Environmental Monitoring Report

Project Number: 43253-027
Semestral Report (January - June 2020)
March 2021

INDIA: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)

Appendices (PART D)

Prepared by Karnataka Urban Infrastructure Development and Finance Corporation, Government of Karnataka for the Asian Development Bank.

3	Registers maintained at site		Contracting Agency has been recommended to maintain all necessary registers asked by time to time.	Complied

4	Steel bars/ iron rods openly laying on roads without any hard barricading or caution sign, which can cause harm		Immediately shift the steel bars from the present location and keep near the Store Room, where space is available. Put proper caution signboards near the storage area. Steel Reinforcement Work should be carried out in safe working location	Partially complied

5	Housekeeping near store room not maintained		The housekeeping near store room should be done properly	Partially complied

7	Proper Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site Hallekote			Proper Hard Barricading is to be done completely along with sign boards from behind the labour room to washing area up to last point of working area at backside in order to prevent fall of any of the persons. Proper bathrooms and washing platform need to be provided.	Not complied

8	Toilet is not properly maintained atOHT Halekote,Kundapura		Toilet facilities at works camp at Halekote must be maintained properly along with provision of Water and electricity connection. The cleanliness should be maintained.	Not complied

9	Found damaged cable cover used for the trial run checking of rotating mechanism of Clariflocculator.			It should be replaced with another cable of required specifications and with no damage	Not complied

ANNEXURE -3

STATUS OF SITE OBSERVATIONS VISITED ON FEB 27th 2020

S.No	Observation		Recommendation	Status
a	Material storage at kodi OHT, Kundapura		Material at kodi OHT site were properly stored and bunded Instructed contractor agency to dispose all loose earth stored to dumping yard	Partially complied

b	First Aid Box at Kodi OHT Site , Kundapura				To have proper first hand treatment at site if any injury occurs to any personnel, First Aid Box as per standards is to be provided at site immediately.	Partially complied

C	Housekeeping at Kodi OHT Site , Kundapura	 	Instructed contractor agency to remove all material covers, cardboard boxesstored at Kodi OHT Store yard and also steel rods to keep in proper placesand to maintain proper housekeeping near store and site	Partially complied

d	One side of the ClariflocculatorJapti WTP Site, Kundapurais open and it may endanger the life or may cause injuries to any person, animal by risking to fall inside Clariflocculator.	 	One side Opening is required with proper channel/Gate/tubular rods.	Partially complied

e	Electrical Switch Board Panel is without proper Enclosure at WTP Jabti, Kundapura		Electrical Switch Board Panel should be covered with proper box cover which prevents rain water from entering inside the panel box.	Not complied

f	Barricading is not done at valley side and proper platform/place has not been provided for washing or bathing at OHT Site,Halekote		Hard Barricading is to be done at river side near Water Tank in order to prevent fall of any person. Proper bathroom and washing platform need to be provided.	Not complied
g	OHT Halkote work site		Hard barricading by sheetmust be provided so that	Not complied

			residential staying nearby and animals should not enter into the OHT site during work	

h	Toilet is not properly maintained at OHT Halekote, Kundapura		Toilet facilities at works camp at Halekote must be maintained properly	Not complied

EHS IMPLEMENTATION ON SITE DURING JUNE 2020 MONTH

1) Conducted medical health checkup for labors.

2) Conducted job specific training to labors.

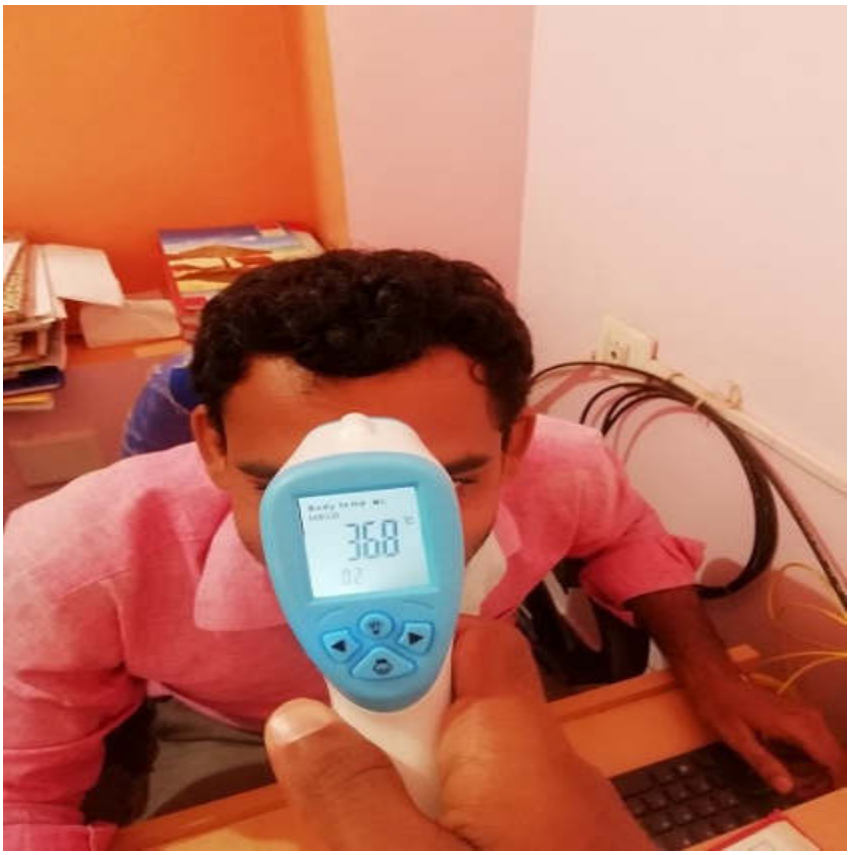
3) Kept new First aid box in all sites.

4) Hard barricading for excavated area for constructing valve chambers.

BODY TEMPERATURE CHECKING OF LABOURS DURING JUNE 2020 MONTH

BODY TEMPERATURE CHECKING OF STAFF


36.7



Labor attendance for the month of June 2020

	Raaja saab	Noor. sab	25	M	
	Baaba	Umar. Ali	25	M	
	Shamshuddin	Manzoor Khan	20	M	
	Saleem	Khadar baba	22	M	Saleem
	Mastar saab	Peer saab	50	M	
	Ummar Khan	Baidam Khan	48	M	
	Akash	Krishna.	44	M	
17/06/2020	Chandra	Naga	35	M	
	Raju shetty	Krishnappa shetty	45	M	
	Rajesh	Ganapayya	30	M	
	Sathish	Nagu	30	M	
18/06/2020	Chandra	Naga	35	M	
	Raju shetty	Krishnappa shetty	45	M	
	Rajesh	Ganapayya	30	M	
	Sathish	Nagu	30	M	
19/06/2020	Chandra	Naga	35	M	
	Raju shetty	Krishnappa shetty	45	M	
	Rajesh	Ganapayya	30	M	
	Sathish	Nagu	30	M	
20/06/2020	Chandra	Naga	35	M	
	Raju shetty	Krishnappa shetty	45	M	
	Rajesh	Ganapayya	30	M	
	Sathish	Nagu	30	M	
21/06/2020	Sunday				
22/06/2020	No work.				

S.NO	NAME	LABOUR NAME	FATHER NAME	AGE	SEX	LABOUR SIGN.
	15/06/2020	Aravind	Krishnappa	20	M	
		Dayanand	Sheena	22	M	
		Ajay	Sanjeev	23	M	
	16/06/2020	Aravind	Krishnappa	20	M	
		Dayanand	Sheena	22	M	
		Ajay	Sanjeev	23	M	
	17/06/2020	Aravind	Krishnappa	20	M	
		Dayanand	Sheena	22	M	
		Ajay	Sanjeev	23	M	
	18/06/2020	Aravind	Krishnappa	20	M	
		Dayanand	Sheena	22	M	
		Ajay	Sanjeev	23	M	
	19/06/2020	Aravind	Krishnappa	20	M	
		Dayanand	Sheena	22	M	
		Ajay	Sanjeev	23	M	

Monthly Environmental Monitoring Report

Project Number: 43253-027
June 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City

Package No. 02MNG02

Prepared by

egis India
Consulting engineers pvt. ltd.

CONTENTS

List of Tables

List of Figures

List of Annexures

INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur, and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded;(ii) water resource planning, monitoring and service delivery improved; and (iii) project management capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an assessment sewerage projects within the project area, i.e., Mangalore.

2. Existing Sewerage System in Mangalore

The first sewerage system in Mangalore wasbuilt in 1961 and was designed for an ultimate flow of 27.04 million liters per day (MLD) estimated for a design population of 200,000 of the year 1991. This scheme was implemented by Public Health Department. The total area covered by the sewerage network is about 25km^2 with two sewerage disrticts and seven zones. Total length of sewerage network constructed was about 250 km with pipe diameter varying from 150mm to 600mm with 7,000 manholes

and eight wet wells-cum-pump houses. In 1974, Karnataka Urban Water Supply and Sewerage Board (KUWSDB) extended the sewerage networks within the existing 25 km^{2}area by another 245 km with 8,000 units of manholes.

The second scheme was established in 2003 under the ADB funded Karnataka Urban Development and Coastal Environmental Management Project (KUDCEMP) and commissioned in 2007-2008 and the sewerage system was upgraded for an ultimate flow of 88.75MLD for a design population of 624,432.

Sewerage network extended to adjoining areas of old city and to other areas in Mangalore City Corporation (MCC) boundary covering 50.60 km^2.Overall 60% of Mangalore, 75.60km^2, is covered with sewerage systems.

Mangalore city is divided into two parts as Surathkal and Mangalore, further subdivided into seven sewerage districts. Each district has one STP. The total length of sewerage network is about 360 km including 14,875 Manholes with pipe diameter varying from 150 mm to 900 mm,and22 wetwells.

North District consists of 10 zones (complete Surathkal area) covers about 25 km^2. West district consists of 6 zones (city center of Mangalore) covers 30.82 km^2.South district consists of 3 zones (Jeppinamogaru, Bajal, Padil) covers 19.66 km^2. East district consists of1 zone (Pachanady, Bondel and Shakatinagara)covers 18.78km^2.

Table 1: Salient Features of Existing Sewerage System in Mangalore

Location	$12^0$87'N Latitude $74^0$88'E Longitude
Area	132.45 km^2
Population 2011	488,487
Number of households	115,036
Road length	1,134 km
Projected population for the year 2016	554,183
Projected population for the year 2031	756,903
Projected population for the year 2046	1,033,778
Existing Underground Drainage (1961 Scheme) by Public Health Department	
Underground drainage Network Total Number of Manholes Total Number of Wet Wells Total area covered Designed Population	250 km (diameter varying from 150 mm to 750 mm) Sewers of stoneware pipes 8000 8 25 km^2 2,00,000 for the year 1991
Extension of Underground drainage system (1974) by KUWSDB and MCC	
Underground drainage Network Total Number of Manholes	245 km 8000
Underground drainage system (2005) under KUDCEMP by KUIDFC	
No. of Sewerage Catchments Underground drainage Network Total Number of Manholes Total Number of Wet Wells Total Area Covered Designed Population	24 360 km - diameter varying from 150 mm to 900 mm 14,815 22 70% 624,432
Capacity and Technology of STP • STP at Kavoor • STP at Pachanady • STP at Bajal • STP at Surathkal	 43.5 MLD UASB 8.75 MLD ASP 20 MLDASP 16 MLD ASP
Total Number of House ServiceConnections	45,000

ASP = activated sludge process, km = kilometer, KUDCEMP = Karnataka Urban Development and Coastal Environment Management Project, KUIDFC = Karnataka Urban Infrastructure Development and Finance Corporation, KUWSDB=Karnataka Urban Water Supply and Drainage Board, MCC = Mangalore City Corporation, mm = millimeter, MLD = million liters per day,STP = sewage treatment plant, km^2 = square kilometer, UASB = up-flow anaerobic sludge blanket.

3. The proposed subproject:

Under this subproject, it is proposed to replace existing sewage pumping mains, which are damaged, undersized and/or chocked up in sewerage zones 3, 4, 6 and 7.

The subproject include providing following sewage mains:

(i) 7.65 kilometer (km) length 1,100 millimeter (mm) diameter sewer pumping main from Kudroli wet well no.-3 to Kavoor sewage treatment plant (STP);
(ii) 0.95 km length 900 mm diameter main from Kandathpalli wet well no.-4 to Kudroli wet well no.3;
(iii) 1.7 km length 450 mm diameter main from Mulihitilu wet well no.-6 to Ridge Manhole near Morgans gate; and
(iv) 1.1 km length 450 mm diameter main from JeppuBappal wet well no.7 to ridge manhole near Yekkur, inside old sewage treatment plant (STP).

includes of replacement of sewerage pumping mains fromwet wells to the STP.Table 2showsthenatureandsizeofthevariouscomponentsofthesubproject, based on the detailed engineering design of the subproject.Figure1shows the location of four proposed pumping main sections in Mangalore City.

Figure 1Key Plan Showing Pumping Main Alignments

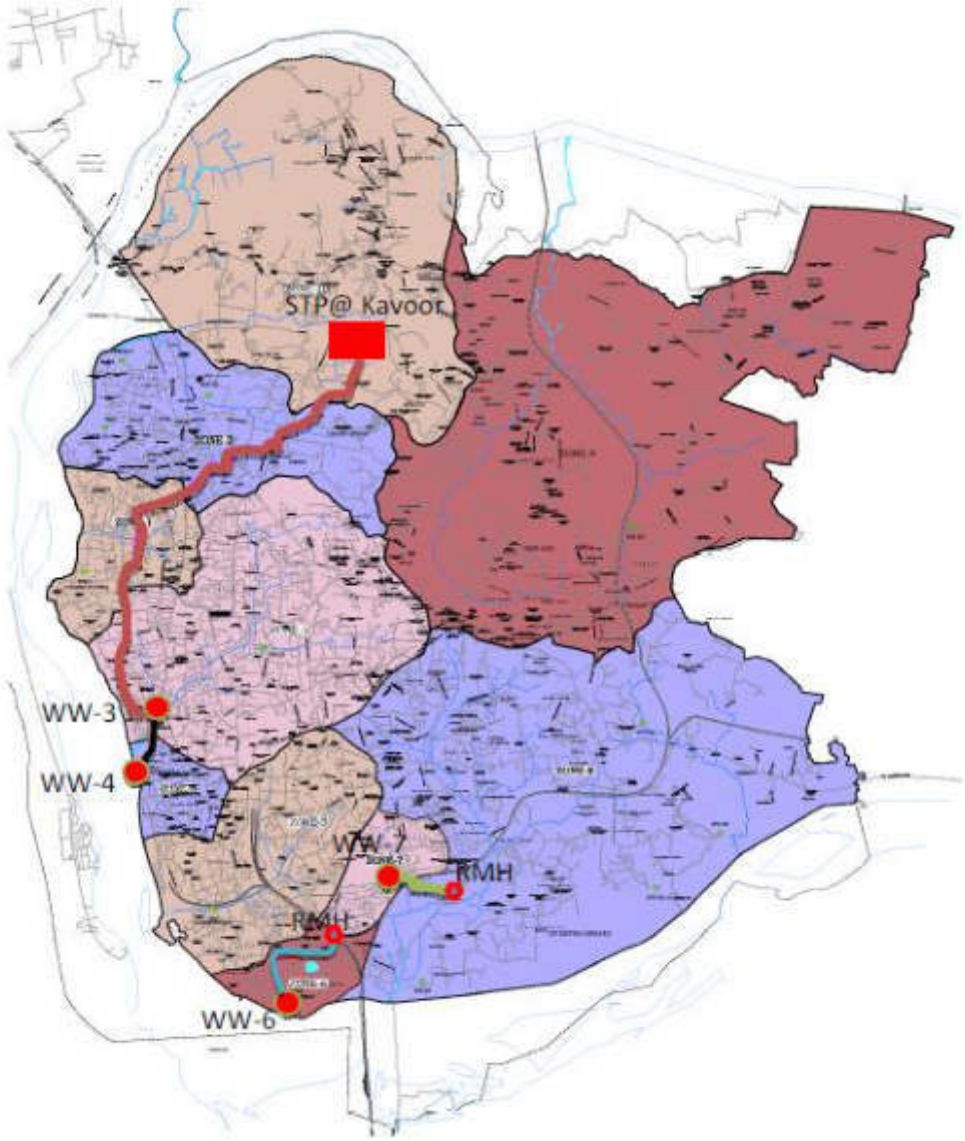


Table 2: Proposed Subprojectand Components

Infrastructure	Function	Description	Location
Pumping Mains	Convey the collected sewage from wet well to the STP	Replacement of old pumping main of total length 11.4 km withnew mains of ductile iron pipes at following section: (i) From Kudroliwet well 3 to Kavoor STP: 7.65 km length and 1,100 mm) diameter (ii) From Kandathpalli wet well 4 to Kudroli wet well 3: 0.95km length and900 mm diameter (iii) From Mulihitlu wet well 6 to Ridge manhole near Morgans gate:1.7km length and 450 mm diameter (iv) From JeppuBappal wet well 7 to Ridge manhole near Yekkur, inside old STP:1.1km length and 450 mm diameter	New pumping mains will be laid along the public roads – in the vacant earthen shoulder where it is available, or in the tarmac portion, where there is no vacant land. New pipeline will be mostly laid adjacent to the existing ones which are currently in operation: Road width varies from 3.5 m to 8 m. List of roads and alignment details of each pipeline section is provided in Table 11.

km = kilometer, mm = millimeter, STP = sewage treatment plant.

4. Environmental Management Plan

An environmental management plan (EMP) is included as part of this IEE, which includes: (i)mitigation measures for environmental impacts during implementation; (ii)an environmental monitoring program, and the responsible entities for mitigating, monitoring, and reporting; (iii)public consultation and information disclosure; and (iv)a grievance redress mechanism. A number of impacts and their significance have already been reduced by amending the designs.

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Replacement of Old Sewerage Pumping Mains for Mangalore City	**Name of the Contractor:** DRS Infra Tech Pvt, Ltd.,
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Mangalore	**Name of SE/EE/AE Of concerned division PIU :-** AE **-** Mr. Shiv Kumar
Date of monitoring: 24/06/2020	**Name of Environment, Health And Safety (EHS) Engineer :-** Mr. Madukar

Status of implementation of Environmental Management Plan for Anticipated Impacts –Construction– Mangalore

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Construction Impacts	• Impacts due to excess excavated earth, excess construction materials, solid waste etc.; and • Occupational hazards which can occur to workers and public during work.	Prepare and submit a Method Statement for pumping main pipeline works in a table format with appended site layout map and cover the following: 1. Work description; No. of workers (skilled and unskilled); Details of Plant, equipment and machinery, vehicles; 2. Work duration (total, and activity-wise, for example for pipe laying, from excavation to road resurfacing/testing); 3. Personal Protection Equipment (PPE) (helmet, gloves, boots, etc.) details for each type of work; 4. Details of materials at each site (type and quantity);	Construction Contractor	• Site inspection and record verification; - Done. • Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work - Done • Site specific Occupational Health and Safety (OHS)plan; • Spoil and waste management plan; and • Complaints from sensitive receptors and public.	Good construction practice to be followed by contractor – no additional costs	1. Maintaining daily work records **Attached in Jan 2020 annexure 5 a & b** 2. Complied. **Attached in Sep 2019 annexure 3** 3. Complied and PPEs are provided to workers on site. **Attached in annexure Sep 2019 1.v** 4. Contractor maintained registers for

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		5. Risks/hazards associated with the work (for example, Trench excavation will have risks such as trench collapse, persons/vehicles falling into trench, structural risk to nearby buildings, damage to buildings, infrastructure etc.); 6. Construction waste/debris generated (details and quantity); 7. Detail the sequence of work process (step-by- step) including specific details of each work; 8. Contractor's supervision and management arrangements for the work; Emergency: Designate (i) Responsible person on site, and (ii) first aider; and (iii)Typical site layout plan including pipe trenching, placement of material, excavated earth, barricading, etc. 9. The pumping main lines are to be laid along the roads, Roads are provided with side drains to carry rain water. The excavated soil, placed along the trench may get disturbed due to wind, rain water and the movement of				pumping main sites and recommended to maintain for each site 5. Building and infrastructure were not found near excavation area. And instructed contracting agency to put hard barricades. 6. Contractor maintained register for damaged infrastructure. Attached as **Annexure-11** in **May - 2019 report.** Recommended contracting agency to Updated work record monthly 7. Not complied. Work plan has to be prepared. 8. Not Complied. First aider not

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		workers, vehicles and pedestrians, and spill onto road way – disturbing road users, creating dust, road safety issues, etc., and also into nearby open drains. **The following should be included in the site layout plan**: a) Provide barricading/security personnel at the site to prevent entry/trespassing of pedestrian/vehicles into the work zone; b) Location of temporary stockpiles and provision of bunds; c) Separation of stockpiles areas with workers/vehicle movement paths to avoid disturbing the stockpiled soil; d) Wetting of soil to arrest dust generation by sprinkling water; and e) Waste/surplus soil utilization and disposal plan – indicate expected duration of temporary stockpiling along the trench at each site and identify final surplus soil utilization/disposal site in consultation with program implementation unit (PIU).				provided. 9. Typical site layout plan not prepared a) Barricading and security personals are provided on working site. b) Contractor is dumping surplus soil in the Pachanady Solid waste management with permission of PIU. c) Contractor is dumping surplus soil in the Pachanady Solid waste management. d) Complied. e) Site layout plan Not prepared as per given mitigation Measures.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Utilities	Disturbance/ damage to existing utilities on the sites (Telephone lines, electric poles and wires, water lines within proposed project sites)	10. At least two-weeks prior to start of work at any section, Identify utilities that will be required to be temporarily disturbed / shifted for the construction work; 11. Liaise with the respective utility department, provide prior information to the affected public and restore the utilities as soon as the work is complete 12. Provide contingency services where required (temporary diversion of drains, provision of water supply by tankers, etc.,)	Construction Contractor and PIU	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken Record to confirm that contingency services are provided and all damaged utilities are restored after the work	Part of project cost	10 Complied- Recommended Contractor to maintain list of utilities identified prior to start of work at any section. 11 Proper record of restoration of the utilities and letter of communication with Different departments and Public is available and Copy should be maintained by Contractor. **Attached as Annexures-2, 3, 4 & 5 in May - 2019 report** 12 Work is in progress and Recommended contractors to provide diversion of drains and provision of water tanker

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		13. Coordinate with the respective department and ensure that electricity and telephone services are restored quickly 14. Reconstruct the damaged compound walls, culverts and drains immediately after the completion of pipeline work in that particular section				whenever and wherever required on site. 13 Work in progress and instructed contractors to restore such damages in same condition as before. 14 Work in progress and and instructed contractors to restore such damages in same condition as before. And List of identified damaged compound walls, culverts and drains for reconstruction have to be maintained. Record of before and after Condition also to be maintained at site by contractor.
Construction work camps, stockpile areas, storage areas, and	Disruption to traffic flow and sensitive areas and receptors	15. Prioritize areas within or nearest possible vacant space in the subproject location; 16. Avoid locating construction work camps close (100 m away) to	Construction Contractor	List of selected sites for construction work camp, storage area and disposal area.	Good construction practice to be followed by contractor –no	15 Compiled 16 Compiled – Advised contractor to

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
disposal areas		residential areas; 17. Do not consider residential areas; for stockpiling the waste/surplus soil; and 18. Material stockpiles shall be protected by bunds during the monsoon to arrest the silt laden runoff into drains.		Complaints from sensitive receptors	additional costs	mark dumping yard location on google map which is complied. **Attached in Sep 2019annexure 4** 17 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant. Location is marked on Google map. **Attached in Sep 2019 annexure 4** 18 Instructed contracting agency, if any stockpiles have been stored temporarily in working site must be provided by bunds or dumped in the stock yard. **Attached in Jan**

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
						2020 in annexure 4
Source of construction 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	19. Contractor should obtain material from existing mines approved/licensed by Mines and Geology Department/ Revenue Department only; 20. Verify suitability of all material sources and obtain approval of implementing agency; 21. No new quarry sites shall be developed for the subproject purpose; and 22. Submit a monthly statement of construction material procured indicating material type, source and quantity.	Construction Contractor	Check Sources and approval	Good construction practice to be followed by contractor –no additional costs	19 Contractor obtained material from authorised agency but no supporting documents maintained by Contractor. 20 Contractor has been recommended to maintain the Proper Documentation. 21 Complied - No new quarry sites developed by contractor for this project 22 Complied
Air quality	Dust and emissions from construction activity may de-grade the air quality	23. Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; 24. Damp down exposed soil and any stockpiled on site by	Construction Contractor	Site observations Informal Ambient air quality monitoring (4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months, parameters -	Good construction practice to be followed by contractor Contractor's cost – air quality monitoring (4	23 Complied- Recommended contractor to maintain the copy of Document. 24 No such exposed

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		spraying with water when necessary during dry weather; 25. Bring materials (aggregates, sand, etc. gravel) as and when required; 26. Use tarpaulins to cover sand and other loose material when transported by vehicles; 27. Stockpile sand and other loose material only in barricaded area and protect/cover by tarpaulins to avoid dust generation 28. Clean wheels and undercarriage of vehicles prior to leaving construction site; 29. Fit all heavy equipment and machinery with air pollution control devices which are operating correctly; ensure valid Pollution Under Control (PUC) Certificates for all vehicles and equipment used in the construction activity; and		SPM, RSPM, SOx, NOx)	locations x 9 samples in construction x 5000 = INR 1,80,000)	soil and stockpiled were found but instructed contracting agency must spray water wherever necessary. 25 Complied 26 Instructed contractors to cover sand, gravel and aggregates with tarpaulins to avoid flow during rainy season 27 Complied. Stockpile, sand and other loose material are kept in barricaded areas. 28 Complied 29 Not Complied. Recommended to Contractor to maintain Pollution under Control (PUC)

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		30. Carry out air quality monitoring.				Certificates for all vehicles and equipments used in the construction. 30 Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter.
Noise Level	High noisy construction activities may have adverse impacts on sensitive receptors and structures	31. Plan activities in consultation with the PIU so that activities with the greatest potential to generate noise (road cutting activity) are conducted during periods of the day which will result in least disturbance; 32. Construction work shall be limited to day light hours (6 AM to 6 PM) for all the works located within the town; Provide prior information to the local public about the work schedule; 33. Ensure that there are no old and sensitive buildings that may come under risk due to the use of pneumatic drills; if there is risk, cut the rocks manually by chiselling;	Construction Contractor	Complaints from sensitive receptors Site observations Ambient noise monitoring (day and night time / 24 hours monitoring at 4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months)	Good construction practice to be followed by contractor Contractor's cost – noise level monitoring (4 locations x 9 samples in construction x 2500 = ₹90.000)	31 Complied. 32 Complied. 33 Till now such buildings are not found and will be complied when such sensitive buildings

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		34. Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and 35. Maintain maximum sound levels not exceeding 80 decibels (dB) when measured at a distance of 10 m or more from the vehicles				observed. 34 However; noise will be minimized by using construction equipment by using vehicle silencers. Recommended to fit jackhammers with noise-reducing mufflers, and portable street barriers at sensitive receptors. 35 Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
Water Quality	Impacts on surface drainage and water quality due to contaminated runoff from construction areas	36. Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;	Construction Contractor	Site observations	Good construction practice to be followed by contractor –no	36 Contractor not carried out Major Construction works during monsoon season.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
	in monsoon	37. Stockpiles shall be provided with temporary bunds; 38. Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with Implementing Agency on designated disposal areas; 39. Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; 40. Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund;			additional costs	Stockpiling of earth fill not observed during site visit. 37 Work in progress and no such stockpiles found on work site. 38 Complied- Contractor Dumping surplus soil in the Pachanady Solid waste management treatment plant 39 NA - Surface water bodies not observed along the Project alignment. 40 Complied. Contractor not using fuels and lubricants in bulk. Whenever required fuel used on particular day onsite. But instructed contracting agency to

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		41. Dispose any wastes generated by construction activities in designated sites; and, 42. Ensure that there is no spill over of excavated earth, construction materials like cement concrete into the drain near wet well no. 3; also ensure that the drain flow is not blocked / disturbed during the work				provide storage yard if fuel stored in bulk. 41 Complied Followed by contracting agency 42 Complied Followed by contracting agency
Landscape and aesthetics	Impacts on landscape and aesthetics due to construction activity	43. Manage surplus soil, construction debris and solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 44. Coordinate with PIU / MCC for beneficial uses of road debris and surplus soils in on-going construction works or for temporary storage for future use or disposal in landfill 45. In unavoidable case of disposal, debris shall be disposed at landfill site or site approved by PIU / MCC; waste shall not be disposed in the forest areas and in or near water bodies/ rivers;	Construction Contractor	Work site inspection Complaints from public	Good construction practice to be followed by contractor – no additional costs	43 Compiled 44 Compiled-disposed in the Pachanady Solid waste management treatment plant 45 No such activities observed at the time of inspection 46 Partially Complied-Waste

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		46. Prepare and implement Waste Management Plan – it should present how the surplus waste generated will temporarily stocked at the site, transported, reused and disposed properly; 47. Surplus soil and debris from work site shall be removed / cleared at the end of each day of work; there shall be no stock piling of debris / surplus soil at the site 48. Recover used oil and lubricants and reuse or remove from the sites; 49. Remove all wreckage, rubbish, or temporary structures which are no longer required; and 50. Request program implementation unit (PIU)/ project management, design and construction supervision consultant (PMDCSC) to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.				Management Plan prepared by contractor needs to be updated. 47 Complied Followed by contracting agency 48 Complied 49 Complied 50 Construction work is in progress.
Construction works	Hindrance to traffic movement / accessibility	51. Plan pipeline work in consultation with the traffic police; Prepare a Traffic Management Plan – a template is provided for reference at Appendix 8. 52. Strictly follow the pipe laying method presented in Table 13 so that trench excavation, pipe laying, and refilling including	Construction Contractor	Work Program Review	Good construction practice to be followed	51 Traffic Management Plan prepared by Contractor and it **needs to be updated again.** 52 Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		compacting, at a stretch is completed in a minimum possible time 53. Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimise disturbance to the traffic movement; 54. Do not close the road completely, ensure that work is conducted onto edge of the road; allow traffic to move on one line; 55. In narrow roads with considerable traffic (Jama Masjid- Road, Ashok Nagara road, and old port / Kandathapalli Road), work shall be undertaken between two intersections and diverting traffic in that section to a parallel road, so that through traffic is not blocked fully. 56. In some sections on Jama Masjid- Road, Old Port Road and Kandathapalli Road there are no parallel roads to divert traffic; in those sections work shall be conducted in the nights or in low traffic hours in day time; but in case of day-time work traffic shall not be blocked for more than 2-3 hours at a stretch; prior information shall be provided to public – a week before and a day before work, about the schedule of the work and temporary road closure; proper signage shall be				53 Complied. 54 Complied. 55 Complied. (**Attached in june 2019)** 56 Complied. Work is carried out in low traffic hours in day time and; prior information given about the schedule of the work. 57 Complied (**Attached in June 2019) and** no such work are executing near residential areas during site visit

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		provided 57. Maintain safe pedestrian access at all times to the houses along the work site 58. At all work sites public information/caution boards shall be provided – information shall inter-alia include: project name, cost and schedule; executing agency and contractor details; nature and schedule of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints. 59. In densely populated areas like market place or layouts, roads with heavy traffics additional care has to be taken. 60. Hard barricades should be mandatorily provided along with caution board and traffic diversion boards. Some of the densely populated area identified in project area are Old Port Road, Jeppubappal to Suterpete				58 Caution board provided at work site. Entry restriction information; competent official's name and contact for public complaints provided. Recommended all sign board must be Retro reflective (**Attached in Sep 2019 annexure 4 g, h, i, j, k and l)** 59 Respective Engineers present on the site for continuous monitoring 60 Traffic diversion boards, hard barricading and Caution boards provided. Recommended all sign board must be Retro reflective (**Attached in Sep 2019 annexure 4**

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
						g, h, i, j, k and l)
Nuisance/ disturbance to sensitive areas	Schools, hospitals and religious places) due construction work in the proximity (within 250 m of such place)	61. No material should be stocked in this area; material shall be brought to the site as and when required 62. Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles 63. No work should be conducted near the religious places during religious congregations 64. Material transport to the site should be arranged considering school timings; material should be in place before school starts; 65. Notify concerned schools, hospitals, etc. 2 weeks prior to the work; conduct a 30 minutes awareness program at on nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions and dos and don'ts Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly at the sites.	Construction Contractor	Complaints from sensitive receptors Work program	Good construction practice to be followed by contractor – no additional costs	61 Complied Followed by contracting agency 62 Complied Followed by contracting agency 63 Followed by contracting agency 64 Complied Followed by contracting agency 65 Complied – Recommended to maintain documentary Evidence

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
Socio-Economic-Livelihood Impediment of access to houses and business	Impediment of access to houses and business	66. Leave space for access between mounds of excavated soil, where required 67. Provide wooden planks/footbridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required. 68. Consult affected business people to inform them in advance when work will occur 69. Address livelihood issues, if any; implement the Resettlement Plan to address these issues 70. Provide sign/caution/warning boards at work site indicating work schedule and traffic information; prevent public entry into work sites through barricading and security; and	Construction Contractor	• Number of walkways, wooden planks and foot bridges; • Complaints from public; • Spoil Management Plan; and • Traffic Management plan.	Good construction practice to be followed by contractor – no additional costs	66 Complied. 67 Complied – access provided by contractor. (**Attached in june 2019)** 68 Complied - Public Consultation were conducted for the affected people to provide prior information about the work. 69 Complied implementation Resettlement Plan to address these issues in progress **(Attached in June 2019)** 70 Complied -

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		71. Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints. 72. Prepare a Traffic Management Plan – a template is provided for reference at Appendix 8. The site-specific traffic management plan should be part of the Construction Management Plan.				Traffic diversion boards, Hard barricading and Caution boards provided(**Attached in June 2019)** Work schedule not provided. 71 Complied. Recommended all project information board and sign board must be Retro reflective (**Attached in annexure 4 g, h, i, j, k and l)** 72 Site-Specific Traffic Management Plan Prepared by contractor is not adequate and to get it updated again. **Recommended to comply (Attached in June 2019)**
Socio-Economic Employment	Impact on local employment generation	73. Employ local labour force to the maximum extent, if manpower is available	Construction Contractor	Employment Records Compliance to labour laws	NA	73 Complied
Occupational Health and Safety	Workers occupational health and safety	74. Develop and implement site-specific Health and Safety (H&S) Plan which will include measures such as: (a) excluding public from the	Construction Contractor	Site specific OHSEquipped first aid station.	Good construction practice to be followed by contractor – no	74 Complied Site-specific Health and Safety (H&S) Plan prepared by

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		site; (b) ensuring all workers are provided with and use Personal Protective Equipment (PPE); (c) H&S Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; 75. All trenches in sandy and mixed sandy soils irrespective of depth and trenches deeper than 2m (or less, if designed by the engineer)in other soils shall be protected against collapse to avoid safety risks to workers, public and nearby buildings/structures; provision has been made for well point type dewatering, sheet piling for shoring and strutting etc., precaution shall be taken at the time of execution; 76. Take all necessary precaution during isolation and blocking of existing pumping main and connecting the new main to the existing system. Skilled supervision, appropriate apparatus and PPEs must be used; 77. Extreme care shall be taken while working on existing sewer lines/ manholes, where they are required to be shifted, to safeguard the workers against the gaseous emissions and		Potable watersupply andclean eating area. PPE and medical insurance	additional costs	contractor. Proper implementation required. 75 Not Complied. 76 Complied. PPEs like nose masks, oxygen masks for emergency, ear plugs and Hand gloves are provided.(**Attached Sep 2019 in annexure 1.v)** 77 PPEs like nose masks, oxygen masks for emergency. ear plugs and Hand gloves are

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		hazardous working conditions 78. Create awareness among all workers, supervisors and site engineers on potential hazard conditions and safety risks in working with existing/old sewer lines; working conditions may be hazardous with harmful gaseous emissions (hydrogen sulphide, carbon monoxide, methane, etc.) and oxygen deficiency; 79. Provide all necessary personnel protection equipment; including oxygen masks for emergency use; 80. Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; 81. Provide medical insurance coverage for workers; 82. Secure all installations from unauthorized intrusion and				provided 78 Complied 79 Oxygen masks for emergency not provided PPEs are provided 80 Not Complied 81 Employees Compensation Insurances taken for 40 Unskilled and for 10 semiskilled workers

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		accident risks; 83. Provide supplies of potable drinking water; 84. Provide clean eating areas where workers are not exposed to hazardous or noxious substances; 85. Provide H & S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; 86. 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; 87. Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; 88. Ensure moving equipment is outfitted with audible back-up alarms; 89. 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. 90. Signage shall be in accordance				82 Complied. 83 Complied. 84 Specific eating area not provided. 85 Safety and Tool box meeting conducted. (**Attached in Sep 2019 annexure 1.u)** 86 Not Complied 87 Complied. 88 Compiled 89 Not Complied.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; 91. Disallow worker exposure to noise level greater than 85 dB for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively; and 92. Overall, the contractor should comply with IFC EHS Guidelines on Occupational Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD =AJPERES).				90 Signage are Provided but not in accordance with international standards 91. Duration of working hours- 8 hours per day. Hearing protection is provided by contractor. **(Attached in Sep 2019 annexure 1.v)** 92. Not Complied
Community Health and Safety	Danger due to deep excavations, hindrance to traffic and chances of accident,	93. All trenches in sandy and mixed sandy soils irrespective of depth, and trenches deeper than 2m (or less, if desired by engineer) shall be protected against collapse to avoid safety risks to workers, public and nearby buildings/structures; provision has been made for well point type dewatering, sheet piling for shoring and strutting etc., precaution shall be taken at the time of execution;	Construction Contractor	• Traffic Management Plan • Complaints from public	Good construction practice to be followed by contractor – no additional costs	**93 Traffic Management Plan submitted by contractor is not sufficient and it needs updation.** No such deep trench found during site visit but instructed contracting agency to Provide sheet piling

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		94. Plan material and waste routes to avoid times of peak-pedestrian activities; 95. One week prior to start of work at any section, a joint inspection shall be conducted along with PIU and MCC to identify risk areas and buildings and take necessary precautions for safe conduct of work; 96. Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure; 97. Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads; and 98. Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/dd673400488559ae83c4d36a6515bb18/ 3%2BCommunity%2Bhealth%2Band%2B				for shoring and strutting if depth is more than 2m. 94 Partially Complied – waste management plan not prepared 95 Complied. Joint inspection conducted along with PIU and MCC to identify risk areas and buildings to take necessary precautions **but not maintained record of joint inspection.** 96 Complied 97 Complied Followed by contracting agency 98 Contractor Not Complied with IFC EHS Guidelines Community Health and Safety Recommended and attached as

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		Safety.pdf?MOD=AJPERES).				
Worker Camps	Temporary worker camps	99 The contractor should operate the temporary worker camps in compliance with IFC EHS Guidelines specific to workers accommodation (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_gpn_workers accommodation), including the following: 100 Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located within reasonable distance of work site; 101 Minimize removal of vegetation and disallow cutting of trees; 102 Labour camps shall include accommodation for workers/labourers along with other basic amenities such as kitchen, potable water supply, sanitation (toilets, bathrooms, washing areas and water supply for such needs), first aid room as well as garbage collection and disposal facility. 103 The roof height of the worker's and labour camp shall not be less than 3 m from floor level to the lowest part of the roof. 104 The camps shall be floored with concrete, shall be kept clean, and with proper cross ventilation, and the space provided shall be on the basis of one sq.mt per	Construction Contractor	List of selected sites. Written consent of land owner Waste Management plan	Good construction practice to be followed by contractor – no additional costs	99. Contractor Not operating the temporary worker camps in compliance with IFC EHS Guidelines specific to workers accommodation. **And instructed to provide awareness to all workers to follow H& S measures of COVID-19 on site and in their camps** 100 Complied. 101 Complied. 102 Proper Kitchen, bathrooms garbage room yet to be provided. 103 Complied. 104 Not Complied

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		head or as per the relevant regulation, whichever is higher. 105 Fire and electrical safety pre-cautions shall be adhered to. 106 Cooking, sanitation and washing areas shall be provided separately. 107 The Contractor shall maintain necessary living accommodation and ancillary facilities (including provision of clean fuel to prevent damage to forests and to prevent fuel wood cutting and burning by labor) in functional and hygienic manner. 108 The site must be graded and rendered free from depressions such that water does not get stagnant anywhere. 109 The entire boundary of the site should be fenced all around with barbed wire so as to prevent the trespassing of humans and animals. 110 Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 lpcd); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; 111 Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less				105. Not Complied. 106. Separate Cooking area yet to be provided by Contractor. Washing area is not proper as per the stipulated norms. 107. Partially Complied 108. Such depressions not found during site visit 109. Not complied. 110. Complied. 111. Complied.

Field	Anticipated Impact	Mitigation Measures	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Fund	Status of Implementation
		persons; 112 Train employees in the storage and handling of materials which can potentially cause soil contamination; 113 Recover used oil and lubricants and reuse or remove from the site; 114 Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; 115 Remove all wreckage, rubbish, or temporary structures which are no longer required; and 116 Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.				112. Complied. 113. Reused. 114. Complied. 115. Complied. 116. Work is in progress.

Conclusion:-

Overall The Contractor's compliance with the Environment and Health and safety requirements of the Project needs improvement. Contractor maintained copy of IEE. Instructed contracting agency has to conduct HIV AIDS Awareness Training programme. Contracting agency has not submitted April, May and June 2020 Site specific EMP report with PIU letter.

Recommendation:-

Key Issues: Following are the key issues which required immediate necessary action / further improvement.

