes such as oils, fuels, and lubricants shall be disposed of in disposal sites approved by local authorities/West Bengal Pollution Control Board (WBPCB); 				

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		<ul style="list-style-type: none"> Prohibit burning of construction and/or domestic waste; Ensure that wastes are not haphazardly dumped thrown within and around the project site and adjacent areas; provide proper collection bins, and create awareness to use the dust bins. Conduct site clearance and restoration to original condition after the completion of construction work; PIU to ensure that site is properly restored prior to issuing of construction completion certificate 				
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	<ul style="list-style-type: none"> Minimize removal of vegetation and disallow cutting of trees, by adopting best site layout and pipeline alignments If tree-removal will be required, obtain tree-cutting 	<ul style="list-style-type: none"> Tree felling is not required for pipelaying site. 	Contractor, PIU	DSISC observation at site and document checking	Project cost for implementation of mitigation

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		<ul style="list-style-type: none"> permit and Plant 5 native trees for every one that is removed. 				
Accessibility	Traffic problems and conflicts near project locations and haul road	<ul style="list-style-type: none"> Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites Schedule transport and hauling activities during non-peak hours; Locate entry and exit points in areas where there is low potential for traffic congestion; Drive vehicles in a considerate manner Notify affected public by public information notices, providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints. 	<ul style="list-style-type: none"> Work areas will be confined along the roads to the minimum possible extent; all the activities, including material and waste/surplus soil stocking should be confined to this area. Barricade will be provided to avoid material/surplus soil stocking in congested areas – immediately removed from site/ or brought to the as and when required Access will be maintained between mounds of soil to maintain access to the houses / properties Pedestrian access will be maintained in all the locations; wooden/metal planks will be provided over the open trenches at each house to maintain the access. Local people will be informed priorly (1-week in advance) about the work schedule The work will be planned and 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

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			executed in such a way that the period of disturbance/ loss of access is minimum. <ul style="list-style-type: none"> Coordination will be made with Police for temporary road diversions, where necessary, and for provision of traffic aids if transportation activities cannot be avoided during peak hours 			
Socio-Economic - Employment	Generation of temporary employment and increase in local revenue	<ul style="list-style-type: none"> Employ local labor force as far as possible Comply with labor laws 	<ul style="list-style-type: none"> Local labours are employed, on priority, whenever available. 	Contractor	PIU and DSISC observation at site and document checking	Contractor costs
Occupational Health and Safety	Occupational hazards which can arise during work	<ul style="list-style-type: none"> Comply with all national, state and local core labor laws Develop and implement site-specific occupational health and safety (OHS) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use personal protective 	<ul style="list-style-type: none"> Based on L&T's OHS Plan, a site specific OHS plan has been developed. Site OHS plan is attached at Attachment P4. All workers have been provided with and made to use Personal Protective Equipment like helmet, gumboot, reflective jacket, gloves, nose mask and ear plugs; H&S Training for all site personnel 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation

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		<p>equipment like helmet, gumboot, safety belt, gloves, nose musk and ear plugs; (c) OHS Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents;</p> <ul style="list-style-type: none"> • Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; • Provide medical insurance coverage for workers; • Secure all installations from unauthorized intrusion and accident risks; • Provide supplies of potable drinking water; • Provide clean eating areas where workers are not exposed to hazardous or noxious substances; • Provide health and safety 	<p>has been arranged and it will be continued;</p> <ul style="list-style-type: none"> • H&S orientation training provided 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 injuries to fellow workers • Documented procedures are followed for all site activities; • Work-related accidents will be recorded; • Bottled water provided at site. • First Aid box provided at working sites • Clean eating areas provided to workers; • Moving equipment maintained with audible back-up alarms 			

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		<p>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> <ul style="list-style-type: none"> • 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; • Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; • Ensure moving equipment is outfitted with audible back-up alarms; • Mark and provide sign boards for hazardous areas 				

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		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;				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	<ul style="list-style-type: none"> • Restrict construction vehicle movements to defined access roads and demarcated working areas (unless in the event of an emergency) • Enforce strict speed limit (20-30 kph) for playing on unpaved roads, construction tracks • Night-time haulage will be by exception only, as approved by the PIU to minimize driving risk and 	<ul style="list-style-type: none"> • Safety signage and demarcation of work area will be maintained. • Night time haulage will be avoided. • Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions • All drivers will undergo safety and training • Public access to all areas where construction works are on-going will be restricted through the use of barricading and security personnel • Warning signs, blinkers will be 	Contractor		Cost for implementation of mitigation measures responsibility of contractor.

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		<ul style="list-style-type: none"> disturbance to communities Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions All drivers will undergo safety and training Public access to all areas where construction works are on-going will be restricted through the use of barricading and security personnel Warning signs, blinkers will be attached to the barricading to caution the public about the hazards associated with the works, and presence of deep excavation The period of time when the pipeline trench is left open will be minimized through careful planning Control dust pollution – 	<ul style="list-style-type: none"> attached to the barricading to caution the public about the hazards associated with the works, and presence of deep excavation The period of time when the pipeline trench is left open will be minimized through careful planning Water sprinkler will be used regularly to control dust during dry season. Access road will be maintained with proper safety measures. Vehicles and equipments will be checked regularly for better performance. 			

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		implement dust control measures as suggested under air quality section <ul style="list-style-type: none"> • Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. • Provide road signs and flag persons to warn of on-going trenching activities. 				
Labour camp areas	Conflicts with local community; temporary air, water and noise pollution, unsanitary and poor living conditions for workers	<ul style="list-style-type: none"> • Provide proper temporary accommodation with proper materials, adequate lighting and ventilation, appropriate facilities for winters and summers; ensure conditions of liveability at work camps are maintained at the highest standards possible at all times; • Minimize removal of vegetation and disallow cutting of trees 	<ul style="list-style-type: none"> • No rented house is chosen as all engaged labours are locals coming from their own houses. 	<ul style="list-style-type: none"> • Contractor, PIU 	<ul style="list-style-type: none"> • DSISC observati on at site 	<ul style="list-style-type: none"> • Project cost

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		<ul style="list-style-type: none"> • Ensure conditions of liveability at work camps are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be allowed as accommodation for workers • Camp shall be provided with proper drainage, there shall not be any water accumulation • Provide drinking water, water for other uses, and sanitation facilities for employees • Prohibit employees from cutting of trees for firewood; 				

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		<p>contractor should be providing proper facilities including cooking fuel (oil or gas; fire wood not allowed)</p> <ul style="list-style-type: none"> • Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; provide a compost pit for biodegradable waste, and non-biodegradable / recyclable waste shall be collected and sold in local market 				
Chance Finds	There are no protected properties in the subproject sites. However, in case of chance finds, contractors will be required to follow a protocol as defined in the mitigation measures.	<ul style="list-style-type: none"> • Consult Archaeological Survey of India (ASI) or West Bengal State Archaeology Department to obtain an expert assessment of the archaeological potential of the site • Include state and local archaeological, cultural and 	<ul style="list-style-type: none"> • No archaeological chance finds are reported at project sites till date. • If there is any such finding, protocol will be maintained as per requirement. 	Contractor		Contractor cost

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		<p>historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available.</p> <ul style="list-style-type: none"> In case of chance finds, works must be stopped immediately until such time chance finds are cleared by experts 				
Submission of EMP implementation report	Unsatisfactory compliance to EMP	<ul style="list-style-type: none"> Appointment of (I) Environment, Health and Safety (EHS) Supervisor to ensure EMP implementation Timely submission of monitoring reports including pictures. 	<ul style="list-style-type: none"> EHS supervisor has been appointed. For timely submission of monitoring report has been instructed to contractor. 	Contractor	PIU and DSISC observation at site and document checking	Project cost for implementation of mitigation measures