S.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Site inspection and record verification	• Site inspection Register must be maintained	**Complied**
2.	Appointment of Environmental, Health and Safety (EHS) Engineer by contractor prior to start of work – Done		**Complied**
3.	Site specific Occupational Health and Safety (OHS)plan;	Site specific Occupational Health and Safety including (International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety**)** • Institutional setup • List of PPE provided and standards followed, Site specific OHS Equipped first aid station, Medical insurance. Hospitals recognized in emergency. • Health Camps and Check -up should conducted for the workers • Necessary HIV/AIDS prevention measures and awareness programme conducted by Contractor. • Electrical measures safety • Fire safety measures should be reflect in OHS plan. • Weekly and monthly monitoring and safety training programs have to be documented properly including mock drill register	OHS Plan submitted – but not adequate, recommended the contractor to update the same and submit
4.	Waste management plan; and	• Type of waste generated (Solid and Hazardous) • Quantity of different waste generated at site • List and type of garbage bins provided	Comply with in 15 days

		• Time of waste collection • Location of Waste disposal site identified consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on google map. • The contractor will provide garbage bins in the camp and construction site and it will be ensured that these are regularly emptied and waste is disposed off in a hygienic manner as per the Solid Waste (Handling and Management) Rules, 2016.	
5.	Complaints from sensitive receptors and public.	• Complaints register must be maintained at each site.	Complaint register maintained at pumping station and recommended the contractor to maintain the complaint register at all working sites
6.	Section-wise list of utilities to be shifted / disturbed to be submitted to PIU two-weeks prior to start of work at that section along with a plan to shift and contingency steps to be taken	• Section-wise list of utilities to be shifted/ disturbed • Submission Letters of Section-wise list of utilities to be shifted/ disturbed to PIU • Plan to shift and contingency steps to be taken	Complied partially - Communication Letters to different Departments from PIU maintained**.** Contractor has to maintain the recommended documents Comply with in 7 days
7.	Record to confirm that contingency services are provided and all damaged utilities are restored after the work		Complied
8.	List of selected sites for construction work camp, storage area and disposal area	• Identify the location consultation with PIU • Letters of communications and finalization location • Mark the location on google map.	Complied - letter for finalization of the disposal site**.** The **letters** for finalization of the locations for (work camp, storage area) have to be complied. Marking the locations on Google map complied
9.	Check Sources and approval	• Maintain Copy of Certification of authorized material sources	Comply with in 5 days
10.	Site observations Informal Ambient air quality monitoring (4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months, parameters - SPM, RSPM, SOx, NOx)	• During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
11.	Site observations	• Maintain Register for site observation at site	Complied

12.	Ambient noise monitoring (day and night time / 24 hours monitoring at 4 locations, frequency – quarterly - 4 times a year, 9 times in 24 months)	• During the construction phase, the contractor will carry out environmental monitoring Air quality by engaging NABL approved laboratory	Air, Noise and Water monitoring tests has been conducted by Contractor on December 2019 but report yet to be submitted with PIU letter
13.	Work Program Review	• Work plan must be prepared and review	Comply with in 7 days
14.	Number of walkways, wooden planks and foot bridges;	• List of walkways, wooden planks and foot bridges provided with location must be maintained	Work in progress and instructed contractors to provide walkways, wooden planks and foot bridge if area is excavated.
15.	Spoil Management Plan	Waste material brought up during the course of an excavation or a dredging or mining operation. • Type and quantity of waste generated will be waste generated. • Reuse of quantity of waste generated in any other projects or any other place • Amount of waste disposed in identified disposal areas consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on google map	Spoil Management Plan submitted – not adequate Comply with in 5 days
16.	Traffic Management plan		Traffic Management Plan submitted – not adequate and recommended the contractor to update the same and submit Comply with in 5 days
17.	Employment Records Compliance to labour laws	• Attendance registers of labour at each site. • Register of payment to the workers at each site.	**Attendance register is maintained. but Register of payment to the workers Not maintained** Comply with in 5 days
18.	Site specific OHS Equipped first aid station	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site.	Comply with in 10 days (when work is in progress all this facilities must be provided)

		• The contractor shall identify nearby hospital, which could be used in case of emergency. First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account.	
19.	Potable water supply and clean eating area.	• Potable water supply: Sufficient (minimum 20 liters at any given point of time) and clean (potable) water for drinking shall be placed in the mess/labour camp and at the each construction site.	Complied
20.	PPE and medical insurance	• The Contractor shall provide and ensure enforcement with zero tolerance the following: • Safety vests will be used by workers when on the construction site. • Hard hat or helmets to all workers, supervising staff and inspecting official entering work site, plant area, and engaged in loading/ unloading operations • Protective footwear, protective goggles and nose masks (as required) will be provided to the workers employed. These shall be provided to all workers employed for handling of cement, mortar, concrete and similar dust generating operations shall be provided. • During reinforcement/fabrication operation, safety appliances like: helmets, protective eye wear, gum boots and hand gloves shall be provided to labour/workers at the construction site. • Welder's protective eye-shields will be provided to workers who are engaged in welding works. • Nettings below and on the sides of overhead construction to prevent mishaps due to accidental fall of a workman, tool and/or debris shall be provided. • Proper moving guards will be provided at all moving machines, like motors and pulleys. • All workforces on the construction site shall be provided with identity cards. • High risk areas are to be provided with warning signage.	Complied
21.	List of selected sites. Written consent of land owner	• If any Activity related to project carrying out in private land written consent of land owner (NOC) must be taken.	If any, Comply with in 20 days

22.	**H & S Plan for COVID-19 implementation**	• **Daily Contractor as to provide awareness to all office staffs and site workers to follow H& S measures of COVID-19**	Complied. Implementation of H & S at work site is done**. Attached as Annexure 3. H & S plan is to be prepared by contractors** Comply with in 3 days

Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist, EGIS,
Mangalore, KIUWMIP – Tranche 2.

Annexure -1

Site Observations for the month of 24th June 2020

S.No	Observation		Recommendation
a	PPEs for workers at work locations	 	All workers should wear PPEs helmet, jacket, hand gloves and shoes during work at site Instructed contractors to provided PPEs to all worker at site Drinking Water facility should be provided to workers at all site

b	Sign boards and hard barricading at work site		Road restoration Work in progress sign board should be kept and hard barricading must be done during road loose earth filling or cement concreting work to avoid public entrance to carry safe work Flag mans should be kept on either side of the road if JCB, road roller are being used

d	One toilet was found damaged		Repair the Toilet

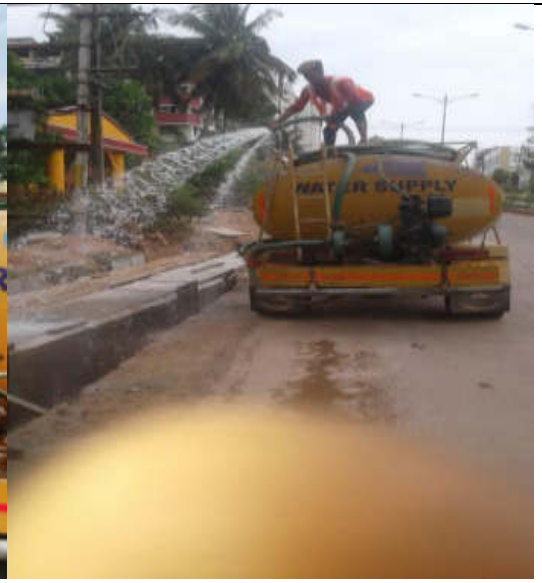
e	Labours are cooking food in their staying room		Separate Cooking facility is to be provided for the Contractor's labours and sub-contractor's labours

f	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard

g	Poor Housekeeping at shakti nagar labour camp of subcontractor		Labour camp of subcontractor at shaktinagar is not properly maintained. Housekeeping should be done properly to keep surrounding area clean.

Annexure -2

Status of Site Observations for the month of 27th May 2020

S.No	Observation		Recommendation	Status
a	Water sprinkling at dry location at konchady site	 	Water is sprinked by contracting agency after work in dry areas to avoid dust generation at work site konchady site	Complied

b	PPEs for workers at work locations	 	All workers should wear PPEs helmet, jacket, hand gloves and shoes during work at site Drinking Water facility should be provided to workers at all site	Partially complied

c	Sign boards and hard barrication at work site	 	Work in progress sign board should be kept and hard barricading must be done during road cement concreting work to avoid public entrance to carry safe work	Partially complied

d	One toilet was found damaged		Repair the Toilet	Not complied

e	Labours are cooking food in their staying room		Separate Cooking facility is to be provided for the Contractor's labours and sub-contractor's labours	Not complied

f	Loose electrical wires found		Electrical wires should be properly fitted with in safety electrical pipes and new switchboard	Not complied

g	Poor Housekeeping at shakti nagar labour camp of subcontractor		Labour camp of subcontractor at shaktinagar is not properly maintained. Housekeeping should be done properly to keep surrounding area clean.	Partially complied

Annexure -3

Status of Site Observations for the month of 29th February 2020

S.No	Observation		Recommendation	Status
a	Proper barricading and Cautionary Sign. information		Barricading is done at kunttikana site Instructed contracting agency to put hard barricading continuous without gap.	Partially complied

b	Flag man at kunttikanna Work location		Flagman provided t both side of the road to maintain traffic and avoid any accident and incident Again instructed to follow it properly	Partially complied

c	PPEs at work locations		All workers are wear PPEs during site visit at kuttikana and kandatpalli locations Instructed to follow it properly at all work site Drinking water must be provided at all working locations for workers One mobil toilet should be provided site site	Complied Not complied Not complied

d	Labour Camp at Shakti Nagar		Proper housekeeping must be maintained in and around the camp	Partially complied

e	Gas stove is being used for cooking food	 	Gas cylinder is to be provided for cooking Kitchen must be separate for cooking Lose electrical cables or boards must be replaced to avoid from electric shocks	Not complied

f	Material stocks at shaktinagara locations	 	Proper sign board in frame with stand should be at site And soft barricading should be done for every stocked materials	Partially complied

g	Water Tank for daily use of water at Low Height		Water Tank should be provided at proper Height	Not complied

i	Water Tap and electricity connections not provided		Water Tap and electricity connections are to be provided	Not complied

Annexure-4

DRS INFRATECH PVT LTD

DRS/MNG-02/006

COVID-19 H&S IMPLEMENTATION PLAN FOR THE MONTH OF JUNE-2020

Labor's Attendance Details Month of JUNE-2020

MUSTER ROLL FOR THE MONTH OF JUNE - 2020

Form I
See Ru

Name of the Establishment: DRS. INFRATECH PVT. LTD

Place: MANGALORE District: D.K

S. No.	NAME	Father's Husband's name / AGE	Sex	Nature of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	RAVI KUMAR	38	M	Pc.Optr	P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P								
2	KRISHNA	35	M	Jr.Optr	P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P								
3	RAKESH	30	M	welder	P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P								
4	PANCHAM	25	M	Fitter	P	P	P	P	P	P		P	P	P	P	P	P		P	P	P	P	P	P		P	P								
5	THIMMA NAIKA	48	M	Fitter	P	P	P	P	P	P	3	P	P	P	P	P	P	3	P	P	P	P	P	P	3	P	P					3			
6	MALLIKARJUN	24	M	Helper	P	P	P	P	P	P	4	P	P	P	P	P	P	4	P	P	P	P	P	P	4	P	P					4			
7	KALLESHI	34	M	Mason	P	P	P	A	A	P	5	P	P	P	P	P	P	5	P	P	P	P	P	P	5	P	P					5			
8	KALAKAPPA	42	M	Mason	P	P	P	P	P	P	6	P	P	P	P	P	A	6	P	P	P	P	P	P	6	P	P					6			

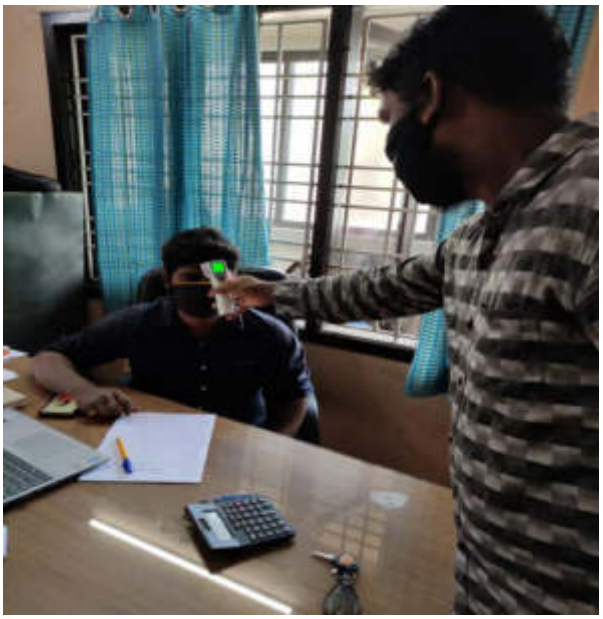
Tool Box Talk About COVID-19

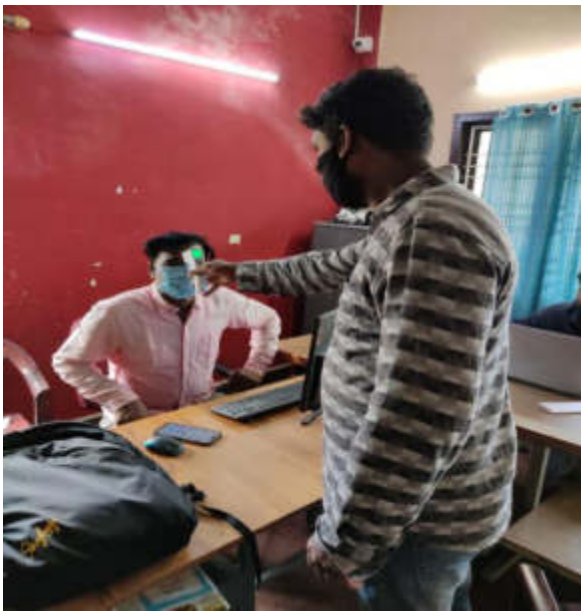
We are conducted TBT about COVID -19 and explain to workers how to use the Sanitizer and Hand wash Liquid and also Instructed to worker's safety precautions of against COVID-19.

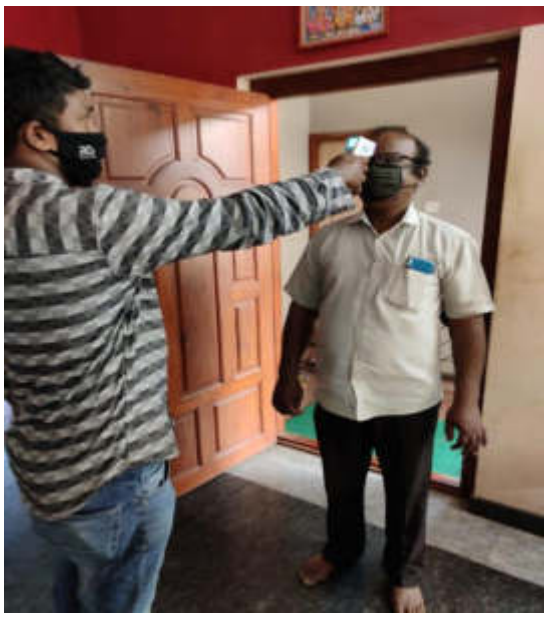
Safety Precautions Materials –COVID-19

BODY TEMPERATURE CHECKING

Before start the work and work closing time daily two times Body Temperature Checking for all Staff, Client and workers and also we are distributed sanitizer and hand wash liquid to every workers and staff.







Workers working with Mask

Sanitizing System at Office

Monthly Environmental Monitoring Report

Project Number: 43253-027
June 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Udupi

Package No. 02UDP01

Prepared by

egis India
Consulting engineers pvt. ltd.

CONTENTS
Page

List of Tables

List of Annexure

INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura,Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be urban water resource management in four coastal towns (Kundapura, Mangalore, Puttur and Udupi) improved. The outputs are (i) UWSS infrastructure expanded and upgraded; (ii) water resource planning, monitoring and service delivery improved; and (iii) institutional capacity of KUIDFC and ULBs strengthened capacity. This initial environmental examination (IEE) is based on an water supply projects within the project area i.e. Udupi

2 Need for Infrastructure Improvement in Udupi

A detailed assessment of existing situation was carried out and it concludes that the present water production of 27.24 million liters per day (MLD), is insufficient to meet water demand of Udupi till the year 2031 as per national standards. Besides Udupi town, this subproject investment also need to provide water supply covering 5 en-route villages, 5 outgrowth villages and 7 adjacent villages.
The present inadequacy in the water supply system, is due to

(i) mainly shortage in water source in summer season;
(ii) increased water demand; and
(iii) old and leaking distribution system, along with weak management system.

In order to meet required water demand of Udupi, an alternate water source from River Varahi is proposed under a government funded bulk water supply project. The necessary improvements and augmentation in water distribution system is proposed under the ADB funded KIUWMIP Tranche 2

3 The proposed subproject:

Subproject includes the following components:

(i) clear water feeder mains of 7.47 kilometer (km) of diameter 150 millimeters (mm) to 355 mm to feed tonew overhead tanks (OHTs);
(ii) 7 OHTs of total storage capacity 5.2 ml;
(iii) distribution network of 358.17 km (diameter 150 mm to 355 mm); and,
(iv) Replacement of 16,870 existing meters and providing new metered house service connections of 15,000for uncovered households. Distribution network pipes will be laid along existing road right-of-way (ROW) and OHTs will be constructed in government-owned lands. New water source from river Varahi about 38.5 kms from Udupi has been selected to meet shortage of water for summer four months. RCC Intake well, RCC Jackwell cum pump house and raw water pipe line for 38.5 Kms is proposed under AMRUTH Scope. Also it is proposed 30 MLD WTP at Baje to meet additional demand of Udupi under State fund.

Table 1 provides details of the KIUWMIP Tranche 2 subproject components in Udupi based on the detailed engineering design of the subproject

Table 1: Proposed Subproject Components

No.	Component	Details	Location
1	Clear water feeder main to feed treated water to overhead tanks (OHTs)	7.47 km length 150 mm – 355 mm diameter **Ductile Iron Pipes** 1.50 km - 150 mm diameter from ground level service reservoir (GLSR) at Manipal to OHT for Zone 5 at Manipal near Manapalla lake 0.5 km - 200 mm diameter from GLSR at Manipal to zone-3 OHT at Manipal **Mild Steel Pipes** 60 m - 219 mm diameter for zone -7C OHT at Kolambe 45 m - 219 mm diameter for zone -8C OHT at Indrali 1.7 km - 273.1 mm diameter for zone-6B OHT at Manchi 815 m - 323.90 mm diameter for zone-8B at Kakkunje 2.85 km - 355.6 mm diameter, for zone-9B at Santhekatte	Along the public roads within the road right of way
2	OHTs	7 OHTs of total storage capacity 5.2 ml Zone 3 – 750 kl at Manipal Zone-5 – 300 kl at Manipal near Manapalla lake Zone 6B – 750 kl at Manchi Zone 7C – 300 kl near Kolambe Zone 8B – 1,000 kl at kakkunje Zone 8C – 500 kl at Indrali Zone 9B – 1,600 kl at Santhekatte	For all 7 OHTs, government owned land parcels have been identified.
3	Distribution network	358.16 km pipes of diameter 63 mm to 350 mm **High Density Poly Ethylene (HDPE) pipes** 63 mm dia - 294.4 km 75 mm dia - 0.375 km 90 mm dia - 0.796 km 110 mm dia - 25.575 km 160 mm dia - 3.336 km 200 mm dia - 5.602 km 250 mm dia - 13.824 km 280 mm dia - 0.330 km 315 mm dia - 0.291 km DI PIPES: 150 mm dia - 0.252 km 300 mm dia - 10.282 km 350 mm dia- 3.098 km	Pipes will be laid along the public roads within the road right of way. Rider lines will be laid parallel to the existing pipes, and within the road right of way. Pipes will be mostly laid in earthen shoulder to avoid road cuttings
4	House Service Connections	Replacement of non-functioning 16,870 water meters for existing connections and providing new water supply connections of 15,000 to un-covered households	At each household

4 Environmental Management Plan.

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Udupi	**Name of the Contractor:**Suez Civil Engineering Services Pvt,LTD& DRS Infra Tech Pvt, Ltd
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Udupi	**Name of SE/EE/AE Of concerned division PIU :-**Mr. Sudarshan, Sr.AE
Date of monthly monitoring: 23-06-2020	**Name of Environment, Health And Safety (EHS) Engineer :-** Mr.Pradeep Sheety

Table 2: Status of implementation of Environmental Management Plan for Anticipated Impacts –Construction

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of implementations
EMP Implementation Training	Impacts on the environment, workers, and community due to improper implementation of EMP	**1)** Project manager and all key workers will be required to undergo EMP implementation including spoils management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc. **2)** Appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start of work	Construction Contractor / PIU / PMDCSC	(i) Certificate of Completion (Safeguards Compliance Orientation) (ii) Posting of Certification of Completion at worksites (iii) Posting of EMP at work sites	Cost of EMP Implementation Orientation Training to contractor is responsibility of PMU. Other costs responsibility of contractor.	**1)** Spoil management submitted **2)** EHS Engineer appointed

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, particulate matter, nitrous	**3)** Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; **4)** Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; **5)** Use tarpaulins to cover sand and other loose material when transported by trucks; **6)** Clean wheels and undercarriage of vehicles prior to leaving construction site	Construction Contractor	(i) Location of stockpiles; (ii) Complaints from sensitive receptors; (iii) Heavy equipment and machinery with air pollution control devices; (iv) Certification that vehicles are compliant with Air Act	Cost for implementation of mitigation measures responsibility of contractor.	**3)** Complied **4)** Instructed contracting agency to spray water at commercial and residential areas if stock piled on-site. **5)** Not complied **6)** Complied
	oxides, and hydrocarbons .	**7)** Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.				**7)** Complied

Surface water quality	Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface water quality.	**8)** Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets. **9)** Laying of pipelines during dry season and closing of all trenches before rainy season and avoid any chances of collecting the water in the trenches or pumping. **10)** Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with Implementing Agency on designated disposal areas (Appendix6).	Construction Contractor	(i) Areas for stockpiles, storage of fuels and lubricants and waste materials; (ii) Number of silt traps installed along trenches leading to water bodies; (iii) Records of surface water quality inspection; (iv) Effectiveness of water management measures; (v) No visible degradation to near by drainages,	Cost for implementation of mitigation measures responsibility of contractor.	**8)** Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season **9)** Instructed contracting agency to fill the excavated trenches at all locations before rainy season **10)** Complied. Contracting agency dumping excess earth in CMC shown area but they contractor don't have authorized letter from PIU or CMC. Recommended contractor to get letter from PIU or CMC
		11) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies **12)** Provide temporary bunds for stockpiles and materials **13)** Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacity bund **14)** Dispose any wastes generated by construction activities in designated sites.		nallahs or water bodies due to civil works		**11)** No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found **12)** Not complied **13)** Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity **14)** Complied. Contracting agency dumping excess earth in CMC shown area but the contractor don't have authorized letter from PIU or CMC.

		15) Conduct surface quality inspection and monitoring.				Recommended contractor to get letter from PIU or CMC **15)** Not complied
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people	**16)** Plan activities in consultation with PIU/PMDCSC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; **17)** Construction work shall be limited to day light hours (6 AM to 6PM) **18)** Provide prior information to the local public about the work schedule; **19)** Ensure that there are no old and sensitive buildings that may come under risk due to the use of pneumatic drills; if there is risk, cut the rocks manually by chiseling; **20)** Minimize noise from construction equipment/pneumatic drills by using silencers, fitting jackhammers with noise- reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and **21)** Maintain maximum sound levels not exceeding 80 decibels (db A) when measured at a distance of 10 m or more from the vehicle/s. **22)** Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;	Construction Contractor	(i) Complaints from sensitive receptors; i)Use of silencers in noise-producing equipment and sound barriers; (iii) Equivalent day and night time noise levels (See Appendix 3 of this IEE)	Cost for implementation of mitigation measures responsibility of contractor.	**16)** Complied **17)** Complied **18)** Complied **19)** No such old or sensitive building found which comes in work alignments. But instructed contracting agency to take safe precautions while executing the works **20)** Complied **21)** Complied **22)** Complied

Landscape and aesthetics	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.	**23)** Prepare and implement spoils management plan **24)** Avoid stockpiling of excess excavated soils; **25)** Coordinate with Udupi CMC for beneficial uses of excess excavated soils or immediately dispose to designated areas; **26)** Recover used oil and lubricants and reuse or remove from the sites; **27)** Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; **28)** Remove all wreckage, rubbish, or temporary structures which are no longer required; and **29)** Request PMU/PMDCSC to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Worksite clear of hazardous wastes such as oil/fuel (iiv) Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers	Cost for implementation of mitigation measures responsibility of contractor.	**23)** Spoil management plan is prepared **(attached in annexture 2a august 2019 but updation is to be done).** **24)** Found no such surplus and stockpiling of soils found in sites **25)** Contracting agency dumping excess earth in CMC shown area but the contractor don't have authorized letter from PIU or CMC. Recommended contractor to get letter from PIU or CMC **26)** Used oil and lubricants not generated on site **27)** Contracting agency reusing by backfilling and dumping excess solid waste to the designated areas **28)** Complied **29)** No such damages found during the site visits but instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.

Existing Infrastructure and Facilities Accessibility	Disruption of service and damage to existing infrastructure at specified project location Traffic problems and conflicts near project locations and haul road	**30)** Obtain from PIU/PMDCSC the list of affected utilities and operators if any; **31)** Prepare a contingency plan to include actions to be done in case of unintentional interruption of service **32)** (iii) The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately. **33)** Plan pipeline work in consultation with the traffic police **34)** Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; **35)** Provide for immediate consolidation of backfilling material to desired compaction – this will allow immediate road restoration and therefore will minimize disturbance to the traffic movement; **36)** Schedule transport and hauling activities during non-peak hours; **37)** Do not close the road completely, allow traffic to move on one line; **38)** Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites; **39)** In unavoidable circumstances of road closure, provide alternative routes, and ensure that public is informed about such traffic diversions; **40)** At all work sites public	Construction Contractor Construction Contractor	Existing Utilities Contingency Plan (i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (Appendix7); (ii) Complaints from sensitive receptors; (iii) Number of signages placed at project location.	Cost for implementation of mitigation measures responsibility of contractor. Cost for implementation of mitigation measures responsibility of contractor.	**30)** No such utilities were shifted or damaged but Recommended Contractor to maintain list of utilities identified prior to start of work at any section. **31)** Not complied **32)** No accidental breaking of any properties yet recorded but instructed contracting agency to rectify immediately **33)** Contractor should inform and take permission from traffic police for any pipe line laying/execution on roads. **34)** Complied **35)** Instructed to contractor agency to backfill and restore the excavated area immediately to avoid traffic **36)** Complied **37)** Complied **38)** Not Complied **39)** Instructed contract agency to provide one separate person at site to give route information to public **40)** Partially complied. Project information

		information/caution boards shall be provided – information shall inter-alia include: project name, cost and schedule; executing agency and contractor details; nature and schedule of work at that road/locality; traffic diversion details, if any; entry restriction information; competent official's name and contact for public complaints. **41)** Keep the site free from all unnecessary obstructions; **42)** Drive vehicles in a consider ate manner; **43)** Prepare a Traffic Management Plan –a Template is provided for reference at Appendix 7.				board should be both in Kannada and English format. **41)** Complied **42)** Complied **43)** Traffic Management Plan is prepared by contracting agency **(attached in annexture 2b august 2019 but updation is to be done).**
Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	**44)** Prepare and implement spoils management plan **45)** Leave spaces for access between mounds of soil; and Provide walkways and metal sheets where required for people; **46)** Increase work force in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; **47)** Consult businesses and institutions regarding operating hours and factoring this in work schedules; and **48)** Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Spoils management plan (iii) Number of walkways, signages, and metal sheets placed at project location.	Cost for implementation of mitigation measures responsibility of contractor.	**44)** Spoil management plan is prepared **(attached in annexture 3caugust 2019 but updation is to be done)** **45)** Complied **46)** Complied **47)** Complied **48)** Complied
Socio cultural resources	Disturbance to socio cultural	**48)** No material should be stocked close to these areas; material shall be	Construction Contractor	(i) Visual site observations	Cost for implementation of mitigation	**48)**Complied

	resources					
	(religious, educational, health care etc.,), access disruptions etc.,	brought to the site as and when required. **49)** Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles **50)** No work should be conducted near the religious places during religious congregations **51)** Material transport to the site should be arranged considering school timings; material should be in place before school starts; **52)** Notify concerned schools, hospitals etc., 2 weeks prior to the work; conduct a 30-minute awareness program on nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions and dos and don'ts **53)** Implement all measures suggested elsewhere in this report – dust and noise control, public safety, traffic management, strictly a the sites.		(i) Public complaints	Measures responsibility of contractor.	**49)** Complied **50)** Complied and instructed to follow **51)** Complied and instructed to follow **52)** Partially complied **53)** Not complied
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	**54)** Employ local labor force to the maximum extent, if manpower is available; **55)** Comply with labor laws	Construction Contractor	(i) Employment records; (ii) Records of sources of materials (iii) Compliance to core labor laws (See appendix 2 of this IEE)	Cost for implementation of mitigation measures responsibility of contractor.	**54)** Register maintained by contractor **55)** Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled).
Occupational Health and Safety	Occupational hazards which can arise during work	**56)** Comply with all national, state and local core labor laws (See Appendix 2 of this IEE)	Construction Contractor	(i) Site-specific OHS Plan; (ii) Equipped	Cost for implementation of mitigation measures responsibility of contractor.	**56)** Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by

		57) Develop and implement site-specific occupational health and safety (OHS) Plan, and include in the Construction Management plan. The OHS plan will include measures suchas: (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 mask 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; **58)** Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; **59)** Provide medical insurance coverage for workers; **60)** Secure all installations from unauthorized intrusion and accident risks; **61)** Provide supplies of potable drinking water; **62)** Provide clean eating areas where workers are not exposed to hazardous or noxious substances;		first- aid stations; (iii) Medicalinsurance coverage for workers; (iv) Number of accidents; (v) Supplies of potable drinking water; (vi) Clean eating areas where workers are not exposed to hazardous or noxious substances; (vii) record of health and safety orientation trainings (viii) personal protective equipment; (ix) % of moving equipment outfitted with audible back- up alarms; (xi) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. (xii) Compliance to core laborlaws		Contractor. Instructed contracting agency to provide **H&S safety measures about COVID-19 to all worker and employees** **57)** Contractor following Company EHS Policy- PPE'S provided by Contractor. **a)** **Complied** **b)** **Complied.** PPE'S provided by Contractor to workers **c)** Complied **d)** Not complied **e)** Accident and incident register maintained **58)** Partially Complied. Instructed to keep first-aid box at each working sites separately **59)** Not complied **60)** Complied **61)** Partially Complied **62)** Not Complied

		63) 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; **64)** 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; **65)** Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; **66)** Ensure moving equipment is outfitted with audible back-up alarms; **67)** Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; and **68)** Disallow worker exposure to noise level greater than 85 dBA for a duration of more than8 hours per day without hearing protection. The use of hearing protection shall be enforced actively. **69)** Overall, the contractor should comply with International Finance Corporation (IFC) EHS		(See appendix 2 of this IEE)		**63)** Complied. **Instructed to Provide health and safety orientation training on COVID-19 on site daily to all workers** **64)** Not complied **65)** Complied **66)** Complied **67)** Complied **68)** Not complied **69)** Not complied

		Guidelines on Occupational Health and Safety				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	**70)** Provide hard barricading for all deep excavations that may require especially for pipe lines; identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work **71)** Plan material and waste routes to avoid times of peak-pedestrian activities **72)** Liaise with Udupi CMC in identifying risk areas on route cards/maps **73)** Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure **74)** Provide road signs and flag persons to warn of dangerous conditions, for all work sites along the roads **75)** Overall, the contractor should comply with IFC EHS Guidelines Community Health and Safety	Construction Contractor	(i) Traffic Management Plan; (ii) Complaints from sensitive receptors	Cost for implementation of mitigation measures responsibility of contractor.	**70)** No such deep trenches found during laying pipes. But instructed contracting agency to put hard barricading if trenches are more then 1.5m depth **71)** Not complied **72)** Not complied **73)** Not complied **74)** Complied **75)** Not complied
Work Camps and worksites	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants	**76)** Consult with PIU before locating workers camps/sheds, and construction plants; as far as possible located at least 200 m from residential areas. **77)** Minimize removal of vegetation and disallow cutting of trees **78)** Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and other refuge	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Drinking water and sanitation facilities for employees	Cost for implementation of mitigation measures responsibility of contractor.	**76)** Not Complied Labour camp location was finalized but Letter has to be issued from PIU to contractors. **And instructed to provide awareness to all workers to follow H& S measures of COVID-19** **77)** Removal of vegetation

	Unsanitary and poor living conditions for workers	**79)** The camp site should be adequately drained to avoid the accumulation of stagnant water **80)** Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60- 80 LPCD); all water storage structures must be cleaned regularly and covered properly to avoid any contamination **81)** Provide separate facilities for men and women; sanitary facilities shall be properly build and well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or less persons **82)** Train employees in the storage and handling of materials which can				Minimize by selecting best alignment. **78)** Instructed contracting agency to built labour shad with sheets with proper ventilation in clean hygienic area and drinking water. **79)** Instructed contracting agency to built camp in dry and plan area where there is no water logging and must hygienic area. **80)** Instructed contracting agency to provide drinking water as per the standards at camp **81)** Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites **82)** Instructed contracting agency to provide training of solid and liquid materials handling to the persons at campcare fully to avoid soil contamination

		potentially cause soil contamination; **83)** Recover used oil and lubricants and reuse or remove from thesite; **84)** Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; **85)** Remove all wreckage, rubbish, or temporary structureswhich are no longer required;and **86)** Report in writing that the camp has been vacated and restored to pre- project conditions before acceptance ofwork. **87)** The work camp details should be includedin the Construction ManagementPlan.				**83)** Instructed to contracting agency to train persons not to spill oil and lubricant and use carefully to avoid soil contamination **84)** Instructed to contracting agency to follow at camp **85)** Instructed to contracting agency to follow at camp **86)** Construction work is in progress **87)** Not complied
Social and Cultural Resources	Risk of archaeological chance finds	**88)** Create awareness among the workers and supervisors about the chance finds during excavation work **89)** Stop work immediately if any finds are suspected to allow further investigation **90)** Inform archaeological agencies promptly if a find is suspected, and take any action they require toensure its removal or protection in situ. **91)** Adjacent to important religious sites, undertake excavationandConstruction work in such a way that no structural damage is caused to the building.	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.	**88)** Till now no such suspected items found nor recorded **89)** Till now no such suspected items found nor recorded **90)** Till now no such archaeological items recorded **91)** No such damages recorded during the visit. But instructed to maintain if such damages happens.

Submission of EMP implementation report	Unsatisfactory compliance to EMP	**92)** Appointment of EHS engineer to ensure EMP implementation **93)** Timely submission of monitoring reports including pictures	Construction contractor	Availability and competency of appointed EHS engineer Monthly report	Cost for implementation of mitigation measures responsibility of contractor.	**92)** EHS Engineer appointed **93)** Complied
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	**94)** Remove all spoils wreckage, rubbish, or temporary structures(such as buildings, shelters, and latrines) which are no longer required; and **95)** All excavated roads shall be reinstated to original condition. **96)** All disrupted utilities restored **97)** All affected structures rehabilitated/compensated **98)** The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. **99)** All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and regrassed using the guidelines set out in the revegetation specification that forms part of this document.	Construction Contractor	PMU/PMDCSC report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to pre-project conditions; (iii) all construction related structures not relevant to O&M are removed; and (iv) worksite clean-up is satisfactory.	Cost for implementation of mitigation measures responsibility of contractor.	**94)** Complied **95)** Work was not in progress. But instructed to restore road same as it was before damage **96)** If utilities are to be shifted contracting agency must take permission from concern authorities before start the work and restore it properly as it was before the damage **97)** Till now no structures affected **98)** Not complied Instructed contracting agency to properly clean surface area free of oil and paints for construction camp **99)** Not complied
		100) The contractor must arrange the cancellation of all temporary services. **101)** Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance ofwork.				**100)** Not complied **101)** Construction work is in progress

Conclusion:-

Construction stage is in progress. Disposal yard is to be identified and consultations with PIU have to be taken. Health and HIV AIDS Awareness Training programme has to be conducted by Contractor. Proper Record maintenance should be improved by Contractor. Contractor has to submit Site specific EMP of January, March, April, May and June 2020 as similar to the construction stage table in IEE report with PIU letter, Udupi.

Recommendation:

S.No	Monitoring of Mitigation / Key Issues to be	Recommendation and Action Required by Contractor	Time line/Remarks

	complied		
1.	Mobilization of Environment, Health And Safety(EHS)Engineer		Complied
2.	Submission of Site specific EMP		Comply with in 7 days
3.	Submission of monthly reports.	• Construction status or complacence report	Contractor has to submit Site specific January, March, April May and June 2020 as construction stage EMP present in IEE report, Udupi Comply with in 7 days
4.	Telephone lines, electric Poles and wires, water Lines within proposed project area	• List of utilities going to effect will be submit to PIU	Comply with in 7 days
5.	Layout plan of overhead tanks (OHTs);		Comply with in 7 days
6.	Tree cutting/pruning permission; and	• If any tree affected are noted in survey permission have to be taken	Comply with in 7 days
7.	Compensatory tree plantation as part of the project.		Comply with in 5 days
8.	List of selected sites for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal Areas.	• Location most be identified and marked on google map and consult with PIU and after joint inspection with consideration of all given mitigation measure given.	Comply with in 15 days
9.	Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	• If any private land is selected NOC from owner have to be taken	Comply with in 5days
10.	List of selected sites for disposal	• Location most be identified and marked on google map and consult with PIU and after joint inspection with consideration of all given mitigation measure given. • If any private land is selected NOC from owner have to be taken	Comply with in 5 days
11.	List of approved quarry Sites and Sources of materials; and		Comply with in 7 days
12.	Bid document to include requirement for verification ofsuitability of sources and permit for additional quarry sites if necessary.		Comply with in 5 days
13.	Method of statement in table format	• As mention in mitigation measures	Comply with in 10 days
14.	Spoil Management Plan	Waste material brought up during the course of an excavation or a dredging or mining operation. • Type and quantity of waste generated will be waste generated. • Identify the impact • Spoil Transportation Methodology • Reuse of quantity of waste generated in any other projects or any	Draft copy shown and submitted and attached as **annexure 3a** in **Aug 2019**report and informed contractor to update plan once construction phase

		other place • Amount of waste disposed in identified disposal areas consultation with PIU • If private land NOC from owner. • Location of Waste disposal site mark on google map	starts
15.	Traffic management plan		Draft copy shown, submitted and attached as **annexure 3b** in **Aug 2019 report** and informed contractor to update plan once construction phase starts
16.	Environmental management plan		Draft copy shown, submitted and attached as **annexure 3c** in **Aug 2019 report** and informed contractor to update plan once construction phase starts
17.	Site specific OHS Plan	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account. International Finance Corporation (IFC) Environmental, Health and Safety (EHS) Guidelines on occupational health and safety **attached in june 2019 month**	Comply with in 5 days
18.	Equivalent day and night time noise levels	• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.	Complied. Construction test conducted in **Jan 2020** and noise report attached as **annexure 5 in feb 2020**

19.	Records of Air quality inspection	• If contractor carrying out Construction activities near sensitive receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	Complied. Construction test conducted **in Jan 2020** and air report attached as **annexure 5 in feb 2020**
20.	**H & S Plan for COVID-19 implementation**	• **Daily Contractor as to provide awareness all office staffs and site workers to follow H& S measures of COVID-19**	Complied. Implementation of H & S at work site is done**. Attached as Annexure 4. H & S plan is to be prepared by contractors** Comply with in 5 days

Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2

Annexure 1

Site visit observations of 23th June 2020

S.No	Observation		Recommendation
1	Sign board, hard barricading and project information board at Indrali OHT site	 	Instructed contractors to provided Sign board, hard barricading around deep excavated area and project information board at the entrance of the all OHT sites

2	Steel rod Material stored at OHT sites	 	Instructed contracting agency to store the steel rods away from the walkways to avoid injury or else soft/hard barricade the steel surround area

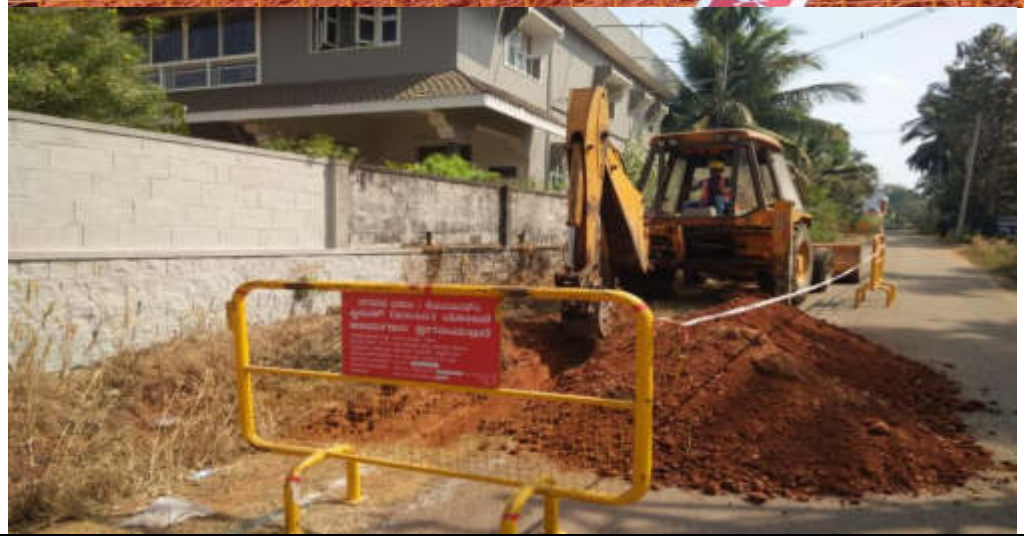
3	Water tank at santekatte OHT for worker usage		Instructed contracting agency to provide separate water can for drinking purpose

4	Waste scrape and loose earth at santekatte OHT for work site		Instructed contracting agency to remove all scrap and loose earth material to dumping yard and steel rods should be not use as fencing of the excavated OHT

Annexure 2

Site visit observations of 25th May 2020

S.No	Observation		Recommendation	Status
1	Sign board and flag man at site		Instructed contractors to provided cones, go slow boards Drinking water can should be kept at all working site for workers Mobil toilets facility should be provided for workers at site	Partially complied Complied Not complied

2	Excavated earth at work site	 	Instructed contractor agency to immediately reuse the loose stored earth at site and dispose the remaining earth to dumping yard after the pipe laying And flag man at both the ends at all main road work places And to sprinkle water by water tank to avoid dust generation near residential and commercial areas	Complied Execution Work was not in progress

3	Aggregates, sand and excavated earth Material stored at santtekatti OHT site		Instructed contracting agency to make bunds for sand and aggregates storage to avoid flow and mix Instructed to remove steel rods used for sheet support And dispose loose earth stored at site to dumping yard	Not complied

4	Water tank at santekatte OHT for worker usage		Instructed contracting agency to provide separate water can for drinking purpose and to use present tank for other usage	Not complied

5	Housekeeping at santekatte OHT for work site		Proper housekeeping should be done at work site Instructed not use fire wood burning for cooking and other purpose at work site place	Not complied

Annexure 3

Status of Site visit observations of 27th Feb 2020

S.No	Observation		Recommendation	Status
1	Project Information Board and barricading at work site		Project information board is provided by the contractor agency both in English and Kannada language Instructed to put sign boards like go slow, deep excavation boards on work sites	Not complied

		 Latitude: 13.345375 Longitude: 74.771271 Elevation: 25.07m Accuracy: 3.2m Time: 02-27-2020 13:15 Note: Endrali OHT site location,udupi		

2	PPEs and Sign boards at work places		Workers wearing PPEs at work place at sattekatti OHT construction site and parakala site during pipe laying excavation	Complied

3	Worker sheds at santtekatte OHT site		Instructed contracting agency to provide proper shelter sheds to worker for resting and also to provide proper toilets sheds.	Not complied

5	Drinking water facility at sattekatte OHT site for workers		Instructed Contractor agency to provide 60 liter can at for drinking and cooking purpose. There may possibility for the of bacteria at the bottom of tank provided	Not complied