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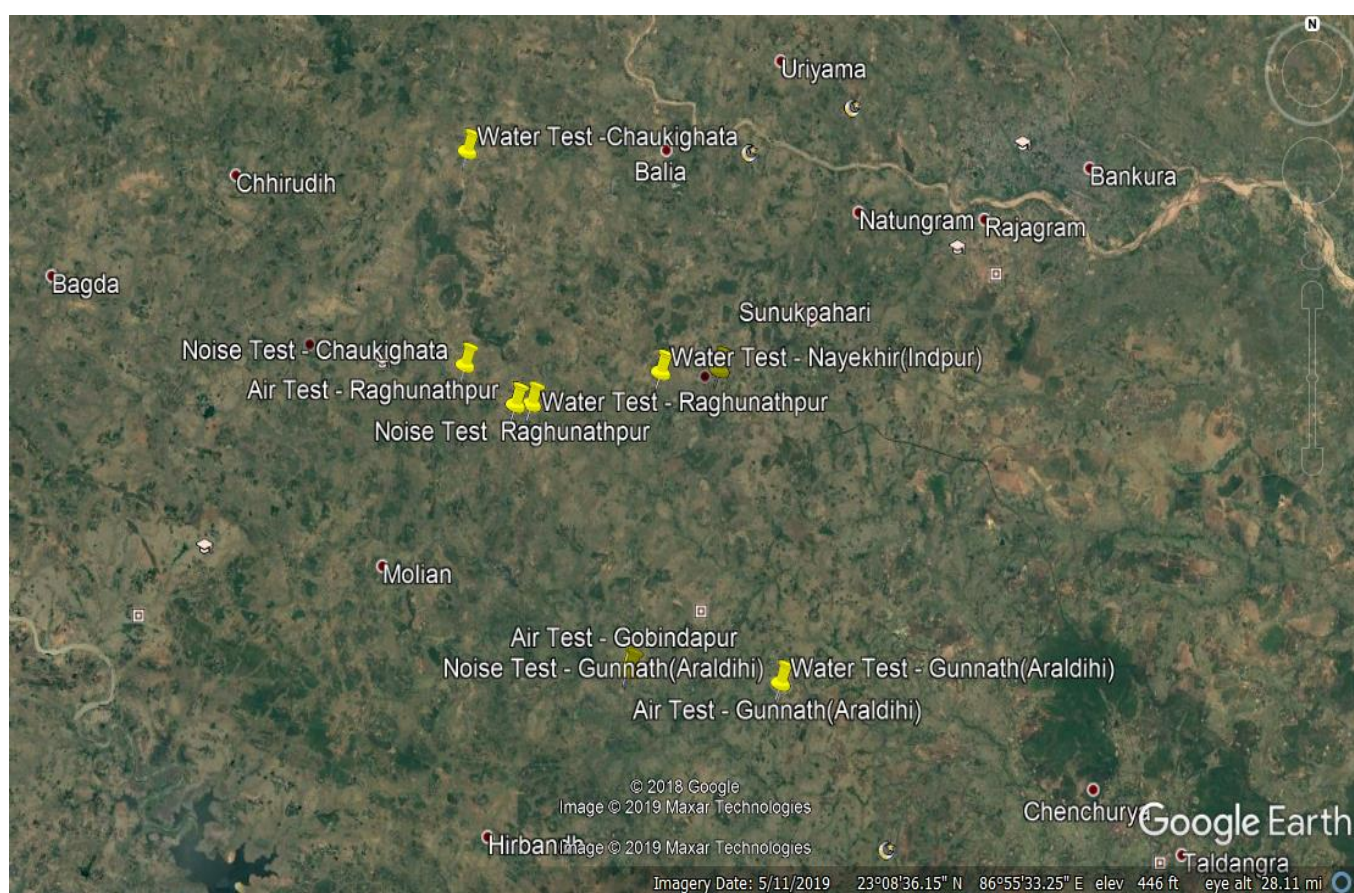
Table 3: Construction Phase Environmental Monitoring Plan for entire package

Monitoring Field	Monitoring Location	Monitoring Parameters	Frequency	Locations*	Cost as per budget (in Rs.)
Ambient air quality	5 locations (to be selected during implementation to represent the overall project area)	PM ₁₀ , PM _{2.5} , NO ₂ , SO ₂ , CO	Once before start of construction. Yearly 3- times except monsoon period during construction (3-year period considered)	(Gobindapur, Raghunathpur, Chaukighata, Nayekhir(Indpur), Gunnath(Araldih)).	250,000/-
Ambient noise	10 locations (same as air quality monitoring)	Day time and night time noise levels (24 hours)	Once before start of construction. Yearly 3- times except monsoon period during construction (3-year period considered)	(Gobindapur, Raghunathpur, Chaukighata, Nayekhir(Indpur), Gunnath(Araldih)).	150,000/-
Surface water quality	5 locations (to be selected during implementation)	pH, Oil and grease, Cl, F, NO ₃ , TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity	Once before start of construction. Yearly 3- times except monsoon period during construction (3-year period considered)	(Gobindapur, Raghunathpur, Chaukighata, Nayekhir(Indpur), Gunnath(Araldih)).	250,000/-
Soil Quality	5 locations (including construction camps, workers camp)	pH, Elect. Conductivity (at 250C), Moisture (at 1050C), Texture (silt, clay, sand), Calcium (as CaO), Magnesium (as Mg), Permeability, Nitrogen (as N), Sodium (as Na), Phosphate (as PO ₄), Potassium (as K), Organic Matter, oil and grease	Once before start of construction. Yearly 3- times except monsoon period during construction (3-year period considered)	Sampling will be conducted shortly	250,000
Ground water quality	5 locations	As per IS 10,500,2012	Once before start of construction. Yearly 3- times except monsoon period during construction (3-year period considered)	Gobindapur, Raghunathpur, Chaukighata, Nayekhir(Indpur), Gunnath(Araldih)).	300,000

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Note- Mention locations had been selected for Baseline data. Sampling were done, report pending. During construction locations are changeable with progress of work. Present locations as mentioned in mitigation tables are base line monitoring conducted as per EMP provision. The exact locations of these monitoring are reported in SEMR over google earth image. For all the packages conduct of these monitoring is responsibility of concerned Contractor and cost for such already budgeted in the IEE

Monitoring Locations on Google Earth



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List of Attachments


- Attachment P1: Details of construction Work sites
- Attachment P2: Details of construction camp sites
- Attachment P3: List of clearances & statutory requirements
- Attachment P4: Contractor's OHS Policy & Organization
- Attachment P5: Utility shifting/relocation
- Attachment P6: Details of Construction Materials
- Attachment P7: Spoil Management Plan
- Attachment P8: Traffic Management Plan

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Attachment P1: Details of construction Work sites

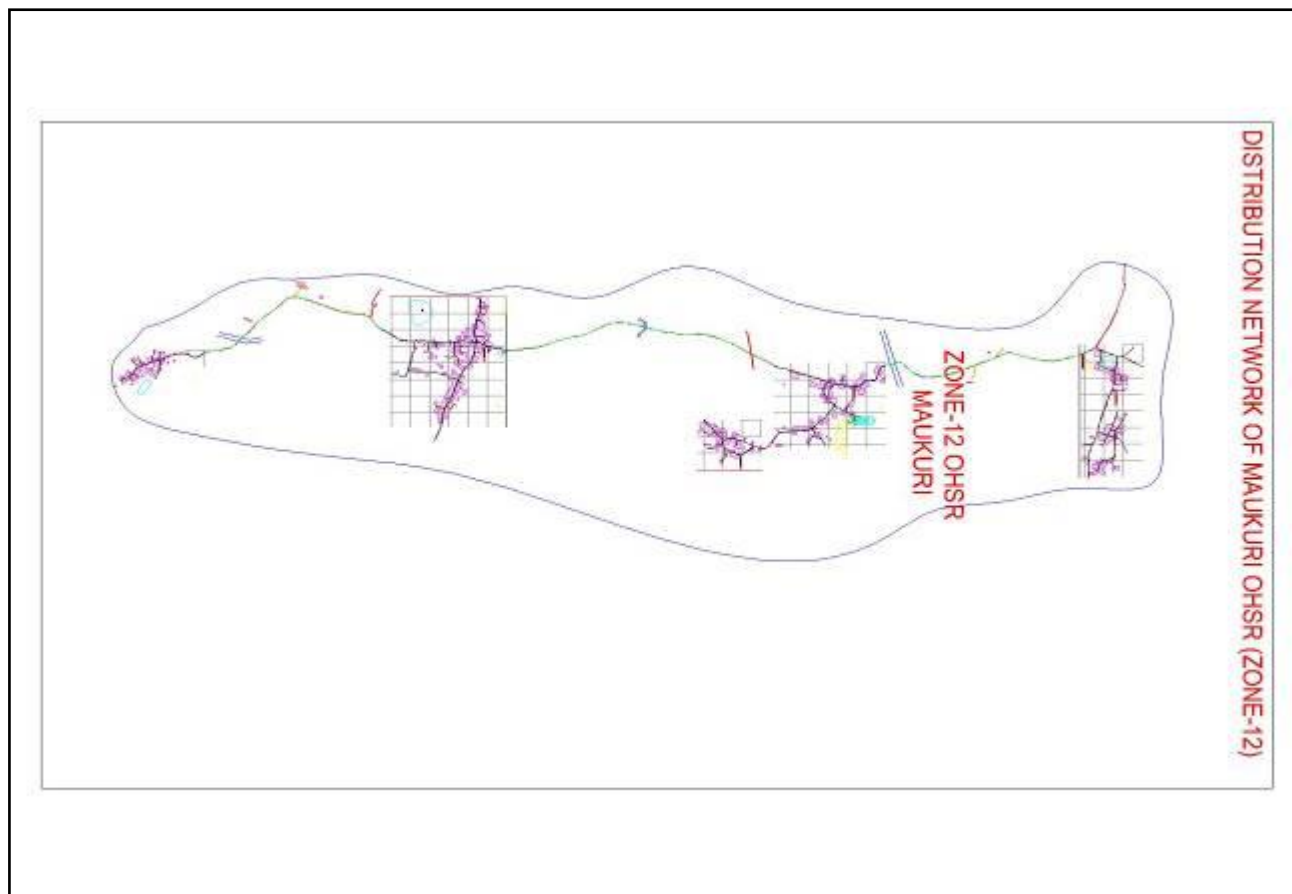
1. Zone 12: Pipeline construction Site							
Location- Maukuri							
A	Material storage <ul style="list-style-type: none"> • Pipe • Fittings 						
B	Plant & Machinery <ul style="list-style-type: none"> ▪ Jointing Machine-Nil ▪ DG (less than 5 kVA) – Nil ▪ JCB – 1 Nos 						
C	Site office – Not yet established						
D	Laboratory – Not yet established						
E	Security cabin – Not yet established						
F	Labor welfare facilities at Site <ul style="list-style-type: none"> • Drinking water • First Aid Box. 						
G	Road, agriculture land involvement and infrastructure facility No agricultural land involved No as such underground infrastructure available. No record for village road						
	Details of pipeline, roads and construction methodology are presented below	Length (m)	Width of trench (m)	Depth of Trench (m)	Width of roads (m)	Type of roads (earthen / BT / CC)	Excavation method (manual/ mechanical)
	Pipe Diameter (mm)						
	DI Pipes (25m)						
	200 mm	25	0.4- 0.8	1.2	2.0-6.0	CC/BT/Earthen	Manual/Mech
	Distribution Network— HDPE Pipes (16211 m)						
	200 mm	2548	0.4- 0.8	1.20	2.0-6.0	CC/BT/Earthen	Manual/Mech

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	140 mm	1481	0.4- 0.8	1.14	2.0-6.0	CC/BT/Earthen	Manual/Mech
	110 mm	2611	0.4- 0.8	1.11	2.0-6.0	CC/BT/Earthen	Manual/Mech
	90 mm	9571	0.4- 0.8	1.09	2.0-6.0	CC/BT/Earthen	Manual/Mech
	75 mm	0	0.4- 0.8	1.08	2.0-6.0	CC/BT/Earthen	Manual/Mech
	63 mm	0	0.4- 0.8	1.06	2.0-6.0	CC/BT/Earthen	Manual/Mech
Pipe stock yard at Danga							

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Attachment P1: Map of Distribution Network



Attachment P2: Details of construction camp sites

1.	Labour Accommodation, Pipeline site – Zone 12 – Not yet established
Location- Maukuri	

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Attachment P3: List of clearances & statutory requirements

Sl. No.	Project related	Status
A	Construction/work related	
1	Gram Panchayat and Other Authorities Permission	Obtained [Refer Appendix 7]
B	Labour Safety / Welfare Related	
1	Labour license	Obtained [Refer Appendix 1]
2	Workmen Compensation	Obtained [Refer Appendix 2]
3	Risk policy	Obtained (Refer Appendix 3)
C	Safety / liability safety related	
1	Medical insurance	Tie-up with local hospital done [refer Appendix 4]
D	Others	
1	Fitness certificate for vehicles, equipment used in construction	Obtained
2	Pollution under control (PUC) certificates for vehicles and equipment	Available [Refer Appendix – 5]
3	Driving licenses for drivers	Obtained
4	Insurance for vehicles / equipment, as required	Obtained

Attachment P4: Contractor's OHS Plan & Organization

1	Contractor agency has a OHS plan	Yes/No
A	If yes, provide policy details: 1. Policy statement 2. OHS organization & responsibilities:	Yes [Refer Appendix 6] Yes
B	List safety risks anticipated in the project Area works (Pipeline Work) • Trips and falls • Slope failure / trench collapse • Road accidents Linear works (pipelines) • Accidents from open trenches	-

Site Specific Environmental Management Plan

C	List personal protection equipment provided to workers <ul style="list-style-type: none"> • Boots- 10No. • Gloves-3no. • Helmet-10nos. • Safety jacket- 10nos. • Goggles- 2nos. 	Yes
D	Preventive Measures	
	<ul style="list-style-type: none"> • Orientation of all workers on OSH 	Done
	<ul style="list-style-type: none"> • Work permit system 	No
	<ul style="list-style-type: none"> • Toolbox/safety meetings (how often will this be conducted, what are the minimum topics) 	Twice Weekly on work inside trench, firefighting, first-aid, housekeeping, etc.
	<ul style="list-style-type: none"> • Safety signages 	Displayed on site
	<ul style="list-style-type: none"> • Barricades (more than 1 m deep requires hard barricading) 	Wherever road width permits
2	Contractor emergency procedure	
A	Detail what steps/procedure to be adopted in emergency situation (eg. accidents) <ul style="list-style-type: none"> • In case of emergency first aid treatment to injured labour/person shall be provided. • In case hospitalization is required, concerned site in-charge will immediately take necessary action for hospitalization and he will inform to our Project Manager. • Details of accident shall be reported in accident register and the same shall be informed to client also. 	Yes
B	Contact information, staff and responsibilities for emergency situations	
	Designation	Staff name & contact
		Emergency responsibility
	Site Engineer	Mr. Rakesh Ahirwar 9131093014
		Site Engineer shall be responsible for arranging of first aid treatment and other necessary action required in case of emergency. He will also be responsible for informing to EHS Supervisor.
	EHS officer	Mr. Tirthraj Gupta
		EHS Supervisor should assess the emergency situation and accordingly instruct the Site Engineer of appropriate actions. Depending on the gravity of the situation, he should also inform Project Manager Representative.
	Project Manager Representative	Mr. Kishore Kumar Sarkar; 7005681502
		Project Manager Representative shall be responsible for taking all necessary action and decisions.

Site Specific Environmental Management Plan

C	Reporting procedure in case of work accidents <ul style="list-style-type: none"> Details of accidents shall be recorded in accident register. Copy of accident register shall be submitted to client at the end of every month. In case of any major accident's client shall be informed immediately. 	Yes
D	Mandatory Reporting to Authorities	Yes
E	Prohibited Acts and Penalties for Violations	Yes

Attachment P5: Utility shifting/relocation

Sl. No.	List work sites that require utility shifting, relocation, temporary shut off	Remarks
1	Area work sites (Pipeline)	Under Process

Attachment P6: Details of Construction Materials

Sl. No	Material	Approximate quantity required (m3) for project	Source	Indicate if source has all necessary government clearances
1	Earth	13174.31	From trench cutting	Not required
2	Pipe - DI	25	Rashmi metalliks	Yes
3	Pipe - HDPE	16211	TEXMO INDUSTRIES	Yes

Site Specific Environmental Management Plan

Attachment P7: Spoil Management Plan

SPOIL MANAGEMENT PLAN(SMP)

WBDWSIP BANKURA-INDPUR

LOCATION- MAUKURI PIPELINE (ZONE -12)

REV	DATE	PREPARED BY	CHECKED BY	APPROVED BY DSISC	ARRPROVED BY PIU
0	13.11.19			 TEAM LEADER DSISC- Bankura WBDWSIP	 Assistant Engineer-I PIU Bankura WBDWSIP, PHE Dte Govt. of West Bengal




Site Specific Environmental Management Plan

1. INTRODUCTION OF SMP:

SMP is to describe how the project will manage the spoil generated and reuse related to design and construction works. This is an integral part of EMP. The objective of SMP is to reuse of spoil from works.

2. SCOPE:

This Spoil Management Plan developed for **pipeline network laying in Zone (12)**. For this site, we do not anticipate any excess Spoil for disposal as all excavated material will be reused at site only.

3. LEGAL AND OTHER REQUIREMENTS:

In this project, there is no legal litigation at site for land and working area or site. Disposal of spoil will be conforming the Environmental Protection Rules and Regulations of Govt. of India and the State Govt.

4. ROLES AND RESPONSIBILITY:

SITE ENGINEER:

- Will strictly work as per drawing.
- Will stay at site during activity is going on.
- Will see excess earth is kept at a particular place after completion of backfilling.
- Will ensure quality of the work by discussing daily about the type of activity on that day with the workmen.
- Will check site drain outlets are not blocked due to excavated earth on the drain.

SAFETY PERSONNEL:

- Will constant Job Specific Tool Box Talk with Supervisor and Workmen.
- Will check excavated earth kept away from top.
- Will check if any underground pipeline is there or live electric cable there water should be sprayed to avoid dust hazard from excavation.
- Necessary Safety signage, Cones to be used.
- Vehicles reverse horn etc to be checked will ensure zero tolerance in safety.

WORKER:

- Workers will start activity only after job specific Tool Box Talk done by the job supervisor.
- They will wear job specific safety items before start of work.
- During working inside the excavated trench, they should use ladder for easy access.
- They should barricade the area of activity with Safety barricading tape/Safety cone/ Caution Boards at the start and end of a road under excavation
- Worker should be skilled to carry out the work.
- Workers should take care of the pedestrians and vehicles safe movement.

It is the responsibility of the Engineers and all department head to implement this procedure and ensure that delegated staff and worker under their supervision carry it out in this project. Major roles and responsibilities are mentioned below:

- Excavated earth should be utilized like refilling at site only.
- Traffic movement should not be obstructed by dumping soil during the work.

Site Specific Environmental Management Plan

- No low land, pond, ditch etc. will be filled up by extra soil outside the work place.
- Ensuring no accident occurs during rainy season by excavated earth during or finished the work.
- All the drains, outlet should be free from excavated earth.