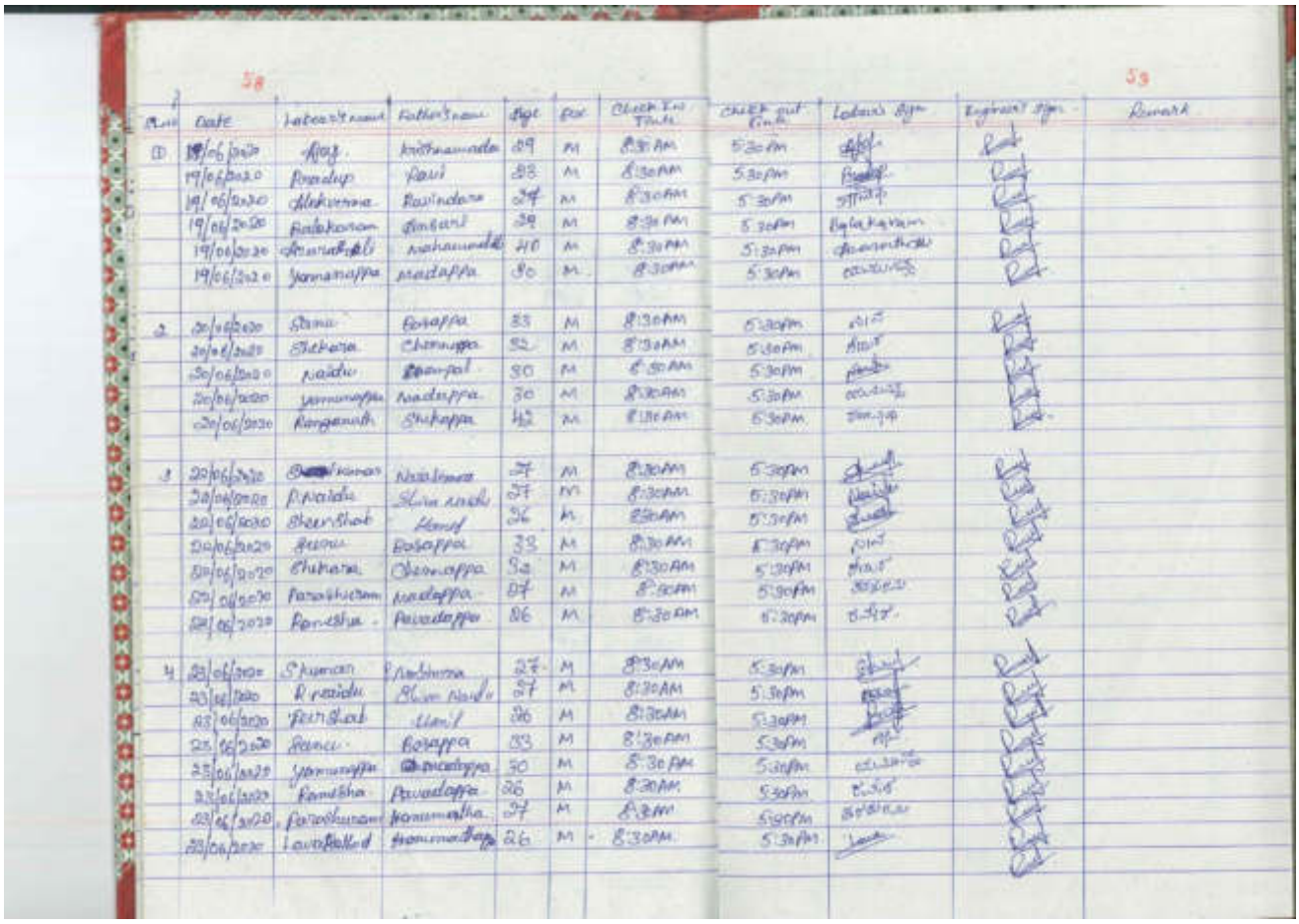
6	Project information board, Barricading at all OHT sites	 	Instructed contracting agency to remove or dump debris and loose materials in dumping yard from OHT site Project information board is not provided by the contractor agency both in English and Kannada language at all OHT sites Instructed to put sign boards like go slow, work in progress, deep excavation boards on OHT sites	Complied Not complied Not complied

		 Latitude: 13.323403 Longitude: 74.772226 Elevation: 38.55m Accuracy: 3.2m Time: 02-27-2020 11:36 Note: OHT site at manchi location,udupi Powered by NoteCam  Latitude: 13.345138 Longitude: 74.771237 Elevation: 29.27m Accuracy: 3.2m Time: 02-27-2020 13:07 Note: Endrali OHT site location,udupi Powered by NoteCam		

7	Steel stock at santtekatte site	 	Recommended Contractor agency to provide sheet fencing and instructed to remove steels bars used for fencing And to constructed metal sheet gate from the entry to avoid entrance of unknown person which may cause any injury or harm	Not complied

Annexure- 4

June 2020 Month Workers Details



Sl.No	Date	Labour's name	Father's name	Age	Sex	Check In Time	Check out Time	Labour's Sign	Engineer's Sign	Remark
1	19/06/2020	Raj	Krishnamurthy	29	M	8:30 AM	5:30 PM			
	19/06/2020	Pradeep	Ravi	23	M	8:30 AM	5:30 PM			
	19/06/2020	Alakananda	Ravindra	34	M	8:30 AM	5:30 PM			
	19/06/2020	Balakaram	Ramesh	38	M	8:30 AM	5:30 PM			
	19/06/2020	Shivanthi	Mahamadali	40	M	8:30 AM	5:30 PM			
	19/06/2020	Yamanappa	Madappa	30	M	8:30 AM	5:30 PM			
2	20/06/2020	Shamu	Basappa	33	M	8:30 AM	5:30 PM			
	20/06/2020	Shekara	Chennappa	32	M	8:30 AM	5:30 PM			
	20/06/2020	Naidu	Rampal	30	M	8:30 AM	5:30 PM			
	20/06/2020	Yamanappa	Madappa	30	M	8:30 AM	5:30 PM			
	20/06/2020	Ranganath	Shekappa	42	M	8:30 AM	5:30 PM			
3	22/06/2020	Shankar	Nadkumar	27	M	8:30 AM	5:30 PM			
	22/06/2020	R. Naidu	Shiva Naidu	27	M	8:30 AM	5:30 PM			
	22/06/2020	Shamshad	Kamal	26	M	8:30 AM	5:30 PM			
	22/06/2020	Ramu	Basappa	33	M	8:30 AM	5:30 PM			
	22/06/2020	Shekara	Chennappa	32	M	8:30 AM	5:30 PM			
	22/06/2020	Parashuram	Madappa	27	M	8:30 AM	5:30 PM			
	22/06/2020	Ramesha	Ravadappa	26	M	8:30 AM	5:30 PM			
4	23/06/2020	Shankar	Nadkumar	27	M	8:30 AM	5:30 PM			
	23/06/2020	R. Naidu	Shiva Naidu	27	M	8:30 AM	5:30 PM			
	23/06/2020	Shamshad	Kamal	26	M	8:30 AM	5:30 PM			
	23/06/2020	Ramu	Basappa	33	M	8:30 AM	5:30 PM			
	23/06/2020	Yamanappa	Madappa	30	M	8:30 AM	5:30 PM			
	23/06/2020	Ramesha	Ravadappa	26	M	8:30 AM	5:30 PM			
	23/06/2020	Parashuram	Hanumantha	27	M	8:30 AM	5:30 PM			
	23/06/2020	Lavakumar	Hanumantha	26	M	8:30 AM	5:30 PM			

Thermal Screening for Workers (<99^{0}F/,<37^{0}C)

Thermal Screening at office entrance for staff (<99^{0}F/, <37^{0}C)

Hand wash / sanitizers provided at entry/exit

Covid-19 Induction for all new employees and subcontractor workmen

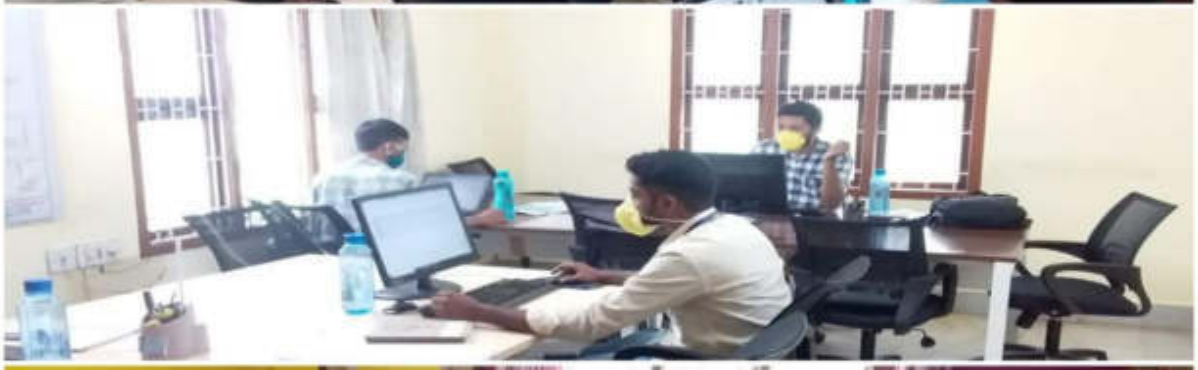
Toolbox talk on Covid-19 Awareness at site

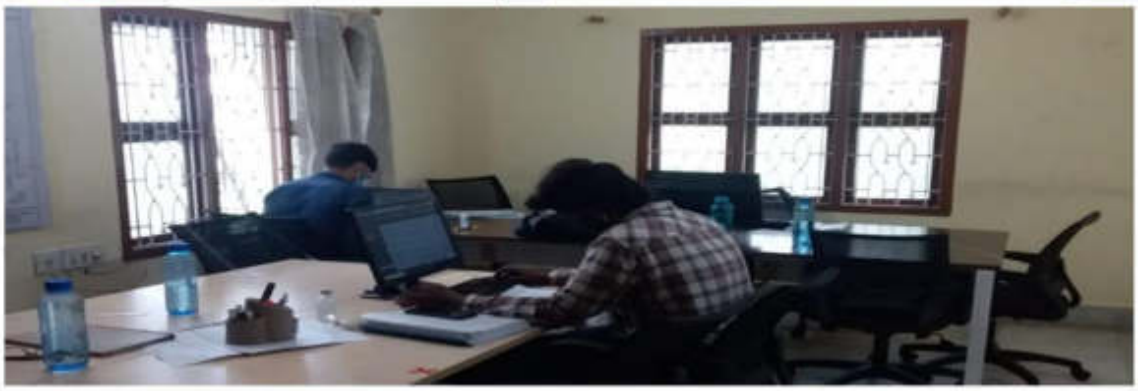
Hand wash (soap + water) / sanitizer arrangement at sites

Decontamination of vehicles.

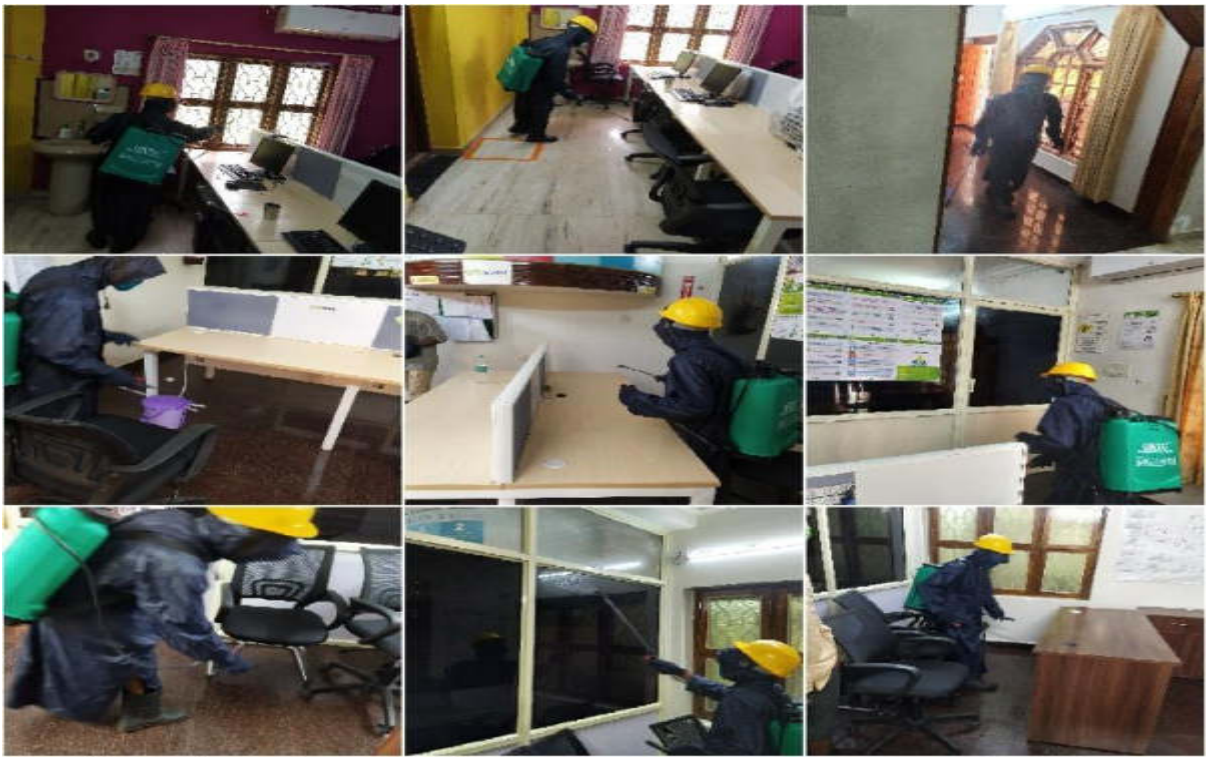
Decontamination in store

Social distancing in office



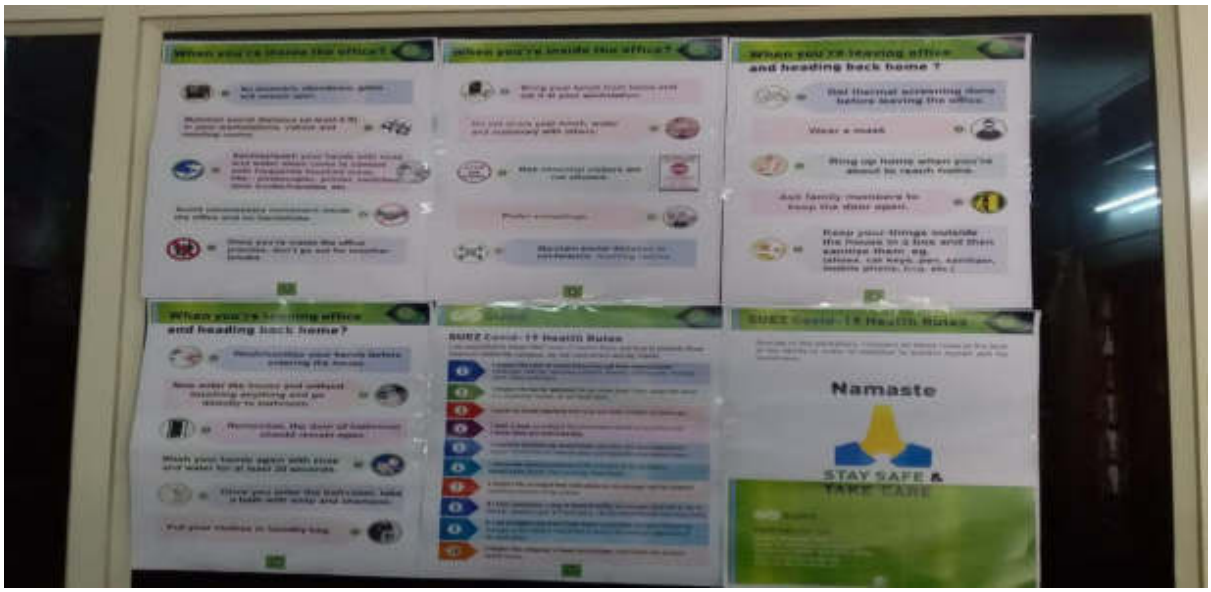


Daily decontamination of common touch points, cubicles, cabins, meeting rooms, toilets



Induvial /common Tools sanitizing at site

Covid -19 Awareness Posters



Covid -19 Health declaration

SUEZ	Health Safety & Environment Employee Health Declaration for Entry to the site/Office	Date: 20.4.2020 Doc. No. SIPL/HSE/HD

1. Employee Name: Pradeep. K
2. Gender: Male ☑

   Female ☐
3. Age: 22 Years
4. Date of Birth: 10/4/1998
5. Are you suffering from any of the following symptoms?

   a) Fever Yes ~~No~~
   b) Cough Yes ~~No~~
   c) Diarrhoea Yes ~~No~~
   d) Shortness of breath Yes ~~No~~
   e) Muscle Pain Yes ~~No~~
   f) Fatigue Yes ~~No~~
6. Please mention the number of days since you are unwell if your answer is Yes (even in one aspect) in point number 5. Above.

   — days (Mention number of days).
7. Are you undergoing any treatment?

   Yes ~~No~~

   — if yes, please specify.
8. Do you have any pre-existing illness like following?
   a) Diabetes Yes ~~No~~
   b) Blood Pressure Yes ~~No~~
   c) Heart Disease Yes ~~No~~
   d) Any recent surgery Yes ~~No~~
   e) Obesity Yes ~~No~~
   f) Osteoporosis Yes ~~No~~
   g) Mental illness Yes ~~No~~
   h) Any other (Specify) Yes ~~No~~
9. Are you undergoing any medication for point number 8) above?

   Yes ~~No~~
10. Do you have fitness certificate? Yes ~~No~~
11. Does Anybody in the family have any illness? Yes ~~No~~
    (Please specify the nature of illness)
12. Did you have any recent travel history? Yes ~~No~~
    (If Yes, please specify the country outside India or State/District/Place within India)
13. Body Temperature (< 100 Deg F) ~~OK~~ No Ok
14. Fitness conclusion (To be certified by HSE & PM). ~~Fit~~ Not Fit

Employee Sign HOD Sign HSE Sign

Thermal screening record

23/06/2020

S.No	Name	Dept (F)	Location	Temp(F)	Checking Time
1.	Shantha Amin	Admin	Office	97.2	8:30
2.	Supriya Shetty	Admin	Office	97.1	8:30
3.	Sajesh.c	EPC	Store	96.8	8:30
4.	Ankith Shetty	EPC	Site	97.7	8:30
5.	Pradeep Shetty	HSC	Site	97.5	8:30
6.	Sushanth Shetty	EPC	Site	97.6	8:35
7.	Basavaraj. HK	CS	Office	97.0	8:35
8.	Akashatha Hebbar	CS	Office	97.5	8:40
9.	Sudeep chandran	EPC	Office	96.1	8:45
10.	Bandi Vishnu	EPC	Site	97.0	8:45
11.	Rajendra prasad	EPC	Site	97.2	8:48
12.	Pramod kumar	EPC	Site	97.5	8:50
13	Subjith paul	planing	office	97.3	8:55
14					

Daily checklists

SUEZ	COVID-19 CHECKLIST FOR DS / WS SITES	Rev: 2 Date : 22-05-2020

All Design and Build sites & Water services must comply with following specific check points in addition to general advisory issued. Site Responsibility of Implementation of this advisory lies with all employees and compliance actions to be performed for Daily Check, Admin Manager Daily review 1: HSE Manager, Daily Review 2: Project Manager.

Date: 23/05/2020 Project: 24x7 water supply Project, Udup

Tasks: Entry-Exit Points	Daily check	Daily Review1	Daily Review2
Thermal Screening done at site entrance for everyone (500 Pax/day)	✓	✓	
and wash / sanitizers provided at entry/exit	✓	✓	
Mask mandatory for everyone entering the site	✓	✓	
Security provided at gate	✓	✓	

Tasks: Covid-19 Induction	Daily check	Daily Review1	Daily Review2
Covid-19 induction done to all new employees and sub-contract workmen (COVID-19 Symptoms, site rules, Distancing, Barriers, PPEs, Hygiene, behavior)	✓	✓	

Tasks: While working at site	Daily check	Daily Review1	Daily Review2
Roster prepared teams & workmen identified with supervisors	✓	✓	
Toolbox talk on Covid awareness done at site	✓	✓	
Hand wash (soap + water) / sanitizer arrangement available at all sites	✓	✓	
Social distancing being maintained during site activities?	✓	✓	

Tasks: Daily Decontamination	Daily check	Daily Review1	Daily Review2
Decontamination of frequently touched points in office & washrooms done twice a day?	✓	✓	
Decontamination of vehicles, Heavy equipment, Machines done.	✓	✓	

Tasks: Material Store	Daily check	Daily Review1	Daily Review2
Decontamination taken done	✓	✓	

Tasks: Canteen / Eating facility	Daily check	Daily Review1	Daily Review2
PPEs, garbage bags / waste bins, hand wash facility available	NA	NA	
Lunch time & seating arrangement organized to ensure social distancing	NA	NA	
Decontamination done in the canteen / eating area	NA	NA	

Tasks: Vehicle Management	Daily check	Daily Review1	Daily Review2
Daily sanitization of vehicles done	✓	✓	
Social distancing to be maintained in vehicles (diagonal, sitting)	✓	✓	
Needs carrying vehicle decontamination, restricted movement of vehicles & driver operated	✓	✓	

Tasks: Labor Housing	Daily check	Daily Review1	Daily Review2
Contacted daily health check to history, symptoms and high risk groups	NA	NA	
Daily inspection of labor housing done	NA	NA	
24X7 security, thermal screening, mandatory hand sanitization at gate done	NA	NA	
Daily sanitization of common area, washing area, washrooms, drinking water area, cooking and dining area done	NA	NA	
Adequate drinking water (20 L/person) available	NA	NA	
Adequate number of dustbins and daily disposal done	NA	NA	

Tasks: Office	Daily check	Daily Review1	Daily Review2
Masks, thermal scanning, hand sanitization made mandatory at site entrance	✓	✓	
Mandatory social distancing in all rooms, cabins, meeting rooms, reorganization of seating arrangement	✓	✓	
Daily decontamination of seating, desks, cubicles, desks, meeting rooms, toilets	✓	✓	
Commuting Employees in self/company vehicle	✓	✓	

suez

Suez BA India
Vehicle Decontamination Checklist

S.No.	Check Points	Vehicle Number	Vehicle Number	Vehicle Number	Comment
1	Vehicle Decontamination	KA19AC3487 (Etios)	KA20MC2559 (Omni)	KA19AA5113 (Ashok leyland)	
1.1	Sanitizer available in the vehicle	✓	✓	✓	
1.2	Driver has mask available	✓	✓	✓	
1.3	Decontamination done for Steering wheel, Dash board, Seats, door handles (Inside & Outside)	✓	✓	✓	
1.4	Spare surgical masks available in the vehicle	✓	✓	✓	
1.5	Driver Covid induction done	✓	✓	✓	
	Driver Sign				

suez

Suez BA India
Udupi Office - Entry Exit Checklist

4.1	Entry to office is restricted to Health declaration Form signed by HOD & HSE	✓	
4.2	Mandatory hand sanitization by security	✓	
4.3	Thermal scanning - < 37.5°C - As per SOP & records maintained	✓	
4.4	Compulsory wearing mask by all employees	✓	
4.5	Compulsory mask, gloves by security	✓	
4.6	No Physical attendance - leave the door open	✓	
4.7	Exit from any location/office to be permitted by security with written permission of HOD	✓	
4.8	Visitor entry restricted in the office	✓	

Name Date Sign

Suez India
Office Decontamination Checklist

1	Do contamination Checks Daily (decontamination of common facilities)			
1.1	Gloves and masks available for support staff	✓	✓	
1.2	Handsfree cleaning of frequently touch points / common areas such as	✓	✓	
1.3	Door handles	✓	✓	
1.4	Tables	✓	✓	
1.5	Keycards	✓	✓	
1.6	Telephone	✓	✓	
1.7	Handrails	✓	✓	
1.8	Lift / Elevator			
1.9	Disinfectant meeting room, Cabin & Cubicles - once a day	✓	✓	
1.10	Paddle bins available at each desk	✓	✓	
2	Washrooms (Hourly cleaning, personal hygiene)			
2.1	Cleaning of washrooms using disinfectants at least every hour?	✓	✓	
2.2	Availability of soap, water and disposable towels in the washroom?	✓	✓	
2.3	Ensure proper circulation of air in washroom	✓	✓	
2.4	Availability of sanitary bins in the washroom to dispose napkins	✓	✓	
2.5	Employees to ensure careful use - waste food habits	✓	✓	
3	Pantry and Cafeteria Areas (bring your own food)			
3.1	Pantry and Cafeteria Areas (Coffee machine) cleaned twice in a day	✓	✓	
	Ground Floor			
4.1	Parking area cleaned	✓	✓	
4.2	Door handles, reception desk, IT room, cabin cleaned	✓	✓	
4.3	Corridors cleaned	✓	✓	
4.4	Used/disposed Masks separately packed in garbage bag and given to CMC	✓	✓	

Support Staff - Shantha

Supervisor

COVID -19 induction attendance sheet

SUEZ	Covid Induction Attendance Sheet	Date: 20.4.2020 Doc. No: SIPL/HSE/HD

URL for online Pre-Health assessment form is below:

Link for downloading Aarogya Setu app in my cell phone
IOS:
Android:

Covid Induction Attendance Sheet 24/06/2020

Sl. No	Name	Dept.	Signature
1.	Ramesha	Store / Helper	[illegible]
2.	Rangnath	"	[illegible]
3.	Yamunappa	"	Yamunappa
4.	Parashuram	"	[illegible]
5.	Naresh	"	[illegible]
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

Name & Sign. of Trainer

24/06/20

Monthly Environmental Monitoring Report

Project Number: 43253-027
June 2020

IND: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Puttur

Package No. 02PTR01

Prepared by

egis India
Consulting engineers pvt. ltd.

CONTENTS

INTRODUCTION

1. Background

The Karnataka Integrated Urban Water Management Investment Program (KIUWMIP, the Program) aims to improve water resource management in urban areas in a holistic and sustainable manner. Investment support will be provided to modernize and expand urban water supply and sanitation (UWSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. The Program focuses on priority investments and institutional strengthening in water supply and sanitation within an integrated water resource management (IWRM) context.

The executing agency is the Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) and implementing agencies for the Investment Program will be respective urban local bodies (ULBs). Kundapura, Mangalore, Puttur, and Udupi are the four towns chosen to benefit from the Tranche 2 of the investment.

The expected outcome will be improved water resource planning, monitoring and service delivery in 24x7 water supply for Puttur City. Project 2 will have 3 outputs: (i) UWSS and sanitation infrastructure expanded and upgraded; (ii) water resource planning, monitoring and service delivery improved; and (iii) institutional capacity of KUIDFC and ULBs strengthened. The IEE is based on an assessment of these components within the project area.

2 Need for Infrastructure Improvement in Puttur

At present, Puttur City meets its water supply requirement through surface source. River Kumaradhara is the main surface source of water supply to Puttur. A new vented dam was constructed under KUDCEMP with a storage capacity of 0.61 million cubic meter (MCM) and a storage spreading of 2,400 m upstream the vented dam. Existing water supply system is depicted in Figure 1.

3 The proposed subproject:

This subproject includes the following components:

(i) Replacement of two old pumps with new vertical turbine pumps in Jackwell at Nekkilady;
(ii) construction of 1.68 kilometer (km) of raw water pumping main (400 millimeter (mm) diameter) from Jackwell to water treatment plant (WTP) at Nekkilady;
(iii) construction of 12.42 km clear water main of 400 mm diameter from the proposed new Water Treatment Plant (WTP) at Nekkilday to ground level service reservoir (GLSR) at Tenkila;
(iv) construction of new WTP of capacity 8.7 million litres per day (MLD) at Nekkilady;
(v) replacement of clear water pumps in existing WTP at Nekkilady;
(vi) construction of 5.06 km of clear water feeder mains;
(vii) construction of six new overhead tanks (OHTs) – (a) 300 kiloliters (kl) capacity in Zone-2 at Mura Shantinagra, Padnur, (b) 100 kl in Zone-3 at Karmala near Microwave station, (c) 600 kl in Zone-4A at Darbe; (d) 250 kl in zone-5 at Lingadagudda, Kabaka, (e) 200 kl in Zone-6A at Balnad Helipad, and (f) 100 kl zone-8 at BalnadKelyadi, Vitla Road;
(viii) construction of two GLSRs - (a) 1,000 kl capacity at Seethigudda, and (b) 2,000 KL at Tenkila;
(ix) Intermediate pumping station at Tenkila; (x) booster pumping station at Balnad Helipad, (xi) 29 bulk water meters;
(x) 142.66 km of distribution network to cover 24x7 water supply to Puttur city for 8 zones; and

(xi) Replacement of 8,441 existing meters and providing new house service connections of 4,500 for un-covered households.

Figure 1: Existing Water Supply System in Puttur

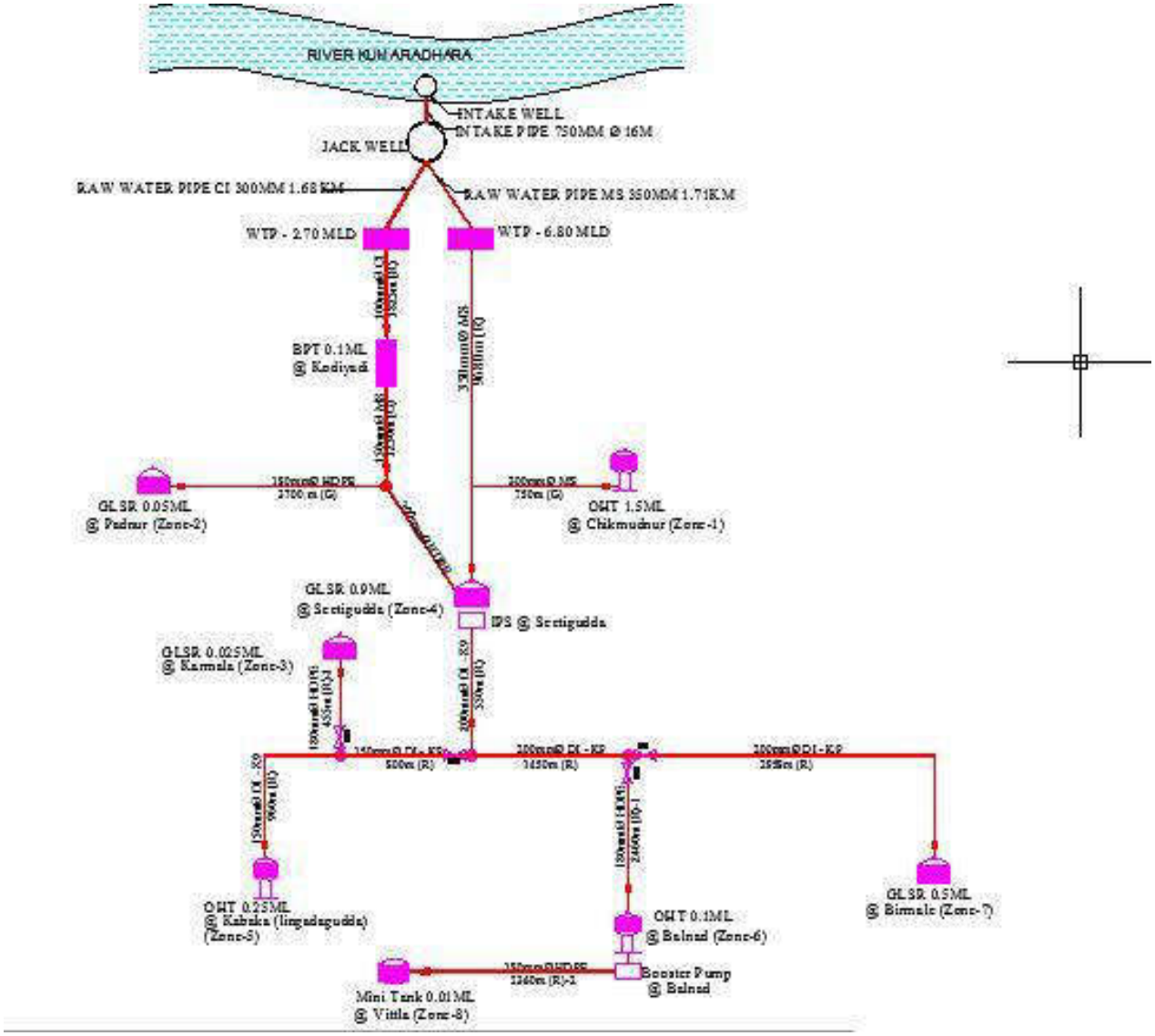


Table 1: Proposed Components for 24x7 Water Supply System

Infrastructure	Function	Description	Location
Raw water pumps in existing Jack well	Pumping of Raw water from Jack well Standby power supply arrangement for pumping	-Replacement of two old pumps with new vertical turbine pumps of capacity 335 m^3/h, 75 m head (1+1) Procurement of diesel generator of 500 kilovolt-ampere -(kVA)	Jack well site at Nekkilady Jack well site at Nekkilady
Raw water Transmission Main	Conveys raw water to WTP by pumping	1.68 km length 400 mm diameter DI pipe	Pipe will be laid underground from Nekkilady to WTP all along the existing road
Water Treatment Plant	Treats raw water to meet drinking water standards	New 8.7 MLD capacity WTP based on conventional treatment Process. The components Include Cascade Aerator Parshall flume Flash mixer Flocculators – 2 units Tube settlers – 2 units Rapid sand filters - 4 beds Chlorination system with safety measures Lime and alum mixing Tanks Clear water sump and pump house Backwash water recirculation and sludge management system (sludge collection, drying beds) – a combined system of adequate capacity for backwash and sludge management will be developed to cater to both new and existing WTPs. This component addresses the issues of concern identified in the environmental audit of existing WTP (Ref Corrective Action Plan, Table 8)	Nekkilady Adjacent to the existing WTP; sufficient land available within the existing WTP campus to accommodate the new WTP
Clear water Pumps in existing WTP	Pumps clear water to Service reservoirs	Replacement of old pumps within new pumps: 2 pump sets of capacity 325 m^3 /hour and 84 m head (1+1)	Pumps will be installed in the existing clear water pumping station at WTP, Nekkilady
Clear Water Transmission Main	Pumping of clear water from WTP (water treatment plant) to service reservoirs	12.42 km length 400 mm diameter DI pipe	Pipe will be laid underground from Nekkilady to Tenkila GLSR along the public roads within the road right of way
Clear water feeder main	Pumping of clear water from MBR to Service Reservoirs	5.06 km length 180 – 300 mm diameter DI /HDPE) pipes DI pipe of 300 mm diameter – 1.134 km DI Pipe of 200 mm diameter – 2.422 km	Laying of pipes underground along public roads within the ULB area

Infrastructure	Function	Description	Location
		DI Pipe of 150 mm diameter – 0.591 km HDPE pipe of 180 mm – 0.918 km	
Water service reservoirs	Water storage for supply	Six OHTs and two GLSRs of RCC including compound walls at the selected sites: **OHT** 300KL for Zone-2 at Mura Shantinagra, Padnur 100KL for Zone-3 at Karmala near Microwave station 600KLfor Zone-4A at CTO, Darbe 250KLfor Zone-5 at Lingadagudda, Kabaka 200KL for Zone-6A at Balnad Helipad 100KL for zone-8 at,Balnad Kelyadi, Vitla Road1 **GLSR** 1,000KL in Zone-4 at Seethigudda 2,000 KL GLSR at Tenkila	**OHT** Existing within ULB Properties. No non-title users are present at these sites **GSLR** Seetigudda land is ULB property. And Tenkila is purchase by Karnataka Housing Board, Government of Karnataka, and it will be purchased through negotiated Settlement.
Intermediate Pumping Stations (IPS)	To provide adequate pressure in the system for supply	Intermediate pumping station at Tenkila Pump capacities: 65m^3/h and 85 m head for zone 3 and 5 (1+1) 82 m^3/h and 33 m head for zone 4A, (1+1) 119 m^3/h and 100 m head for zone 6, 6A and 7, (1+1) Booster pumping station at Balnad Pump capacity 11 m^3/h and 80 m head (1+1)	Pumping station will be located within Tenkila GLSR site Pumping station will be located within the site identified for Zone 6A OHT at Balnad Helipad
Distribution system	Supply of water from service reservoirs to consumers	142.66 km of pipe lines of diameter 75 mm to 280 mm (HDPE / DI pipes) 75 mm – 106.139 km 90 mm – 1.853 km 110 mm – 21.744 km 150 mm (DI) - 2.784 km 160 mm – 2.889 km 200 mm – 1.403 km	In 8 zones within the city limits Pipes will be laid underground along the roads within the ROW

		250 mm – 0.362 km	

Infrastructure	Function	Description	Location
		250 mm (DI)- 4.916 km 280 mm – 0.570 km	
Bulk Water Meters	To record data of volume of flow to each Distribution System zones at desired time interval.	29 no.	Bulk meters will be fixed at strategic locations in the pipe line at Jack well point, WTP and service reservoir points
House Service Connections (HSC)	For each house connection will be provided with meters to supply water and record volume of water. W	4,500 new HSC connections 9226 replacement of existing domestic water meters	In 8 zones for all the houses within the city limits

CMC = City Municipal Council, m^3/h = cubic meter per hour, DI = ductile iron, GLSR = ground level service reservoir, HDPE = high density polyethylene, HSC = House Service Connections, IPS = Intermediate Pumping Stations, km = kilometer, m = meter, mm = millimeter, MLD = million liters per day, OHT = overhead tank, RCC = reinforced cement concrete, ROW = right-of-way, ULB = urban local body, WTP = water treatment plant.

4 Environmental Management Plan

The environmental management plan (EMP) aims to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with

Karnataka Integrated Urban Water Management Investment Program	
Name of the Work: Karnataka Integrated Urban Water Management Investment Program (Tranche 2) – Improvements for 24 x 7 Water Supply System for City Municipal Council in Puttur	**Name of the Contractor: Suez Civil Engineering services Pvt,LTD**
Package No: Karnataka Integrated Urban Water Management Investment Program (Tranche 2)	
Name of the city : Puttur	**Name of SE/EE/AE Of concerned division PIU** :-Mr.Shamath, AE
Date of monthly monitoring: 25/06/2020	**Name of Environment, Health And Safety (EHS) engineer :-** Mr.YAmruth

Table 2: Status of implementation Environmental Management Plan for Anticipated Impacts –Construction Stage - PUTTUR

Field	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds	Status of Implementation
Environmental Management Plan (EMP) Implementatio nTraining	Impacts on the environment, workers, and community due to improper implementation of EMP	**1)** Project manager and all key workers will be required toundergo EMP implementation including spoils management, Standard operating procedures (SOPs) for construction works; occupational healthandsafety(OHS),corela bor laws, applicable environmental laws, etc.;and **2)** appointment of Environment, Health and Safety (EHS) Engineer by contractor prior to start ofwork	Construction Contractor/ Program Implementation Unit (PIU)/ Project Management Design, Construction and Supervision Consultant (PMDCSC)	(i) Certificat e of Completion (Safeguards Compliance Orientation); (ii) Posting of Certification of Completion at worksites;and (iii) Posting of EMP at worksites	Cost of EMP Implementation Orientation Training to contractor is Responsibility of Program Management Unit(PMU). Othercosts Responsibility of contractor.	**1)** Spoil management submitted but it needs to be updated **2)** EHS Engineer appointed
Air Quality	Emissions from constructionvehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, Sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons.	**3)** Consult with PIU/PMDCSC on the designated areas for stockpiling of clay, soils, gravel, and other constructionmaterials; **4)** Damp down exposed soil and any stockpiled on-site by spraying with water when necessary during dryweather; **5)** Enclose the area with dust screens of sufficient height during the dismantling work; employ proper construction methods limiting the dustgeneration; **6)** Use tarpaulins to cover sand and other loose material when transported bytrucks; **7)** Clean wheels andundercarriage of vehicles prior to leaving construction site;and	Construction Contractor	(i) Locatio n of stockpiles; (ii) Complaint s from sensitiverecept ors; (iii) Heavy equipment and machinery with air pollution control devices;and (iv) Certificati on that vehicles are compliant with AirAct.	Cost forimplementation of mitigation measures responsibility of contractor.	**3)** Complied **4)** Pipe execution work is not in progress due to rain. But instructed contracting agency to spray water at commercial and residential areas if stock piled on-site. **5)** Not complied **6)** Not complied. Instructed to cover sand and loose earth with tarpaulins is transported **7)** Complied

		8) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly.				**8)** Complied
Surface water quality	Mobilization ofsettled silt materials, and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface waterquality.	**9)** Prepare and implement a spoils managementplanasthepartof the Construction ManagementPlan; **10)** Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plasticsheets; **11)** Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; **12)** Place storage areas for fuels and lubricants away from any drainage leading to water bodies. Storage structure should consider 110% capacitybund;	Construction Contractor	(i) Areas for stockpiles, storage of fuels and lubricants and waste materials; (ii) Number of silt traps installed alongtrenches leading to waterbodies; (iii) Records of surface water quality inspection; (iv) Effective ness of water management measures;and (v) No visible degradation to nearby drainages, nallahs or	Cost forimplementation of mitigation measures responsibility of contractor.	**9)** Spoil management plan is submitted during preconstruction stage. Updation is to be done for construction stage **10)** Instructed contracting agency to use tarpaulins or sheets for Stockpiling during monsoon season **11)** No such water bodies found during site visit but instructed contracting agency to use silt trap if any water bodies found **12)** Contracting agency not using fuels and lubricants in bulk but instructed to provide separate room for bulk quantity

		13) Dispose any wastes generated by installation of pipeline in designated sites;and **14)** Conduct surface quality inspection according to the Environmental Management Plan (EMP).		waterbodies due to civil works.		**13)** Complied **14)** Not complied
Noise Levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, andpeople	**15)** Plan activities in consultation with PIU/PMDCSC so that activities with the greatestpotential to generate noise are conducted during periods of the day whichwill result in leastdisturbance; **16)** Horns should not be used unless it is necessary to warn other road users or animals of the vehicle'sapproach; **17)** Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitivereceptor; **18)** Properly enclose the dismantling area with temporary noise barriers;and **19)** Maintainmaximumsoundlevels not exceeding 80 decibels(dbA) when measured at a distance of 10 m or more from thevehicle/s.	Construction Contractor	(i) Complaints from sensitiverecepto rs; (ii) Use of silencers in noise-producing equipment and sound barriers;and (iii) Equivalent day and night time noise levels (See Appendix 4 of this IEE).	Cost forimplementation of mitigation measures responsibility of contractor.	**15)** Complied **16)** Complied **17)** Complied **18)** Complied **19)** Complied

Landscape and aesthetics	Impacts due to excess excavated earth, excess construction and demolition materials and solid waste such as removedconcrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items. C & D materials after dismantling of the old WTP and old GLSR are identified	**20)** Prepare and implement spoils managementplan; **21)** Avoid stockpiling of excess excavatedsoils; **22)** Coordinate with Puttur CMCfor beneficial uses of excess excavated soils or immediately dispose to designated areas; **23)** Recover used oil and lubricants and reuse or remove from the sites; **24)** Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; **25)** Remove all wreckage, rubbish, or temporary structures which are no longer required; and **26)** Request PIU/PMDCSC to report in writing that the necessary environmental restoration works has been adequately performed before acceptance of work. C&D materials after dismantling of the old WTP and old GLSR shall be managed as per C&D Rules2016,	Construction Contractor	(i) Complaints from sensitiverecept ors; (ii) Worksite clear of hazardous wastes such as oil/fuel; and (iii) Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers.	Cost forimplementation of mitigation measures responsibility of contractor.	**20)** Spoil management plan is prepared **(attached in annexure 3a July 2019 but updation is to be done)**and contractor agency following and found no surplus soil found in sites **21)** Complied **22)** Complied **(attached in annexure 4 September 2019)** **23)** Used oil and lubricants not generated on site **24)** Complied **(attached in annexture 4 september 2019)** **25)** Complied **26)** Pipe execution work is not in progress due to rain but instructed contracting agency to restore immediately and when work gets completed, joint site inspection will be conducted and report / letter will be issued.

Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	**27)** Obtain from PIU/PMDCSC the list of affected utilities and operators ifany; **28)** Prepare a contingency plan to include actions to be done in case of unintentional interruption of service;and **29)** The public should be given notice at least three days in advance and any accidental breaking should be rectified immediately.	Construction Contractor	Existing Utilities ContingencyPlan	Cost forimplementation of mitigation measures responsibility of contractor.	**27)** No such utilities were shifted or damaged but Recommended Contractor to maintain list of utilities identified prior to start of work at any section. **28)** Not complied **29)** Complied
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	30) Minimal tree cutting is envisaged as part of this sub project. to safeguard any tree removal, following measures to be implemented; (a) Minimize removal of vegetation and disallow cutting of trees;	Construction Contractor	PMU/PMDCSC to report in writing the no oftreescutand planted.	Cost forimplementation of mitigation measures responsibility of contractor.	**30)** Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work a) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work
		b) If tree-removal will be required, obtain tree-cutting permit from the Forest Department;and c) Plant two native trees for every one that is removed.			d) e) f)	b) Instructed contracting agency to avoid tree cutting and to get permission from concerned department before start of the work c) Instructed contracting agency

Accessibility	Traffic problems and conflicts near project locations and haul road	**31)**Traffic Management Plan (TMP) should be part of the Construction Management Plan. **a)** Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of deliverysites; **b)** Schedule transport and hauling activities during non-peakhours; **c)** Locate entry and exit points in areas where there is low potential for trafficcongestion; **d)** Keep the site free from all unnecessaryobstructions; **e)** Drive vehicles in a considerate manner; **f)** Coordinate with Traffic Police for temporary road diversions and with for provision of traffic aids if transportation activities cannot be avoided during peakhours; **g)** Notify affected sensitive receptors 2 days in advance by providing sign boards informing nature and duration ofconstruction works and contact numbers for concerns/complaints; **h)** Plan and execute the work in such a way that the period of disturbance/ loss of access is minimum;and **i)** Provide pedestrian access inall the locations until normalcy is restored.	Construction Contractor	(i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (refer outline TMP is provided in Appendix 12); (ii) Complaints from sensitive receptors;and (iii) Number of signages placed at project location.	Cost forimplementation of mitigation measures responsibility of contractor.	**31)** Traffic Management Plan is prepared by contracting agency **(attached in annexture 3bjuly 2019 but updation is to be done)** **a)** **Not complied.** Instructed to prepare plan **b)** Complied **c)** Complied **d)** Complied **e)** Complied **f)** Pipe execution work is not in progress due to rain. But instructed contracting agency to inform traffic department for temporary road diversionbefore two days start of the work. **g)** Complied **h)** Complied **i)** Pipe execution work is not in progress due to rain. But instructed contracting agency to provide pedestrian wherever required

Socio-Economic – Income.	Impede the access of residents and customers to nearby shops	**32)** Prepare and implement spoils managementplan; **33)** Leave spaces for access between mounds of soil; **34)** Provide walkways and metal sheets where required forpeople; **35)** Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; **36)** Consult businesses and institutions regarding operating hours and factoring this in work schedules;and **37)** Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.	Construction Contractor	(i) Complaints from sensitiverecept ors; (ii) Spoils management plan;and (iii) Number of walkways, signages, and metal sheets placed at project location.	Cost forimplementation of mitigation measures responsibility of contractor.	**32)** Spoil management plan is prepared **(attached in annexture 3a july 2019 but updation is to be done)** **33)** Complied **34)** Complied **35)** Complied **36)** Complied **37)** Complied
Socio-Economic - Employment	Generation of contractual employment and increase in local revenue	**38)** Employ local labor force to the maximum extent, if manpower is available; and **39)** Comply with core labor laws	Construction Contractor	(i)Employment records; and (ii) Compliance to core labor laws (See Appendix 2 of this IEE).	Cost forimplementation of mitigation measures responsibility of contractor.	**38)** Register maintained by contractor attached as **Annexure – 4 in dec 2019** **39)** Contractor Obtained Labour license and Employees Compensation Insurances for Workers (Skilled and unskilled).

Occupational Health and Safety	Occupational hazards which can arise duringwork	**40)** Comply with all national, state and local core labor laws (See Appendix 2 of thisIEE); **41)** Develop and implement site- specific occupational health and safety (OHS) Plan, and include in the Construction Management plan. The OHS plan will include measures such as: (a)excluding public from the site; (b) ensuringall workers are provided with anduse	Construction Contractor	(i) Site-specific OHS Plan; (ii) Equipped first-aid stations; (iii) Medical insurance coverage forworkers; (iv) Number of accidents; (v) Supplies of potable drinkingwater;	Cost forimplementation of mitigation measures responsibility of contractor.	**40)** Contractor following Company EHS Policy Site-specific OHS Plan Have to be prepared by Contractor. **41)** Contractor following Company EHS Policy- PPE'S provided by Contractor. **a) Complied** **b) Complied.** PPE'S provided by Contractor to workers and tool box training provided at site.
		personal protective equipment like helmet, gumboot, safety belt, gloves, nose mask 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; **42)** Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site; **43)** Provide medical insurance coverage forworkers; **44)** Secure all installations from unauthorized intrusion and accidentrisks; **45)** Provide supplies of potable drinkingwater; **46)** Provide clean eating areas where workers are not exposed to hazardous or noxioussubstances;		(vi) Clean eating areas where workers are not exposed to hazardous or noxioussubstances; (vii) record of health and safety orientation trainings; (viii) personalprotective equipment; (ix) % of moving equipment outfitted with audible back-up alarms; (x) permanent sign boards for hazardous areas such as energized		**c)** Complied **d)** Not complied **e)** Accident and incident register maintained **42)** Partially Complied. Instructed to keep first-aid box at each working sites separately **Annexure-4 in Dec 2019** **43)** Not complied **44)** Complied **45)** Complied **46)** Complied

		47) Provide health and safety orientation training to all new workers to ensure that they are apprised of the basic site rules of workatthesite,personalprotective protection, and preventing injuring to fellowworkers; **48)** 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; **49)** Ensure the visibility of workers through their use of highvisibility		electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal; and (xi) Compliance to core labor laws (See Appendix 2 of this IEE).		**47)** Not complied. Instructed to Provide health and safety orientation training to all workers **48)** Not complied **49)** Complied **Annexure-1 in dec 2019**
		vests when working in or walking through heavy equipment operating areas; **50)** Ensure moving equipment is outfitted with audible back-up alarms; **51)** Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well knownto,andeasilyunderstood by workers, visitors, and the general public as appropriate;and **52)** Disallow worker exposure to noise level greater than 85 dBAfor adurationofmorethan8hoursper day without the ring				**50)** Complied **51)** Complied **52)** Workers not allowed to work more than 8 hours per day without hearing protection who are exposing to noise level greater than 85 dB. Recommended Contractor to use hearing protection Measures to workers

		protection. The Use of hearing protection shall be enforced actively.				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	**53)** Plan routes to avoid times of peak-pedestrianactivities. **54)** Liaise with PIU/PMDCSC in identifying high-risk areas on route cards/maps. **55)** Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or prematurefailure. **56)** Provide road signs and flag persons to warn of on-going trenchingactivities.	Construction Contractor	(i) Traffic Management Plan;and (ii) Complaints from sensitiverecept ors.	Cost forimplementation of mitigation measures responsibility of contractor.	**53)** Not complied **And instructed to provide awareness to follow H& S measures of COVID-19 to the worker at site and to office staffs** **54)** Not complied **55)** Not complied **56)** Complied
Work Camps and worksites	Temporary air and noise pollution from machine operation,	**57)** Consult with PIU before locating workers camps/sheds, and construction plants; as faras	Construction Contractor	(i) Complaints from sensitive receptors;	Cost for implementation of mitigation measures	**57)** Complied Contractor informed to PIU office regarding labor camp construction at mottetadka opposite NCRC but they not having letter from PIU. And also instructed to provide **awareness to follow H& S measures of COVID-19 to the worker at site and camps**

	water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers.	possible located at least 200 m from residential areas; **58)** Minimize removal of vegetation and disallow cutting of trees; **59)** Living facilities shall be built with adequate materials, and should be in good condition and free from rubbish and otherrefuge; **60)** The camp site should be adequately drained to avoid the accumulation of stagnantwater; **61)** Provide water and sanitation facilities; water, meeting Indian drinking water standards shall be provided, in adequate quantities (supply of 60-80LPCD); all water storage structures must be cleaned regularly and covered properly to avoid any contamination; **62)** Provide separate facilities for men and women; sanitary facilities shall be properly buildand well maintained; toilet and bath facilities should be provided on basis of 1 per 15 or lesspersons; **63)** Train employees in the storage and handling of materials which can potentially cause soil contamination; **64)** Recover used oil and lubricants and reuse or remove from thesite; **65)** Manage solid waste according to the following		(ii) Drinking water and sanitation facilities for employees.	responsibility of contractor.	**58)** Removal of vegetation Minimize by selecting best alignment. **59)** Instructed contracting agency to built labour shad with sheets with proper ventilation in clean hygienic area. And also instructed to provide **awareness to follow H& S measures of COVID-19 to the worker at site and camps** **60)** Instructed contracting agency to built labour shed with sheets with proper ventilation in clean hygienic area. **61)** Instructed contracting agency to provide drinking water as per the standards at camp **62)** Instructed contracting agency to provide separate toilet facilities for men and women at camp and working sites **63)** Instructed contracting agency to provide training of solid and liquid materials handling at camp

		preference hierarchy:reuse, recycling and disposal to designated areas; **66)** Remove all wreckage, rubbish, or temporary structures which are no longer required; **67)** Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work; and **68)** The work camp details should be included in the Construction Management Plan.				**64)** Instructed to contracting agency **65)** Complied **66)** Complied **67)** Construction work is in progress. **68)** Not complied
Social and Cultural Resources	Risk of archaeological chance finds	**69)** Create awareness among the workers and supervisors about the chance finds during excavation work; **70)** Stop work immediately if any finds are suspected to allow furtherinvestigation; **71)** Inform archaeological agencies promptly if a find is suspected, and take any action they require to ensure its removal or protection in situ;and **72)** Adjacent to important religious sites, undertake excavation and construction work in such a way that no	Construction Contractor	Records of chance finds	Cost forimplementation of mitigation measures responsibility of contractor.	**69)** Till now no such suspected items found nor recorded **70)** Till now no such suspected items found nor recorded **71)** Till now no such archaeological items recorded **72)** No such damages recorded during the visit. But instructed to

		structural damage is caused to thebuilding.				maintain if such damages happens.
Submission of EMP implementation report	Unsatisfactory compliance to EMP	**73)** Appointment of EHS Engineer to ensure EMP implementation;and **74)** Timelysubmissionofmonitoring reports includingpictures.	Construction contractor	Availability and competency of appointed EHS engineer Monthly report	Cost forimplementation of mitigation measures responsibility of contractor.	**73)** EHS Engineer appointed **74)** Complied **Annexure-5in dec2019**
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	**75)** Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; **76)** All excavated roads shall be reinstated to originalcondition.	Construction Contractor	PIU/PMDCSC report in writing that (i) worksite is restored to originalconditions; (ii) camp has been vacated and restored to	Cost forimplementation of mitigation measures responsibility of contractor.	**75)**Complied **76)** No such bitumen or concrete road damaged during site visit. But instructed to restore road same as it was before damage

		77) All disrupted utilities restored; **78)** All affected structures rehabilitated/compensated; **79)** Theareathatpreviouslyhoused the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleanedup; **80)** All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall betop soiled and regressed using the guidelines set out in the revegetation specification that forms part of thisdocument; **81)** The contractor must arrange the cancellation of all temporary services;and **82)** Request PMU/PMDCSC to report in writing that worksites and camps have been vacated and restored to pre-projectconditions before acceptance of work.		pre-project conditions; and (iii) all construction related structures not relevant to O&M are removed; and (iv) worksite clean-up is satisfactory.		**77)**If utilities are to be shifted contracting agency must take permission from concern authorities before start the work and restore it properly as it was before the damage **78)**Till now no structures affected **79)**Not complied Instructed contracting agency to properly clean surface area free of oil and paints for construction camp **80)** Not complied **81)**Not complied **82)**Construction work is in progress

Conclusion:-

Construction stage is in progress. Health and safety training and HIV AIDS Awareness Training programme has to be conducted by Contractor. Proper Record maintenance should be improved by Contractor. Proper safety measures like project information boards, safety sign boards, hard barricading and register books should be maintained at all work sites. Contractor has to submit Site Specific EMP of January, February, March, April, May and June 2020 month with PIU letter, Puttur. Overall the work in the projects for health and safety needs improvement.

Recommendation:-

Sl.No	Monitoring of Mitigation / Key Issues to be complied	Recommendation and Action Required by Contractor	Time line/Remarks
1.	Mobilization of Environment, Health And Safety(EHS)engineer		Complied
2.	Submission of Site specific EMP		Before start of Construction work Comply with in 7days
3.	Submission of monthly reports.	• Construction status or compliance report	Contractor has to submit Site specific EMP of **January, Feb, March, April and May 2020 Month Comply with in 7 days**
4.	Telephone lines, electricPoles and wires, water Lines within proposedproject area	• List of utilities going to effect will be submitted to PIU	Before start of Construction work
5.	Heavy equipment and machinery with air pollution control devices;	• **PUC certification for all vehicles/equipment used for/during construction and certification of users at site.**	Comply with in 7days
6.	Certification that vehicles are compliant with Air Act	• **Register of Equipment and Vehicles maintenance certificates at site**	Comply with in 5 days
7.	Layout plan of overhead tanks (OHTs);		Comply with in 7 days

8.	Tree cutting/pruning permission; and	• If any of the tree is getting affected, it is to be noted in the survey and its permission has to be taken	Comply with in 7 days
9.	Compensatory tree plantation as part of the project.	NA	Identify Before start of Construction work and Compensate during Construction
10.	Areas for stockpiles, storage of fuels and lubricants and waste materials;	• Storage of materials like fuel, chemicals, and cement shall be done in a manner (with impervious layer on bottom and a covered shed on top) that does not contaminate land and ground/surface water.	Comply with in 7 days
11.	List of selected sites forconstruction work camps, hot mixplants, stockpileareas, storage areas,and disposal Areas.	• Location must be identified and marked on google map and consult with PIU and after joint inspection and with consideration of all given mitigation measure given.	Complied Attached as **Annexure –2 & 3 in may 2019.** Take site approval letter from PIU (for construction work camps, hot mix plants, stockpile areas, storage areas, and disposalareas.) Before start of Construction work
12.	Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	• If any private land is selected NOC from owner has to be taken	Comply with in 15 days
13.	List of selected sites for disposal	• Location must be identified and marked on google map and consult with PIU and after joint inspection with consideration of all given mitigation measure given. • If any private land is selected ,NOC from owner have to be taken	Debris disposal land location identified and Permission letter has been issued by PIU. **Attached as annexure 4 in September 2019.**
14.	List of approved quarrySites andSources of materials; and		Before start of Construction work
15.	Bid document to include requirement for verification ofsuitability of sources and permit for additional quarrysites if necessary.		Before start of Construction work
16.	Method of statement in table format	• As mention in mitigation measures	Comply with in 10 days
17.	Spoil Management Plan	Waste material brought up during the course of an excavation or a dredging or mining operation. • Type and quantity of waste generated. • Identify the impact • Spoil Transportation Methodology • Reuse of quantity of waste generated in any other projects or any other place • Amount of waste disposed in identified disposal areas consultation with PIU	Draft copy shown and submitted attached as an **annexure 3a in August 2019 report but updation is to be done** and informed contractors to updateplan once construction phase starts Debris disposal land location identified and Permission letter has

		• If private land NOC from owner. • Location of Waste disposal site mark on Google map	been issued by PIU. **Attached as annexure 4 in September 2019.**
18.	Traffic management plan		Draft copy shown and submitted attached as **annexure 3b August 2019 report but updation is to be done** and informed contractors to updateplan once construction phase starts Comply with in 7 days
19.	Environmental management plan		Draft copy shown and submitted attached as an **annexure 3c in August 2019 report but updation is to be done** and informed contractors to updateplan once construction phase starts Comply with in 7 days
20.	Site specific OHS Plan	• Readily available first aid box including an adequate supply of sterilized dressing materials and appliances as per rules shall be provided in all work zones. • Trained first aid personal will be available at the construction site. • Emergency numbers will be displayed prominently at camp and construction site. • Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital. Designated vehicle, which can be used as ambulance, will be available at construction site. • The contractor shall identify nearby hospital, which could be used in case of emergency. First aid facilities and free emergency care shall be provided to all workforce and third party and no cost shall be recovered from them on this account.	Comply with in 7 days
21.	Equivalent day and night time noise levels	• During the construction phase, the contractor will carry out environmental monitoring noise levels by engaging NABL approved laboratory.	Complied. **Pre-construction and construction stage noise test conducted in November 2019 and February 2020 noise report has to submit by contractors**
22.	Records of Air quality inspection	• If contractor carrying out Construction activities near sensitive receptor(residential areas, temples, Hospitals, schools) During the construction phase, the contractor will carry out Ambient Air quality monitoring by engaging NABL approved laboratory	Complied. **Pre-construction and construction test conducted in November**

			2019 and February 2020. Air report has to submit by contractors
23.	**H & S Plan for COVID-19 implementation**	• **Daily Contractor as to provide awareness all office staffs and site workers to follow H& S measures of COVID-19**	Partially complied. Implementation of H & S at work site is done**. Attached as Annexure 3. H & S plan is to be prepared by contractors** Comply with in 3 days

Mahmad Raphiyoddin Shaphiyoddin Malik
Environmental Specialist
KIUWMIP – Tranche 2

Annexure-1

Site Visit observations on 25th June 2020

1	PPEs to workers at Nekkeladi WTP work site.		Instructed contracting agency to Project information Board is to be provided both in English and Kannada. PPEs provided to workers at work site and instructed to provide PPEs to all worker at all working site Labour attendance register, labour wages register, grevience redresal register and accident and incident register compulsory be at all work site. Drinking Water can must be provided at all work site

2	Barrication and sign boards at CTO Darbe OHT		Sign boards and soft barricading should be done at work site for public awareness to avoid their entry at work place
3			

4	Project information board at OHT sites Housekeeping at work sites, puttur	 	Project information board should be present at all work site and should be place at the entrance of the work sites Instructed contracting agency to maintain proper housekeeping at work sites. Rods, wooden, sheets should be kept at safe place after its usage to avoid any cuts to works or publics during visits

Annexure-2

Status of Site Visit on 26th May 2020

1	PPEs provided at work site.		PPEs provided to workers at work site and instructed to provide PPEs to all worker at all working site Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand Labour attendance register, labour wages register, grevience redresal register and accident and incident register compulsory be at all work site. Drinking Water can must be provided at all work site	Partially complied Partially complied Complied Not complied

2	Bunding of materials at all OHT sites,Puttur		Materials like sand, aggregates should be properly bunded with sand bags to avoid flow along slope	Not complied

3	Scrap, steel rods and materials storage at all OHT work sites,Puttur			Instructed contracting agency to avoid scarp steel and other materials storage at works sites	Not complied

Annexure-3

Status of Site Visit observations on 28thFebruary 2019

1	Project information board and sign boards must be provided at work site.		Provide project information board related to the particular project work and place at all working site Project information Board is to be provided both in English and Kannada. And board should be properly placed with steel or wooden stand	Not complied

		 Latitude: 12.774197 Longitude: 75.186639 Elevation: 168.96m Accuracy: 3.2m Time: 02-28-2020 15:24 Note: OHT at karmala site, puttur		

2	Sign boards , barricading should be provided at work site		• Project information board, Go slow board, Grievance redressal committee board and flag man should be there at work site. • Labour attendance register, labour wages register, grevienceredresal register and accident and incident register compulsory be at all work site. • Drinking Water can must be provided at all work site	• Not complied • Complied • Not complied

		 Latitude: 12.771951 Longitude: 75.213244 Elevation: 100.67m Accuracy: 7.5m Time: 02-28-2020 17:40 Note: 110mm dia Distribution line laying at zone 1, puttur Powered by NoteC		

3	Bunding of materials		Materials like sand, aggregates should be properly bunded with sand bags to avoid flow along slope	• Not complied

		 Latitude: 12.782042 Longitude: 75.17585 Elevation: 150.85m Accuracy: 3.2m Time: 02-28-2020 15:00 Note: OHT at padnoor site, puttur		

4	Scrap and materials storage at work locations	 	Instructed contracting agency to avoid scarp steel and other materials storage at works sites	• Not complied

5	Labour Camp at mottetadka site, puttur	 	Labour camp is properly maintained Toilets are provided to workers Drinking water tap connection provided at the camp	Complied Complied

			Instructed contracting agency to provided separate bathrooms with proper sheet shed for workers at camp	Not complied
			Instructed contracting agency to randomly check worker room to keep clean and hygienic to avoid any diseases	Partially complied

6	PPEs for workers at work site		Workers wearing PPEs at works site	Partially complied

		 Latitude: 12.782025 Longitude: 75.175763 Elevation: 142.79m Accuracy: 3.2m Time: 02-28-2020 15:02 Note: OHT at padnoor site, puttur		

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

Annexure - 4

- **Conducted Thermal Screening to Workers Daily**

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- **Hand wash campaign to workers**

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EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- **Conducting COVID-19 induction to workers**

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EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

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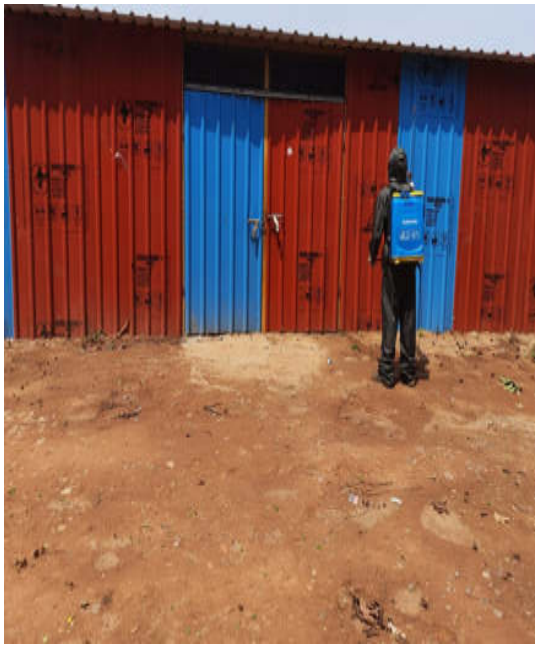
EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- **Sanitizing Workers Camp , Stores and Wash Rooms**



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EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- **PROVIDED A SANTIZIER AT OFFICE AND DISPLAYED WARNING SIGNAGE**

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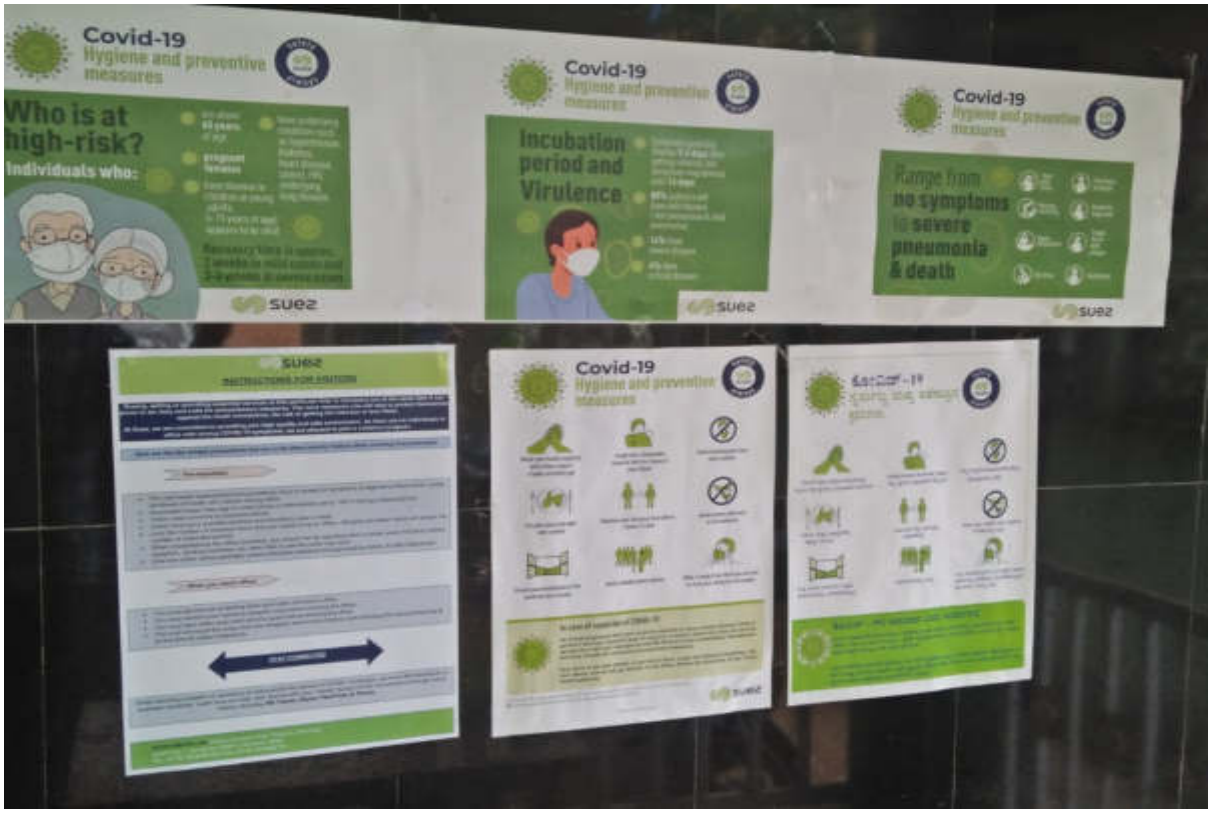
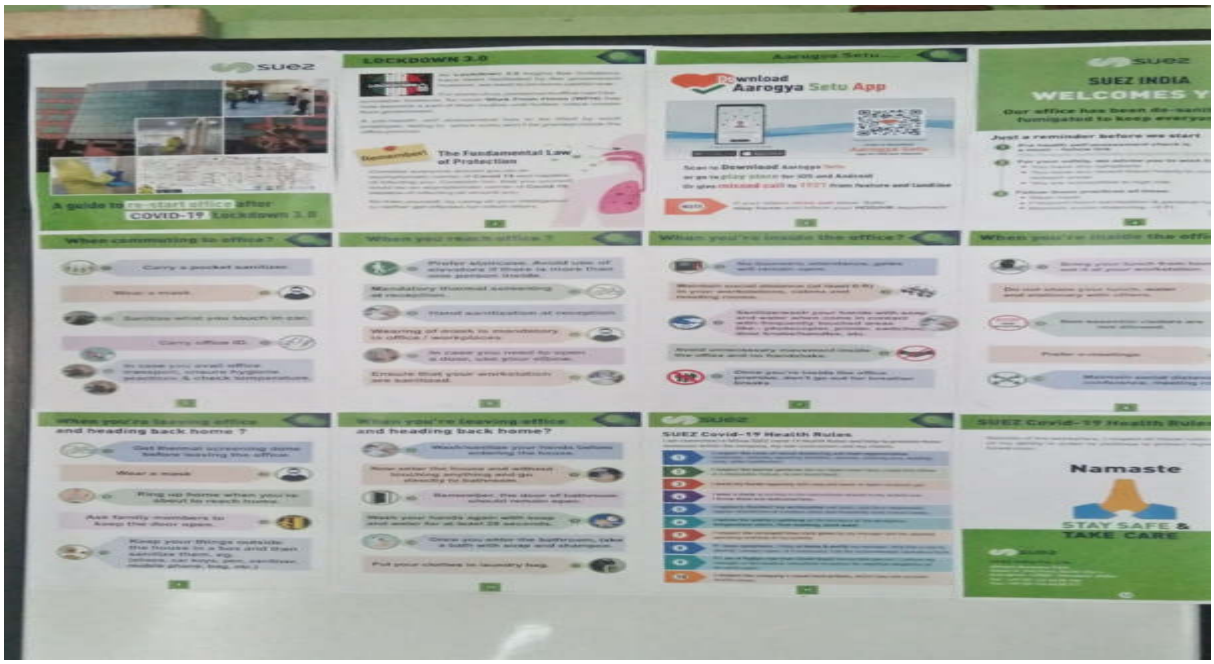
EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- **DISPLAYED COVID-19 AWARENESS POSTERS IN ENGLISH AND LOCAL LANGUAGE**





SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- **SANITIZING REGULAR OF USUAL TOUCH POINTS, HANDRAILS, DOOR KNOCKS, WORKING STATION, CABINS, CONFERENCE HALL, TOILETS etc.**

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- **SANITIZING OF VEHICLE**

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EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

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EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- **REGULAR THERMAL SCREENING TO EMPLOYEES AND THERMAL SCREENING RECORD**

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EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

S.NO	Name of Employee	DATE				TEMPERTURE IN F°			
		16-6-20	17-6-20	18/6/20	19-6-20	20-6-20	22-6-20	23-6-20	24-6-20
1	Pramod Kumar BK	97.5	96.3	97.2	97.2	97.0	97.3	97.0	96.9
2	Shamsuzzama	97.2	97.0	97.9	97.2	96.8	97.3	97.3	97.2
3	P. Sai Reddy	97.2	97.2	96.3	97.2	97.2	95.9	96.9	97.2
4	Jayaram	97.2	97.0	96.8	97.0	97.2	96.0	96.9	97.0
5	V Amroon	97.2	96.8	97.0	97.9	97.3	97.6	97.3	96.8
6	Kareem Basha	-	-	-	-	-	-	-	-
7	Santosh HP	97.8	97.0	97.6	97.0	97.2	96.9	96.1	97.0
8	Dubai Sab	97.5	96.2	97.7	97.5	97.5	97.9	96.8	97.2
9	Soniya .P	97.5	97.0	97.5	97.2	96.3	97.2	97.3	97.2
10	Diwakar . N	97.2	97.5	97.3	97.1	97.5	97.2	97.0	97.3
11	Adarsh Shetty	97.0	97.0	96.9	97.0	97.4	97.5	97.2	97.2
12	Ritheesh Rai	97.2	97.2	96.0	97.5	95.7	97.0	97.2	97.2
13	Shabeer K.P	97.5	96.3	96.3	97.7	96.8	97.0	97.2	95.7
14	Manivanan	97.3	96.8	97.0	97.7	96.9	97.1	97.0	97.0
15	Anil Ravi N	97.8	96.5	97.2	97.2	95.7	97.2	97.5	97.1
16	B. Suresh babu	97.2	97.0	97.5	97.3	97.2	97.2	96.5	97.0
17	Prajwarsth . K	97.6	97.3	96.8	97.1	97.6	97.0	97.2	97.3
18	Chandrahasa	97.2	97.2	97.5	97.2	96.9	95.1	96.3	95.9
19	Santosh .K	-	97.3	96.6	97.2	96.9	97.2	96.1	97.2

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

- **DAILY CHECKLIST**

suez

Suez BA India
Puttur Office - Entry Exit Checklist

S.No.	Check Points		Comment
4	Entry / Exit Controls (Health declaration form to be filled by new as well old employee returning to office after break)		
4.1	Entry to office is restricted to Health Declaration Form signed by HOD & HSE	YES	
4.2	Mandatory hand sanitization by security	YES	PROVIDED SANITIZERS
4.3	Thermal scanning - < 37.5°C ; Refer SOP & records maintained	YES	MAINTAINED
4.4	Compulsory wearing mask by all employees	YES	PROVIED MASK TO ALL EMPLOYEES
4.5	Compulsory mask, gloves by security	YES	PROVIDED HAND GLOVES AND MASK
4.6	No biometric attendance - leave the doors open	OK	
4.7	Exit from any floor of office to be permitted by security with written permission of HOD	YES	EACH ENTRY AND EXIT HAS BEEN RECORDED IN REGISTER
4.8	Visitors entry restricted in the office	OK	

Admin Dept. Sign (Sowmya.P) HSE Dept. Sign (Amruth)

suez	COVID-19 CHECKLIST FOR DB / WS SITES	Rev: 2 Date : 22-5-20

All Design and Build sites & Water services must comply with following specific check points in addition to general advisory issued earlier. Responsibility of implementation of this advisory lies with all employees and compliance actions to be performed for Daily Check: Admin Manager, Daily review 1: HSE Manager, Daily Review 2: Project Manager.

Date: 23-06-20 Project: PUTTUR

Tasks: Entry-Exit Points	Daily check	Daily Review1	Daily Review2
Thermal Screening done at site entrance for everyone (<99°F/,<37°C)			
Hand wash / sanitizers provided at entry/exit			
Mask mandatory for everyone entering the site			
Security provided at gate			

Tasks: Covid-19 Induction	Daily check	Daily Review1	Daily Review2
Covid-19 Induction done for all new employees and subcontractor workmen (COVID-19 Symptoms, site rules, Distancing, Barriers, PPEs, Hygiene, behavior)			

Tasks: While working at site	Daily check	Daily Review1	Daily Review2
Roaster prepared; teams & locations identified with supervisors			
Toolbox talk on Covid awareness done at site			
Hand wash (soap + water) / sanitizer arrangement available at all sites			
Social distancing being maintained during site activities?			

Tasks: Daily Decontamination	Daily check	Daily Review1	Daily Review2
Decontamination of frequently touched points in office & washrooms done twice a day?			
Decontamination of vehicles, Heavy equipment, Machines done.			

Tasks: Material Store	Daily check	Daily Review1	Daily Review2
Decontamination in store done			

Tasks: Canteen / Eating facility	Daily check	Daily Review1	Daily Review2
PPEs, garbage bags / paddle bins, hand wash facility available			
Lunch time & sitting arrangement organized to ensure social distancing			
Decontamination done in the canteen / eating area			

Tasks: Vehicle Management	Daily check	Daily Review1	Daily Review2
Daily sanitization of vehicles done			
Social distancing to be organized in vehicles (diagonal sitting)			
Goods carrying vehicle decontamination, restricted movement of vehicles & driver organized			

Tasks: Labor Housing	Daily check	Daily Review1	Daily Review2
Controlled entry / exit, ensure no history, symptoms and high risk to entrant			
Daily inspection of labor housing done			
24X7 security, thermal screening, mandatory hand sanitization at gate done			
Daily sanitization of common area, washing area, washrooms, drinking water area, cooking and canteen area done			
Adequate drinking water (20 L/Person) available			
Adequate number of dustbins with lid and daily disposal done			

Tasks: Office	Daily check	Daily Review1	Daily Review2
Masks, thermal scanning, hand sanitization made mandatory at site entrance			
Mandatory social distancing in cubicles, cabins, meeting rooms reorganization of seating arrangement			
Daily decontamination of common touch points, cubicles, cabins, meeting rooms, toilets			
Commuting limited to self/company vehicle			

SPPL-SIPL-DRS INFRATECH PVT.LTD. PUTTUR

EHS IMPLEMENTATION MEASURES ON COVID-19 FOR THE MONTH MAY 2020

Suez SA India
Vehicle Decontamination Checklist

S.No	Check Points	Vehicle Number	Vehicle Number	Vehicle Number	Vehicle Number	Vehicle Number	Vehicle Number	Comment
1	Vehicle Decontamination	KA19 AC 8888						
1.1	Sanitizer available in the vehicle	AVAILABLE						
1.2	Driver hats masks available	YES						
1.3	Decontamination done for Steering wheel, Dash board, Seats, door handles (Inside & Outside)	YES						
1.4	Gloves surgical masks available in the vehicle	YES						
1.5	Driver Covid reduction done	YES						
	Driver Sign							

APPENDIX 21: SPOIL MANAGEMENT PLAN-PUTTUR

Suez Projects Private Limited

Spoil Management Plan

Project: Construction of Distribution System for 24x7 Water Supply including Services for Operation and Management for Puttur City, Contract Package No 02PTR01

		Amruth Yedugani	Vishal Pattanshetti	Ramesh Patil	For Approval
Rev.	Date	Prepared By	Checked By	Validated By	Submission Purpose
00					

1.0 Introduction

This Guideline has been developed for two primary reasons, to provide consistent guidance on spoil management in relation to construction activities and to encourage increased diversion of spoil from landfill.

This Guideline should be used as a resource by property owners, builders and developers to assist in assessing likely waste generation from construction projects and identifying ways to divert any waste generated from landfill.

2.0 PURPOSE

This Spoil Management Plan (SMP) has been prepared to manage spoil during construction of the SVC Works. Set spoil management protocols. Outline responsibilities of site personnel involved in spoil management. Provide a process for identifying and managing environmental and other risks associated with spoil handling

3.0 Legal and other Requirements

Construction and Demolition waste management rule 2016

ADB Guidelines (Initial Environmental Examination)

4.0 Roles and Responsibilities

Position	Responsibilities
Project Manager	Overall responsibilities for implementation of Spoil Management plan
	Overall responsibility for compliance with statutory requirements

Construction Manager	Day to day implementation of Spoil Management plan
	Day to day co-ordination of the project
Site Engineer	Ensures all equipment is adequately available, maintained and correctly operated
	To carry out action of Spoil management plan
	Report all environmental incidents
HSE Manager	Provide advice on spoil management related issues
	Report any non-compliances in implementing Spoil management plan
All persons involved in project	Comply with requirements of Spoil Management plan
	Exercise duty of care to the environment at all times

5.0 Identification and assessment of spoil aspects and impacts

Environmental Aspects	Environmental Impacts
• Excavation for pipeline laying • Demolition of overhead water tank • Spoil storage • Spoil transportation	• Water & air pollution from the dust generated due to excavation, demolition • Flora and fauna damage due to sediment run off from spoil excavation • Water, soil and air pollution from inappropriate storage, handling and disposal of spoil. • Mud-tracking during haulage operations.

	• Noise & vibration impacts from demolition activity

6.0 Spoil volume, characteristics and minimization

Spoil volume calculations: Estimate the volume Spoil volume calculations: Estimate the volumes of spoils produced from each of the construction sites. Characterization of spoil: Based on the type of spoil; characterization is done (sand stone, mud mix materials, reusable materials)

7.0 Spoil reuses, Opportunities, Identification and Assessment

An overview of the assessment methodology to be used is mentioned below. - Consideration of likely spoil characteristics - Identification of possible reuse sites - Screening of possible reuse opportunities

8.0 Onsite Spoil Management Approach

Spoil from the excavations done for pipe laying will be stored on the site in such a way that it will not cause any hinderance to the traffic movement. It will be properly barricaded and necessary caution signage will be displayed. If the spoil is in large quantities which may cause disturbance to traffic movement then it will be transported to dumping site designated by KUIDFC. For excess spoil disposal, 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. Debris disposal site shall be at least 200 m away from surface water bodies. No

residential areas shall be located within 50 m downwind side of the site; and site is minimum 250 m away from sensitive locations like settlements, ponds/lakes/ river.

9.0 Spoil Transportation Methodology

- Spoil will be transported by registered road trucks.
- Spoil transportation routes will be identified with the help of local authorities of KIUDFC.
- The spoil carrying trucks will be covered with dust nets (green nets) during spoil transportation.
- The drivers will be given training in order to make them aware of requirements of Spoil management plan.

10.0 Monitoring, Reporting, Review and Improvements

Volumes of spoil generated will be recorded using a register. Monthly quantities of spoil re-used, and spoil disposed shall be recorded. The report will separate the reused spoil into the quantities of material reused on-site and the quantities of material reused offsite.

Continuous improvement of this Spoil Management Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

APPENDIX 22: SPOIL MANAGEMENT PLAN-UDUPI

Suez Project Private Limited

Spoil Management Plan

Project: Construction of Distribution System for 24x7 Water Supply including Services for Operation and Management for Udupi City, Contract Package No 02UDP01

		Pradeep Shetty	Vishal Pattanshetti	Ramesh Patil	For Approval
Rev.	Date	Prepared By	Checked By	Validated By	Submission Purpose
00					

1.0 Introduction

This Guideline has been developed for two primary reasons, to provide consistent guidance on spoil management in relation to construction activities and to encourage increased diversion of spoil from landfill.

This Guideline should be used as a resource by property owners, builders and developers to assist in assessing likely waste generation from construction projects and identifying ways to divert any waste generated from landfill.

2.0 PURPOSE

This Spoil Management Plan (SMP) has been prepared to manage spoil during construction of the SVC Works. Set spoil management protocols. Outline responsibilities of site personnel involved in spoil management. Provide a process for identifying and managing environmental and other risks associated with spoil handling

3.0 Legal and other Requirements

Construction and Demolition waste management rule 2016

ADB Guidelines (Initial Environmental Examination)

4.0 Roles and Responsibilities

Position	Responsibilities
Project Manager	Overall responsibilities for implementation of Spoil Management plan

	Overall responsibility for compliance with statutory requirements
Construction Manager	Day to day implementation of Spoil Management plan
	Day to day co-ordination of the project
Site Engineer	Ensures all equipment is adequately available, maintained and correctly operated
	To carry out action of Spoil management plan
	Report all environmental incidents
HSE Manager	Provide advice on spoil management related issues
	Report any non-compliances in implementing Spoil management plan
All persons involved in project	Comply with requirements of Spoil Management plan
	Exercise duty of care to the environment at all times

5.0 Identification and assessment of spoil aspects and impacts

Environmental Aspects	Environmental Impacts
• Excavation for pipeline laying • Demolition of overhead water tank • Spoil storage • Spoil transportation	• Water & air pollution from the dust generated due to excavation, demolition • Flora and fauna damage due to sediment run off from spoil excavation • Water, soil and air pollution from inappropriate storage, handling and disposal of spoil.

	• Mud-tracking during haulage operations. • Noise & vibration impacts from demolition activity

6.0 Spoil volume, characteristics and minimization

Spoil volume calculations: Estimate the volume Spoil volume calculations: Estimate the volumes of spoils produced from each of the construction sites. Characterization of spoil: Based on the type of spoil; characterization is done (sand stone, mud mix materials, reusable materials)

7.0 Spoil reuses, Opportunities, Identification and Assessment

An overview of the assessment methodology to be used is mentioned below. - Consideration of likely spoil characteristics - Identification of possible reuse sites - Screening of possible reuse opportunities

8.0 Onsite Spoil Management Approach

Spoil from the excavations done for pipe laying will be stored on the site in such a way that it will not cause any hinderance to the traffic movement. It will be properly barricaded and necessary caution signage will be displayed. If the spoil is in large quantities which may cause disturbance to traffic movement then it will be transported to dumping site designated by KUIDFC. For excess spoil disposal, 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.