5. IDENTIFICATION AND ASSESSMENT OF SPOIL ASPECTS AND IMPACTS:

In this project, there are some places which will be assessed and identified jointly along with design engineer. Main places where the excavated earth can be utilized are the trench of pipes and backfilling location.

6. SPOIL VOLUMES AND CHARACTERISTICS:

In this project, approx. generation of excavated earth will be **approx. 13174.61 cum**.

As per report from soil expert, excavated earth is cohesive in nature.

7. SPOIL REUSES OPPORTUNITIES, IDENTIFICATION AND ASSESMENT:

In this project, there is **189.84 cum** quantity of excavated earth; total excavated earth should be reused as per plan.

8. ON SITE SPOIL MANAGMENT APPROACH:

In this project, no need of the approach as there is no extra soil for disposal.

9. SPOIL TRANSPORTATION METHODOLOGY:

In this project, no need of transport as there is no extra soil for disposal.

10. MONITORING, REPORTING, REVIEW AND IMPROVEMENTS:

Monitoring, Reporting and all necessary improvements will be done as per requirements.

Expected Spoil generated at Maukuri (Zone 12) for Pipe laying

Sl.	Dia	Length(m)	Excavation (cum)	Backfilling Quantity (cum)	Spoil Volume (cum)
1	75	-	-	-	-
2	90	9571	7285.5	7224.5	61
3	110	2611	2087.8	2052.8	25
4	200	2548	2504.5	2027.8	80.04
5	200	25	25.11	24.31	0.8
7	250	-	-	-	-
8	140	1481	1271.7	1248.7	23
		Total =	13174.61	12984.77	189.84





Site Specific Environmental Management Plan



Attachment P8: Traffic Management Plan

TRAFFIC MANAGEMENT PLAN

WBDWSIP BANKURA PKG-02A

LOCATION- MAUKURI, PIPELINE (ZONE – 12)

REV	DATE	PREPARED BY	CHECKED BY	APPROVED BY DSISC	ARRPROVED BY PIU
0	13.11.19			 TEAM LEADER DSISC- Bankura WBDWSIP	 Assistant Engineer-I PIU Bankura WBDWSIP, PHE Dist Govt. of West Bengal

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Site Specific Environmental Management Plan

1. **PURPOSE**

Main purpose is to prevent accident between vehicles, pedestrians and employees and also minimize inconvenience to the vehicle. To stop property damage and prevent injury to persons arising from site traffic and site transport.

2. **SCOPE**

The procedure is applicable for HDPE/DI pipe laying area. Pipe laying works not required full road closure but partial closure is required on all these roads and hence, traffic management plans have been developed accordingly.

3. **RESPONSIBILITY**

It is the responsibility of the Engineers and all department head to implement this procedure and ensure that delegated staff under their supervision carries it out.

4. **LEGAL REQUIREMENT**

The Building and Other Construction Workers (Regulations of Employment and Conditions of Service) Act 1996 and Central Rule 1998 Rule 48, 88 and 95, Motor Vehicle Act 1988

5. **REQUIREMENTS**

5.1 **General**

- All road works create inconvenience and are a potential hazard to the safety of all road users and those employed in carrying out the work.
- All the effects should be reduced to the minimum, and to ensure that the works are properly guarded, lighted and signed.
- A clear and early warning of any obstruction to all road users should be provided.
- All areas where work is going on should be clearly demarcated by proper barricading and entry into these areas should be restricted to only authorize personnel.
- Site access for local people.

5.2 **Planning Stage**

Particular attention should be given to:

- Traffic signs
- Cones
- Barriers
- Road hazard warning lights
- Information boards and
- Site lighting
- Site access for local people
- Consider necessity to traffic control systems such as temporary traffic lights or Stop/Go boards.
- Access should be planned to eliminate dangerous movements of site traffic (e.g. reversing of vehicles) and personnel (e.g. crossing dual carriageways).
- Provision of adequate lighting while working at night.
- All persons working on the road shall wear high visibility jackets.

5.3 **On Site**

The working space shall be defined and "A PLACE FOR EVERYTHING AND EVERYTHING IN ITS PLACE" to be follow.

Site Specific Environmental Management Plan

5.4 Operators/Drivers

- Only Experienced operators and drivers with valid licensed has been appointed.
- One copy of license has been collected.
- Refreshment training conducted for all operators and drivers.
- Operators/Drivers authentication and validation to operate the particular machinery displayed in the machine/vehicles.

5.5 Equipment

- Drivers undertake a daily visual inspection of their vehicles include steering, brakes, mirrors, lights, horn, tyres and windshield wipers.
- Safety Department along with Plant and machinery department shall check the vehicles as a monthly basis.
- All vehicles have reverse horns and it is in working properly.
- All vehicles, preventive maintenance schedule has to be followed strictly.

5.6 Roads

- For safe operation we are following the below safety measure:
- Safe width of road has been provided.
- Flag man deployed at every traffic point to control the vehicles and pedestrians.
- Speed limits 10km/hr within the working area.
- Caution board has been placed in every location within the site.
- Workers are working with reflective jacket as well as required PPE's.
- Road for use of pedestrian has been identified.
- Reverse horn used in vehicles.
- While reverse vehicles ensuring Banks man.
- Do's and Don'ts displayed at site office.

5.7 Loading and Unloading

- Only authorized persons were engage loading/unloading.
- Materials loaded within the permitted safe weight limit (as per RTO) for the truck.
- Ensuring Soil and Sand loaded trucks are covered with tarpaulin while transporting
- During Toolbox talk's intimation has been delivered to all drivers/operators that when the drivers leave the driving seat, the engine of the truck shall be switched off, the gear engaged and parking brakes applied. On slopes, wheel blocks shall be applied.
- Helper has been provided with all vehicles.
- After unloading, the banks man ensuring that the tipper is lowered before moving.
- Turn buckle and side stoppers used while transporting as required.

5.8 Working Area

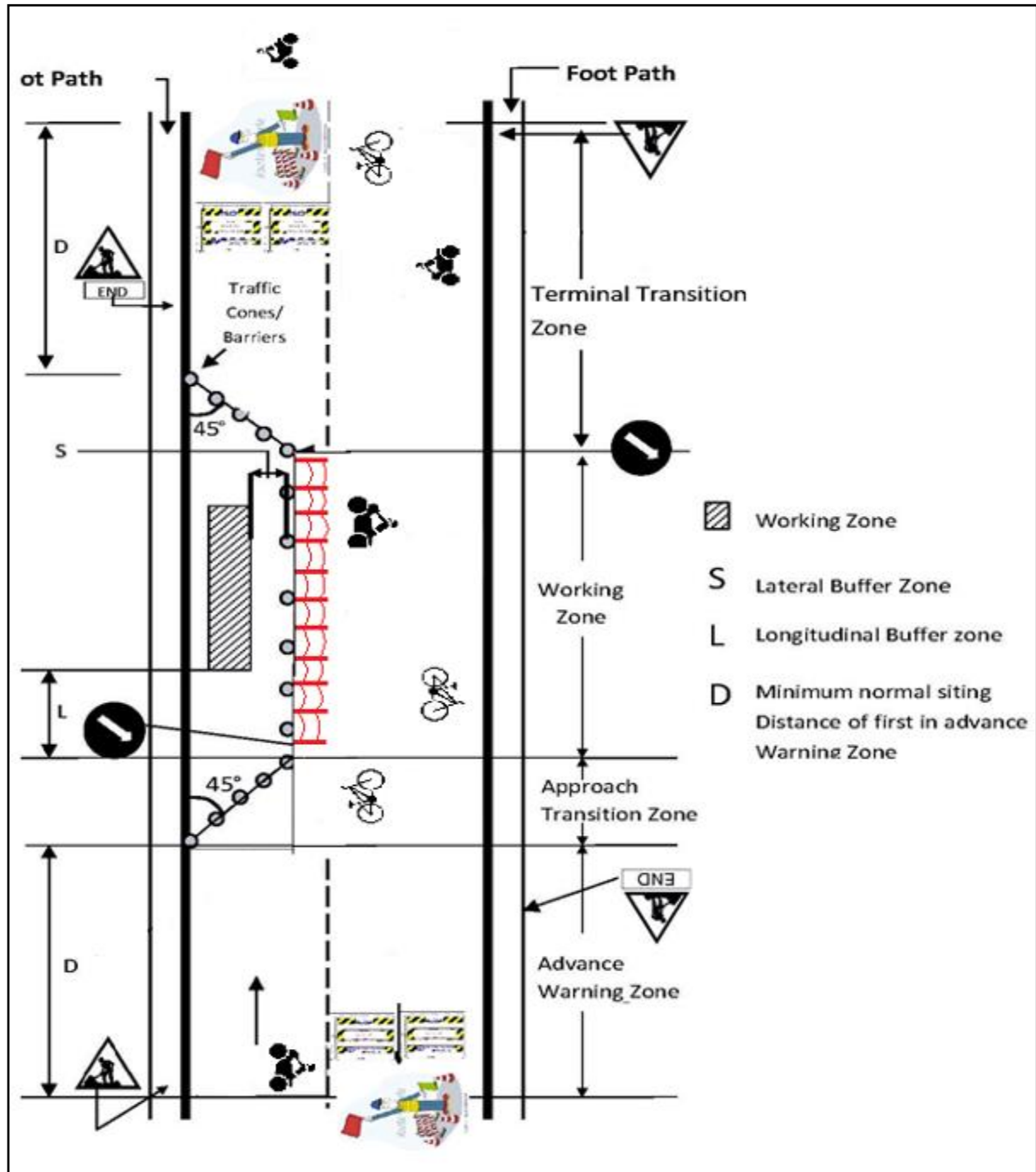
- The working area has been restricted from unauthorized entry.
- The working space has been defined.

Particular attention has been taken in working area:

- Traffic signs
- Cones
- Barriers
- Information boards, and
- Site lighting
- Adequate lighting has been provided at working area at night.
- All persons wear high visibility jackets.

Site Specific Environmental Management Plan

Traffic Management Plan for Low traffic (PMGSY-ROAD)



Site Specific Environmental Management Plan

List of Appendices (OHSR and Pipelaying Works)

Appendix 1: Labor License

Appendix 2: Workman Compensation

Appendix 3- Risk Policy

Appendix 4: Tie up Letter with local Hospital

Appendix- 5- Certificate of Fitness and PUC

Appendix 6- Contractor's EHS Policy Statement



Appendix 7: Permission letter from Gram Panchayat

Appendix 8: Procedure for on-site Grievance Redress Mechanism

Appendix 9: Procedure for information disclosure prior to start of works

Site Specific Environmental Management Plan

Appendix 1: Labour License

GOVERNMENT OF WEST BENGAL
OFFICE OF THE ASSISTANT LABOUR COMMISSIONER , KHATRA
Office Of The Assistant Labour Commissioner, Khatra Dhalai Road PO & PS- khatra Dist.- Bankura Pin-722140

FORM VI
[See Rule 25(1)]

Licence No. : **KTR16/CLL/000043** Date : **21st Aug, 2019**

Lic Fees	250
S.Deposit	10000

LICENCE

Licence is hereby granted to **Larsen & Toubro Limited** at **Ward No. 9 Holding no. 95/B/11, Uttar Aurobindo Nagar, Junbedia More, Bankura Municipality , Ward- 9, Bankura Sadar , PS - Bankura , District - Bankura, Pin Code - 722101** under Section 12(1) of the Contract Labour (Regulation and Abolition) Act, 1970 subject to the conditions specified in Annexure.

The Licence shall remain in force till: **19th Aug, 2020.**

AMIT RAY
Digitally signed by AMIT RAY
Date: 2019.08.21 15:23:34 +05'30'
Licensing Officer
Under the Contract Labour(R&A) Act, 1970
&
Assistant Labour Commissioner
Khatra, Bankura

Establishment Information:
Project Implimentation Unit, Public Heath Engineering Directorate [BAN08/CLR/000038]
W.Site - Ailakundi, PHE Complex ,
Anchurt, Block - Bankura -I , Bankura Sadar - 722102, PS - Bankura , Bankura

Work site exact location:
Taldangra Project, Vill-> Chechuriya, Near Chechuriya Eco park.
Taldangra, Block- Taldangra , Khatra
PS - Taldangra , District - Bankura, Pin Code - 722152

1 of 2

Site Specific Environmental Management Plan

ANNEXURE

The licence is subject to the following conditions:

- (1). The licence shall be non-transferable.
- (2). The number of workmen employed as contract labour in the establishment shall not on any day, exceed **100 (One Hundred)**.
- (3). Except as provided in the rules the fees paid for the grant, or as the case may be, for renewal of the licence shall be non-refundable.
- (4). The rates of wages payable to the workmen by the contractor shall not be less than the rates prescribed for the Schedule of employment under the Minimum Wages Act, 1948, where applicable, and where the rates have been fixed by agreement, settlement or award, not less than the rates fixed.
- (5). In cases where the workmen employed by the contractor perform the same or similar kind of work: as the workmen directly employed by the principal employer of the establishment, the wage rates, holidays, hours of work and other conditions of service of the workmen of the contractor shall be the same as applicable to the workmen directly employed by the principal employer of the establishment on the same or similar kind of work provided that in the case of any disagreement with regard to the type of work the same shall be decided by the Labour Commissioner, West Bengal, whose decision shall be final.
- (6). In other cases the wage rates, holidays, hours of work and conditions of service of the workmen of the contractor shall be such as may be specified in this behalf by the Labour Commissioner, West Bengal.
- (7). In every establishment where 50 or more, women having children are ordinarily employed as contract labour there shall be provided 2 rooms of reasonable dimensions for the use of their children under the age of six years. One of such rooms would be used as a play room for the children and the other as bed room for the children. For this purpose the contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the sleeping room. The standard of construction and maintenance of the creches may be such as may be specified in this behalf by the Labour Commissioner, West Bengal.
- (8). The Licensee shall notify any change in the number of workmen or the conditions of work to the Licensing Officer.

**ASHIS KUMAR
GARAI**

Digitally signed by ASHIS
KUMAR GARAI
Date: 2019.08.13 17:31:17
+05'30'

Site Specific Environmental Management Plan

Appendix 2: Workman Compensation



Certificate No: 695

Date: 02-Dec-2019

To whomsoever it may concern

This is to certify that we have issued Group Personal Accident Policy No. 4005/102843874/04/000 to M/S. Larsen & Toubro Limited valid for the period 31-03-2019 to 30-03-2020.

This Policy covers all Permanent Workers, Temporary Workers, Sub-contractor's Workers, Piece-rate workers, Trainee Workers working at Project/Office of L&T Ltd and their Subsidiary & Associate Companies, Factories & Consortiums, SPVs, JVs, L&T Infrastructure Development Projects Ltd, L&T Hydrocarbon Engineering Ltd located anywhere in India.

This Policy covers the above workers in the following project site.

LE190278 - Design and Construction of Intermediate Pumping Station, Ground Storage Reservoirs, Overhead Reservoirs, Water Distribution Network and Metering Works in Indpur Block including Secondary Transmission Mains to Indpur and Taldangra Blocks

For ICICI Lombard General Insurance Co Ltd



Rathnakar Nair K | Associate Vice President – Specialized Industries

ICICI Lombard General Insurance Company Limited

AA

Mailing Address:

401 & 402, 4th Floor, Interpace T1,
New Linking Road, Malad (West),
Mumbai - 400 084.

Registered Office:

ICICI Lombard House, 414, Vastu Saverkar Marg,
Near Siddhi Vinayak Temple, Preetbhandari,
Mumbai - 400 025.

Toll Free No. : 1800 2602

Alternate No.: 0 2236 22666 (toll free)


Email : customersupport@icicilombard.com

Website : www.icicilombard.com

Site Specific Environmental Management Plan

Appendix- 3- Risk Policy

02A



Date: 13-08-2019

Customer ID : 101770109

Customer Name : LARSEN AND TOUBRO LIMITED

Address : 11th, tower-II, Godrej Water Side Building Salt Lake city, North 24 Paraganas,
West Bengal ,700091

Dear Sir,

Subject: Interim Held Cover Letter

In consideration of having received the below premium – we hereby confirm our coverage with effect from 12-Aug-2019 00:00 Hrs strictly as per terms quoted by us on 07-Aug-2019 and subject to our standard Policy Terms and Conditions.