Debris disposal site shall be at least 200 m away from surface water bodies. No residential areas shall be located within 50 m downwind side of the site; and site is minimum 250 m away from sensitive locations like settlements, ponds/lakes/ river.

9.0 Spoil Transportation Methodology

- Spoil will be transported by registered road trucks.
- Spoil transportation routes will be identified with the help of local authorities of KIUDFC.
- The spoil carrying trucks will be covered with dust nets (green nets) during spoil transportation.
- The drivers will be given training in order to make them aware of requirements of Spoil management plan.

10.0 Monitoring, Reporting, Review and Improvements

Volumes of spoil generated will be recorded using a register. Monthly quantities of spoil re-used, and spoil disposed shall be recorded. The report will separate the reused spoil into the quantities of material reused on-site and the quantities of material reused offsite.

Continuous improvement of this Spoil Management Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

APPENDIX 23: Permission to Dispose the Waste in the Disposal Land - Mangalore

Karnataka Urban Infrastructure Development & Finance Corpn.Ltd.,
Karnataka Integrated Urban Water Management and Investment Programme - "jalasiri"-Tranche-2
Office of the Executive Engineer Programme Implementation Unit, Mangaluru
Email Id : jalasiritranche2eemng@gmail.com

No.KIUWMIP/PIU-MNG/CR-02/2017-18/ 256 Date: 19-03-2018

The Managing Director
M/s DRS Infratech Pvt. Ltd.,
Flat No. S1, Priya Apartments,
Rajbhawan Road, Somajiguda
Hyderabad – 500082.

Sir,

Sub:"Replacement of old sewerage pumping mains and Rehabilitation of sewerage system for Mangaluru city:Package No:02MNG02-Excavated soil disposal location-reg.

Ref : (1) M/s DRS Infratech Pvt. Ltd., Hyderabad. Letter No: DRSITPL/KUIDFC /MNG/2017-18/003, Dated:17-01-2018

(2) Commissioner, MCC Letter No: ಮ.ನ.ಪಾ/ಆರೋ.ಎ/ಸಿ.ಆರ್-101/2017-18/ಜಿ12 ದಿನಾಂಕ:03.03.2018

****

In letter cited in ref(1) you had requested location for disposal of excess soil during execution of pumping main work.

In this connection as per the direction of Commissioner, MCC vide letter in ref(2) you are hereby instructed to dispose excess soil at Pachanady solid waste management treatment plant. Also the waste materials like compound wall debris, culverts , etc may be disposed to Kunjathbail reserved/Identified location.

This is for your kind information and necessary action.

Thanking you.

Yours faithfully

19/03/18

Executive Engineer
KIUWMIP-PIU
Mangaluru

CC: Project Manager, M/s DRS Infratech Pvt Ltd. ಈ ಬಗ್ಗೆ ಕ್ರಮ ಕೈಗೊಳ್ಳಿ.

BY R.P.A.D.

ಮಂಗಳೂರು ಮಹಾನಗರಪಾಲಿಕೆ

ಲಾಲ್‌ಬಾಗ್, ಎಂ.ಜಿ ರಸ್ತೆ, ಮಂಗಳೂರು – 575 003, ಕರ್ನಾಟಕ, ಭಾರತ.
ಫೋನ್: 0824 2220313 – 18, ಫ್ಯಾಕ್ಸ್: 0824 2220310 ವೆಬ್‌ಸೈಟ್: www.mangalorecity.gov.in

ಮ.ನ.ಪಾ/ಆರೋ.ವಿ/ಸಿ.ಆರ್–101/2017–18/ಜಿ 1 ದಿನಾಂಕ: 03–03–2018

ಇವರಿಗೆ,

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಕೆಯುಐಡಿಎಫ್‌ಸಿ–ಕೆಐಯುಡಬ್ಲ್ಯೂಎಂಐಪಿ–ಪಿಐಯು.
ಮಲ್ಲಿಕಟ್ಟೆ, ಮಂಗಳೂರು.

Office of the Executive Engineer PIU 351 Mangaluru Date. 08/03/18 Mangalore Nagara Palike

ಮಾನ್ಯರೇ,

ವಿಷಯ:–ADB ನೆರವಿನ ಒಳಚರಂಡಿ ಕಾಮಗಾರಿಯಲ್ಲಿ ಬರುವ ಹೆಚ್ಚುವರಿ ಮಣ್ಣನ್ನು ವಿಲೇವಾರಿ ಮಾಡಲು ಗುತ್ತಿಗೆದಾರರು ಜಾಗ ಕೋರಿಕೊಂಡಿರುವ ಕುರಿತು.

ಉಲ್ಲೇಖ:–ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರು, ಕೆ.ಯು.ಐ.ಡಿ.ಎಫ್.ಸಿ. ಲಿಮಿಟೆಡ್, ಮಂಗಳೂರು, ರವರು ಮಾನ್ಯ ಆಯುಕ್ತರು, ಮ.ನ.ಪಾ. ರವರಿಗೆ ಬರೆದಿರುವ ಪತ್ರ ಸಂಖ್ಯೆ ಕೆ.ಐ.ಯು.ಡಬ್ಲ್ಯೂಎಂಐಪಿ/PIU-MNG/ಸಿ.ಆರ್–02/2017–18/166, ದಿನಾಂಕ: 05–02–2018.

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ಮೇಲ್ಕಾಣಿಸಿರುವ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ಹಾಗೂ ಉಲ್ಲೇಖ ಪತ್ರದಲ್ಲಿ ತಿಳಿಸಿರುವಂತೆ, ಎ.ಡಿ.ಬಿ. ನೆರವಿನ ಕೈಮಿಪ್–ಜಲಸಿರಿ ಟ್ಯಾಂಚ್–2 ಯೋಜನೆಯಲ್ಲಿ ಗುತ್ತಿಗೆದಾರರು ಸದರಿ ಕಾಮಗಾರಿಯಲ್ಲಿ ಬರುವ ಹೆಚ್ಚುವರಿ ಮಣ್ಣನ್ನು ವಿಲೇವಾರಿ ಮಾಡಲು ಸ್ಥಳಾವಕಾಶವನ್ನು ಗುರುತಿಸಿ ಕೊಡಲು ಕೋರಿರುತ್ತಾರೆ.

ಆದರಂತೆ, ಈ ಹಿಂದೆ ಸೂಚಿಸಿರುವಂತೆ ಹೆಚ್ಚುವರಿ ಮಣ್ಣನ್ನು ಪಚ್ಚನಾಡಿ ಪ್ರದೇಶದಲ್ಲಿ ತ್ಯಾಜ್ಯ ಮೇಲೆ ಹೊದಿಕೆ ಹಾಕಲು ಉಪಯೋಗಿಸಬಹುದಾಗಿದ್ದು, ಸದರಿ ಹೆಚ್ಚುವರಿ ಮಣ್ಣನ್ನು (Excess Soil) ಪಚ್ಚನಾಡಿ ಘನತ್ಯಾಜ್ಯ ಪ್ರದೇಶಕ್ಕೆ ಸಾಗಾಣಿಕೆ ಮಾಡಬಹುದಾಗಿದೆ. ಕಟ್ಟಡ ಭಗ್ನಾವಶೇಷವನ್ನು ಕುಂಜತ್ತಬೈಲ್ ಪ್ರದೇಶದಲ್ಲಿ ಗುರುತಿಸಲಾಗಿರುವ ಪ್ರದೇಶದಲ್ಲಿ ವಿಲೇವಾರಿ ಮಾಡಲು ಅನುಮತಿ ನೀಡಲಾಗಿದೆ.

(351)

ಆಯುಕ್ತರು
ಮಂಗಳೂರು ಮಹಾನಗರಪಾಲಿಕೆ

AEE(UGD) / M/s DRS Infratech
for info & n/a
08/03
08/03

APPENDIX 24: Permission to Dispose the Waste in the Disposal Land - Puttur

ನಗರಸಭಾ ಕಾರ್ಯಾಲಯ ಪುತ್ತೂರು ದ.ಕ ಜಿಲ್ಲೆ
CITY MUNICIPAL COUNCIL PUTTUR D.K.
Web : www.putturcity.mrc.gov.in Phone : 08251-230251,
e mail : co.puttur@gmail.com

ಪು ನಸಭೆ ನೀ.ಸಿಆರ್/27 /2019-20 ದಿನಾಂಕ: 11-09-2019

ರಿಗೆ,

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಕ್ವಿಮಿಪ್ ಟ್ಯಾಂಕ್ - 2 ಪಿ.ಐ.ಯು
ಪುತ್ತೂರು

16/09/19

ಮಾನ್ಯರೇ,

ವಿಷಯ: ಎಡಿಬಿ ನೆರವಿನ ಯೋಜನೆಯಡಿ ಪುತ್ತೂರು ನಗರಕ್ಕೆ 24/7 ಕುಡಿಯುವ ನೀರಿನ ಯೋಜನೆ ಗೆ ಸಂಬಂಧಿಸಿದಂತೆ ಹಳೆಯ 2.3 mld ಸಾಮರ್ಥ್ಯದ ನೀರಿನ ಶುದ್ಧೀಕರಣ ಘಟಕವನ್ನು ತೆರವು ಮಾಡಿದ ಕಟ್ಟಡದ ಡೆಬ್ರಿಸ್ ನ್ನು ವಿಲೇವಾರಿ ಮಾಡಲು ಸ್ಥಳ ಗುರುತಿಸುವ ಬಗ್ಗೆ.

ಉಲ್ಲೇಖ: KIUWMIP/PIU-PTR/CR-21/2018-19/367 ದಿನಾಂಕ:30 08 2019ರ ತಮ್ಮ ಪತ್ರದಂತೆ.

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392
Forwarded to M/s SUEZ to Carryout the dismantle work immediately.
AE-PIU-Puttur

ಮೇಲಿನ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ನೆಕ್ಕಿಲಾಡಿಯಲ್ಲಿ ಇರುವ 2.3 MLD ಫಿಲ್ಟರ್ ನ ತೆರವು ಮಾಡುವ ಎಲ್ಲಾ ಡೆಬ್ರಿಸ್ ನಗರಸಭೆಯ ನೆಕ್ಕಿಲಾಡಿ ಮೂಲ ಸ್ಥಾವರದಲ್ಲಿ ಸ.ನಂ.1 66/SA 0.20 ಎಕ್ರೆ 2) 66/SB 0.20 ಎಕ್ರೆ, 3) 114/ 2A3A 0.40 ಎಕ್ರೆ ಸ್ಥಳದಲ್ಲಿ ಖಾಲಿಯಿರುವ ತಗ್ಗು ಪ್ರದೇಶದಲ್ಲಿ ಡೆಬ್ರಿಸ್ ನ್ನು ವಿಲೇ ಮಾಡಬಹುದಾಗಿದೆ ಎಂದು ಈ ಮೂಲಕ ತಿಳಿಸಲಾಗಿದೆ.

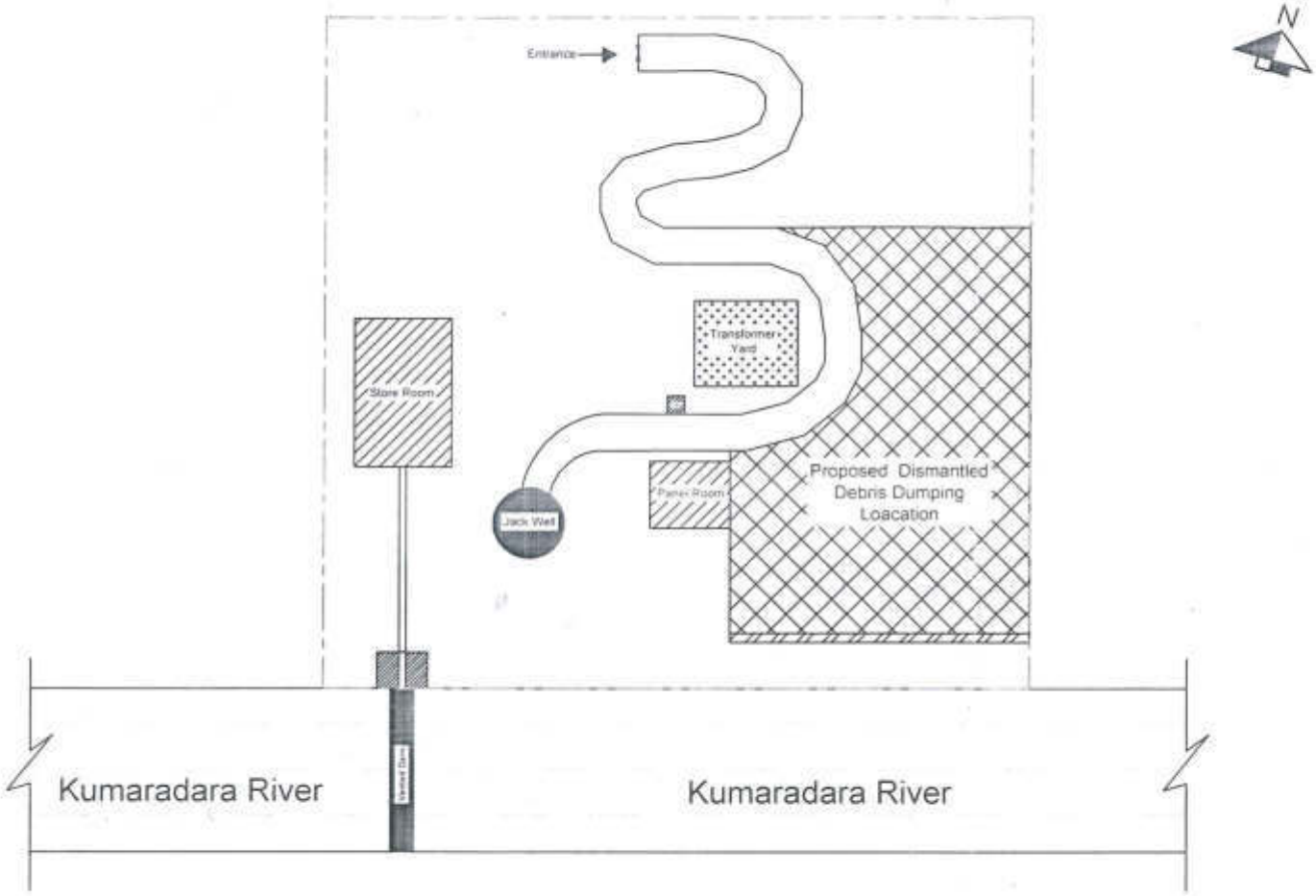
ಪೌರಾಯುಕ್ತರು
ನಗರಸಭೆ ಪುತ್ತೂರು

ರಿಗೆ,

ಉಪಯೋಜನಾ ನಿರ್ದೇಶಕರು, ಆರ್.ಪಿ.ಎಂ.ಯು ಮಂಗಳೂರು ಇವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ.

Annexure 1 = ಸ್ಥಳದ ನಕ್ಷೆ.

PROPOSED DUMPING YARD LOCATION AT JACKWELL.



Notes :
1. Drawing not to scale.
2. Survey No's - 66/SA (0.20Acre), 66/SB (0.20Acre) , 114/2A3A(0.40Acre).

for Executive Engineer
PIU-KIUWMIP-Tranche-2
KUIDFC, Puttur.

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

APPENDIX 25: Letter no 75 -electrical pole Ashok nagar -Mangalore UGD

Karnataka Urban Infrastructure Development & Finance Corpn.Ltd.,
Karnataka Integrated Urban Water Management and Investment Programme "Jalasiri"-Tranche-2

Office of the Executive Engineer, Programme Implementation Unit,
3rd Floor, Mangaluru City Corporation, Lalbagh, Mangaluru 575003
Email Id : jalasiritranche2ccmng@gmail.com , Ph:0824 2984623

No: KIUWMIP/PIU-MNG/CR-02/2017-18/75 Date: 26-04-2019

Assistant Executive Engineer
MESCOM, Kavoor
Mangaluru

Sir,

Sub: "Replacement of old sewerage pumping mains and Rehabilitation of sewerage system for Mangaluru city Package No:02MNG02"– Requesting for relocation of electrical pole at Ashoknagara - reg.

Ref : M/s. DRS Infratech Pvt. Ltd., letter no: DRSITPL/KUIDFC/MNG/2019-20/01 , dated : 26.04.2019.

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With reference to above, the above said work is taken up on tender basis and the said work is awarded to M/s. DRS Infratech Pvt. Ltd., Hyderabad and the laying of 1100mm dia UGD pipe from Ashoknagara to Urwastore is in progress. Along the alignment two electrical poles are obstructing for dismantling the culvert. Hence it is requested to kindly make arrangement for shifting of electrical poles by 2 mtrs. It is requested to entrust this job work to any of licences electrical contractor for which the agency M/s. DRS Infratech Pvt. Ltd., Hyderabad pay the cost incurred.

This is for information and needful action.

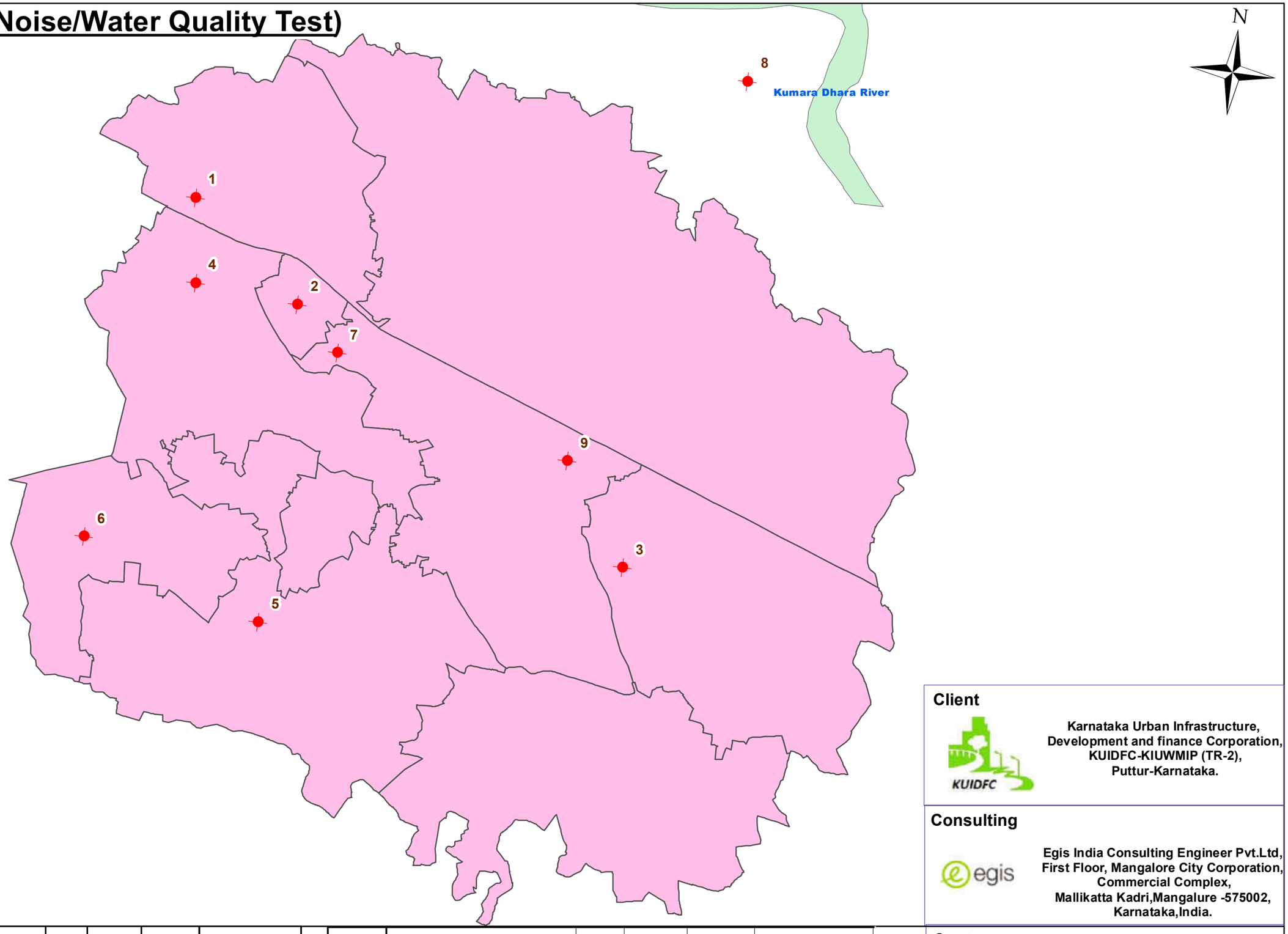
Yours faithfully

Executive Engineer
KUIDFC-KIUWMIP-PIU
Mangaluru

APPENDIX 26: Air-Noise-Water Sampling Locations on Map-Puttur

Environmental (Air/Noise/Water Quality Test)

Location : Puttur



Legend

- Environmental_Test
- Zone_Boundary
- River

Sl,No	Place_Name	Air Test	Noise Test	Water Test	Wastewater Test
1	Mura Shantinagara Padnur	✓	✓	×	×
2	karmala Near Microwave Station	✓	✓	×	×
3	CTO -Darbe	✓	✓	×	×
4	Lingadagudda-Kabaka	✓	✓	×	×
5	Balnad-Helipad	✓	✓	×	×
6	Balnad-Keliyad	✓	✓	×	×
7	Settigudda	✓	✓	×	×
8	Kumara Dhara River	×	×	✓	×
9	Adarasha Hospital	×	×	✓	×

Client

Karnataka Urban Infrastructure, Development and finance Corporation, KUIDFC-KIUWMIP (TR-2), Puttur-Karnataka.

Consulting

Egis India Consulting Engineer Pvt.Ltd, First Floor, Mangalore City Corporation, Commercial Complex, Mallikatta Kadri,Mangalure -575002, Karnataka,India.

Contractor:

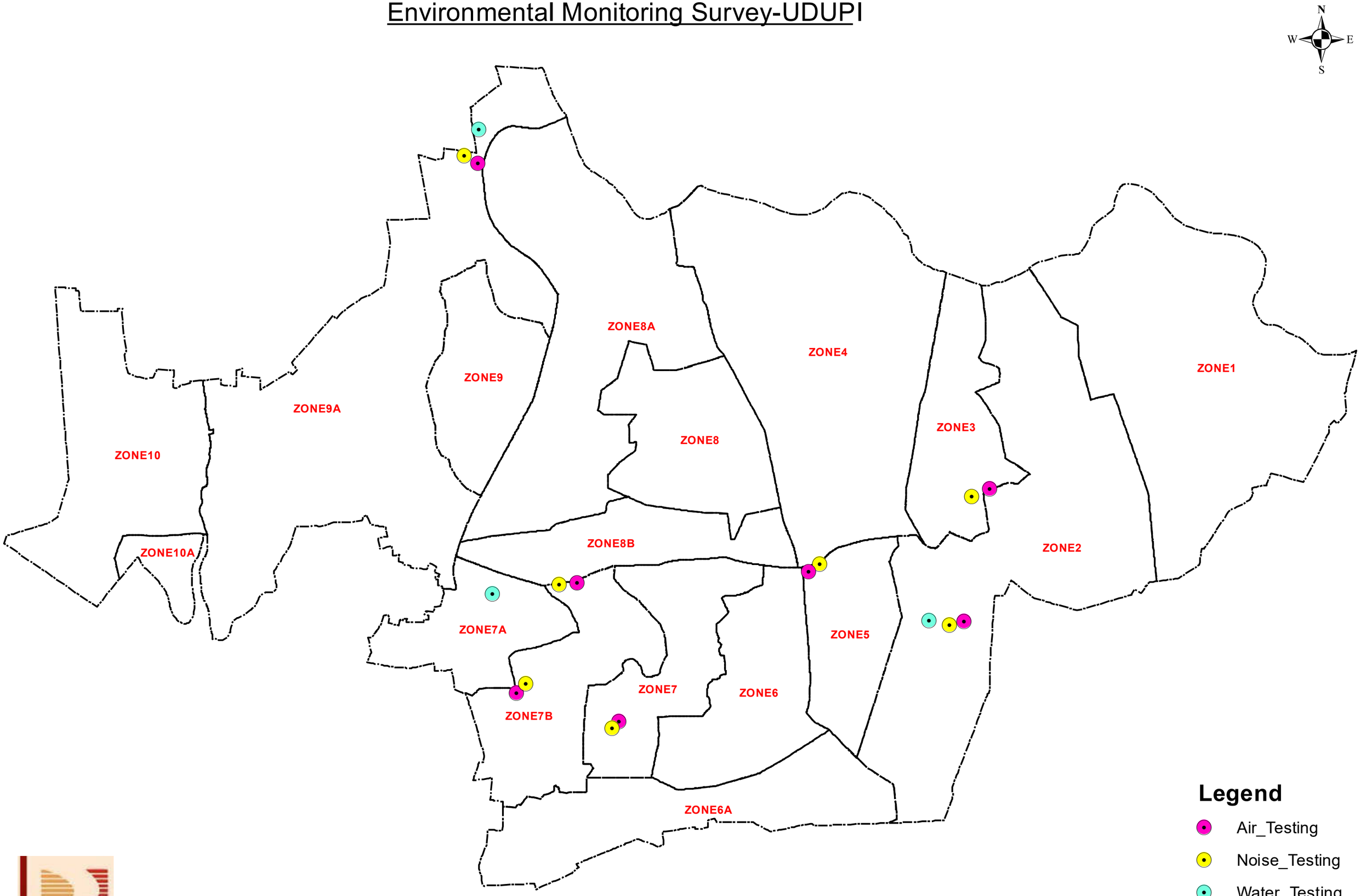
SUEZ Projects Private Limited. SUEZ India Private Limited. Kausthuba Building,no.1/28/A, Padil,Bannur Post, Puttur, Dakshina Kannada Dist. Karnataka-574203.

Prepared By : Divakar C.R. : Pramod

Validated By : Amruth Date : 07.11.2019

APPENDIX 27: Air-Noise-Water Sampling Locations on Map-Udupi

Environmental Monitoring Survey-UDUPI



APPENDIX 28: GRM establishment for Tranche 2

Karnataka Urban Infrastructure Development Finance Corporation,
Karnataka Integrated Urban Water Management and Investment
Programme (KIUWMIP) "Jalasiri" Tranche-2
Regional Programme Management Unit (RPMU)
First Floor Mangalore City Corporation Commercial Complex,
Mallikkatte, Kadri, Mangaluru- 575002
Email: jalasiritranche2dpd@gmail.com Tel: 0824-2981109

No: KIUWMIP/RPMU/CR.88/2017-18/389 Date: 23-08-2018

Task Manager
Karnataka Urban Infrastructure Development Finance Corporation
Urban Development Building, #22,17th F cross road
Old Madras road, Indhiranagar, 2nd Stage
Near BMTC Bus Depot, Bangalore-560038

Sir,

Sub: Approval for the Grievance redressal committee formation in KIUWMIP Tranche-2 related to municipality during project implementation work arising issues at district level.
Ref: 1) Your office phone call date: 23/05/2018
2) Your office letter no: KIUWMIP/RPMU/CR.88/2017-18/54 date: 24/04/2018

With reference to the above mentioned subject of Mangalore, Udupi, Kundapura and Puttur town already Grievance Redressal committee has created and this is to essence for solving the issues after the start-up of up-coming work complaints and grievances / Grievance Redressal committee.

Report submitted to your office on ref (2)date 24/4/2018 with the attached copies.

Yours Faithfully
D. Manjunathaiah
Deputy Project Director
KIUWMIP/ RPMU
Mangalore

APPENDIX 29: GRM establishment for Tranche 2-ENGLISH

Karnataka Urban Infrastructure Development & Finance Corpn. Ltd.,
Karnataka Integrated Urban Water Management and Investment
Programme (KIUWMIP) "Jalasiri" – Tranche 2
Regional Programme Management Unit (RPMU),
First Floor, Mangalore City Corporation Commercial Complex,
Mallikatta Kadri, Mangaluru – 575002
E-mail : jalasiritranche2dpd@gmail.com Tel 0824-2981109

No:KIUWMIP/RPMU/CR.88/2017-18 /389 **ದಿನಾಂಕ:23-08-2018**

ಟಾಸ್ಕ್ ಮ್ಯಾನೇಜರ್
ಕರ್ನಾಟಕ ನಗರ ಮೂಲಸೌಕರ್ಯ ಅಭಿವೃದ್ಧಿ ಮತ್ತು ಹಣಕಾಸು ನಿಗಮ ನಿಯಮಿತ
ನಗರಾಭಿವೃದ್ಧಿ ಭವನ, # 22, 17 ನೇ 'ಎಫ್' ಕ್ರಾಸ್ ರಸ್ತೆ,
ಹಳೆ ಮದ್ರಾಸ್ ರಸ್ತೆ, ಇಂದಿರಾ ನಗರ , 2ನೇಹಂತ
ಬಿಎಂಟಿಸಿ ಬಸ್ ಡಿಪೊ ಹತ್ತಿರ,ಬೆಂಗಳೂರು-560038

ಮಾನ್ಯರೇ,

ವಿಷಯ: ಕ್ರಿಮಿಪ್ ಟ್ರಾಂಚ್ -2 ಯೋಜನೆಗೆ ಸಂಬಂಧಿಸಿದಂತೆ ನಗರಾಡಳಿತ ಸಂಸ್ಥೆಗಳ ವ್ಯಾಪ್ತಿಯಲ್ಲಿ ಕೈಗೊಳ್ಳುವ ಕಾಮಗಾರಿಗಳ ಅನುಷ್ಠಾನ ಸಮಯದಲ್ಲಿ ಉದ್ಭವಿಸಬಹುದಾದ ಸಮಸ್ಯೆಗಳ ಬಗ್ಗೆ ಜಿಲ್ಲಾ ಮಟ್ಟದ "ಕುಂದುಕೊರತೆ ಪರಿಹಾರ ಸಮಿತಿ "ರಚನೆ ಧೃಡೀಕರಿಸುವ ಕುರಿತು.

ಉಲ್ಲೇಖ: 1)ತಮ್ಮ ಕಛೇರಿಯ ದೂರವಾಣಿ ಕರೆ. ದಿನಾಂಕ: 23-08-2018

2)ಈ ಕಛೇರಿಯ ಪತ್ರ ಸಂಖ್ಯೆ:KIUWMIP/RPMU/CR.88/2017-18 / 54 ದಿನಾಂಕ:24-04-2018

****

ಮೇಲಿನ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಮಂಗಳೂರು , ಉಡುಪಿ , ಕುಂದಾಪುರ ಮತ್ತು ಪುತ್ತೂರು ನಗರಗಳಲ್ಲಿ ಈಗಾಗಲೇ ಕುಂದುಕೊರತೆ ಪರಿಹಾರ ಸಮಿತಿ Grievance Redressal committe (GRC) ಗಳನ್ನು ರಚಿಸಲಾಗಿದೆ. ಕಾಮಗಾರಿ ಪ್ರಾರಂಭಿಸಿದ ನಂತರ ಬರಬಹುದಾದ ದೂರುಗಳು / ಕುಂದುಕೊರತೆಗಳನ್ನು ಪರಿಹರಿಸಲು ಈ ಸಮಿತಿ ಅಸ್ತಿತ್ವದಲ್ಲಿ ಇರುತ್ತದೆ.

ಈ ಬಗ್ಗೆ ಉಲ್ಲೇಖ(2) ರಂತೆ ದಿನಾಂಕ:24-04-2018 ರಂದು ತಮ್ಮ ಕಛೇರಿಗೆ ವರದಿ ಸಲ್ಲಿಸಲಾಗಿದೆ . ಅದರ ಪ್ರತಿಯನ್ನು ತಮ್ಮ ದಯಾಪರ ಅವಗಾಹನೆಗಾಗಿ ಇದರೊಂದಿಗೆ ಲಗತ್ತಿಸಿ ಸಲ್ಲಿಸಿದೆ.

ತಮ್ಮ ವಿಶ್ವಾಸಿ

(ಡಿ.ಮಂಜುನಾಥಯ್ಯ)
ಉಪಯೋಜನಾ ನಿರ್ದೇಶಕರು
KIUWMIP-RPMU
ಮಂಗಳೂರು

24/8

Karnataka Urban Infrastructure Development & Finance Corpn. Ltd.,
Karnataka Integrated Urban Water Management and Investment
Programme (KIUWMIP) "Jalasiri" – Tranche 2
Regional Programme Management Unit (RPMU),
First Floor, Mangalore City Corporation Commercial Complex,
Mallikatta Kadri, Mangaluru – 575002
E-mail : jalasiritranche2dpd@gmail.com Tel : **0824-2981109**

No: KIUWMIP/RPMU/CR.88/2017-18/54 **Date:24-04-2018**

Task Manager,
KUIDFC- KIUWMIP,
Nagarabhirudhi Bhavan, Indiranagar,
Bengaluru 560038
Sir,

Subject : ADB Assisted KIUWMIP-Tranche-2 Mangaluru-"Jalasiri "– Constitution of Grievance Redressal Committee to receive complaints, evaluate concerns and address grievances of the affected person-reg.

Ref: 1) Your office OM No: KUIDFC/KIUWMIP/DLIC/2014-15/228 /1393 Dated: 28/06/2017.

2) This office letter No : KIUWMIP/RPMU/CR-11/2016-17(Land acq GRC)/612
Dated: 16-02-2018 addressed to Deputy Commissioner, D.K,Mangaluru .

3) This office letter No : KIUWMIP/RPMU/CR-13/2016-17(Land acq GRC)/599
Dated : 16-02-2018 addressed to Deputy Commissioner , Udupi.

4) This Office letter No:KIUWMIP/RPMU/CR-88/2016-17(Land acq GRC)/629
Dated : 20-02-2018 addressed to S.L.A.O MCC Mangaluru.

5) This office letter No: KIUWMIP/RPMU/CR-88/2016-17(Land acq GRC)/627
Dated : 20-02-2018 addressed to Asst.Commr, Kundapura.

6) This office letter No: KIUWMIP/RPMU/CR-88/2016-17(Land acq GRC)/613
Dated : 16-02-2018 addressed to Chief Officer , TMC , Kundapura.

7) This office Letter No: KIUWMIP/RPMU/CR-88/2016-17(Land acq GRC)/628
Dated : 20-02-2018 addressed to AC Puttur.

8) Head Office Email message dated :10.04.2018 11.45AM.

****

With reference to the above subject, the Grievance Redressal Committees have been formed in Mangaluru , Udupi , Puttur and Kundapura towns to receive complaints, evaluate concerns and address the grievance of Affected Persons (APs) under KIUWMIP Project while executing the works under KIUWMIP Project.

The details of the Committees Formed are as here under:

Grievance Redressal Committee (GRC) of Mangaluru City

1.	Special Land Acquisition Officer Mangaluru City Corporation, Mangaluru	President
2.	Commissioner Mangaluru City Corporation, Mangaluru	Member
3.	Executive Engineer KIUWMIP– PIU, Mangaluru (on behalf of DPD , KIUWMIP – RPMU)	Member Secretary
4.	Representative of PMDCSC (Project Management Design and Construction Supervision Consultant) Mangaluru	Member
5.	NGO / Affected Community member	Member
6.	SDO (Social Development Officer) RPMU- KIUWMIP, Mangaluru	Member

Grievance Redressal Committee (GRC) of Udupi City

1.	Assistant Commissioner Kundapura Sub division, Kundapura	President
2.	Commissioner Udupi City Municipal Council, Udupi	Member
3.	Executive Engineer KIUWMIP- PIU, Udupi (on behalf of DPD , KIUWMIP – RPMU)	Member Secretary
4.	Representative of PMDCSC (Project Management Design and Construction Supervision Consultant) Mangaluru	Memeber
5.	NGO / Affected Community Member	Member
6.	SDO (Social Development Officer) RPMU- KIUWMIP, Mangaluru	Member

Grievance Redressal Committee (GRC) of Kundapura Town

1.	Assistant Commissioner Kundapura Sub division, Kundapura	President
2.	Chief Officer Town Municipal Council, Kundapura	Member
3.	Asst.Executive Engineer KIUWMIP– PIU, Kundapura (on behalf of DPD , KIUWMIP – RPMU)	Member Secretary
4.	Representative of PMDCSC (Project Management Design and Construction Supervision Consultant) Mangaluru	Member
5.	NGO / Affected Community member	Member
6.	SDO (Social Development Officer) RPMU- KIUWMIP ,Mangaluru	Member

Grievance Redressal Committee (GRC) of Puttur City

1.	Assistant Commissioner Puttur Sub division, Puttur	President
2.	Commissioner City Municipal Council, Puttur	Member
3.	Executive Engineer KIUWMIP– PIU, Puttur (on behalf of DPD , KIUWMIP – RPMU)	Member Secretary
4.	Representative of PMDCSC (Project Management Design and Construction Supervision Consultant) Mangaluru	Member
5.	NGO / Affected Community member	Member
6.	SDO (Social Development Officer) RPMU- KIUWMIP ,Mangaluru	Member

Yours sincerely

Deputy Project Director
KIUWMIP-RPMU
Mangaluru

APPENDIX 30: Complaint Register - Mangalore UGD

S.No	DATE	NAME	ADDRESS	PHONE NUMBER	LOCATION	COMPLAINT DETAILS	ACTION TAKEN	COMPLIANCE SIGN	STATUS OF GRIEVANCE	DATE OF RESOLVED	REMARKS
	20/01/2020	GANGADAR.	Shakta Elect Electrical Service Doresani. Mandal opp: Church.	9164946598	Doresani	Drainage pipeline Damaged	Rectified	K.S.	closed	20/01/2020	
							04/02/2020 SDO - EG15 KLLWMIP - T2				
	Feb/2020	NILL		NILL							
	MARCH/20	NILL									
	APRILL/20	Lock down									
	MAY/20	Work	Stop Due	to	Rain.						
	June/20	Work	Stop Due to Rain.								

APPENDIX 31: Complaint Register - Puttur

Date of Damage	Type of Excavation	Particulars of Damage	Name of Site / Area	Date of Rectified	Sign Name / Ph NO	Remark
12/03/20	manual	1/2 Inch water pipe PVC Damaged	Bannur	13/03/20	1 Jayantha Jayanth 7899584804	Rectifie
13/03/20	manual	1/2 pipe PVC Damaged (house connection)	Bannur	13/03/20	2 Jayantha 7899584804 Jayanth.	Rectified
07/9/20	manual	1/2 Pipe Inch PVC pipe damage	Padnoor	08/9/20	mofideen	Rectified
07/9/20	manual	1/2 in PVC pipe damaged	Padnoor	08/9/20	Mogideen	Rectified
16/09/20	manual	1/2" Pvc pipe damage	Bannur	16/09/20.	9663192320	
17/09/20	manual	3/4" Pvc pipe damage	Bannur	17/09/20.	krishnapa	Rectified
18/09/20	manual	1/2" Pvc pipe damage	Bannur	18/09/20.	Gangotha	Rectified
19/09/20	Manual	1/2" pvc pipe. damage	Bannur.	19/09/20.	[illegible]	Rectified
21/09/20.	Manual	1/2" & 2" pvc pipe damage.	Bannur (V.C.)	21/09/20	Manoja	
		1/2" ~~[illegible]~~ pvc pipe damage	Bannur school road	21/09/20	9944244337	
22/09/20	Manual	2" pvc pipe damage	Bannur School road	21/09/20	[illegible]	
25/09/20	Manual	1/2" pvc pipe damage	V.C college	25/09/20	[illegible] 25/09/20	

APPENDIX 32: Complaint Register - Udupi

Sl. No	Name of customer.	Phone Number	Date of complain recived.	Reason for complaint.	complaint Resolved Date
1.	Mr. Ramson	9901289302	13/11/2019.	while Excavating in santhekatte site(OHT) the House service connection has been damaged so they complainted us.	14/11/2019.
2.	Mr. Vedavas.	8310871847	20/11/2019.	while doing pipeline work the main water double was damaged so complaint has been recieved.	22/11/2019.
3.	Mr. Srinath	8123374125	25/11/2019.	while doing pipeline the BSNL Broad band cabel has been damaged so we got complaint.	28/11/2019.
4.	Mr. Shrisha (counillor)	9448501296	09/01/2020	While excavating in Mudubettu 5th cr (zone 9A) the HSC has been damaged. So they complainted us.	10/01/2020.
5.	Mr. Santosh Janath	9844213052	04/02/2020	They need new HSC connections for 5 property. @ zone. 8A, Nittur.	
6.	Mr. Shrisha	9448501296	04/02/2020	While excavating in Moodubettu (zone 9A) the HSC has been damaged. So they complained us.	05/02/2020
7	Mr. Santish	9740948785	03/02/2020	They want HSC replacement from a HDPE pipe. @ zone-8A, Nayampalli 4th cr.	

APPENDIX 33: EHS PLAN-Mangalore UGD

HEALTH SAFETY & ENVIRONMENT MANAGEMENT PLAN

CONTENTS

21 JOB SPECIFIC ACTIVITIES

21.1 Material Handling

21.2 At Stock Yard:

21.3 Traffic -Y At job Location/ Near Highways/ Roads:

21.4 Pipe Shifting:

21.5 Pipe Laying in to Trench:

21.6 Welding:

21.7 NDT (Non destructive tests):

21.8 Pressure Testing:

1. OBJECTIVES

- To determine broad parameters of HSE management at site.
- Establish & define aim of command for resolution of all hazard prevention issues,
- Define individual hazard prevention & safety promotion responsibility at the level of the construction team.
- Identify highly hazardous operations within the scope of work and specify integrated preventive measures to mitigate the same.
- To ensure compliance with relevant applicable legislation.
- Continued HSE performance improvement by directing focus on the key areas for improvement in a consistent manner.

2. Commitments and Motivation

DRSITPL is fully committed to this Health, Safety and Environmental Policy and Standards and will provide motivation through:

- Planning all work in a safe manner prior to executing the tasks and conducting risk assessments for non-routine and hazardous activities.
- Providing a safe facility, equipment, personal protective equipment and safe working procedures.
- Providing suitable training, supervision, information and instruction to all personnel engaged in Project activities.
- Accepting and being accountable for the responsibility of accidents and incidents in the workplace.
- Introducing systems to encourage active involvement of the management workforce and the local community in providing suggestions and proposals for improvements in the HSE performance.
- Providing active support to the workforce by way of specialist advice in safety and quality areas.
- Assessing the risks in the workplace with subsequent communication to the workforce.
- Maintaining an active record of all incidents for continual evaluation/analysis of the Project safety refinance so that ways and means for improvement can be developed and implemented. A continuous effort, driven by Project Management involvement, will be made throughout alf phases of Project activities to motivate the workforce to take an active part in use issues and activities.

2.1 Visibility

The management will provide strong demonstrable visible leadership and commitments towards HSE by personal example and action. The Management will participate in HSE Meetings, conduct site Inspections and HSE
Audits, to encourage a positive attitude towards HSE.

Sl No	TASK	ACTION BY	COMPLIANC
1	Project HSE Review Meeting: (Review performance against HSE plans, HSE Objectives & targets and any HSE issues)	Project Manager	Minimum Frequency 1 month
2	Project HSE Committee Inspection	HSE Committee Members	Minimum Frequency 1 month
3.	HSE Review	Section Heads	During HO representative's Site Visit

4	(Motivation) Giving Safety Certificates, with token gift to the "Best safety conscious personnel" of the month to recognize good HSE		Every Quarter

2.2 Proactive in Target Setting

The Site management demonstrates pro-activeness in target setting by:

No	TASK	ACTION BY	COMPLIANCE TARGET
1	Jointly developing and discussing improvement targets and indicators for each location with Site Engineer & HSE Engineer. (Eg. Training of Workmen Coverage. Inspection Compliance etc.)		Every Quarter
2	Jointly review the Incidence rate of First Aid Case and set a target for reduction.		Every Quarter
3.	Management involvement in Accident review and target setting.	AVP/ HSE Engineer	As Required/ Monthly

2.3 Company Culture

The management seeks to create and sustain a Company culture in which employees share a commitment to HSE.

Sl No	TASK	ACTION BY	COMPLIANCE TARGET
1	Putting HSE as the "First agenda" of all revie meetings at Headquarters & project sites	Avp/ PM	All time
2	Empowerment to Stop Work Employees are empowered to stop work when the situation warrants immediate action in view of imminent danger to life / property / environment. Project Managers must appreciate and reward those employees whose prompt	ALL	All time

2.4 Involvement of Senior Management

Senior management demonstrates its involvement in HSE issues through.

No	TASK	ACTION BY	COMPLIANCE TARGFT
1	Review Project HSE Performance and HSE plan implementation in consultation ith Project Manager & HSE Engineer.	Zonal Head	Half yearly
2	Ensure adequate professional HSE support is available for effectively implementing the HSE Ian, fulfilling EHS targets and attaining HSE bjectives.	HSE Engineer	Project Duration
3	Ensure sufficient support and resources are vailable to meet HSE targets (Eg. Infrastructure vehicle, safety steward ,	AVP/ PM	proj ect Duration
4	Imparting necessary HSE training for the Staff & workmen of the project.	AVP/ PM	As required

HSE Rules

In order to formulate the necessary standards to be used in the HSE policy, ten basic HSE rules are considered to be the foundation for such standards that have been established to achieve Project objectives. The ten basic rules are:

DRSITPL. will comply, as a minimum, with national and international laws and applicable local regulations and rules throughout its operations and activities.

These Health, Safety and Environmental Policy and Standards are to be clearly defined and made known at all levels of the Project. Responsibilities and accountabilities for the associated application are to be identified and assigned in writing.

— sThroughout Project I s activities and operations, the risks to health, personnel, Às and environment are to be identified and the means by which they are to be ed/ avoided are to be defined.

All subcontractors must be evaluated for their ability to conform to the Project 's health, safety and-environmental requirements that must be -clearly stated in the contract. All contract award recommendations must address this issue.

4. All operations with potentially critical effect on health, safety and environment are to be covered by procedures that are reviewed and updated on a regular basis.
5. Training and competency programs are to be formalized and implemented to ensure that personnel are prepared for the tasks required of them; with particular attention being given to safety and environmentally critical posts.
6. Emergency procedures covering communications and actions in case of medical accident and environmental emergencies are to be maintained and tested.
7. All accidents, including near misses, are to be reported, analyzed and remedial actions taken to avoid re-occurrence.
8. Atl Project 's operations and activities are to be assessed by inspection and audits.
9. Each area of operation will establish objectives and improvement plans based on incident analyses, audit results and risk analyses in order to raise the level of HSE performance.

HSE POLICY

All staff and employees shall be made aware of the existence of this policy by discussing in HSE meetings, displaying at site offices, notice boards, workmen camp, canteen some conspicuous locations.

HEALTH SAFETY & ENVIRONMENT POLICY

We affirm or commitment to our objectives of conserving the environment and providing a safe and healthy work place for our employees and Workers.

The objectives of the HS&E Policy shall be achieved by:

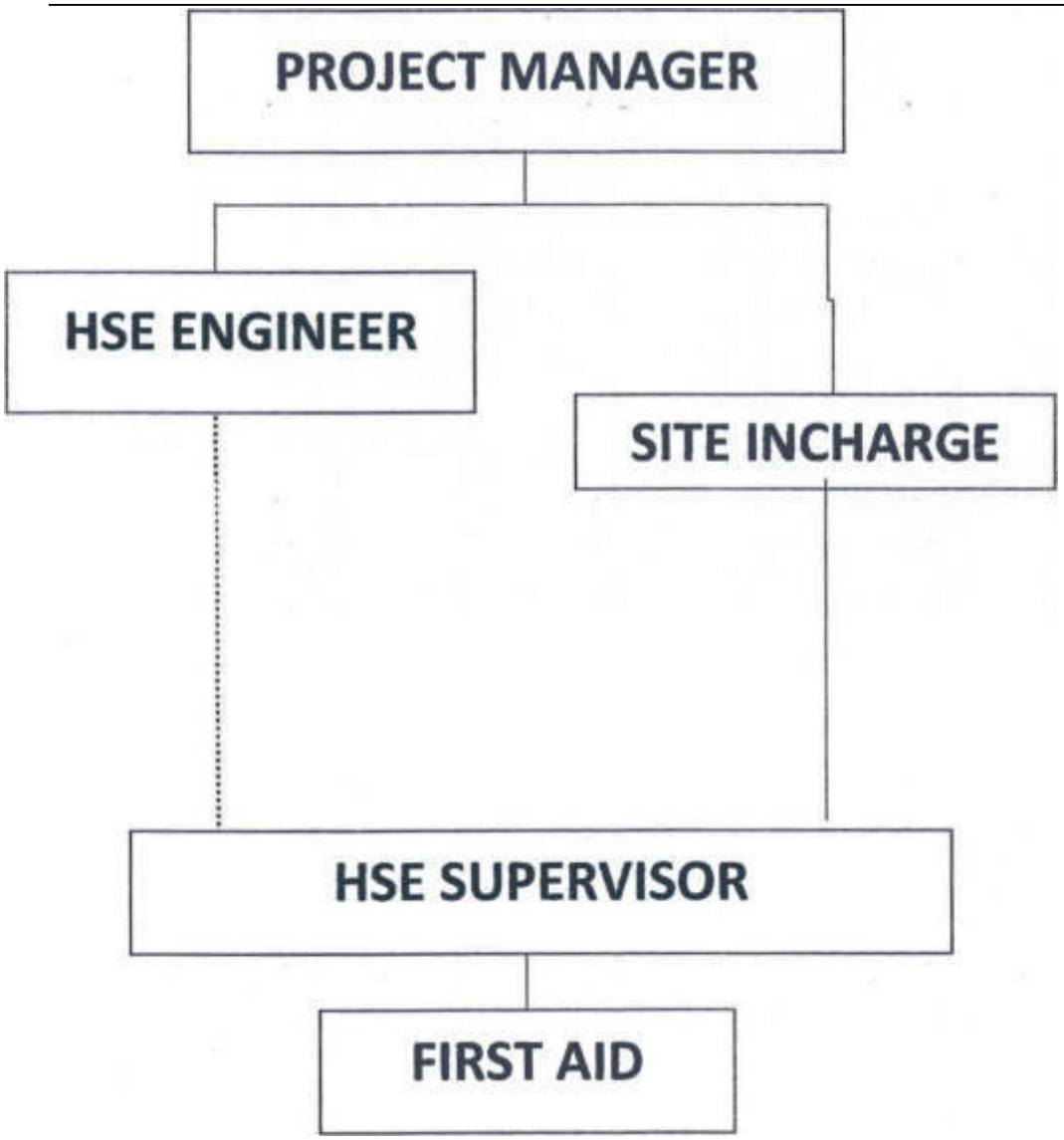
- Incorporating HSE consideration in all business decisions,
- Operations while also ensuring compliance to legal and contractual requirements
- Identifying and controlling HSE risks apart from imparting structured training for employees and workers
- Employing contractors who aspire to adopt DRSITPL's HSE standards in their work
- Encouraging communication, consultation and collaboration with all employees and workers for promoting a positive HSE culture
- HSE Philosophy

  All adverse environmental impacts and accidents are preventable
  No task is so important that the risk of inury to people or damage to environment is justifiable

We shall collectively uphold the philosophy and work safely in an enviroment friendly manner. we shall be responsable for integrating and implementing best practices while we strive towards continual improvement in our HSE performance

HSE ORGANISATION

4.1 Organization Chart



RESPONSIBILITES

HSE Management is a line esponsibility requiring active participation of all levels of management and supervision.
Individual HSE roles and responsibilities, atong with task and target shall be distributed to the individuals for action, as described below.

1	Responsible for completion of the project with total implementation of the company's HSE policy requirement, HSE Management System & requirements of this plan and comply with the relevant statutory rules and regulations.	project Duration
2	Responsible to ensure that all staff & workmen are competent to perform their tasks safely in compliance with Drs Infratech Pvt. Ltd HSE Management System and this plan requirement. He shall do so by:	Project Duration
	Ensuring the screening of workmen is effectively implemented by the time office & site execution engineers. HSE Induction provided for all staff & workmen beforedeployment by HSE Engineer.	
	Ensure regular monitoring and organize continuous HSE in-house trainings.	
	Establishing adequate control measures for the employee's fitness in order to avoid fatigue, stress, extended working etc.	
3	Ensure sufficient resources are available at site. He shall ensure through:	Project Duration

5.1 Project Manager

> KO

	Reviewing HSE Plan implementation and discuss any outstanding issues in Project HSE Committee Meeting. Investigating non-compliance and non-implemented items.	
4	Site HSE Inspection and HSE Plan implementation monitoring	Project Duration
5	Investigate all high potential incidents and noncompliance and ensure immediate remedial action to stop recurrence.	AS & When notified

Si No	TASK	TARGET
1	Disseminate and Communicate HSE Policy, HSE Management System requirements to site personnel.	project Duration
2	Provide necessary advice, information and support in the effective implementation of the HSE Management System requirements and the project HSE plan.	Project Duration

3	Updating the HSE Plan to the requirements of the activities being carried out when there is a revision.	Project Duration
4	Plan and conduct Internal HSE training programs, initiate driveto promote HSE awareness and performance	Project Duration
5	Carry out HSE inspection of Work Area, P&M Equipment & Machineries, etc. as per the IMS requirement.	As per Monthly Activity Plan
6	Creating HSE awareness through TBT talks.	Every day
7	Advising line management in preparing HSE Risk Assessment for the new activities.	Project Duration

8	Conduct investigation of all incidents/ dangerous occurrences &Recommend appropriate corrective measures.	When reported
9	Convene HSE Committee meeting & minute the proceedings forcirculation & follow-up action.	Min Frequency Once in a month
10	Advice & co-ordinate for implementation of Work Permit Systems (WPS).	Whenever work requiring WPS is executed
11	Plan procurement of PPE & safety devices and inspect before use as per laid down norms.	Project Duration
12	Report to HSE Engineer on all matters pertaining to status of HSE and promotional program at site !evel.	Regular basis
13	Facilitate screening of workmen and conduct HSE induction.	Project Duration
14	Monitoring administration of First Aid.	Project Duration

15	Conduct Fire Drill, Procure, inspect and arrange to maintain Fire Extinguishers.	AS scheduled in the monthly
16	Organize campaigns, competitions & other special emphasis program to promote HSE in the workplace.	As and when required
17	Register Customer complaints and take corrective action.	Project Duration
18	Record, analyse and cascade lateral learning points from First Aid Cases, Near Miss Cases & Accidents to all project personnel and analyse the trends & effectiveness.	Monthly
19	Maintain all HSE related documents Update HSE training records	Continues

5.2HSE Engineer

5.3 Section I Area In-Charges

No	TASK	TARGET
1	Ensure that all the workmen engaged under him are selected through the screening system & have undergone site HSE Induction before assigning any task at site.	Project duration
2	Ensuring compliance of Drs Infratech Pvt. Ltd. basic HSE rules and applicable specifications by	project duration
	Taking prompt action of site inspection and hazard findings.	
	Closing all the points identified in inspection reports	
	Ensure HSE Risk Assessment is done for all the jobs under him.	
3	Ensure that all near miss cases / Reportable LTI / Dangerous	AS & when notified
	Occurrence / Fatality are reported promptly.	
4	Participate regularly in HSE meetings.	As schedule

5.4 All Employees

Si No	TASK	TARGET
1	Report all unsafe acts and condition to the immediate supervisor.	Continuous
2	Start work only when conditions are safe and stop work when it is unsafe.	Continuous
3	Operate equipment only when authorized and prescribed manner. (If applicable)	Continuous
4	Report any injury or accident immediately.	Continuous

5.5 Site Engineers

Sl No	TASK	COMPLIANCE TARGET
1	Understanding the HSE requirements of the Project from this Plan, HSE Management Systems, HSE Manual & following the same in execution of the work	Continuous
2	Give Pep talk to the workmen under him	Daily
3	Ensuring the workmen under him wear the necessary personal protective equipment respective to the job	Continuous
4	Eliminating all unsafe conditions in their work area	Continuous
5	Keeping the work area neat & clean	Continuous
	Know the critical activities of his job based on the HSE Risk Assessment and ensure implementation of the control measures.	project Duration
7	Participating with the HSEO Officer or the committee Members in the Project HSE Inspection	As per schedule
8	To follow all work permit system as per client requirements Or Drs Infratech Pvt. Ltd.Management System before starting of similar work	As and when required

9	To report all near miss cases / reportable I-TI /dangerous occurrences/ fatality to HSE Engineer immediately verbally & submitting the preliminary accident report within 24 hours.	As and when required
10	Informing the Concerned Authority as per the emergency response plan.	As and when required

5.6 Project HSE Committee Members

TASK	COMPLIANCE TARGET	VERIFICATION DOCUMENT
To discuss and decide the ways and means of	Once in a week	MOM - HSE Committee Meeting
To analyze all the activities of the forth coming Period and identify the possible hazards and Finalizing the precaution to be taken.		
To monitor the HSE Performance of the Project and suggesting improvements whenever needed.		

5.7 Sub-contractors

All Subcontractors/ Vendor/ Supplier/ Third Party performing services at the Project site shall be subject to this plan requirement.

TASK	COMPLIANCE TARGET
Shall understand the HSE code of conduct for subcontractors and signthe same as a token of acceptance before starting the activity.	Before starting the activity
Subcontractor, his Supervisor and his workmen shall adhere all the laid down HSE rules & Regulations while working at site, follow the instruction / advice of Site engineer & HSEO from time to time.	Continuous

6. PROJECT HSE COMMITTEE

This section shall give the details of the Project HSE Committee.

- HSE committee having all the section heads as members under the chairmanship

of Project Manager.

- HSE committee meets under the chairmanship of PH/PM at least once in a Month in order to bring out solutions to the problems related to HSE.
- Minutes of meeting are recorded and circulated to ati the concerned for follow up.

7. HSE RISK ASSESMENT (HIRA)

7.1 Purpose

To assess the risk of the activities to be executed, rate the risk levels as per the risk assessment matrix, and identify the control measures so as to bring the risk level to Al-ARP.

7.2 Matrix for Group Risk Assessment

Fatal	Impact Rating	5	5	10	15	20	25 (5 x 5)
Hospitalization Case		4		8	12		20
Lost Time Case		3	.3	6	9	12	15
Medical treatment case		2		4	6	8	10
First Aid Treatment				2	3		5
			1	2	3	4	5
			Probability Rating				

Risk Level = Probability x Impact Rating						o	Inevitable
Legend							

Risk Level from 1 to 4		Low Risk			
Risk Level from 5 to 12		Medium Risk			
Risk Level from 15 to 25		High Risk			

7.3 Severity of hazard (Impact)

Severity is the degree or extent of injury or harm caused by the hazards, or as a result of an accident. Severity of hazard is classified as per the table given below.

Impact Descriptions		
(The highest category will always be used)		
VALUE	Result of Hazard to Personnel	Result of Hazard to Assets I Progress
5	Single or multiple Fatality	Catastrophic Damages, Critical Delay
4	Serious Injury requiring hospitalisation	Major Damages, Serious Delay
3	Lost Time Accident	Serious Damage, Moderate Delay
2	Injury requiring Medical Treatment but not Lost Time	Moderate Damage, Minor Delay
1	First Aid treatment only	Minor Damage, No Delay

7.4Likelihood of occurrence (Probability)

Likelihood of occurrence of an accident or incident or ill health is classified as per the table given below.

Probability Descriptions		
(The highest category will always be used)		
VALUE	Status	Description
5	Inevitable	Happens regularly on this site
4	Most Likely	Known to have occurred on this site in the past
3	Likely	Known to occur on other sites

2	Unlikely	Known to occur in the industry
1	Most Unlikely	Never known before

8. LIST OF APPLICABLE LEGAL & OTHER REQUIREMENT

- Indian electricity Rule -1956
- Environment Protection Act -2003 and applicable central, state, local along with interested party requirement.
- e Air rules - The Air (Prevention and Control of Pollution) Act 1981 as amended from time to time and Central Pollution Control Board (CPCB) 1994.
- , Water Quality Standards by CPCB / IS 10500:1991
- Noise Standards by CPCB

9. GENERAL REQUIREMENTS ON SAFETY, HEALTH, WELFARE

9.1 First aid facilities

- • Approved first aid kit shall be kept at site offices in the charge Time Officer
  Approved first aid kit shall be kept at site offices in the charge Time Officer and also at the work places in the site in the charge of the subcontractor Supervisor to ensure the availability during ail working hours.
- Adequate numbers of other staff members shall be trained in first aid duties including resuscitation to take account of numbers of site workers íocated on the permanent site and mobile site operations.
- Vehicles shall be kept available at the site offices and the remote workplaces to take
- •The injured or sick workmen to the nearby designated hospital for jrmparting medical treatment.

9.2 Overhead hazards

- Overhead protection shall be provided at any location where there is a hazard of falling objects. This shall particularly be observed around any scaffolding and in excavations.
- In places, where frequent movement of plants is required beneath the overhead lines, Height Barriers (Goalposts) shall be erected to prevent the arms or jibs of plant from approaching such lines.

9.3 Excavations

- Pipeline trenches and other excavations shall be barricaded. Where human movement is relatively less, an earthen bund shall be provided around the trenches and the excavations for preventing fall of persons.
- Where ever the local people need to cross the trenches, there cross platforms with guardrails should be provided.
- Trenches or excavation walls shall be slopped and the excavated earth shall be dumped so as to prevent collapse of excavation.
- At nights warning illuminating light shaft be provided at road crossings to warn vehicle drivers about the presence of excavation.
- 9.4 Drowning hazards

- Where the work involves filling tanks with water leaving an open surface, the area shall be barricaded for preventing fall of persons inside water. It shall be ensured

that the workmen involved in such works know swimming and rescue themselves if they fall inside water.

9.5 Slipping hazards

- Passageway, or a scaffold, platform or other elevated working surface shall not be in slippery condition. Oil, grease, water and other substances causing slippery footing shall be removed, sanded or covered to provide safe footing.

9.6 Tripping hazards

- All passageways, platforms and other places of work shall be kept free from accumulations of dirt and debris and from other obstructions that may cause tripping. Sharp projections shall be removed or covered.

9.7 Access to workplace

- Temporary stairways, ramps or runways shall be provided as the means of access to working levels above or below ground except where the nature or progress of the work prevents their installation, in which case ladders or other safe means shall be provided.

9.8 Dust and gases

- Dust and gases shall be controlled by ventilation or otherwise so as to prevent concentrations tending to injure health or obstruct vision or from exceeding safe levels.

9.9 Hazardous and corrosive substances

- All alkalis, acids, gases and other hazardous and corrosive substances shall be so stored and used so as not to endanger employees in accordance with national and state regulations. Suitable protective equipment for the use of such substances shall be provided. Clean water shall be kept readily available for washing off any spillage of any corrosive substance on the employees

9.10EyeandEar protection

- Suitable eye protection equipment shall be provided for and shall be used by employees while engaged in welding or cutting operations or in chipping, cutting or grinding any material from which particles may fly, or while engaged in any other operation which may endanger the eyes.
- Ear protectors shall be mad e available for employees when operating noisy machinery like jack hammer, Diesel Generator etc.

9.11 Work in confined spaces

- Where work is required to take place in a confined space, defined as an n enclosed space or excavation with limited access and where there is no natural ventilation, adequate ventilation for workers carrying out work inside a confined space, pipeline or amber or other enclosed areas shall be ensured by using blowers or other suitable means.

9.12 Personal protective equipment (PPE)

1 Every site worker and visitor shall be provided with a full set of personal protective equipment for use at all times including safety helmet, steel toecapped boots, gloves and other specific work-related clothing offering ear and eye protection. All site workers and visitors shall be required to wear PPE while working or visiting the Site.

2. The construction site shall be barricade at all time in a day with adequate markings, flags, Reflectors etc. for safety of general traffic movement, workers and pedestrians.
   - Contractor will provide all necessary safety appliances such as safety goggles, helmets, safety belts, ear plugs, mask etc. to workers and staff.
   - Protective footwear and protective goggles to all workers employed on mixing asphalt materials, cements, and time mortars, concrete etc.
   - Welder's protective eye-shields to workers engaged in welding works.
   - Protective goggles and clothing to workers engaged in stone breaking activities and workers will be seated at sufficiently safe intervals.
   - Earplugs to workers exposed to loud noise, and workers working in crushing, compaction, or concrete missing operation.
   - Adequate safety measures for workers during handling of materials at site are taken up.
   - The DRSITPL will comply with all regulations regarding safe scaffolding, ladders, working platforms, gangway, stairwells, excavations, trenches and safe means of entry and egress.

4 The DRSITPL will not employe any person below the age of 18 years for any work and no women will be employed on the work of painting with products containing lead in any form.

5. Every employee required to work in water, wet concrete or other wet footing shall be provided with suitable safety, water proof boots. Every employee required to use or handle alkaline, acid or other corrosive substances shall be provided with appropriate PPE.

6. All portable power driven abrasive wheels and grinders shall be equipped with guards above the base plate which completely protects the operator from contact.

9.13 Public vehicular traffic

- Whenever any work is being performed over, on, or in proximity to a highway or any other place where public vehicular traffic may cause danger to men at work, the working area shall be barricaded as to direct traffic away from it or the traffic shall be specially controlled by persons designated for that purpose.

9.14 Site traffic

- All vehicles used at the worksite must be roadwofthy and registered with the appropriate authority.
-

9.15 Stability of Structure

- No section of the plant or other structure or part of a structure shall be left unguarded in such condition that it may fall, collapse or be weakened due to wind pressure or vibration.

9.16 Storage of materials and equipment

- Alt materials shall be stored or stacked in a safe and orderly manner so as not to obstruct any passageway or place of work. Material piles shall be stored or stacked in such a manner as to ensure stability

9.17 Disposal of debris

- Debris shall be handled and disposed of by a method which will not endanger persons or environment and surroundings. Debris shall not be allowed to accumulate so as to constitute a hazard.

9.18 Ladders and access platforms

- Every ladder, step-ladder and access platform shall be of good construction, sound material and adequate strength for the purpose of which it is used. Ladders and access platforms shall not stand on loose bricks or other loose packing, but shall have a levelled and firm footing. Ladders of over 2m in height shall be securely tied to the structure it is propped against.

LTm

9.19 Working at height

- All site workers who work at height shall be provided with appropriate PPE including helmet, safety harness, safety shoes etc to prevent an accident by slipping or falling.

9.20 Alcohols and Drug Prohibition, Smoking Restrction

No Alcoholic beverages or illegal drugs are permitted on worksite.the contractor shall ensure that personnel is made aware of and fully comply with this prohibition

No Smoking takes place in the non-smoking areas

Safety at work is not Jeopardized by any kind of narcotics and drugs, which may include some medical drugs, affecting the sen

9.21 Positioning of machinery

- No person shall be permitted to position or operate machinery in a manner likely to endanger him or others.

9.22 Fixed and mobile cranes

- Fixed and mobile cranes shall be so constructed, positioned and operated as to be stable. No crane shall be loaded beyond the safe working load except by an approved person or an inspector for the purpose of testing such machine.
- Every crane including all blocks, shackles, sheaves, wire ropes and the various devices on the mast and jib shall be thoroughly inspected by an approved person at intervals not exceeding 12 months. Cranes shall be inspected before being first

erected or operated on the job or after any major repair. Inspection and repair of crane jib shall be made only when the jib is lowered and adequately supported.

- Outriggers and counter-weights shall be provided and used as specified by the manufacturer of the crane or by an approved person. Counter-weights shall be properly placed and secured.
- Levelling jacks or other suitable means shall be provided and used with outriggers of truck-mounted mobile cranes. Firm and uniform footing shall be provided for cranes. When such a footing is not otherwise supplied it shall be provided by substantial timber, or other structural members sufficient to distribute the load so as not to exceed the safe bearing capacity of the underlying material.
- Every power-operated crane shall be provided with efficient brake or brakes or other locking devices which will prevent the fall of the load when suspended and by which the load can be effectively controlled whilst being lowered. Hand or foot - operated bakes shall be provided with a substantial locking device to lock the brake in engagement.
- No load-bearing part of any crane shall be replaced by another part, and no such machine shall be modified by the addition thereto or removal there from of any load bearing part, unless the replacement or modification shall be certified by either the manufacturer or the approved person who tested the crane.
- A capacity chart shall be provided for every crane. Chart shall be posted and Maintained in a place clearly visible to the operator and shall set forth the safe loads for various lengths of job at various jib angles and radial distances. Where outriggers are provided such loads shall be set forth with and without the use of outriggers.
- A crane shall not lift any load that exceeds the corresponding safe working load specified by its capacity art. Every crane having a jib shall be provided with an accurate indicator which st-nn,s, clearly to the operator, the radius of the jib and the safe working load corresponding to that radius at all times and gives warning signal when the radius is unsafe.
- Before hoisting any load at a new job site, the jib shall be operated to its maximum height. Crane cabs shall be locked when the operator is not present and no unauthorized person shall enter the cab or remain immediately adjacent to any crane in operation. If locking of a crane cab is impracticable, the operating mechanism shall be locked as to prevent the crane from being operated by an unauthorized person.
- No crane shall be operated in such a location that any part of the crane or of its load in any position of jib or swing may come within 3m of live power line.
- All the lifting equipment used at site shall have a valid certificate form competent authority at the time of usage.
- All crane operatives should be authorized to operate the particular type of fixed or mobile crane. Valid certificates will be available for inspection by the Engineer. All signalmen will be formally trained to undertake their duties and refresher training will be given at an appropriate frequency agreed by the Engineer.

9.23 Attachment of loads (Lifting Tools & Tackles)

- Where a sling is employed to hoist long-length material, a lifting beam Shali be used to space the sling legs for proper balance, When load is suspended at two or more points with slings, the eyes of the lifting legs of the slings shall be shackled together and this shackle or the eyes of the lifting legs may be shackled directly on the hoisting block or balance beam.
- The eyes may be placed on the lifting hook without shackles if the hook is of the safety type. Each container or receptacle used for raising or lowering filter media or other loose material of any kind shall be so enclosed, constructed or designed as to prevent the accidental fall of such material. Crane loads shall be raised vertically so as to avoid swinging during hoisting.

- No crane, excepting pick and cany crane, shall travel with a suspended load. During travel without loads, crane's falls shall be secured or placed so as to prevent accident or damage by swinging.

10. WORK PERMITS & LIASION CLIENT

The following permit system wili be operated at site

Si No	Description of the Critical Activity	Issuing Authority
1	Industrial Radiography	Project In charge & Site HSE Engineer in co-ordination with Site {n charge of the Radiographic Agency. { With approval of CONCERNED AUTHORITY}
2	Blasting Operations	Project In charge & HSE Engineer { With approval of Statutory Authorities through CONCERNED AUTHORITY}
3	Excavation clearance Permit	Section In charge, Electrical and Mechanical In charge, & Site HSE Engineer
4	Confined work Permit	Project in charge, HSE Engineer

10.2 Liaison with Cliente

Liaison with CONCERNED AUTHORITYshall be carried out at early stage of the project;

(1) Preconstruction stage
(2) Design and construct stage
(3) Operation & Maintenance stage

(1) Preconstruction

We will liaise with Client during the pre-construction stages with regards to all matters, so as to fulfil all project requirements. We Wilf propose an action plan in detail, the methodology to be adopted during pre-construction stages like site ey, collection of data in detail, and joint site inspection with RWS & SD.

We will liaise with Client in obtaining the statutory permission from various applicable authorities

a) Gram Panchayat,
b) Electricity Dept
c) Telecom
d) Police
e) Area MLA / Corporator / Councillor
f) Labour Commissioner
g) Tax Authorities
h) Division Office
i) National Highway
j) Public Works Dept.
k) Any other Departments.

With due permission from client we shall also consult all concerned personnel of various Depts./ Organisation as mentioned above with relevant action plan, methodology, drawings/sketches etc, and any other details as required by the appropriate department/organisation for granting of permission / Right of Way for execution of the works. Also with the permission and assistance from CONCERNED AUTHORITYwe will ensure that clearances and permits required from the above relevant organisation are in place by providing early understanding of the project, the impact and benefits. This will ensure the necessary support is obtained without delay and the progress of the contract is notham

We will also meet the concerned CLIENT personnel for the area under execution and liaise with them in checking of the action plan as per requirements of the Project.

(2) Design & Construct

We will liaise with CONCERNED AUTHORITY and submit detailed working methods &

We will integrate all our establishment activities with the routine operational activities of Concerned Authority. There will be increased involvement and liaising with the CONCERNED AUTHORITYoperational staff, who are having knowledge and experience of operating network and its components in a particular area during the design and construct stage. The Project Director will ensure that there is well managed communication link with CONCERNED AUTHORITY Divisional Operational staff with respect to work carried out under the Contract and CONCERNED AUTHORITYroutine operational work. This wilt avoid any interference between O&M activities of CONCERNED AUTHORITYdivisional staff and our team carrying out investigation and leakage activities.

Also acknowledging that we will have more operational responsibilities during this time we will ensure that we have a system of reporting and liaison to ensure that the customer service levels are maintained.

We will be in constant touch with the concerned CONCERNED AUTHORITY maintenance personnel with regards to hours of water supply for particular area network for repairs, replacement etc., so as to minimising any affect to the consumers.

In co-ordination with CONCERNED AUTHORITYwe will interact with Police Dept. and other local Govt. bodies from time to time and ensure that all works are carried out smoothly without affecting the road users complying with due safety regulations and acts as prescribed by the statutory bodies.

We will give awareness about our construction activities to public through Information sign boards & Caution boards

(3) Operation & Maintenance

We will adopt the same level of contact and communication with CONCERNED AUTHORITYduring the 1 year of operation and maintenance period.

11. CHECKS & REPORTS

Following checklists & reports to be used

- Site HSE inspection report

Electrical safety inspection checklist

- Vehicle & earth moving equipment inspection ched(åist
- Safety norm violation memo
- Performa for screening of workmen
- Minutes of HSE meetings & Follow-ups.
- TBT talks.
- Office Inspection report
- Workmen Camp Inspection repoft. • Fire Extinguishers Report
- Incident Investigation checklist
-

12. STATISTICS & REPORTS

- Monthly activity plan
- Monthly Project HSE statistics
- Preliminary accident report
- Incident investigation report
- Dangerous occurrence investigation report
- HSE Evaluation of subcontractor
- Analysis of first aid cases

13 Emergency Response Pla

14 LIST OF JOB SPECIFIC PPE TO BE USED IN THE SITE

a. Introduction

PPE will be issued to all personnel as per agreement conditions. All safety equipment and PPE shall conform to recognized standards and legislations etc.

The Tahal Consulting Engineers Limited will provide all necessary safety appliances such as safety goggles, helmets, safety belts, ear plugs, mask etc. to workers and staff.

- Protective footwear and protective goggles to al! works employed on mixing asphalt materials, cement, and time mortars, concrete etc.
- Welder's protective eye-shields to workers engaged in welding works.
- Protective goggles and clothing to workers engaged in stone breaking activities and workers will be seated at sufficiently safe intervals.
- Earplugs to workers exposed to loud noise, and workers working in crushing, compaction, or concrete mixing operation.
- The Drs Infratech Pvt.Ltd. will comply all regulations regarding safe scaffolding, ladders, working platforms, gangway, stairwells, excavations, trenches and safe means of entry and egress.

b. General Procedures

It is the responsibility of the user to take good care of the PPE issued to him. Damage to PPE, intentional or otherwise, will be dealt with accordingly.

PPE must be wearing properly in accordance to its use.

d. Head Protection

- Approved type hard hats must be wore at all times by personnel while working at sites.
- Hard hats must be fitted with a chinstrap always, when working in high winds, or when working at a very elevated position.

A hard hat protects the head against blows, jolts, falling objects, welding slag and high temperatures. They are fabricated from a durable material, and no alteration may be made to approve type hard hat. 'Damaged hat must be replaced immediately

- Hats not to be painted. Metal Hats are prohibited.

D. Eye and Face Protection

- Protective filters, goggles, safety spectacles and full face visors, complying with the appropriate standard must be worn to give protection to the eyes and face against chemicals, welding arcs, and sparks, flying particles, injurious light rays and similar hazards.

- Dark glasses will not be permitted during dark hours unless working on or within brightly illuminated areas.
- Face shields or goggles are to be wore within areas where grinding, grit blasting, chemical handling, machining, compressed air cleaning, cutting, etc. is taking place.

E. Hand Protection

- All gloves must be kept dry particularly when used in welding or handling live electric wires to avoid electric shock.
- All gloves must be in good condition, fit properly and free of grease, oil and dirt Accumulations. They should be regularly inspected for cut, abrasions, cracks, etc.
- For the protection of hands numerous types of glove are available. The kind of gloves used will depend upon the material or equipnqent being handled. Supervisors should advise on the type of glove required.
- Electric hazards require special natural rubber gloves of hiah insulation standards with working voltage clearly marked on each glove.

Foot Protection

- Approved safety boots to comply with appropriate standards is compulsory. Safety boots that is, with steel toe plate in step, must be wore by-all personnel. tn case of slushy areas and while working with concrete gumboot should be used.

G. Leg Protection

- Trousers must not be tucked into the cuff of the boots as this witl allow material to be channelled into the boot particularly sparks or hot slugs during welding or cutting.

H.Hearing Protection

- Where it is not possible to reduce the noise levels to permissible noise exposure levels or duration of exposures is long, ear protective devise wilt be provided and used.
- Ear muffs or earplugs will be issued and used on individual basis.
- The earplugs must fit tightly in the ear canal and must be insefted with hands free of dirt or grease. Individual user must clean them regularly.
- In high noise level areas, a notice "WEAR EAR PROTECTION" must be exhibited.

I.Safety Harness

- Safety harness must be wore and hooked up when working on elevated platforms more than 6 feet above ground.

-AXME

15. TRAINING15.1. Training Matrix

16. COMMUNICATION & REPORTING

Cascading any HSE messages down the line is vital for the success of any HSE Management System and to ensure that alt personnel are aware of HSE issues the following technique shall be adopted.

No	TASK	ACTION BY	COMPLIANCE TARGET	VERIFICATION DOCUMENT
1	HSE NOTICE BOARD	HSE Engineer	Weekly update starting from Mobilization and Daily	HSE Notice Board
	HSE Notice board will be fixed at site office and other conspicuous locations for cascading HSE messages such as HSE Notices, Safety Alerts, Posters and accident evaluation etc., shall be regularly updated.			
	Install and maintain HSE performance board showing Safety statistics i.e. days without LTl etc			
2	PROMOTION Monthly Incentive Safe Man of the month shall be selected on the basis of HSE performance evaluation and will be given a certificate of commendation along with a token gift.	PM / HSE Engineer	Monthly	Incentive Scheme record

17. ENVIRONMENT PLAN

17.1 Environmental Responsibilities

Zonal Head is responsible and accountable for the environment management plan and its planning and the entire project team is responsible for the success.

Company Environmental Specialists is consulted on specific expert advice. The Project Manager, the project team including the Environmental Control Manager for the specific work and the environmental specialists (within Tahal and external) identifies the contractual or Tahal environmental requirements for the project. This team identifies the environmental impacts, assesses the significance of the risks for each identified environmental impact and the mitigation measures

17.2 Identify Environmental Requirements

The Zonal Head with the works team will understand and identify the environmental requirements of the work/project as define by the contract, scope of work (both design & construction) and any other external bodies' requirements. Depending on the requirements, Tahal's responsibility may be for both projectrelated environmental impacts caused by Tahal during the execution of our project activities (office and site) and/or the environmental impacts due to the construction and operation of any

resultant facility. In the latter case, it is based on the services stipulated in the Contract with the Client and will also be based on compensation for performing them.

Figure 1 illustrates how environmental requirements will be identified to produce environmental plans.

Project Director with respect to the concerned Work/Project scope of work for environmental management plan will identify environmental requirements with respect to the following;

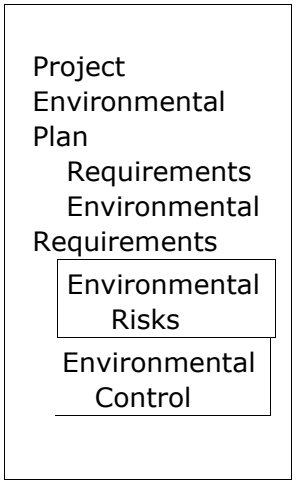


Figure 1

- Contamination of surface, ground, groundwater, surface water and rivers
  Emission to air, including smell, gases, smoke and dust
  Unsanitary or unsafe storage or discharge to drain, sewer and surface waters
  nsanitary or unsafe storage or discharge of solid wastes
- Noise
- Visual intrusion and
- Excessive energy and water consumption

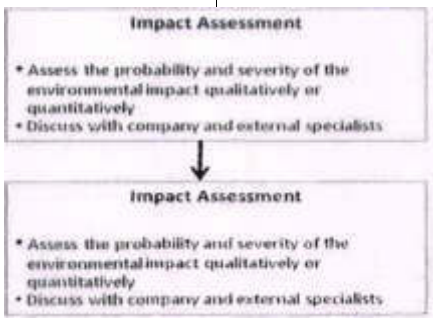
The Project Director will consult and seek guidance from the operation management or secure the services of company and external Environmental Specialists where needed to provide expert advice on the above identified scope of work. Where Tahal is acting in the role as supervisor of construction works performed by others, it is the Project Director's responsibility to confirm that appointed contractor(s) carries out identification environmental requirements for the Works.

17.3 Works/Project Environmental Impact Identification

This is the first of the three steps in the overall risks assessment process of the Works as shown in figure 2. The project manager arranges for the identification of potential impact of the Works activities, products and/or services on the environment. The Project Manager will use a team approach to identify any obvious, known and expected or foreseeable environmental impact, over which the Works team can have control by reviewing the scope of work by taking into account past experience, the specific task to be performed in the work breakdown structure and water industry relevant checklists. Where necessary data will be collected and surveys conducted to enable the identification of the environmental impact on the Works. While doing this the whole planned life of the project will also be considered with respect to noise, emission to air, conserving energy and water. The out of the environmental impact identification will be help to determine the potential environmental impacts from the Works.

Impact Identification

- Review contractrequirements and scope of work
- Discuss with company and extemot specialists



Note:The detailed process varies depending on the tvpe of the project

17.4 Works/ Project Environmental Impact Assessment

The Project Director and the team analysis and assess each environmental impact. The assessment could be qualitative or quantitative. This assessment is undertaken to identify appropriate environmental controls and to develop planned approach or procedure to minimise risks associated with each impact. Figure 3 provides an example of qualitative environmental risks taken up by Tahal in its works. The decision as to whether action is required for each impact is based on the probable degree of impact and probability of occurrence based on simple low, medium & high rating.

PROJECT ENVIRONMENTAL RISK ASSESSMENT					
Is the likely to Involve any ɔfthe follovån	Yes/No NIA	i lficance			Coments detðis of enormtnental upectg on
			eq	ction	
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waste be produced?				Y	Timber and ccncrete be tegregated Oh Byte and, ag as possible then recycled The re-use of excess spul has been destçned Into re-landscapino the Site
hazafd21Æ waste be produced'					A garage on Site is to be has an asbestos rcof
there asbestos present					

nt on site? an					
'he geneate dust'		M	M		palticu!ð' dry petfr)ds darrpiqg don be utiltsed reduce dust Into the surround ng area
Joes the work involve | e g piling, demolition? Insole parliculaly noisy acti l/tles					hvgered ptl:ng be uttlsed site Cue to the spatial sepaabon beiween the Site and he neaest houses It ts anhcpated that the, rutsance v,níi bê mimr md for !ernprat) peržod only
the increase the background nost to thc surrounding ane'					New bfm¿ers WII: he on Site bui these WII be housed IF an ðCOUStlC cnclasure
SIGNIFICANCE f legislation contractual duties and/or company policy, long breach of legislation, medium term effect possible (if difficult) to legislation, no sensitive receptors, little or no scope for impact High Extremely likely or certain to occur Medium Quite likely/occasional chance of o Low Improbable or unlikely to occur Ncenv					Severity Bleach HH HM HI MH occumg kctm WI LM LL
Where It has been that action ired, mitt stiorg measurag will be included in the Environmentlt Plan.					

17.5 Work/Project Environmental Control

The Zonal Head and his project team with the Environmental Control Manager plan the environmental controls, develop emergency response and finalises the Environmental Management Plan (EMP) for the Works. Environmental control usually consists of mitigation measures based on the following categories;

AVOID: Prevent adverse environmental effects at source (e.g., choice of road location or specification of construction equipment).

REDUCE: Include features in the design and planning that reduce unavoidable impacts. (E.g. minimizing noise and vibration through the choice of construction technique, minimizing land-take).

REMEDIATE: Take remedial action such as temporarily relocating affected sensitive/ importantflora and fauna, for re-instatement later.

Activity/Hazards	Mitigation Measures
Pipe charging and Washout	AVOID: During pipeline charging and washout precautious will be taken that wash water does not to reach the roads where and where possible will be put to the surface water drains. Old pipes produced from changing to new pipes will be disposed of by trucks.
Site drainage/ surface water runoff	AVOID: Precaution will be taken to avoid runoff from the construction works to the drains. This will be done using drain covers/blockers for foul water drains to prevent silt for surface water drains. Stockpiles, plant and materials will be stored in a manner that run off to the drains is minimised

Waste disposal	REDUCE: Due to the constraints of the site, waste will not be stored on the site for longer than 15 work days in any one period. Waste will be removed from site approximately every 3 days, or when the volume produced is enough to fill a waste removal wagon. Traffic to and from the site will be minimized, resulting in a reduction in-energy usage and vehicle pollution by only removing waste when there is a full load.

An example of the likely mitigation measures that may be employed in the Works is shown in Figure 4 below•

Noise and vibration	REDUCE: Construction hours where feasible will be restricted to 08.00-18.00 Monday to Friday and 08.00-13.00 Saturday. There will be some increase of noise during pile laying, but this is short duration at a time and should therefore not cause a significant impact.

17.6 WorklProject Environmental Reporting

The Environmental Management Plan will be implemented and environmental impact from the project activity will be monitored and reported by the Project Director working with the Environmental Control Manager for the works. As required the reporting will be done on a monthly basis as part of the monthly reporting procedure of the Works. The report will include summary of the daily monitoring results on all the environmental aspects of the project.