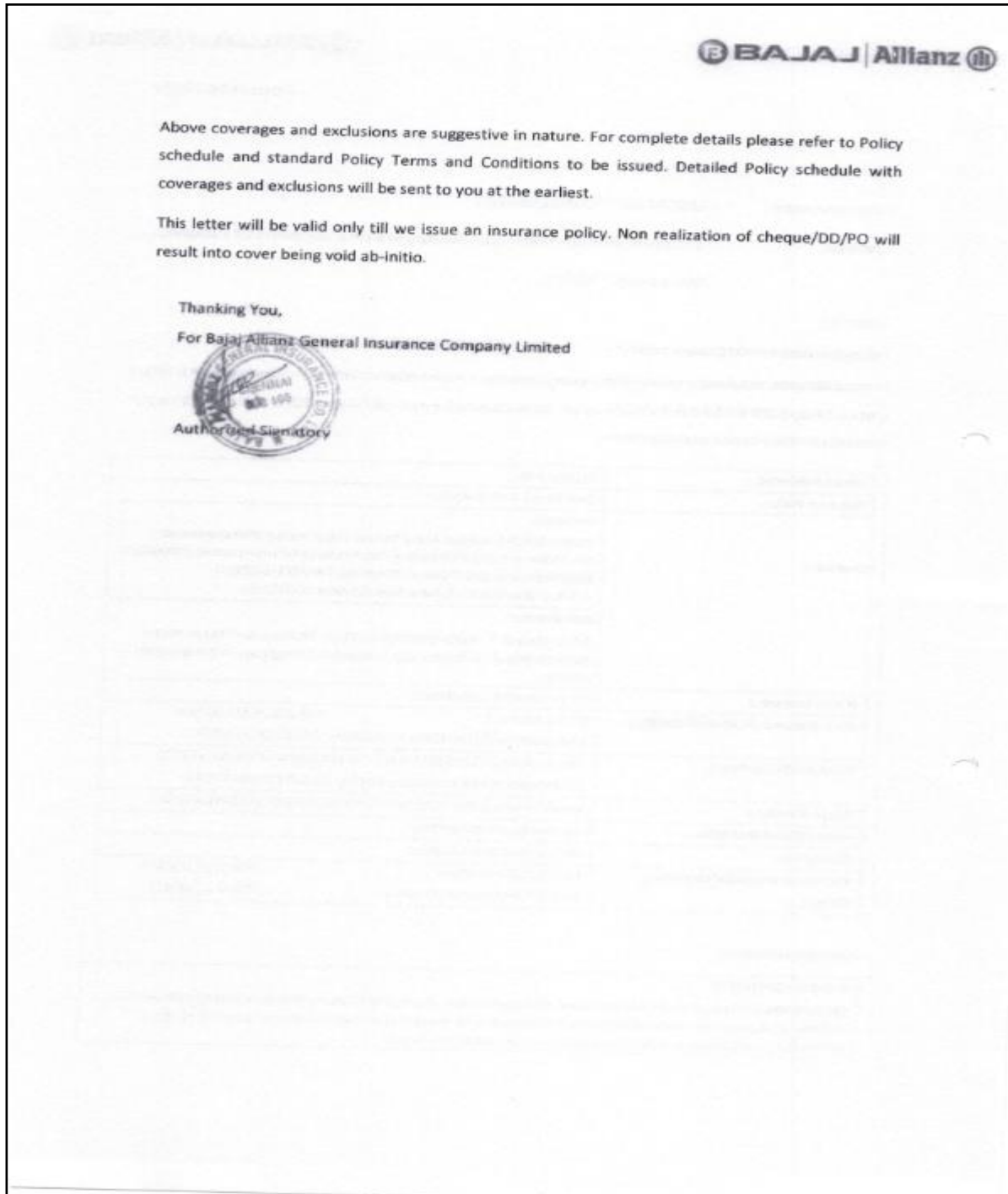
Line of Business	Engineering
Type of Policy	Erection All Risk Policy
Insured	Principal Public Health Engineering Directorate, Project Management Unit, West Bengal Drinking Water Sector Improvement Project, Utility Building, 1st Floor, (Premises No-09/1-0024) AA-1A, (Tank No.3), New Town Kolkata -700156
	Contractor M/s Larsen & Toubro Limited, 11th, Tower –II, Godrej Water Side Building, Salt Lake City, North 24 Paraganas, West Bengal-700091
Perils Covered	As per quote submitted
Sum Insured / Limit of liability	EAR Section 1 : INR 221,99,00,000 EAR Section 2 (Third Party Liability) : INR 25,00,00,000
Period of Insurance	From 12-Aug-2019 00:00 Hrs To Midnight of 26-May-2022 + 12 Extended Maintenance Period as per Proposal form
Project Period	From 27-May-2019 00:00 Hrs To Midnight of 26-May-2022
Deductible/ Retention	As per quote submitted
Exclusions	As per quote submitted
Premium Payable[Including Taxes]	EAR Total Premium : INR 31,43,378
	EAR 1 st Instalment Premium : INR 6,54,871

Additional terms:-

Job No : LE190278

Description: Design and Construction of Intermediate Pumping Station, Ground Storage Reservoirs, overhead reservoirs, water distribution network and metering works in Indupur block including secondary transmission mains to Indupur and Taldangra block


Site Specific Environmental Management Plan



Site Specific Environmental Management Plan

Appendix- 4- Tie up Letter with local Hospital

e/c



LARSEN & TOUBRO

Larsen & Toubro Limited
L&T Construction
Water & Effluent Treatment
Indpur & Taldangra Pochampas
Ward No. 9, Holding No. 253/11
Older Anandnagar Nagar,
Jawahar Estate,
PO-PS- Bankura
Dist- Bankura - 722101
West Bengal - India
www.lntec.com

Ref: PMU/WBDWSIP/PHED/82/207 & Date: 06-06-2019
PMU/WBDWSIP/PHED/83/208 DT. 08/03/2019

To,
Bankura Seva Niketan Hospital
Patpur, Jail Road
Bankura (W.B.) – 722101

Kind Attention : Mr. Sibaram Sana

Sub: MoU for Staffs & Workers Medical Health Checkup.

Sir,

With reference to the previous discussions had with you, we are pleased to sign this MoU for staff's and worker's Medical Health Checkup as per the following:

Purpose & Scope : Medical Health Checkup for Staffs and Workers whenever necessary.

Conditions & Arrangements: Medical Health Checkups needs to be performed whenever required. You are also required to attend our staffs or workers in case of any emergency. The location/ premises will be as per the convenience of both the parties.

Timings : 24 x 7

Payment Terms:
Bill is to be submitted on Monthly basis & payment is to be made within fifteen days of Bill submission.
Tax as applicable will be recovered.
Payment will be made by NEFT/ RTGS only.

Kolkata Cluster Office :- Godrej Waterside Building, 11 Th. Floor, Salt Lake, Sector-V Block-Dp-5, Kolkata-700081, West Bengal, India
Headquarters: Mount Poonamallee Road, Marapakkam, P.B. No. 979, Chennai - 600 059, INDIA
Registered Office: L&T House, N. M. Marg, Ballard Estate, Mumbai - 400 001, INDIA
Licence No.: CIN - L50502MH1946PLCOO4788

L&T Construction - Water & Effluent Treatment is a brand of Larsen & Toubro Limited

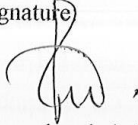
Site Specific Environmental Management Plan



Larsen & Toubro Limited
L&T Construction
Water & Effluent Treatment
Indpur & Taldangra Packages
Ward No. 9, Holding No. 95/B/11
Uttar Aurobindo Nagar,
Jambheda More,
PO+PS- Bankura
Dist- Bankura -722101
West Bengal -India
www.Lntec.com

The present MoU elucidates the general conditions and arrangements for future cooperation between the concerned parties.

Signature



For and on behalf of: Larsen & Toubro Limited

Date: 06/06/2019

Signature



For and on behalf of: Bankura Seva Niketan Hospital

Date: 06.06.19

Thanking you in anticipation.

Yours Faithfully,

For Larsen & Toubro Limited



Sanjib Bose.
Project Manager.

Bankura Packages

Site Specific Environmental Management Plan

Appendix 5- Certificate of Fitness and PUC

POLLUTION UNDER CONTROL CERTIFICATE
(Under the Motor Vehicle Pollution Rules, 2001)

Vehicle Register No: **WB-01-CA664492**

Date of Issue: **14 AUG 2019** Valid upto: **13 FEB 2020**

Pollution Level

CO (ppm)	25.4
HC (ppm)	
SO (ppm)	

PUC Certificate issued by: _____

Signature: _____

COMPUTERISED EMISSION TEST CERTIFICATE
AUTHORISED BY: GOV. OF WB
RAMA BHOWMICK
C/O-STANDARD AUTOMOBILES, GOBINDANAGAR, (BUS STAND) BARRHURA

Vehicle Registration No: **WB-01-CA664492**

Year of Registration: **2014**

Speedometer Reading (KM/Hr): **10**

Vehicle Make: **BMW**

Engine Number: **A1700**

Chassis Number: **50100**

Vehicle Class: **45**

Type of Engine: **45**

Type of Vehicle: **45**

Test Result: Free Acceleration

No. of K	Rval	Max/Min RPM	Max/Min RPM	Interval	OffTemp	TestTime
1	2.23	500	2500	2.2	69.4	2:51:02 PM
2	2.23	580	3140	4.8	65.0	2:51:15 PM
3	2.23	572	3210	4.0	60.0	2:51:20 PM
4	1.75	540	3350	4.5	60.0	2:51:23 PM
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
K_Avg	2.00					
HSU	22.4					

Certified that the vehicle's Emission and HSU values conform to the Standards prescribed under rule 113(2) of CrP Rules 1988, the certificate is valid for 6 months.

Name of Authorised Signatory with Signature: _____ Seal of Testing Center

Site Specific Environmental Management Plan

Appendix 6: Contractor's EHS Policy Statement

Corporate Environment, Health & Safety (EHS) Policy

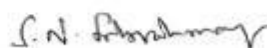
We remain committed to safeguarding the health and safety of our employees and other stakeholders and preserving the environment.

To fulfil the above commitment, we will ensure the following:

- Incorporate applicable EHS requirements across all processes, right from tendering, planning, design, recruitment and procurement, production, execution, operation and maintenance to align with their respective business objectives
- Meet or exceed all applicable legal and other compliance obligations, irrespective of the stipulations of the enforcement authorities in the country of operation
- Pay serious attention to workmen welfare, especially to their habitat, to improve morale, retention and thereby productivity
- Impart structured training and augment resources for effective EHS performance
- Prevent adverse environmental impact and occupational health and safety risks
- Conserve natural resources, minimize waste generation and environmental emissions
- Encourage communication, consultation and collaboration with all stakeholders
- Establish SMART EHS objectives to permanently reduce EHS risks by eliminating hazards or substituting with less harmful equipment, material, methods and review implementation to achieve continual improvement.

This policy to be communicated to all our stakeholders and reviewed every year to ensure that it remains relevant to our business and effective to improve performance.

Date: 1st July, 2019



S N SUBRAHMANYAN
Chief Executive Officer
& Managing Director



LARSEN & TOUBRO
It's all about Imagineering

Site Specific Environmental Management Plan

DRUG AND ALCOHOL POLICY

Purpose

Water and Effluent Treatment-IC (WET IC) has responsibility and commitment toward its employees, visitors, stakeholders and interested parties to ensure a safe and healthy workplace and a work environment free of alcohol and drug use / abuse.

Policy

This policy applies at the workplace of WET IC, to its employee, workmen, visitors, Sub-Contractors and other related parties during the working Hours.

- All employees are expected to report fit for duty for scheduled work and should be able to perform assigned duties safely and acceptably without any limitations due to the use or after-effects of alcohol, illicit drugs, non-prescription drugs or prescribed medications or any other substance.
- Alcohol or drugs can have adverse effects upon the workplace, the integrity of our work culture and the safety of employees. It will diminish the objective of an alcohol and drug free work environment. As such, the Company wants to impress upon all employees that it has zero tolerance for employees who arrive at work under the influence of alcohol or drugs, and/or whose ability to work is impaired in any way by reason of consumption of alcohol or drugs on the Company property.
- The Company strictly prohibits the use, unlawful manufacture, sale, purchase, offer to purchase or sell, transfer, distribution, consumption or possession of drugs or alcohol on company property. To this end, the Company reserves the right to conduct searches for drugs or alcohol, including but not limited to lockers, filing cabinets, desks, packages, etc. which are on Company property or in a Company facility. Any drugs or alcohol found as a result of such a search will be confiscated and the occupant or user of the object searched will be subject to disciplinary action, up to and including termination of employment.
- No workmen, Sub-Contractors, visitors and other related parties shall be allowed to enter the workplace under the influence of alcohol and drugs.

Roles & Responsibilities

It is the responsibility of an employee's superior to identify a situation in which they have concerns about the individual's immediate ability to perform their job and take appropriate steps. Where necessary, they will remove any employee, workmen, Sub-Contractor, visitor and other related parties who are suspected of violating the provisions of this policy from Company premises, pending investigation and a decision on appropriate disciplinary action.


S. Rajavel

SR. VP & Head
Water & Effluent Treatment IC & SWC BU

Date: 18th September, 2018

Site Specific Environmental Management Plan

ENVIRONMENT HEALTH & SAFETY POLICY

The **Water and Effluent Treatment IC** of L&T Construction is committed to conserve the Environment and to provide a Healthy, Safe and Cordial Workplace to Employees and Stakeholders.

EHS Philosophy

- Minimize the Environmental Aspect & Impacts
- All incidents are preventable
- "Zero Harm" across the work places and offices
- Preserve natural resources for future generations and
- No task is so important that risk of injury to people or damage to the environment is justified

The objectives of this EHS Policy shall be achieved by

- Integrating the EHS Plan and Procedures into every operations of the Independent Company.
- Achieving an incident free work places and offices through proactive capturing and correcting of maximum number of UA/UC/UB, Near Miss and First-Aid cases and subsequent reduction of Severity Rate, Frequency & Fatality Rates
- Compliance to applicable Legal and Other Requirements.
- Elimination & Reduction of OH&S Hazards and Risks.
- Encouraging the preparation of HIRA & EAISR across the sites and offices to have better proactive EHS hazard control measures and minimize the environmental aspect and impact
- Inculcating a positive EHS culture among employees through continuous training and awareness programs
- Encouraging Communication, Consultation and Coordination among Employees, Stakeholders and External Agencies
- Achieving continual improvement by integrating EHS procedures into every process and through periodic internal/external auditing of IMS Management System
- Continuous monitoring of EHS Implementation across the IC through various software modules
- Assessing and employing the Sub-Contractors complying with L&T/WET-IC IMS Standard.
- Engages, Motivates and Develops Employees to promote Sustainability Initiatives that result in Innovative Ideas, Operational efficiencies, Cost savings and a reduced Environmental footprint.
- Preserving water through Reduce, Reuse and Recycle principles.

The Top management is committed to provide Manpower, Infrastructure and Financial assistance for achieving the above EHS objectives. Employees are accountable and responsible for implementing and maintaining the EHS Management System across the WET-IC. Business Units, Tendering & Contracts, EDRC, P&M, HR, HR (W), IR & Admin, Supply Chain & Sub-Contractor Management and other Functional departments and Sites shall support and implement the above Management directives to achieve "Zero Harm" across the WET-IC as per employment conditions.



S. Rajavel

SR. VP & Head

Water & Effluent Treatment IC & SWC BU

Date: 18th September, 2018



L&T Construction
Water & Effluent Treatment IC

Site Specific Environmental Management Plan

SMOKE FREE POLICY

Purpose

Water and Effluent Treatment IC (WET IC) has a duty to provide a safe and healthy work environment for its employees, service users, customers and visitors. Exposure to second-hand smoke, also known as passive smoking, increases the risk of lung cancer, heart disease and other illnesses. Ventilation or separating smokers and non-smokers within the same airspace does not completely stop potentially dangerous exposure.

Policy

It is the policy of WET IC that all our workplaces are to be smoke-free and all employees have a right to work in a smoke-free environment.

Smoking or use of tobacco products (including but not limited to pipes, cigars and snuff or chewing tobacco) is prohibited throughout the entire workplace with no exceptions. This includes company vehicles. Employees may smoke outside the office or at designated smoking areas.

This policy applies to all employees, consultants, Sub-Contractors, customers or members and visitors.

Implementation

- Senior and Middle Management are responsible for the implementation of the policy.
- Staff members are obliged to adhere to and facilitate the implementation of the policy.
- Appropriate 'No smoking' signs will be clearly displayed at the entrances to and within the premises.

Non-compliance

Local disciplinary procedures shall be followed if a member of staff consultants, Sub-Contractors, customers or members and visitors does not comply with this policy.


S. Rajavel


SR, VP & Head

Water & Effluent Treatment IC & SWC BU

Date: 18th September, 2018

Site Specific Environmental Management Plan

Appendix 7- Permission Letter from Gram Panchyat



GOVERNMENT OF WEST BENGAL
OFFICE OF THE EXECUTIVE ENGINEER
PROJECT IMPLEMENTATION UNIT, BANKURA, WBDWSIP, P.H.E.DTE.
AAILAKUNDI: DISTRICT-BANKURA
PIN - 722102, email : ee.piubankura.adb@wbphed.gov.in

Memo No: 452 (3) / EE / PIU Bankura Dated Bankura : 07.02.2020

✓ 1) To,
The Project Manager,
BKP- 02A
Larsen & Toubra Construction,
Water & Effluent Treatment,
Bankura.

2) To
The Project Manager,
BKP- 03
Larsen & Toubra Construction,
Water & Effluent Treatment,
Bankura.

3) To,
The Project Manager,
BKP- 04
Larsen & Toubra Construction,
Water & Effluent Treatment,
Bankura.

Sub:- Permission for laying of pipe line along the different roads under WBSRDA, Bankura Division for piped water supply scheme to Bankura District (Phase – II) under WBDWSIP.

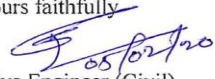
Dear Sir,

Enclose please find herewith a copy of permission for laying of pipe line in the block of Indpur, Mejia, and Gangajalghati from the Executive Engineer, WBSRDA, Bankura Division.

You are requested to follow the point regarding restoration of the road after laying of pipes as mentioned in the permission letter attached herewith.

This is for your information and taking necessary action please.

Encl:- Memo No : 46 / WBSRDA-03 / BMGSY / EE / 20,;
dated : 15.01.2020 of The Executive Engineer,
WBSRDA, Bankura Division.

Yours faithfully

Executive Engineer (Civil),
PIU, Bankura, WBDWSIP, PHE Dte.

Memo No: 452 (3) / / EE / PIU Bankura Dated Bankura : 07.02.2020

Copy forwarded for information and necessary action:-

- 1) The Superintending Engineer, PIU, Bankura, WBDWSIP, PHE Dte.
- 2) The Assistant Engineer – I / (HQ) , PIU, Bankura, WBDWSIP, PHE Dte.
- 3) The Team Leader, DSISC, PIU Bankura, WBDWSIP.

Executive Engineer (Civil),
PIU, Bankura, WBDWSIP, PHE Dte.

Site Specific Environmental Management Plan

West Bengal State Rural Development Agency Bankura Division

Bankura Zilla Parishad Bhavan (2nd Floor), Court Compound, Bankura - 722101,
Tele-fax: (03242) 258471, e-mail: wb-ban@pmgsy.nic.in

Dated: 15/01/2020

No. 46/WBSRDA-03/BMGSY/EE/20

To
The Executive Engineer
Project Implementation Unit, Bankura.
WBDWSIP, P.H.E Deptt.
Bankura.