18. HEALTH & SAFETY PLAN:

18.1GENERAL RULES

Regulation Acts in General:

- Workmen below 18 years & above 58 years will not be engaged for job.
- Physically challenged personal will not be engaged, jobs which are not suitable to the individuals.
- Female work forces will not be engaged more than the prescribed time as per the recommendation by the act.
- The authorized representative will give training, before starting the job.
- No building worker lifts by hand or carries overhead or over his back or shoulders any material, article, tool or appliances exceeding in weight the maximum limits set out in the following table,

Person	Maximum Weight Load
Adult-Male	50 Kg
Adult-Female	30 Kg

18.2 HSE Orientation for the Workmen

Every new workman undergoes an HSE orientation program before sending to the site. In the program, safety engineer explains how to overcome probable hazards at site and important PPEs. Also, explains the safety norms that are to be followed at site.

18.3 TBT Talks (tool box talk)

tn order to enhance the safety awareness amongst workmen, site engineer conducts TBT talks regularly. Whenever the new job starts Safety engineer inducts workmen on the hazards involved in the activity and proper •work methods covering all the areas periodically.

18.4Safety Training

Safety engineer conducts safety-trade wise training programs regularly. Site engineers, Supervisors & workmen attend the program to enhance their technical knowledge with respect to safety and learn how to integrate safety into the work-practices. Depending on the requirement, demonstration on required type will be done in consultation with the site engineers.

18.5Safety Promotional Activities

Safety promotional activities like motivational programs, Awarding schemes, safety month celebration etc., shall be arranged to enhance safety awareness amongst execution staff and workmen. Such activities shall be initiated by safety personnel and organized by project team.

18.6 Personal Protective Equipment

All the types of personal protective equipment (PPEs) required at the site is made available at stores and all the PPEs shall confirm to the relevant IS codes. Safety manual shall be referred for more details about the PPEs. Site engineers shatt issue the required PPEs according to the job. The site engineer inform to SSC for making the necessary arrangement of special PPEs. Suitable foot protection will be ensured invariably to all male & female workers before engaging in the job. Please refer Exhibit 1 for the list of PPEs

18.7 Safety Code of Practice for Sub contractors

- All workmen shall be screened before engaging them on the job. Physical fitness of the person to certain jobs like working at height or other dangerous locations to be ensured before engaging the person on work. The final decision rests with the site management to reject any person on the ground of physical fitness.
- Smoking is strictly prohibited at workplace.
- Labours shall ensure adequate supervision at workplace. They shall ensure that all persons working under them shall not create any hazards to self or to co-workers.
- Nobody is allowed to work without wearing safety helmet. Chinstrap of safety helmet shall be always on.
- No one is allowed to work at or more than two meters height without wearing safety belt and anchoring the lanyard of safety belt to firm support preferably at shoulder level.
- No one is allowed to enter into workplace and work at site without adequate foot protection.
- Usage of eye protection equipment shall be ensured when workmen are engaged for grinding, shipping, welding and gas-cutting. For other jobs as and when site safety coordinator insists eye protection has to be provided.
- Alt PPEs like shoes, jaiket, helmet, safety belt etc. shall be arranged before starting the job as per recommendation of site safety coordinator.
- All excavated pits shall be barricaded and barricade to be maintained till the backfilling is done. Safe approach to be ensured into every excavation.
- Adequate illumination at workplace shall be ensured before starting the job at night.
- All the dangerous moving parts of the portable / fixed machinery being used shall be adequately guarded.
- Ladders being used at site shall be adequately secured at bottom and top. Ladders shall not be used as work-platforms.

Material shall not be thrown from heights. If required the area shall be barricaded and one person shall be posted outside the barricade for preventing the trespassers from entering the area.

Other than the electricians with red helmet no one is allowed to carry out electrical connections, repairs on electrical equipment or other jobs related thereto.

- Power supply shall be taken through Earth Leakage Circuit Breakers (ELCB) of 30mA Sensitivity.
- Inserting of bare wires for tapping the power from electrical sockets is completely prohibited.
- All major, minor accidents and near misses to be reported to Project Manager / Site Safety coordinator to enable the management to take necessary steps to avoid the recurrence.
- All scaffoldings / work-platforms shall be strong enough to take the expected load. The width of the working platform and fall protection arrangements shall be maintained as per recommendation of Site Safety coordinator.
- Debris, scrap and other materials to be cleared from time to time from the workplace and at the time of closing of work every day.

- Adequate fire fighting equipment shall be made available at workplace and persons are to be trained in fire fighting techniques with the coordination of Site Safety Coordinator.
- All the unsafe conditions, unsafe acts identified by contractors, reported by site supervisors and / or safety personnel to be corrected on priority basis.
- No children shall be allowed to enter the workplace.
- Female workmen are not allowed to work on height & high risk areas.

18.8. Jobs at remote & isolated site

- No personal shall be assigned to work individually & team of required member will be provided according to the job nature in the particular job / area.
- Whenever the jobs is in progress at least one personal qualifying / trained will be at site, enabling the any emergency situation.
- Concern Spread — in charge will be available at site / over phone, during jobs.

Working hours will be during daylight & whenever the job is to be carried out beyond the time necessary illumination witl be arranged on prior.

19. WELFARE PLAN

19.1 Labour Camp

Labour camp will be made at a nearby the work area with all necessary facilities to stay.

19.2 Drinking Water

Drinking water shall be made available in number of places to cater the labour strength and the water tank shall be cleaned regularly.

19.3 First Aid Facilities

The following activities shall be ensured.

- Provision of first aid and emergency treatment.
- Conducting training regarding First-Aid.
- Promote Health education, including family welfare among workers.

19.4. First-Aid Boxes

- Sufficient numbers of First-Aid boxes are provided and maintained for providing First-Aid to the workers.
- Every First-Aid box is distinctly marked "First-Aid".
- Nothing except appliances or requisites for First-Aid is kept in a First-Aid box and such box is so kept as to protect it against contamination by dust or other foreign matter and against penetration of moisture and such box is kept in the charge of a person trained in First-Aid and is always readily available during working hours.

19.5. Emergency Vehicle Arrangement

Vehicle for emergency purpose will be made available during working hours in a convenient place for attending any emergency situations at site. Ambulance arrangement will be made available with the tie up of local health centre / hospital / agency having the facility with necessary arrangement.

20. CRITICAL JOB ACTIVITIES

20.1 Overhead hazard (power lines)

- Wherever jobs near the overhead power lines are crossing, jobs will be carried out in presence of senior / authorized person.
- Wherever frequent movement of vehicles/ any other mode which are possible to entangle with electrocution, in the designated place "Goal Post" will be paced, at safe position for avoiding the movement of truck / vehicle with the extended height of material.
- Wherever the cranes are to be placed & job is to be carried out, such machines will be earthed locally.

20.2 Overhead Power Line crossing area

Care is to be taken while working near overhead power line and Safe distance is to be followed as per the details given below, to avoid electrocution. If not possible shutting down of power is to be done after getting permission from concerned departments and permit should be obtained from the respective department, the same should be returned after the completion of the specified work for recharging the line.

20.3 Minimum Clearance for Live Conductor

A. Classification of voltage (IE Rule 2(1)(a):
Low Voltage : Not exceeding 250V; Medium voltage : Not exceeding 650V
High voltage : More than 650V & unto 33KV ; Extra high voltage: More than 33KV
B. Clearance from building (IE Rule no 79)

Working under power line: safety distance to maintain

440 volts----------10ft from top tip of equipment to the line

13ft from top tip of equipment to the

18ft from top tip of equipment to

20.4 Underground hazard - Power cables I Water Sewage

- Wherever such items are visible, care will be taken by rerouting with the concern authority.
- If the area is under private party, clearance will be taken from the party for ensuring safe execution and rerouting of power cables, water and sewage lines.
- While carrying out job at common places it will be ensured with the available local authority.
- Wherever there is no possibility of getting details, cable detector will be used for identifying the underground cable.

20.5 Electrical & Instrument

- Only qualified electricians are allowed to give electrical connections.
- Electrician will wear red colour helmet for identification.
- Either an electrical engineer or 'B' license holder is responsible for the electrical maintenance and shall be at site till all the electrical equipment are shifted from site.
- Every DB will display a warning board to caution unauthorized person entering the area.
- Switch boards, DBS, SDBs, and all electrical installations have to be covered by a shed and must be easily approachable.
- Portable hand tools (metallic body) must have 3 core cable connection
- Colour coding for cable will be

  Red — Phase, Black — Neutral, Green — Earth and for single phase Red, Yellow, Blue for 3 phase & Green for ear thing Wherever vehicle/ equipment movement is frequent cable should be laid underground/ overhead
- Metal clad plug must be used for all sorts of connection.
- Operation of portable power tools under open sky during rain must be avoided.

Earthling of DBS, SDBs and all electrical panels must be checked properly before energized.

- Proper insulation n must be ensured.
- Cable lying on the ground must be avoided.

- El-CBs must be check whether it is in working condition and with sensibility of 30 mA from distribution board.
- Work on live circuit is not allowed; shutdown will be taken before any electrical job commences.
- Earthling resistance should be less than 1 ohm.
- • First joint in a cable, emerging from a hand tools, must be 3M away from it, with good insulation.
- Welding cable and power cable must not overlap.
- Welding cable must be connected with proper lugs/ferules.
- Electrically operated tools should not be used in explosive environment.
- Personal protective equipment like rubber suitable hand gloves, shoes, safety helmet, safety belt etc. should be used for electricat work.
- All electrical installation should be well protected from rainwater.
- Authorized person will do periodical inspection of ELCB & electrical installation.
- All the Electrical works shall comply with alt relevant statutory regulations.

20.6 Blasting (IS 4081 - 1986):

- Wherever excavation is not possible using excavators, it should be done by Controlled blasting (or) Chesling operations.
- Authorized & recommended materials are only shall be used up to the allowable quantity.
- Controlled Blasting must be carried after obtaining Work permit.
- Explosion is to be done by the exploder/fire as per the suitable site conditions.
- Blasting will be carried out in the recommended timings only.
- Precautions will have to carry out before blasting, during blasting & after blasting.

Authorized shot firer only will be engaged for carrying out the blasting operation.

- The entire guide lines arrived by the Directorate of Explosives will be followed.
- All the above activities will be performed under the supervisión of valid license holder.

20.7 Transportation of Construction materials- Cement Bag, Bricks, Mortar, Reinforcement, Pipes and valves

- Men and women should not carry more than 50 and 30 Kg weight respectively.
- Proper care shall be taken during manual transportation of Cement Bags, Bricks, Mortar, and Reinforcement on slippery area and during rainy season.
- Lifting Arrangement by two workers should be used to carry cement bags at site.
- While shifting the materials from stockyard to location using tractor/trailer, no materials shall be extended than the body of the truck.
- Red flags to be used for protruding materials for cautioning the other vehicles. If it is to be shifted at night, necessary red light is to be placed at side & rear of the vehicle, preferably at the end/tip of the materials, for cautioning the other vehicle

20.8 Excavation

- Sides of the excavation must be sloped to a safe angle or shoring should be ensured if depth is more than 5 feet.

Angle of repose for different soil		
Ashes; coal		45
Clay; dry	1 .3 : 1	38
Clay; damp		27
Earth; dry	1.3:1	38
Earth; damp		27

- No excavation below foundation level of any adjoining building/structuré. Before doing excavation near any building site in-charge/client/safety engineer should contacted.
- Keep minimum 5 feet clearance from the excavated pit.
- Boulders also should be dumped in this fashion that it should not roll down.
- Proper care shall be taken while working with underground cable/pipeline etc.
- Under cut is not allowed in excavation.
- Shoring should be given as per the requirement.
- Proper barricading at least Imtr away from edge should be done for the excavated pit/trench.
- Proper access ladder should be given on pit] trench.
- Excavation should be started after ctearance permit from client/safety department.
- If excavation is on road, road should be blocked & caution boards shall be displayed on both sides.
- Worker should use required personal protective equipment like helmet, goggle, shoe, etc.
- Immediate action should be taken for water seepages, landslide/cracks

21 JOB SPECIFIC ACTIVITIES

21.1 Material Handling:

- While shifting the material using cranes, no items should be controlled without tag tine.
- The condition of wire rope should be checked.
- The condition of the loading belt should be inspected visually before lifting the materials

21.2 At Stock Yard:

Materials are to be stacked with the wedge supports at both sides, for avoiding rolling Stacking pipe one over other is to be avoided. If to be staked, additional care is to be taken to avoid caught between / pressed between injuries. Cast iron/breakable materials are to be stacked carefully.

21.3 Traffic -¥ At job Location/ Near Highways/ Roads:

Pipes are to be stacked well away from edge of the road, without obstructing the public movement. Signalmen provided with signalling jacket and a red flag is to be deployed for cautioning the road traffic at both the ends.

21.4 Pipe Shifting:

While shifting the pipes using cranes, swinging of the pipe should be controlled by anchoring a Polypropylene rope as a control tag tine. No personnel shall be allowed to enter in between crane & material and underneath. Tested tools & tackles are only to be used for lifting & shifting.

21.5 Pipe Laying in to Trench:

Crane capacity vs. Weight of the material, which is to be lifted, must be ensured before lifting. The crane should be moved nearer to the trench as closer as possible maintaining the safe working condition. Only trained personnel are allowed to lay ipes in to the trenches. While lowering the pipes into trenches care should be to avoid foot caught between the pipe and shore of the trench.

21.6 Welding:

- If diesel-welding generator deployed for carrying out job, it should be kept horizontally.
- Main is to be stopped, white fuet filling is carried out.
- Local ground ear thing is to be connected and continuity is to be ensured.
- Welding machine earth cable is to be extended up to the job & no steel materials like Reinforcement rod are not to be connected as earth.
- All the rotary parts are to be covered with the necessary protection guards.
- Other than the authorized person, no other personnel are allowed to operate the machine.
- If electrical welding sets are to be used, supply must be taken through ELCB. 4-core cables, local ground earth are to be ensured.
- Necessary authorized welder PPEs are to be arranged before starting of the job.

21.7 NDT (Non-destructive tests):

- While using RT test separate GRA is to be prepared and the same should be followed.
- Authorized & experienced personnel are only to be allowed to carry out the process.
- Proper supervision shall be ensured till completion of job.

21.8 Pressure Testing:

- Only authorized person shall be allowed to enter in the nearby areas.
- Welding, Gas cutting, Hammering on the pipe is not to be done under pressurized condition.
  Continuous pressurizing is not to be done. Gradual pressuring & time delay is to be maintained.

APPENDIX 34: EHS PLAN-PUTTUR

Suez Projects Private Limited

Health and Safety Plan

Project :- Construction Of Works and Services for Operation and Management of 24X7 Water Supply System for Puttur Town
Contract Package NO 02PTR 01

		Amruth Yedugani	Vishal Pattanshetti	Pramod Kumar B.K	For Approval
Rev.	Date	Prepared By	Checked By	Validated By	
00				Pramod Kumar B.K	Submission Purpose

Contents

I. HEALTH, SAFETY AND ENVIRONMENT POLICY

SUEZ

HEALTH, SAFETY, ENVIRONMENT & INDUSTRIAL RISK POLICY

Excellence in safety, health and environment contributes directly to the performance of SUEZ and creates value for our clients. This is an ongoing and critical objective.

Everyone has an obligation to work safely and the duty to contribute on this by behaving responsibly.

All accidents can be avoided by implementing appropriate methods, equipment, training, controls and behaviors.

IN ORDER TO ACHIEVE THIS LEVEL OF SAFETY, HEALTH AND ENVIRONMENT, WE ASK THAT:

- All employees behave in an exemplary manner and comply with all applicable regulations, rules and commitments, including in disruptive situations. Our internal rules prevail when they offer greater protection than local regulation.
- We follow all applicable requirements including Life Saving Rules developed by company.
- Activities are organized so that they reduce risks to an acceptable level.
- Employees contribute to routine and incident feedback, and formalization of working instructions.
- Sustaining and improving health and wellbeing of our employees and temporary workmen.
- To develop fair culture approach where good behavior is recognized, error is seen as a source of progress and violation of the rules is not tolerated and sanctions are imposed as disciplinary action.
- Our clients get facilities that can be run in complete safety for people and for the environment.
- Partners and contractors contribute to continuous improvement actions and that they are selected on the basis of their commitment to do so.

MISSION AND DUTIES

Within their area of responsibility, each manager has the duty to ensure the health and safety of all personnel and the protection of property and the environment. Each manager is responsible for the communication and application of the rules and commitments and ensuring that messages and practices are consistent.

Each employee is aware of his / her personal role in protecting the environment and in preventing accidents. Employees are expected to deploy responsible behavior to their benefit and their co-worker.

The Sustainable Development and Risk Prevention Department establishes and ensures the deployment and continuous improvement of all Safety, Health and Environment related processes in our Omega Management system. It oversees its implementation and its effectiveness.

WHILE REINFORCING OUR COMMITMENT TO ABOVE WE SHALL FURTHER EMPHASIZE

- Compliance with SUEZ Health, Safety, Environment and Industrial Risk management rules and procedures to minimize Health & Safety risks, environmental impacts, machinery breakdown and damage to property.
- Prevention of pollution, continual improvement, ongoing detection/rectification of deficiencies and implementing changes wherever necessary.
- Conservation of key resources like chemicals, water and energy.
- Environmentally safe handling of chemicals and safe disposal of inevitable wastes.
- Elimination, minimization and/or control of occupational hazards and associated risks having potential for ill health and diseases.
- Sustaining and improving health and well-being of our employees and temporary workmen.

Mr. Shyam J Bhan

Date & Rev.: 2nd Jan. 2017

II. INTRODUCTION

Suez ranks among the world's leaders in water and waste management services. It's objective: to meet the challenge of conserving natural resources. A human adventure spanning more than 120 years that continues to unfold day after day.

We believe we can reconcile economic performance, environmental performance and corporate responsibility. We are committed to helping our customers achieve their objectives and find the ideal solution tailored to their specific concerns.

SPPL, as SUEZ PROJECTS PRIVATE LIMITED follows highest standards of Health, Safety and Environment in lined with guidelines of SUEZ.

This standard defines mandatory requirements for ensuring safe working environment for employees and all stake holders working with us. Overall goal of implementing HSE standard, procedure and practices is to minimize loss, damage and/or workplace injury incidents and "Zero Loss Time Accidents" in our activities and services.

In this context all employees / workmen are required to strictly follow procedures / rules stated in this HSE standard.

To ensure effective implementation of HSE rules in our activities, HSE department in coordination with concern manager or alone will carry out routine and non-routine, planned and surprise inspection of workplaces.

III. Health, Safety and Environment Standard:

LIFE SAVING RULES:

"In all our businesses, in all countries where the Group is present, fighting against serious accidents has always been our priority. To achieve this, we are committed to implement 11 "Life saving rules" in all our worksites. Each one of our employee and subcontractors including temporary workmen will play role to save his life and also that of others".

Here are these rules to be committed by each employee and follow as basic rules in all our sites.


Do not walk or stand under a load.


Stay out of the path of moving vehicles, plant and equipment.


Clip your harness when working at height.


Only enter a trench if appropriate wall support are in place.


The atmosphere must be tested safe before entering a confined space and monitored as you work


Do not perform hot work unless the fire or explosion risks have been eliminated


Verify that there is no energy (mechanical, chemical, electrical, fluid under pressure etc.) before starting work


Do not handle phone or any other communication devices when driving.


Do not drive under the influence of alcohol or drugs.


Signal, reduce speed and check mirrors before turning or reversing.

1. PERSONAL PROTECTIVE EQUIPMENT (PPE):

Prior to commencement of any work, concern manger/ engineer/ subcontractor shall ensure that all the workers are having necessary protective equipment to perform his work safely. All PPE's must meet IS/EN/CE / equivalent standards and sound physical condition.

Helmets, safety boots, reflective vest shall be considered as **mandatory PPE** and shall be worn by all employees / workmen / visitors etc. on worksites. Sandals or sneakers must never be worn on the job.
In addition to mandatory PPE's, specific job-related PPE's must be worn by all employees e.g.

- Workmen working in dusty operations shall use suitable dust mask, goggles and hand gloves.
- While working in noisy operation, suitable ear plug, ear muff shall be used.
- Workmen engaged in welding, cutting and grinding suitable face shield, goggles and screens shall be used.
- Electrical hand gloves (rubber), shoe & goggles to be used while working with electrical panels (hazards)
- Workmen working at height more than 1.0 meter should wear full body safety belt / harness and it should be tied / anchored properly to a firm support or lifeline with a guy rope.

Responsibility of employee:
It is the responsibility of every employee/workmen to:

- To wear mandatory PPE while on the site
- To wear specific job-related PPE as per the requirement
- To maintain his PPE's in clean & sound condition

Any will full violation of rules will be viewed seriously, and strict action will be taken in such case.
To define and maintain minimum stock of PPE is responsibility of facility manager / subcontractor under whom respective staff is working.
Mandatory PPE's:

No	DESCRIPTION	SPECIFICATION	PICTURE
1	HELMET	IS- 2925 The Helmet needs to have adjustable suspension and complete chin strap	

2	SAFETY BOOTS	EN-345 or IS-15298 Safety boots with toe guard Suggestion to wear the socks for better protection and comfort	
3	HIGH VISIBILITY VEST	EN- 471 "Silver" Stabillo (Scot light).	
4	GOGGLES (Clear / tinted for indoor / outdoor works)	EN 166 FT CE Make:- Karam ES 006	

2. FIRST-AID:

First aid kit to be provided in all offices and worksites accessible to teams. This kit must contain sufficient items for 11 to 50 persons or as per the employee strength. Responsibility of providing this facility lies with each subcontractor and SPPL facility manager.
This first aid kit shall be kept in charge of either subcontractor's authorized person who will be on the site during all working hours to ensure that the first aid kit is available without delay.
The SPPL / subcontractor shall ensure that adequate numbers of first aid kits and trained personnel are available strategically at the site during working hours.

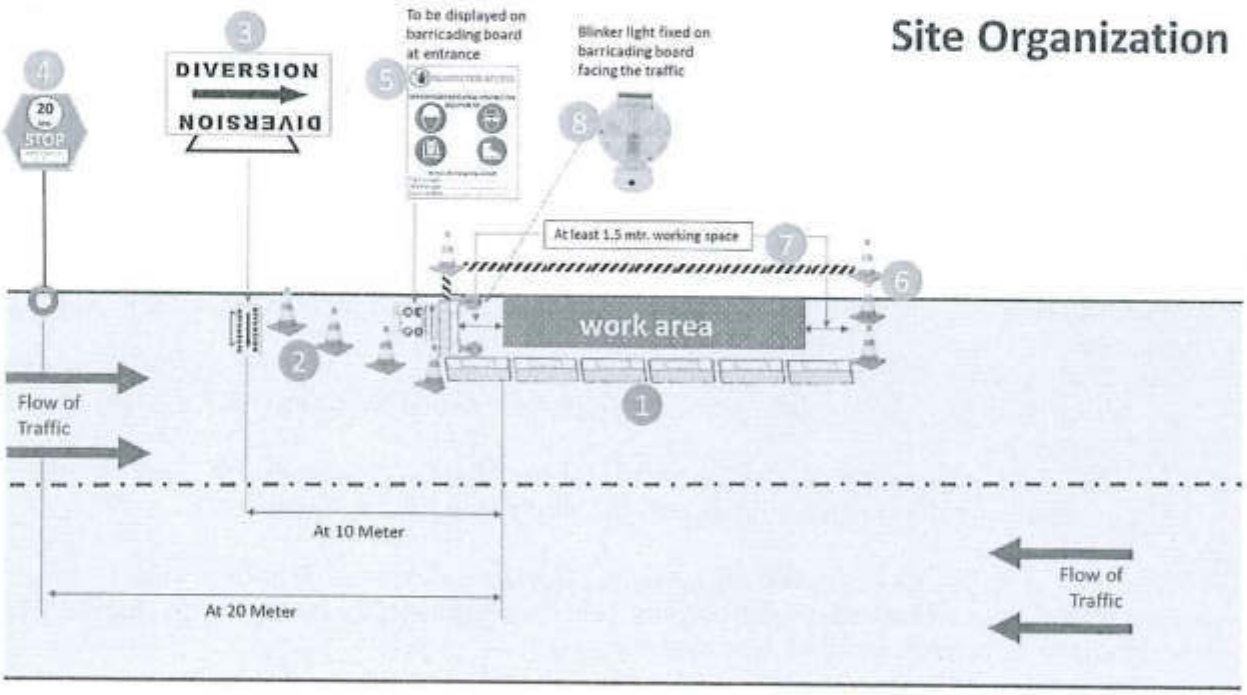
The SPPL / subcontractor will ensure availability of the emergency vehicle at the site during working hours and shall have his own arrangements / tie-ups with nearby hospitals for shifting and treatment of sick and injured.

3. SIGNALIZATION/ SAFETY SIGNAGE, BARRICADE FOR WORKS:

Working in public utilities / near busy roads involves risk to general public in addition to workmen performing their duties. Therefore, proper planning of diversion of traffic, putting signage / caution boards, installing barricade and deputing signaling man / watch man to be identified well before start of work.
Implementation of traffic plan with identified control measures is responsibility of each person in-charge of activity.

- **Following is the standard for organizing a work site**

1. Barricading boards
2. Traffic cones
3. Diversion sign board @ 10 Meter from work site
4. Stop Sign @ 20 Meter from work site
5. Mandatory PPE sign board
6. Traffic cones
7. Soft Barricading by caution tape
8. Blinker lights on barricading boards facing the traffic

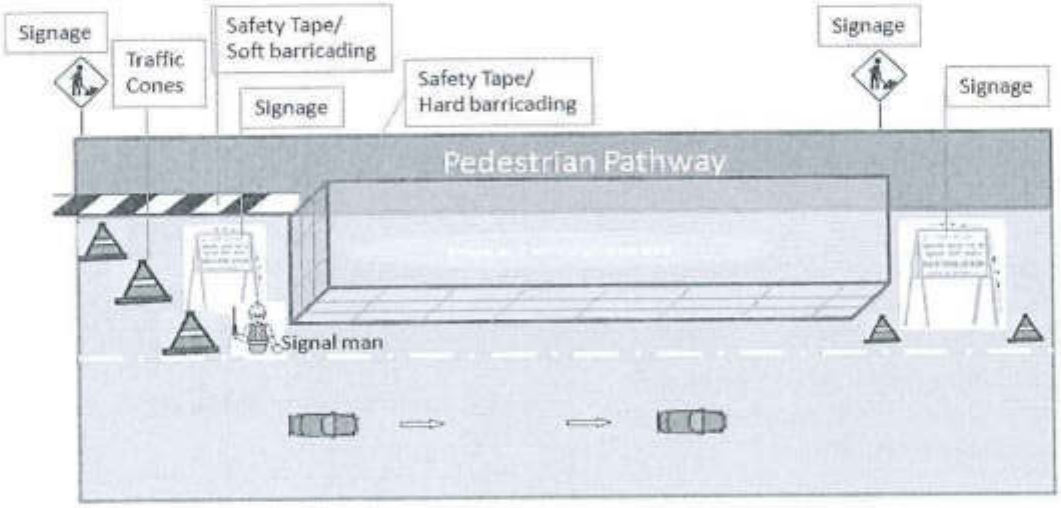


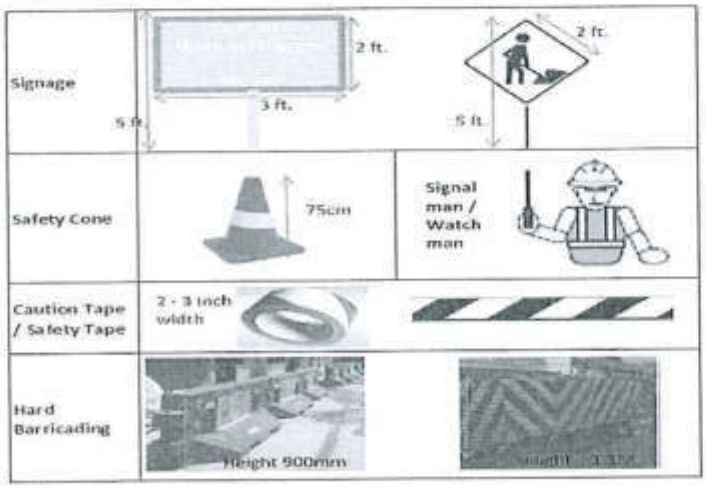
Following major risks are being identified and rules are being set-up for such works:

1. **Narrowing of roads or walkways may have potential risk of injuries and inconvenience to pedestrians:**
   - Ensure that pedestrian pathways are maintained free from obstacles.
   - Display signage to caution pedestrians.

- Barricade the excavated or work in progress areas prior to start of work.
- Keep watch on the area to maintain safe conditions all the time.

The SPPL / subcontractor has **obligation to signalize & barricade every single work** in order to prevent any incident to pedestrians or surrounding communities.
In general, if the walking space is less than 1 mtr. in Width (depending on pedestrian flow), or there is insufficient space left for fixing the barricading board, pedestrian movement can be blocked / diverted after obtain permission from concern authority.
Storage of loose materials or construction materials / machines should not be done on walkways. This may require continuous clearing of waste / unwanted materials from work areas.





2. Partial blocking of a traffic lane of road may cause potential risk of collision of vehicles resulting to serious injuries and inconvenience to commuters:

Blocking of a traffic lane to be planned and controls to defined and implemented prior to start of job. This may require permission from authorities and:

- Diversion of traffic to minimize bottle neck and impact on traffic load
- Placing hard barricades & safety cones to contain risks arising out of work in progress area
- Placing signage, caution notices & signals (lighting lamps / rotary lamps) for public and vehicles keeping day and night in mind
- Deputing a dedicated man as watch man / signaling man to guide traffic

The supervisor of works shall ensure that the signalization / safety signage, barricade of works are in place prior the start and during works.
All workmen including watch man / security guard to be inducted for hazards and associated risks and Do's & Don's instructions to be followed by each one of them.
Additional soft barricading to be provided for visual impact and better controls.
Continuous vigil to be kept to rectify and improve the controls as and when required.

Do's and **Don'ts** for an employee working beside busy roads.

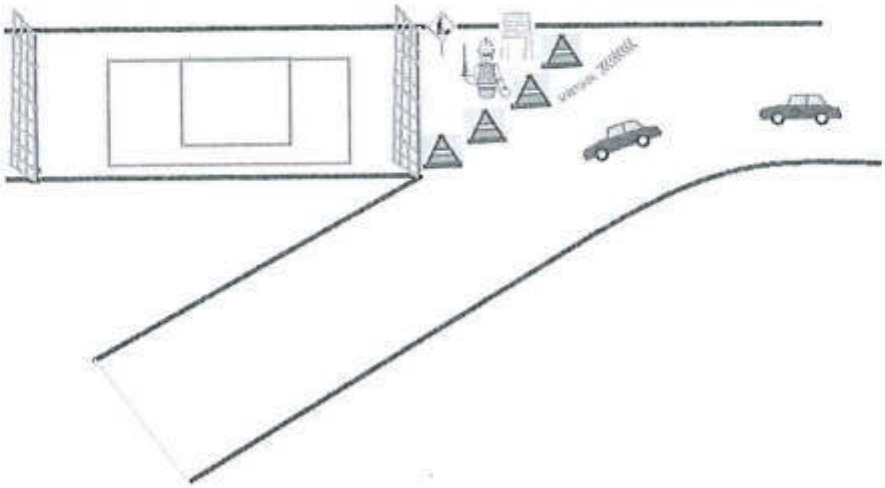
Sl.	Do's	Don't
1	Wear reflective vest, helmet and safety shoes for high visibility and protection from injuries.	Do not remove your PPE's while working on site
2	Stay out of path of moving vehicles, plant or equipment	Do not approach to traffic / roads or un-barricaded areas without permission
3	Follow traffic signals of police and watch man deputed on site	Do not take shortcuts or do not avoid dedicated paths
4	Ensure all machines & materials are placed safely.	Do not keep machines or materials etc. on pathways or outside the barricaded areas
5	Enter trenches only when appropriate wall support is in place	Do not enter deep trenches unless you are authorized by your supervisor
6	Be vigilant to your surroundings. In case you notice any abnormal conditions,	Do not ignore instructions given to you or danger noticed by you
	- Inform your supervisor - Alert your co-workers	- Do not put yourself or your co-workers in danger

3. Complete Closure of a road may cause potential risk of traffic congestion, and inconvenience to commuters and trespassing of vehicles resulting to serious injuries:

There may be situations where work plan requires complete closure of a road. In such cases good traffic planning and organization of work is desired even if it is planned in lean traffic timings.

- Diversion of traffic to minimize bottle neck and traffic congestion
- Complete closure of road / pathways using hard barricading & safety cones to contain risks arising out of work in progress area
- Placing direction signage, red light, caution notices & signals (lighting lamps / rotary lamps) for public and vehicles keeping day and night in mind
- Deputing a dedicated watch man / signaling man to guide traffic

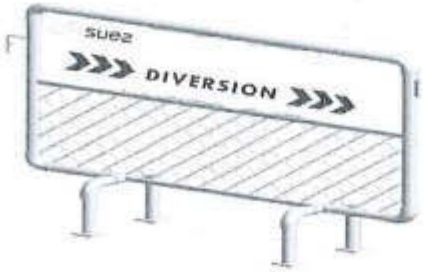
Manager of works along with subcontractor & Safety officer to inspect prior to start of works and review the situation periodically.
Supervisor of works to inspect the area every day before starting and at end of day's work or during recess to ensure no unsafe condition is left behind. There may be chance that barricading boards are temporarily removed or any materials / machines are left unattended in public places posing risk of trespassing or injury to general public.
Watchman to be dedicatedly deputed to guide traffic and keep control on unauthorized entries.

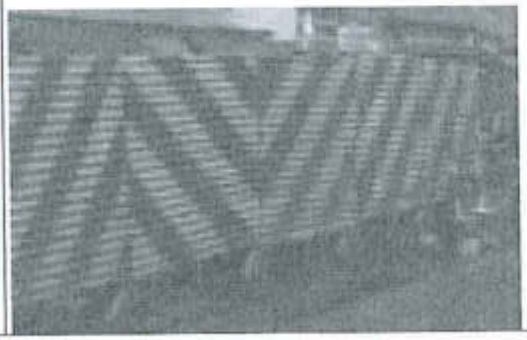


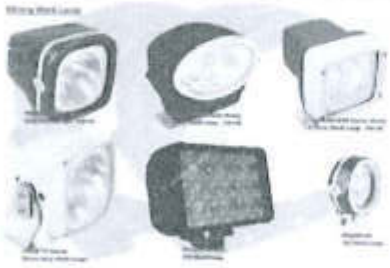
Road Diversion for complete closure

Description of Signalization/ safety signage, barricade:

Specification must be in accordance to EN / IS standards especially for standard color & high visibility. Ensure robust make and reputed manufactures for the same.

NO	DESCRIPTION	SPECIFICATION	PICTURE
1	MEN AT WORK, GO SLOW 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	
2	WORK IN PROGRESS 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	
3	DIVERSION 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	

4	CAUTION SAFETY TAPE	Material: Plastic Color: Red and white stripes	
5	TRAFFIC CONES	Height: 75cm Material: Rubber Base With reflection bar	
6	BARRIERS	Barricading block Interlocking wall effect, 90 degree turning radius <u>For wide road> 2000mm</u> Length- 2000mm Width- 600 mm Height- 900mm <u>For narrow street < 2000mm</u> Length- 1000mm Widgth- 300 mm Hieght- 800mm (low width barricades are acceptable for narrow spaces) GI sheet barricading as per requirement (min. two sheet width)	 

7	ROTARY LAMP (Must for traffic block / diversion)	Color: Yellow Rotating motor use motor system Environment friendly: no UV, IR, lead or mercury.	
8	BARRICADE LAMP (Must for barricade along running traffic and additional for traffic blocking / diversion)	Color: Red/ Orange	
9	STICK LAMP (Must for traffic controller / security man / Signaling man)	Color: Red/Orange	 
10	LIGHTING LAMP	Super Bright White LEDS	

4. IDENTIFYING HAZARDS, ASSOCIATED RISKS & DEFINING CONTROLS

4.1 HSE Management Plan

4.2 IDENTIFICATION OF DANGERS AND CONTROLS OF RISK

Considering all activities with respect to road works hazards and risks are identified and necessary control measures are suggested as below.

IDENTIFICATION OF DANGERS AND CONTROLS OF RISK			
ACTIVITY	**POTENTIAL HAZARDS**	**ASSOCIATED RISKS**	**CONTROL MEASURES**
Travelling by company car	Traffic hazards (Vehicle speed, condition and compliance)	Injury to driver or traveling employee due to hit / collision of vehicle	Fasten your seat belt while driving / traveling by vehicle
			Check condition of vehicle daily - by driver & periodic joint inspection of vehicles by H&S and Admin. Managers
			Install speed governor to limit speed to 60 KMPH & Follow speed limits
			Park the vehicle in designated areas
			Follow traffic signages and safety instructions given by H&S
Travelling by company motor cycle / Bicycle	Traffic hazard (vehicle speed, condition and compliance)	Injury to rider or travelling employees due to hit / collision of vehicles	Crash Helmet is mandatory for rider & pillion rider in case of motor cycle and Bicycle helmet & reflective vest is mandatory in case of Bicycle.
			Check condition of motor cycle before riding, periodic joint inspection by H&S and Admin
			Do not overspeed
			Follow traffic signs
Walking / visual surveying on	Vehicular Traffic	Traffic - Hit or over-run by vehicle	Use pedestrian pathways, plan your activity in case it is mid of the road.

the streets / roads			Use of PPE's - Safety helmet, Shoes, Reflective vest/jacket is mandatory
			Depute a signaling man with baton (light) to keep watch / control on traffic when working in group
Working on the road	Movement of vehicles pedestrians	Damage injury to general public	Display a sign board " CAUTION - WORK IN PROGRESS" with client logo
			Barricade the area using hard barricading boards.
			Depute a signaling man with baton (light) to control traffic, maintain barricades & control on movement of workmen working on job site
			Keep a vehicle standby and maintain first aid box, drinking water in the vehicle
Excavation work on road	Underground utilities, fall of person / vehicle in to the depth, collapse of soil / edges	Injury to person / damage to vehicles	Check for underground utilities before start of excavation and ensure to locate electric cables / other underground utilities and accordingly define safe work procedures.
			Barricade & signpost the area using hard barricading (1 meter away from edges) & depute a signaling man to guide the traffic, alert the workmen and maintain barricades
			Keep sufficient slope for protection against soil collapse
			Supervisor to inspect work location before start of works each day & periodically and ensure that area is not left unsecured, provide lighting during night

			Activity to start with work permit issued by concern engineer / manager.
Welding & grinding operation	Electric hazards, radiation - eye, rotating part - grinder, flying chips	Electric shock, Injury to eye, hand and other body parts	Use suitable welding machine and electric power source to avoid open connections / cables etc.
			Welder and his helper must use welding glass (Filter No. 12 or suitable), Leather hand gloves, apron and shoes
			Grinding technician must use suitable machine (rpm of wheel must be compatible to machine and wheel guard in place) leather hand gloves, shoes, eye protectors & ear plugs
			Welding inside the rooms, flammable areas, confined spaces to follow specific procedure for addressing specific risk controls.
Storage of materials beside the road	Blocking pedestrian pathways, roads causing restriction to circulation	Injuries / damages to pedestrians, restriction to vehicle movement	In case the activity requires any storage of material / machines on site: Limit the storage duration and qty., Barricade the material / machines & have visible signage to caution passerby, keep pathways clear
Emergency situation on site	Various hazards	human injuries	Prepare emergency response plan for various scenarios (such as Electrocution, damage to gas pipeline, vehicle collision, vehicle hitting worker etc) and display / place it inside the site vehicles
			Identify & tie-up with hospital nearby work location / areas

			Train Engineers, supervisors & other staff on site & practice it (Communication of serious incident and response of driver, supervisor and co-workers)
			List certified first aiders with each crew / team

Above IDCR (IDENTIFICATION OF DANGERS AND CONTROLS OF RISK) exercise gives few basic controls which need to be implemented in almost all project activities. As a result, 10 basic rules/checkpoints for implementation and enforcement are listed below in the form of checklist from risk prevention & control point of view.

Actual Risk assessment as per the Suez procedure to be performed at site covering all activities.

4.3 Evaluation of Performance of Subcontractors

Evaluation of performance of subcontractors - All		Week / Date: Note: Refer AP for details								
Contract:										
Sl. No.	Check points	Subcontractors / Partner / Services								
0 = No compliance: the requirement is almost imperceptible on site. **1 = Little compliance**: the requirement is most of the time not respected on site **2 = Partial compliance**: the requirement is most of the time respected on site but non-compliances were seen. **3 = Full compliance**: the requirement is strictly respected on site. No cases of non-compliances were seen										
1	**PPE**: The personnel wear their PPE (basic and work specific). The PPE are in good condition.									
2	**Tools/Equipment:** The tools and equipment used are in good condition (collective protection available, no hazardous wear and tear)									
3	**Housekeeping**: debris, scraps and other wastes are removed from the work place. Tools and equipment are properly stored.									

4	**Supervision**: A supervisor from the subcontractor is on site. He is active and reacts to abnormal situations.									
5	**TBT**: Tool-Box-Talks are organized at least once a week									
6	**Work permits**: They are available on site where the job is taking place.									
7	**Barricading:** work in progress areas are barricaded, signage is available & a signal man is deputed.									
8	**Lifting**: Loads are not lifted over persons and the workers do not position themselves under a suspended load. Necessary documents are available with lifting machine & operator.									
9	**Driving**: site vehicle driving rules are respected (speed, seat belt, stoppage/parking, authorized use, etc.)									
10	**Excavations**: excavated areas are barricaded, signage is available and the access is limited to authorized personnel.									
11	**Planning:** Check for underground utilities before start of excavation and ensure to locate electric cables / other underground utilities and accordingly define safe work procedures.									

5. RISKS IN EXCAVATION AND SAFETY PRECAUTIONS:

Excavation work is unavoidable for repairs and laying of new pipes.

Excavation work may pose various following hazards and related risks:

- Collapse of trench / excavation walls
- Unstable mobile equipment very close to excavated edges / uneven surface
- Contact with electrical power lines
- Breaking of pipes / underground utilities in service
- Injuries caused by the fall of an object
- Falling, from heights or otherwise
- Confined spaces - contaminated soil causing microbial infection

Different type of soils will have different bearing capacity and safe angle of repose will vary as per the bearing capacity i.e. stability of soil. While working on busy road / areas there is no possibility of maintaining safe angle of repose (slope) and therefore as a thumb rule, soil support is a must for excavation deeper than 1.5M.

Following precautions and controls to be taken for excavation works and excavated areas.

Before Start:

Plan the activity in advance and inform to all concerns (authorities / employees) to take necessary steps for minimum disturbance and impact to general public and traffic.

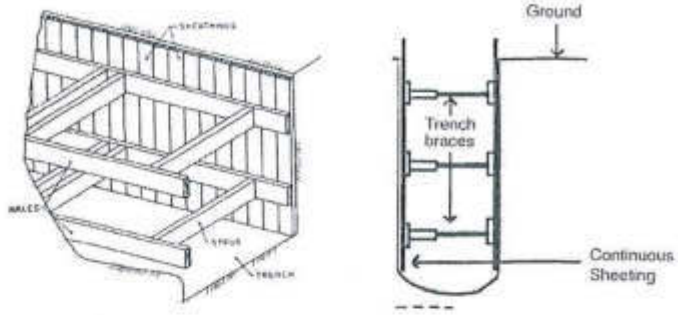
- Barricade all sides of the trenches
- Red danger lights for easy visibility from dusk to dawn at an internal of 15-20 m and at all the road crossings.
- Traffic signals and display boards giving direction for diversion of traffic at the appropriate places.
- Locate ground utilities & isolate them for avoiding interference with our activities Use cable and pipe locating tools, detector, and transmitter receiver instruments.
- Depute signaling man / security man for round the clock watch and ward for maintaining all safety regulations at the site of work and protecting the site from unauthorized intrusions.