Sub:- Permission for laying of road clear water provision main & distribution pipe line along different roads.

Ref : 35/EE/PIU-Bankura Dt.10/12/2019

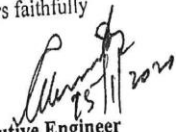
Dear Sir,

In reference to the above subject & memo this is for your kind information that higher authority has given consent regarding laying of the water pipe line in the block of Indpur, Mejia & Gangalghati subject to the condition that the line should be laid along the toe line of the road embankment and restoration of the same with proper slope & compaction as per PMGSY norms. Other restoration works as required should be done. Also the points mentioned in your letter should strictly be followed.

Before and after laying of pipe line a joint inspection should be conducted for each and every road.

Thanking you.

Yours faithfully


Executive Engineer
WBSRDA, Bankura Division.

Dated: 15/01/2020

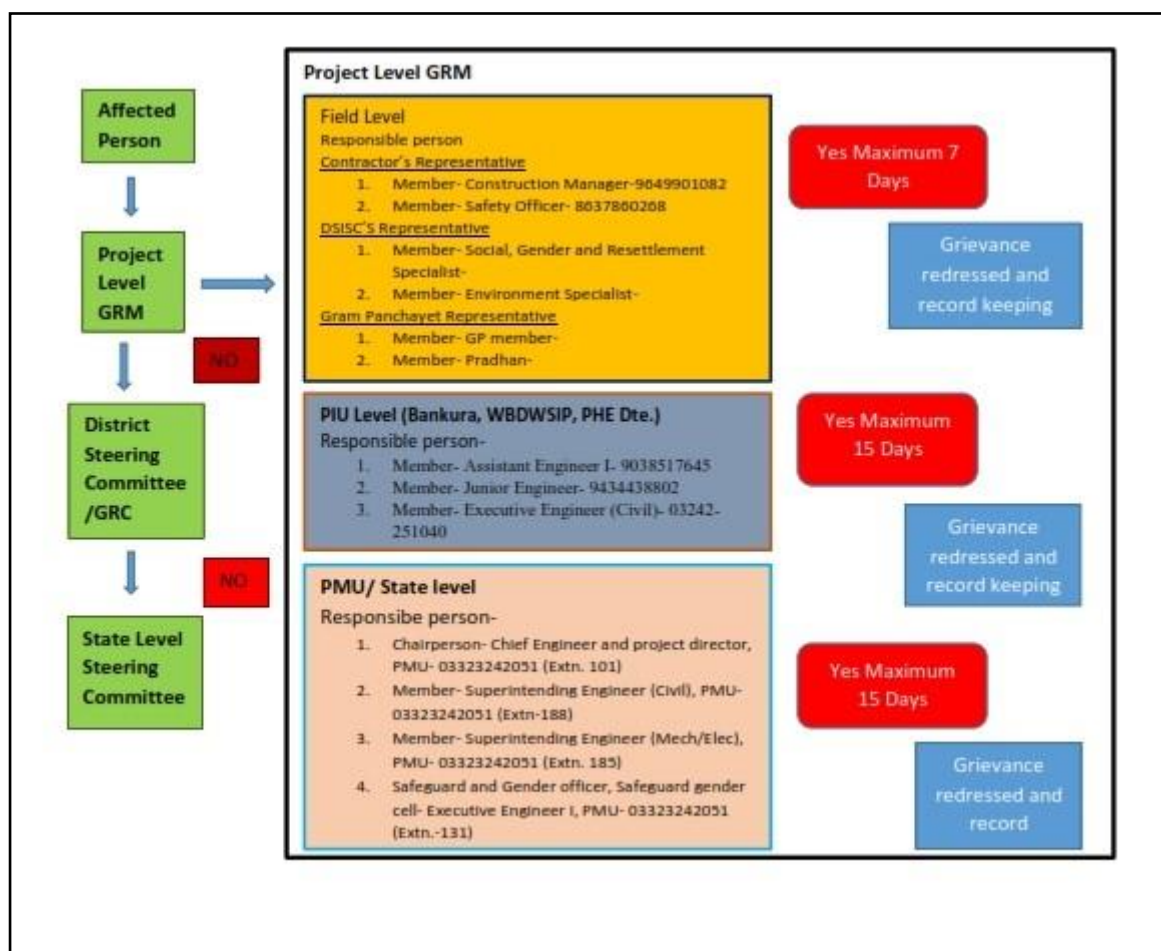
- No. 46(4)/WBSRDA-03/BGSY/EE/20
- Copy forwarded for information and necessary action to :-**
- The Superintending Engineer, WBSRDA, Joint Administrative Building, Plot No. 7, Block - Hc, Sector - Iii, Bidhannagar, Kolkata -106.
 - C.A. to The Savadhipati, with the request to place the same before Savadhipati, Bankura Zilla Parishad.
 - C.A. to The Additional Executive Officer, with the request to place the same before Additional Executive Officer, Bankura Zilla Parishad.
 - Office Guard File.
 - A.E., WBSRDA; Bankura Div.


Executive Engineer
WBSRDA, Bankura Division

Site Specific Environmental Management Plan

Appendix 8: Procedure for on-site Grievance Redress Mechanism

A common Grievance Redressal Mechanism (GRM) is in place to redress social, environmental or any other project and/or subproject related grievances. The GRM presented below has been developed in consultation with stakeholders. Public awareness campaign has been conducted to ensure that awareness on the project and its grievance redress procedures is generated. The campaign has ensured that the poor, vulnerable and others are made aware of grievance redress procedures and entitlements per project entitlement matrix, and PMU and PIU will ensure that their grievances are addressed in time.



All grievances are recorded in site grievance register and resolved at the earliest. The sample grievance registration form is given below.

Site Specific Environmental Management Plan

Sample Grievance Registration Form

(Available in Bengali and English)

The _____ Project 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 into 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.

Date	Place of registration	Project Town		
		Project:		
Contact information/personal details				
Name		Gender	* Male * Female	Age
Home address				
Place				
Phone no.				
E-mail				
Complaint/suggestion/comment/question Please provide the details (who, what, where, and how) of your grievance below:				
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

Registered by: (Name of official registering grievance)	
Mode of communication: Note/letter E-mail Verbal/telephonic	
Reviewed by: (Names/positions of officials reviewing grievance)	
Action taken:	
Whether action taken disclosed:	Yes No
Means of disclosure:	



Site Specific Environmental Management Plan

অভিযোগ নিবন্ধন ফর্মের নমুনা

..... প্রকল্পকে বাস্তবায়িত করার লক্ষ্যে অভিযোগ, পরামর্শ, অনুসন্ধান এবং মন্তব্যের জন্য স্বাগত।

আমরা অভিযোগকারীকে অভিযোগ সহ নাম জানাতে উৎসাহিত করি এবং আপনার সাহচর্যে এসে এর শোধন ও প্রতিক্রিয়া জানাতে সক্ষম হই।

অবশ্যই আপনি আপনার ব্যক্তিগত বিষয় বিস্তারিত ভাবে যুক্ত করতে ইচ্ছাপ্রকাশ করবেন। যে তথ্য আপনি দেবেন, তা অবশ্যই গোপন থাকবে। তাই অনুগ্রহ করে আপনার নাম লিখে / টাইপ করে জানান।

তারিখ	নিবন্ধনের জায়গা	প্রকল্পের শহর প্রকল্পঃ			
যোগাযোগের তথ্য / বিস্তারিত ব্যক্তিগত তথ্য					
নাম		লিঙ্গ	পুরুষ মহিলা	বয়স	
বাড়ীর ঠিকানা					
জায়গা / স্থান					
ফোন নং					
ই-মেল					
যেকোন অভিযোগ / পরামর্শ / মন্তব্য / প্রশ্ন অনুগ্রহ করে নিচে বিস্তারিতভাবে (কে, কি, কোথায় এবং কেমন করে) আপনার অভিযোগ জানান					
যদি কোন সংযুক্তি / চিরকুট / চিঠি অন্তর্ভুক্ত করতে চান, অনুগ্রহ করে সেখানে টিক দিন।					
আপনার অভিযোগ / মন্তব্যের হালনাগাদ (আপডেট) বা প্রতিক্রিয়া কিভাবে পেতে চান?					

Office ব্যবহারের জন্যঃ

অভিযোগ নিবন্ধনকারী আধিকারিকের নামঃ	
যোগাযোগ ব্যবস্থাঃ	
চিরকুট / চিঠি-	
ই-মেল-	
মৌখিক / টেলিফোন-	
নিবন্ধকৃত অভিযোগ পর্যালোচনাকারী আধিকারিকের নাম ও পদঃ	
অভিযোগের বিরুদ্ধে গৃহীত ব্যবস্থা-	
গৃহীত ব্যবস্থা প্রকাশ্যে আনা হয়েছে কি না	হ্যাঁ না
প্রকাশের উপায়	



Site Specific Environmental Management Plan

Appendix 9: Procedure for information disclosure prior to start of works

- Local population is informed through community leaders as well as by visiting individual households of the locality.
- Information board is placed at construction site
- Stakeholder consultation carried out at Gram Panchayat level and work details including time period is informed.