During Works:

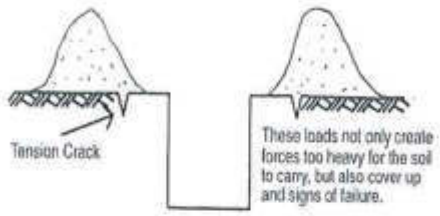
- In case of deep excavation, store excavated soil / spoil at least 1.5M away from edges.
- Support the soil from possible collapse by providing suitable benching, sloping or shoring.
- Shoring plates to be supported using trench braces at equidistance throughout the trench depth & length.
- Stop unauthorized entry to trench and maintain safe conditions surrounding trenches.

After the work:

- Ensure that area is leveled and restored to normal after completion of work.
- Inspect the area during recess / work intervals and periodically during the day.



Soil support to be provided as per the IS-3764 or OHSAS excavation standard



Avoid over loading of edges due to spoil / equipment

Other precautions while working in excavated areas:

- Where a road or footpath is to be kept opened up in the course of work, special care shall be taken to see that proper protection is provided to prevent any accidents from occurring. Work shall be done in such a manner that it will not unduly inconvenience pedestrians or occupants of building or obstruct road traffic
- Care shall be taken to see that apparatus, tools or other excavating implements are not left in a dangerous or insecure position as to fall or be knocked into the trench thereby injuring any workmen who may be working inside the trench.
- The flags and lams shall be placed in conspicuous position so as to indicate the pedestrians and drivers of vehicles the full extent, i.e. both width and length of the obstruction.
- Where any excavation is not clearly visible for a distance of 25 meters to traffic approaching from any direction or any part of the carriage way of the road, a warning notice shall be placed on the curb of all such roads to make excavated area well visible. Such warning shall be placed at a distance of 25 meters from the excavated area or at least 10 meters from the junction of an entering of intersecting road with in the road in which the excavation exists.
- All warning, in these cases shall be clearly visible and legible. All warning lamps shall exhibit a red light, but white lights may be used in addition to facilitate working at night. Wherever required a passage for pedestrians with foot bridge shall be provided. At excavation tools and all materials likely to offer obstruction shall be properly folded round and protected.
- In case there is any damage to underground gas pipes:
- Evacuate the area, keep everyone clear of leaking area.
- Enforce no smoking and no naked lights.
- Inform immediately SPPL authorized person & service provider company and follow instruction given to you

- Remember do not put yourself in to danger situation and also to others

Disposal of Debris:

Due to excavation on existing roads the debris will be generated and that waste to be disposed-off with due permission from client in environment friendly way. The debris should not be accumulated on roads causing inconvenience to public and shall be disposed on regular intervals.

These debris shall be dumped in approved debris disposal sites. Debris shall be collected in trucks and covered with dust nets and transported to the approved disposal site.

Avoid disposal of debris in or near water bodies / rivers / residential areas / forest areas.

6. FIRE PREVENTION & CONTROL

Basically, fire is a chemical reaction. Whenever fire occurs there is combustion or burning, in other words, oxidation of substance accompanied by heat, light and smoke. Three things are necessary for fire to occur Fuel, Heat and Oxygen. The danger of fire is greater during the period of construction than it is after the completion. To eliminate the causes of fire, it is important to locate how and where fire starts. The maximum frequency of fire cause is Electrical. There are various other causes like Smoking, Hot work etc.

Suitable quantity of fire extinguishers shall be maintained for each class as per the fire potential.

CLASS A FIRES - Wood, Textiles and paper.

CLASS B FIRES - Oil, petroleum, solvents, grease paint & the like.

CLASS C FIRES - Gaseous substance under pressure.

CLASS D FIRES - Reactive chemicals, active metals and the like.

All extinguishers provided at site shall be inspected periodically and maintained in good condition all the time.

7. PROCEDURE IN CASE OF ACCIDENT:

In the event of an incident/accident occurring on site, the SPPL / subcontractor shall provide first aid assistance and ensure transportation to a near hospital if necessary. Same shall be informed immediately to Project Manager SPPL & HSE officer by Phone & then the event shall record and report in writing in the prescribed form by the concern manager/ engineer/ subcontractor's representative to SPPL Project Manager and HSE officer within 24 hours.

Reporting of all kind of incidents is necessary to find root causes and avoid recurrence of similar incidents. This is not to develop blame game but to improve upon workplace conditions and minimize unsafe situations having potential to cause accidents.

The subcontractor has the obligation to report any accident by completing the Accident / Incident Notification Form enclosed below.

BU: BA: SITE: DATE: TIME:

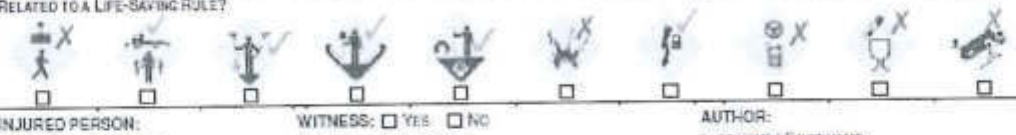
1 - NATURE OF THE INCIDENT:

HUMAN	ENVIRONMENT	INDUSTRIAL SAFETY
☐ Work Accident ☐ Commuting Accident ☐ Near Miss	☐ Pollution Water ☐ Air ☐ Soil ☐ ☐ Waste ☐ Nuisance Noise ☐ Olfactory ☐	☐ Toxic discharge Air ☐ Water ☐ Soil ☐ ☐ Explosion of Gas ☐ of Dust ☐ ☐ Fire ☐ Other:

Actual severity of incident: ☐0 ☐1 ☐2 ☐3 ☐4 ☐5

Potential severity of incident: ☐1 ☐2 ☐3 ☐4 ☐5

Related to a Life-Saving Rule?



Injured person:	Witness: ☐ Yes ☐ No	Author:
Last name / First name:	Last name / First name:	Last name / First name:
Position:	Position:	Position:
Company:	Company:	Date of report:
☐ Employee ☐ Temp	☐ Employee ☐ Temp	Hierarchy notified date: At:
☐ Sub-contractor:	☐ Sub-contractor:	
☐ Third party:	☐ Third party:	

2 - DESCRIPTION OF THE INCIDENT

What happened (Who?, When?, What?, Where?, How?, estimated quantity?, affected people, duration?):

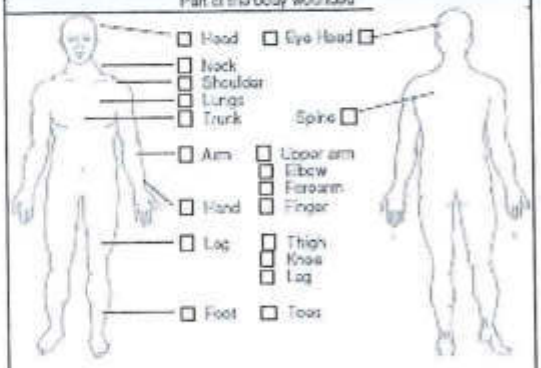
1- Before the incident (description of the situation prior to the incident : work done, process conditions, etc):

2- At the time of the incident (accidental event):

3- After the incident (what was done: removal of a persistent danger, rescue of the victim, first corrective actions, etc):

3 – ACTUAL CONSEQUENCES OF THE INCIDENT:

Part of the body wounded



Type of injury
- ☐ Death
- ☐ Lumbago
- ☐ Traumatism
- ☐ Crushing
- ☐ Contusion
- ☐ Muscle tear
- ☐ Sprain/dislocation
- ☐ Fracture
- ☐ Abrasion
- ☐ Cut
- ☐ Bite
- ☐ Sting
- ☐ Burn
- ☐ Visual problems
- ☐ Auditory problems
- ☐ Intoxication
- ☐ Asphyxiation
- ☐ Other:

Equipment / Process / Environmental damages

Type:

Cost (if known):

Other:

4 - FIRST ACTIONS TAKEN:

CARE:	CONFINEMENT:	ALERT:
First aid given: Yes ☐ No ☐ Victim transported to: Local nurse ☐ Doctor ☐ Hospital/Clinic ☐ Time off work: Yes ☐ Until: No ☐ Adapted assignment proposed: Yes ☐ No ☐ Accepted by employee: Yes ☐ No ☐	Confinement of a zone: Yes ☐ No ☐ Name of the zone: External means contacted: Yes ☐ No ☐ Type of actions considered:	Triggering of an alert: Yes ☐ No ☐ Client contacted: Yes ☐ No ☐ Administration contacted: Yes ☐ No ☐

5 - ILLUSTRATIONS

Photos, diagrams illustrating the incident location, the material involved, the human, environmental or industrial damages

8. SAFE MEANS OF ACCESS & SCAFFOLD / WORKING PLATFORMS:

Adequate safety measures of access and exit shall be provided at all elevations using suitable means as per standards.

Suitable scaffoldings, ladders and platforms shall be provided for working at height more than 1.5 meter from the ground. Timber bamboo scaffoldings shall not be used.

Every scaffold and every component thereof is of adequate construction, made of sound material and free from defects and is safe for the purposes for which it is intended for use. All metal scaffold used in construction work conform to the relevant national standards.

All scaffoldings shall be examined by the competent person before use and stairways platforms etc. shall be suitably guarded.

The platform shall not project beyond the end support and ladders used as approach shall not be more than 8 meters in length. The upper end of the ladder shall be 1 meter above platform.

Scaffolding shall be properly designed and erected, with its intended use in mind. All hazards involved with the erection or dismantling shall be identified at the planning stage and the appropriate safety precautions taken. Proximity to live electrical equipment or interface problems may need to be considered. SPPL / subcontractor shall take all precautions to prevent any accidental collapse of scaffolding or fall of persons from scaffolding. SPPL / subcontractor shall ensure that scaffolding erection, dismantling and repairs should be done under the expert supervision. The scaffolding shall meet the required strength and other requirements for the purpose for which the scaffold is erected.

9. CONFINED SPACE WORK AND PRECATIONS:

Major Hazards and associated risks: -

- Asphyxiation due to lack of oxygen in air.
- Intoxication due to presence and inhalation of toxic gases.
- Fire /explosion due to presence of flammable gases and contact with ignition source
- Slip / fall and injuries due to physical hazards
- Electrocution and injuries due to electricity and machines

No person shall be required or allowed to enter any chamber, tank, vat, pit, pipe, flue or other confined space in any worksite in which any gas, fume, vapour or dust or other physical hazard is likely to be present to such an extent as to involve risk to persons being overcome thereby, unless it is provided with a man entry of adequate size i.e. safe / effective means of access / egress.

No person shall be required or allowed to enter any confined space referred above, until all practicable measures have been taken to remove any gas, fume, vapour or dust and physical hazards which may be present so as to bring its level within the permissible limits and to prevent any ingress of such gas, fume, vapour or dust and unless: -

A) a certificate in writing has been given by a competent person, based on a test of confined space atmosphere is carried out by himself that the space is reasonably free from dangerous gas, fume, vapour or dust; or

B) such person is wearing suitable breathing apparatus and a belt securely attached to a rope the free end of which is held by a person outside the confined space or as appropriate

A dedicated signaling man should be placed near entrance with means to raise the alarm in case of any emergency & follow the intervention procedure specifically prepared for the activity after risk assessment.

All personnel working in confined space shall be adequately trained & medically fit for executing the job.

The SPPL / subcontractor shall ensure adequate ventilation / explosion proof lighting (24V hand lamp) in the work place.

Always perform risk assessment and use work permit, LOTO of all energies.

10. LIFTING MACHINES / TOOLS & TACKLES:

Major hazards and associated risks: -
Improper lifting (arrangements / methods) or failure of lifting devices resulting in fall of materials and consequential injuries to person and/or damage to materials
The SPPL / subcontractor shall ensure all the lifting appliances, tools & tackles including cranes etc. are in good condition, examined & certified by competent person before use and afterwards once in a year according to Section 29 of The Factories Act 1948.

- Copy of third party certificates to be submitted to SPPL before use / furnished on demand.
- SWL of all lifting appliances to be marked on it. Do not use lifting tools to lift loads access to it's SWL.
- Method of use of a sling, chain pulley block etc. can reduce it's SWL considerably when used at higher than recommended angle or in different position / use.
- Never stand below load being lifted. Barricade the area as far as practically possible.

11. WORKING AT HEIGHTS:

Major hazards and associated risks: -
Fall of person or materials from height and consequential injuries to person and/or damage to materials

Working at above 1 meter of height to be considered as height work and all safety precautions to be taken to avoid fall of workers from height.

Person working at height shall have: -

- Working platform with access and handrails
- Full body harness with anchoring point

All working platforms, walk ways etc. shall be maintained free from accumulations of debris or any other material causing obstructions and tripping / falling.

Every opening at elevation from ground level through which a person, material, equipment etc. may fall at a construction work shall be covered and or guarded suitably by the SPPL / subcontractor to prevent such falls.

12. WELDING AND GAS CUTTING:

Major hazards and associated risks: -

- Electric shock, Burn injuries, Fire / explosion
- Arc eye due to UV exposure
- Exposure to toxic fumes
- Operation shall be done by authorized persons only after issue of work permit.
- Remove flammable materials from surrounding area before start of welding / cutting / hot work.
- Gas cylinder in use shall be kept upright on a custom-built stand or trolley fitted with a bracket to accommodate the hoses & equipment or otherwise secured. The metal cap shall be kept in place to protect the valve when the cylinder is not connected for use.
- Hose clamp or clip shall be used to connect hoses firmly in both sides of cylinders and torches. Use of makeshift arrangements in place of clamp e.g. wires etc. to be strictly avoided.
- All gas cylinders shall be fixed with pressure regulator & dial gauge.
- Non-return valve & flashback arrestor shall be fixed at both the end of cylinder & torch.
- Domestic LPG cylinder shall not be used for gas welding & cutting purpose.
- DCP or CO2 type fire extinguisher not less than 5 kg shall be fixed at or near to welding process zone in an easily accessible location. Fire extinguisher should confirm to local standards.
- Use firewatchers if there is a possibility of ignition unobserved by the operator.
- Oxygen cylinder and flammable gas cylinders shall be stored separately.

13. FENCING OF ROTATING / DANGER PARTS OF A MACHINE:

Major hazards and associated risks: -

- Abrasion, puncture, cut injuries due to contact of body part with machine part in motion
- Electric shock
- Entanglement of lose cloth / caught in between

Rotating / reciprocating / transverse movement for cutting, punching, bending or other operations may have above potential risks. All machines should be placed safely and Dangerous parts of machines to be suitably guarded all the time. SPPL / Subcontractor shall ensure at a worksite that:

- All chains & friction gearing, dangerous & moving parts of machinery are securely fenced / guarded.
- The fencing of dangerous parts of machinery shall not be removed while such machinery is in motion or in use.
- Machine parts are cleaned when such machine is stopped.
- When a machine is stopped for servicing or repairs, adequate measures (Lock out/ tag out) should be adopted to ensure that such machine does not re-start inadvertently.
- After servicing machine guard shall be reinstalled immediately.

14. HAND TOOLS:

14.1. General

Trained manpower shall be engaged and periodically inducted to avoid accidents relating to hand tools. Accidents arising out of hand tools can be attributed to any one of the following reasons:

- Using the wrong tools.
- Using tools, which are in poor condition.
- Using the tool in a wrong way.
- Keeping tools in unsafe places.

If the above four conditions are taken care of, we can eliminate all the hand tool accidents. Also, concern engineer / supervisor must train all operators time to time.

SPPL / Subcontractors / users must carry out inspection of all machines and tools being used on site on monthly basis. Records of such inspections must be visible to identify that tool / machine is in sound condition and can be used. Defective tools shall be removed from the site.

14.2. Using the Wrong Tools

The weight, size and type of tool should be selected to suit the job being carried out. Using pliers or wrenches as hammers, using screw drivers as pinch or chisels, using double end spanners in place of ring spanners, using pipe wrenches as spanners area a few examples of using wrong tools.

14.3. Using Tools in Poor Condition

Tools provided with wooden handle should always be used with the handles intact. The handles should be tightened with wedges whenever necessary. Split or broken handles should be replaced immediately. Pipes or rods shall not be used as handles.

Sharp tools improve accuracy and are safer than dull tools. Accumulated dirt or grease should be wiped off immediately to avoid slippage. Shovel and pick handles should be free from splinters, splits and cracks. Insulated and non-conducting tools should be tested frequently for their electrical resistance. Mushroomed chisel is a serious source of hazard.

14.4. Using Tools in Wrong Ways

Wrenches should always be placed on nuts with the jaw opening facing the direction in which the wrench is to be rotated. Wrenches should not be pushed but be pulled.

Chisels should be held with steady but relaxed grip. Chisels being struck by other should be held by tongs or other holding devices. Always chip away from yourself and protect others by screening. Use goggles while chipping.

While using screwdriver, the object should not be held in hand or thigh.

Blades of hacksaw should always point forward and the entire length of the blade should be using din the forward cutting stroke. The stroke should be steady and firm to avoid jumping of blade.

14.5. Keeping Tools in Work Places

Hand tools should not be allowed to lie on workbenches, scaffolding, etc. where from they can be tipped down. They should be stored properly after the work is over. Sharp tools like screwdriver, etc. Should not be kept in pockets. Hand tools shall not be held in hand while climbing up or down through a ladder. Tools should never be thrown up or down.

14.6. Jacks

Select jacks heavy enough to raise and hold the load safely. Jacks should rest on firm level foundation, adequate to support the load. Jack of same capacity and type should be used while using number of jacks. Simultaneously be sure that the jack does not tip and

is in line with the vertical movement of load. Wooden block should be given over the jack also to avoid metal to metal contact. Load must rest on firm packing before releasing the jack or before allowing persons to work below the raised load.

Inspect frequently and use only the proper grade and clean oil. It is advisable to shore up any load that must remain in a raised position for any length of time.

14.7. Portable Electric Tools

- Maintenance of electric tools should be systematic.
- Safety guards provided in the tools should not be tampered with.
- Gloves, safety shoes, goggles, etc. should be worn by the operator wherever necessary.
- Only experienced and authorized personnel should be permitted to operate power tools.
- For all electric power tools, a running earth must be maintained, and the supply cable should be handled very carefully.
- Electric supply should be disconnected before attempting any repairs or servicing. Even a change of wheel in the grinding machine requires the supply to be disconnected.

14.8. Drilling Machine

- A prick punch or pilot hole should always be provided to guide the drill bit.
- Suitable drill bit should be selected for the material being drilled.
- If bit is long enough to pass through the object, care should be taken to avoid damage or injury on the far side.
- If the object is small, it should be secured to prevent spinning.
- Care should be taken to prevent sleeves and other clothing from being wound around drill.

14.9. Portable Grinders

- HOOD GUARD provided in the machine should be maintained in place always.
- Wheels of proper rpm rating should be used. Date of expiry of wheels should always be checked before mounting. If in doubt, a tap test may be conducted to check for minor cracks and the machine be allowed to run under no load in a safe place for some time.
- The grinding wheel shall be stored and handled properly. It shall never be allowed to be dropped and stored in damp places.
- Mounting blotter should be used when provided in the machine the spindle nut should not be over tightened.
- Only experienced and skilled grinders shall be engaged.

- The grinding machine shall not be allowed to be kept on the ground when the wheel is in rotation.

14.10. Pneumatic Tools

- Air hoses of pneumatic tools should be protected against whipping. They should also be protected against damage by vehicles.
- The airline should be depressurized before opening any joint.
- Compressed air should not be directed against self or others. It should not be used for removing dirt from the clothes, etc.
- Air hoses taken over head or vertically should be sufficiently supported.

15. ELECTRICAL FACILITIES:

Major hazards and associated risks: -

- Electric shock, Burn injuries
- Fire / explosion
- Working on site and offices requires electricity for operating equipment and area lightings etc. Providing electricity often requires temporary arrangement which is more hazardous.
- Temporary electrical facilities to be provided with following minimum standards:
- All temporary distribution boxes must be robust and provided with rain protection & main switch to supply/cutoff power of DB.
- Each DB must have earthing of metallic parts, 30mA ELCB, rubber mat and lockable to avoid unauthorized working.
- Only authorized persons should be allowed to work with electricity.
- Display danger sign and provide physical barrier to prevent entry of unauthorized persons in electrical facility.
- Put numbering on each DB and inspect them periodically for safe and sound condition.
- Maintain minimum inventory of temporary boards with industrial cable and plug tops, power tools / machines required for their job.

Before start of works, the SPPL / subcontractor shall ascertain that all sources of electricity e.g. cables / wires / machines (underground / above ground) etc. are identified and isolated suitably to prevent mishap due to possible interference with planed activity in proposed working area.

The SPPL / subcontractor should ensure that all electrical installations at the construction work comply with the requirements of local electricity acts/rules & site rules.

The SPPL / subcontractor shall take all adequate measures to prevent any worker from coming into physical contact with any electrical equipment or apparatus, machines or live electrical circuits which may cause electrical hazards during the construction work. The subcontractor shall provide the sufficient ELCBs / RCCBs for all the portable equipment, electrical switchboards, distribution panel etc. to prevent electrical shocks.

The SPPL / subcontractor should ensure use of single/double insulated hand tools or low voltage i.e. 110 volts hand tools.

The SPPL / subcontractor should also ensure that all temporary electrical installations at the construction works are provided with **Earth Leakage Circuit Breakers**.

16. OVERHEAD ELECTRICAL POWER LINES:

Wooden goal post shall be erected under all overhead lines by keeping safe clearance distance subjected to the lines for avoiding any contacts by moving machinery. Safe clearance distance shall be confirmed by local electricity rules / authority.

17. HEAVY EQUIPMENT (Cranes, Excavators, Hydra, Bulldozers, etc.):

The SPPL / subcontractor shall provide heavy construction equipment in good condition, suitable for safe operation. All safety features shall be operating as fitted by the manufacturers e.g. reversing alarms, seat belts, limit switches etc.

- A valid vehicle fitness certificate/ operator license as per local legislation shall be produced by the subcontractor.

18. SCAFFOLDING:

For any work that cannot be done from ground level or from part of any permanent structure of from other available means of support, soundly constructed scaffoldings of adequate strength shall be used as a safe means of access. A scaffold or its components should be designed to support 4 times the maximum intended load. During erection and dismantling, neither the scaffolding components nor tools shall never be allowed to be thrown up or down. Slippery conditions on scaffolds must be eliminated as soon as they occur.

18.1. Wooden Scaffoldings

As far as possible, wooden scaffolding shall be avoided. However, when it is unavoidable following precautions shall be taken.

- Vertical poles of scaffoldings should not be more than two meters apart.
- Diagonal bracings should be provided at the level of each joint. The joints in scaffoldings being the weakest points should be inspected regularly and maintained

in proper condition. Diagonal bracings should be sufficient to prevent buckling of the scaffoldings due to wind pressure or side thrust.

- No welding or gas cutting work shall be carried out in above or near wooden scaffoldings. In addition, suitable firefighting provision (preferably water hose) shall be made available.
- A shuttering supervisor exclusively shall be placed to check, monitor and ensure that no failure occurs while pouring concrete.

18.2. Hanging Scaffolding / Swing Scaffolding / Continuous Scaffolding

- Chain, ropes or other lifting materials used for the suspension of scaffolding must be of adequate strength and of suitable tested quality. In any case, the rope shall not be less than 20 mm dia. The chain or rope used for suspension scaffold should be properly fastened to safe anchorage points and not to hand railing, etc.
- In continuous scaffolding, more than 2 persons should not stand. The scaffold must be inspected and tested every day before use.
- The working platform shall be sufficiently wide and provided with handrails of about 1 Meter height with one top rail, mid rail and toe board
- If the platform is long and provided with two lifting arrangements, lowering/ lifting of the scaffolding should be done simultaneously at both the ends. A safety rope shall be provided in addition to the main supporting rope.
- A tag tie should always be used to control the movement of the scaffolding.

18.3. Steel Scaffolding

- Before starting the scaffolding erection, the surface on which it has to be erected must be made firm and level.
- Once the surface is ready, sole plates have to be kept. It can be a timber sleeper or steel plate Sole plates should be long enough to hold at-least two vertical pipes and should extend 600 mm beyond the vertical pipes. Sole plates may be avoided in case if the scaffold is erected on a firm ground. (Ref Fig. 16.3 (i)).

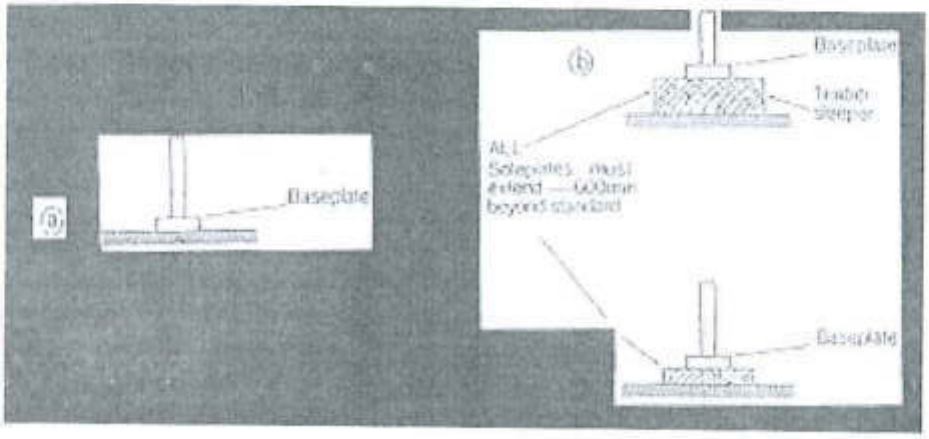


Fig. 16.3 (i)

- However, base plates are a must, irrespective of where the scaffolding is erected. It should be 200 x 200 x 10 mm steel plate. Sole plates and base plates support the entire load of the scaffolding. They distribute the load and prevent the scaffold from sinking.
- Vertical members should not be kept more than 3 M apart.
- Right angle coupler and swivel coupler used in the erection of scaffolding are tested for 1.2 tonnes without slipping (Fig. 16.3(ii)).

Fig. 16.3 (ii)

- Single bolt coupler can take only a load of 508 kgs without slipping. The putlog coupler can take only 129 kgs without slipping (Fig. 16.3(iii)).
- Joint pin connects the pipes internally. This can be used only to connect vertical pipes (Fig. 16.3(iv)).
- Sleeve couplers are fixed on the outside of two tubes to connect them. This can be used to connect vertical, horizontal and slanting pipes.

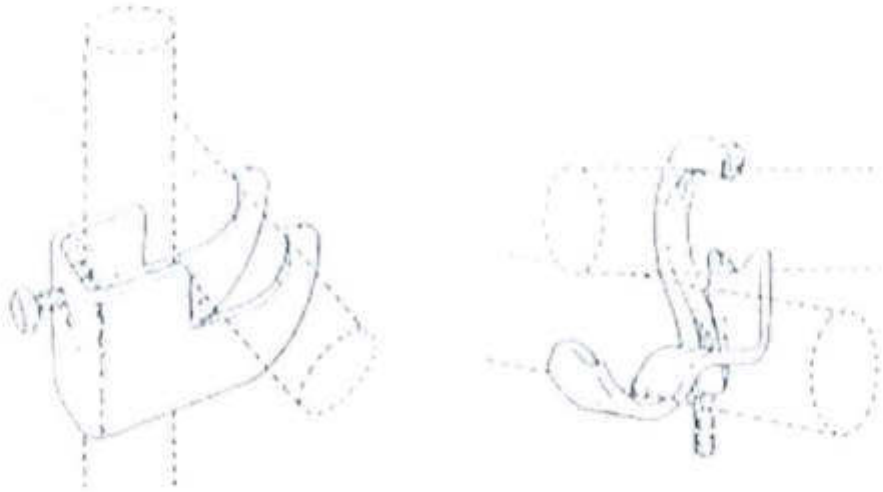


Fig. 16.3 (iii)

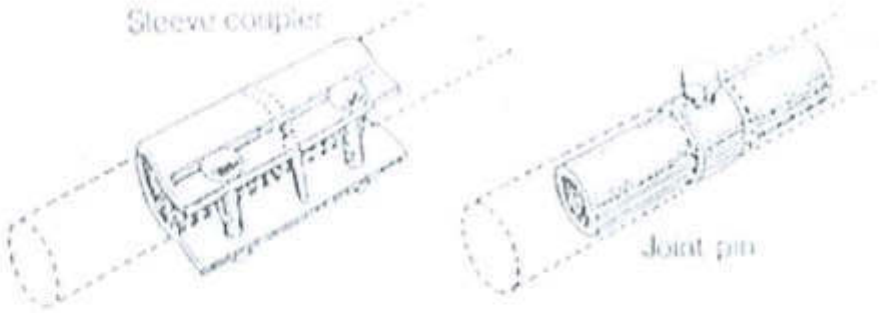


Fig. 16.3 (iv)

- DO NOT USE PIPES WHICH are (a) split along their length, (b) bent or kinked, (c) thin at the ends, (d) heavily pitted and (e) having badly cut or ragged ends.
- Do not use corroded or deformed couplers and make sure that the threads are in good condition.
- Allowable maximum span between support for:

a) 40 mm thick plank is 1.5 M and
b) 50 mm thick plank is 2.6 M.
c) Wooden jallies is 1.0 M.
d) Steel jallies is 1.5 M.

- The Overhang of a scaffold plank should be at least 50 mm but not more than 4 times the thickness of board.
- Knots or knot holes in the scaffolding board should not exceed 50 m in diameter across the edge. The board must not be split even partway. The grain should be reasonably straight.
- Dropping or throwing materials from the top and from bottom to top should not be entertained. A rope shall be used for that purpose.

18.4 Common Faults in Scaffolding

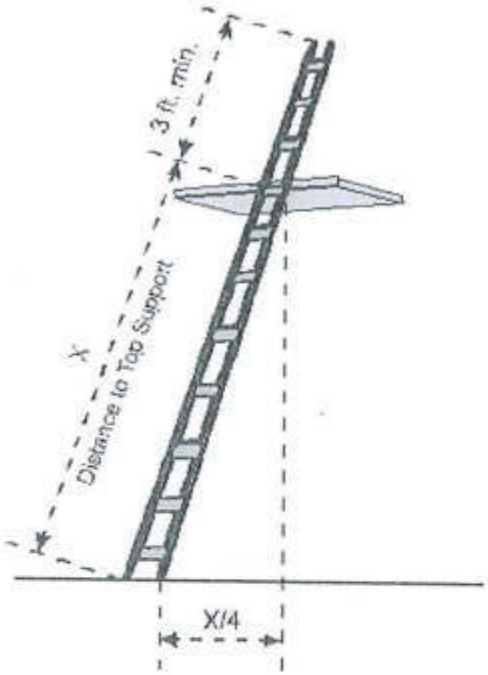
- Supporting of boards inadequate and therefore liable to tilt.
- Absence of toe-boards and guard rails where necessary.
- Faulty alterations made without approval.
- Erected on uneven ground.
- Supported by scaffold lashings instead of wire ropes.
- Couplers misused; use of putlog coupler where load bearing coupler to be used.
- Absence of ties where necessary.
- Foundations insecure.
- False supports, for example, drums, ladders, piles of brick etc.
- Outdated and damaged couplers.
- Lack of bracings.

- Defective boards, large knots, splits etc.
- Inadequate access.
- Not wide enough - three planks is normally the minimum.
- Gangways obstructed.

19. LADDERS:

The following practices should be observed when placing ladders:

- Place a ladder so that the horizontal distance from the base to the vertical plane of the support is approximately one fourth the ladder length between supports. For example, place a 4 M ladder so that the bottom is 1 M away from the object against which the top is leaning.
- Do not use ladder in a horizontal position as runways or as scaffolds. Single and extension ladder is designed for use in a nearly vertical position and not be used in horizontal position.
- Never place a ladder in front of a door that opens towards the ladder unless the door is locked, blocked or guarded.
- Place the ladder feet on a substantial, firm and level base, and not on any other objects, like barrels, wooden boxes etc.
- When using a ladder for access to high places, securely lash or otherwise fasten the ladder to prevent its slipping.
- Secure both bottom and top to prevent displacement when using a ladder for access to a scaffold.
- Extend the ladder side rails at least 1 meter above the top landing.
- Do not use a metal ladder close to live electric wiring or any operational piping like acid, gas, etc. which could be damaged.
- While ascending or descending, the user shall face the ladder, sue both hands and place his feet near the ends of the rungs rather than the middle. Be sure the shoes are not greasy, muddy or slippery before ascending or descending.
- Extension ladder should be sufficiently propped.



- All ladders of vertical height more than 10 meters hall is provided with an intermediate landing with guard rail, mid rail and toe board.
- No portable single ladder should be over 6 meters in length.
- Ladders should not be hung from brackets, as it tends to pull out the rungs.

Landing	-	Tie-up the ladder with this.
Aisle	-	Do not place ladders blocking this.
Doors	-	Do not keep ladders against this.
Descend	-	Do not ascend or descend with some materials in the hands.
Elec. Equip.	-	Do not use metal ladders to work in this.
Rungs	-	Do not have make shift methods, in case this breaks.

20. DEMOLITION:

- Before any demolition work is commenced and also during progress of work the following safety precautions are to be taken:
- A definite demolition procedure shall be worked out after studying the entire structure and followed strictly throughout the demolition work.

- All the roads and open areas adjacent to the work site shall be protected and caution Boards / Danger sign in local language, Hindi English shall be displayed at prominent places. Unauthorized entry to the building under demolition shall be effectively controlled.
- No electric cables or apparatus, which is liable to be a source of danger, shall remain electrically charged. Water and gas connections, if any, have to be removed, but a separate water source must be available nearby for quenching operations.
- Glass panels of doors and windows are to be removed first.
- When only a portion of a structure is to be demolished adequate props should be provided to prevent damage to the remaining portion due to shock and vibrations. Shoring of other buildings may be necessary when the demolition operation exposes or breaches and adjoining wall.
- Debris shall not allow to be thrown from heights. Remove all debris promptly, using chutes or through internal holes. Try to minimize production of dust, by watering.
- Permit no employee to work below others.
- Safety appliances like safety belt, goggles, foot protection, gloves, etc. should be used, wherever necessary.
- Use only proper and tested tackles while lowering heavy materials.
- The cages, hoists, tackles should not be overloaded.
- Before demolishing buildings with over hangs, chajjas, etc. they should be properly supported and demolished first before demolishing superstructure of the buildings.
- The work should be carried out under strict supervision of a responsible supervisor. Only one man who is well experienced should give signal.
- All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.
- While breaking roof slabs, workmen should not be allowed to sit on the same floor. A separate platform with independent supports shall be used for the demolition purpose.
- Walls should not be left in an unstable condition where they may be toppled by wind or other force. Walls may need temporary support unless designed to be free standing.

21. PROTECTION FROM EXCESSIVE NOISE:

The SPPL / subcontractor shall take adequate measures to protect the workers against the harmful effect of excessive noise. The noise should not exceed the limit prescribed under the local regulation.

- Provide engineering controls and PPE's to reduce noise as far as practically possible.

22. PLANT & EQUIPMENT

22.1. General

In this section of "Plant & Equipment" the accident preventive measures to be followed for all Diesel/Petrol engines and Light/Heavy Vehicles, in general, have been covered in two separate sub-sections. These procedures and practices are applicable for all plants and equipment, which have engines or are treated as vehicles.

The specific safety measures for any particular plant or equipment has been further elaborated and detailed in the relevant equipment items subsequently.

22.2. Hydraulic Excavators / Power Shovels

- Trained and authorized persons should operate.
- Warning boards should be displayed where excavation is going on. Put barricades around the excavated area. "KEEP AWAY" from the "SWING AREA"
- Before starting movement of the machine check the inside, outside and down side of the machine.
- Never grab joysticks or other control levers while getting on/off the machine.
- During operation, do not read, drink or eat. Do not divert your attention away from the attachment / control board
- Never swing the load over persons.
- Never allow anyone to ride in the machine.
- Never try to operate the machine except from the seat of the operator as the machine may go out of control.
- Do not load a dumper / truck unless the driver is in a safe location.
- Working in the vicinity of electrical lines, contact the electrical department before beginning excavation.
- Treat all power lines as energized even when it is known that the power is shut off and the line is grounded.
- Always maintain more than the minimum specified clearance between the machine and the power lines, employ a qualified or experienced signalman, if required.
- Slow down the operation cycles when operating in the vicinity of power lines.
- Remember death can occur in case of an accident caused due to electric shock from the energized power line.
- Never exceed the lifting capacity of the machine.
- Keep the machine away from the edge of an excavation. Avoid cutting under the machine.
- Operating on a slope is risky.
- Heavy items to be lifted by a hydraulic excavator should be hung from the designated lifting point. Never exceed the specified lifting values as shown in the chart. Failure of the bucket/ sling can occur even if the wire ropes used for the boom suspension as well as for the shovel / bucket shall be of the specified diameter.

- Always use the proper equipment for the job to be undertaken.
- While moving on a road, travel with the headlights on even in the day light. While taking a turn allow for boom overhand and other structural clearance if any. Watch for boom clearance while travelling.
- Be careful while parking the machine. Do not park the machine where there is a possibility of the ground caving-in or at low-lying areas where the rainwater might accumulate.
- The attachment is held in position by the trapped hydraulic oil in a cylinder or a motor when the machine is not working (Hydrostatic locking). If there is any leakage of hydraulic oil, the attachment might come down suddenly endangering anyone or anything who/which may be below the attachment. Make sure that attachment is firmly resting on the ground.
- Power shovels / Excavators shall be so operated as not to endanger their stability.
- Power shovels that are equipped with unit for deep digging shall either be so designed that the bucket teeth should not come nearer the under-carriage more than 40 cm or be provided with reliable stop that prevents the bucket to come nearer than the specified distance.
- The boom shall not be pulled tight against the emergency stops while supporting a load.
- The bucket or grab of the shovel shall be pulled out of the bank as soon as it is full. When not in use, the bucket shall be kept resting on stable ground and shall not be left hanging.
- The bucket or grab of a power shovel shall be fixed to restrict movement while it is being repaired.
- While operating near edge of excavations or embankment substantial space shall be provided to prevent it from approaching a dangerous position and the sides of the excavation shall be adequately shored. Heavy equipment such as excavating machinery and road traffic shall be kept back from the excavated sides at a safe distance.
- The height of benches in overburden shall not be more than the height of the boom of the machine used for digging excavation of removal.

22.3. Tippers / Dumpers

- No unauthorized persons should operate the vehicle.
- Tipping system should be used only after positioning the vehicle for unloading (Tilt cylinder lever should not be tempered with).
- Rear view mirrors should be provided on both the sides of the cabin for reversing, loading or unloading of the vehicle.
- All tippers/ dumpers should be equipped with reverse horn.

22.4. Water Tankers (Truck Mounted Type)

- No unauthorized person should operate the vehicle.
- Rear view mirrors should be provided on the cabin on both the sides for reversing the vehicle.
- The vehicle should be placed on a firm ground for filling or emptying the tank.

22.5. Tractors

- No unauthorized persons should operate the vehicle.
- Tilting and lifting should be done only when required.
- Vehicles should be used for towing, levelling or ploughing purposes only.
- Workers should not be allowed to travel on a tractor.

22.6. Vibratory Compactors

- A trained operator should be allowed to run the machine.
- If the compactor is electrically operated, the wiring/ cables should be properly laid so that movement of the machine is not restricted.
- Electrically operated compactor must be earthed properly.

22.7. Vibratory Rollers / Road Rollers

- A trained/ Authorized person should operate the machine.
- Caution boards should be displayed at the site of work.
- In the vicinity of the weak structures, vibration should be minimized and to bed own with precautions.
- Vibration should not be continued while the roller is not in motion.

22.8. Tar Boiler

- Only trained person should be allowed to operate the equipment.
- Burner and the connections should be checked against blockade/ leakage.
- Equipment should be anchored properly before loading and firing.
- Fuel tank should always be kept at a distance from boiler.
- Never use petrol with diesel for burner firing.
- Exhaust pipes should be checked / inspected against blockade.
- Keep your hands and face away from the inspection hole while burner is in operation / started firing.

22.9. Pavement Breakers / Concrete Drills

- Safety goggles should be worn by the operator while working.

- All the pneumatic hose connections should be checked to detect any leakage, before starting the machine/tools.
- Whips to be provided with all compressed air hoses.
- Damaged hoses should be replaced immediately.

22.10. Pneumatic Compressor

- Compressor should be checked against any crack in the air receiver and pipe connection.
- Safety valves should be checked periodically for their effective functioning at the specified / set pressure.
- Pressure gauges should be checked regularly.
- Compressor should not be installed / placed near excavation pits / blasting area.
- Air hose ends should not be kept free to avoid whipping.
- No one should use compressed air to clean his dress or body. It should not be directed on others; no horseplay is allowed with compressed air.
- Supply of compressed air to pneumatic tools should be controlled by valves and connected with oil lubricator.
- Goggles should be used while the air compressor tools are in operation.

22.11. Concrete Batching and Mixing Plant

- Skip, weigh batcher and drum should be clearly visible to the operator in the cabin.
- Trained persons only should operate the plant.
- Weighing attachment should not be tampered with / nothing should fall on it.
- Mixing drum should be cleaned after completion of each and every delivery.
- Workmen should be kept away from the area of operation of scrapper unit.
- Plant should have proper earthing.
- Periodic inspections of wire ropes should be done.
- Overloading of the scrapper/ skip unit and drum should be avoided.
- Any unwarranted mechanical noise should be carefully probed into for corrective action.
- All operators and laborer for cement filling should use dust masks and helmets.

22.12. Transit Mixer

- Only trained/ valid license holding person should be allowed to operate the equipment.
- Rear view mirrors should be provided for reversing the vehicle.
- Mixing drum should be cleaned regularly.
- Inspection covers of the drum should be bolted properly.
- Water and air connections should be checked before operation.

22.13. Mixers

- All gears, chains and rollers of concrete mixer should be adequately guarded to prevent damage / danger.
- Concrete mixer hopper shall be protected by side railing to prevent workers from passing under them. Operators shall make sure before lowering the skip that the operational space is absolutely clear.
- Wire rope used for hopper hoisting has to be checked thoroughly and periodically.
- Hopper hoist and anchoring brake should be checked for proper functioning.
- Be sure that motor fan guard is secured.
- Be sure that wiring is properly connected and insulated.

22.14. Concrete Pump

- Only the trained persons should operate the equipment.
- The pipes, bends and the snap couplings should be checked against leakages/cracks.
- O-Ring with the proper size only should be used between the joints / connections.
- The equipment should be greased periodically.
- Slurry should be passed before pumping the concrete.
- Elephant hose should be held in position with the help of rope while discharging concrete.
- Electrical connections and earthing of the equipment should be properly done.
- Proper anchoring should be done between piping and equipment.

22.15. Concrete Vibrators

- Vibrating unit shall be completely enclosed and the belt transmitting power to the unit to be adequately guarded.
- Electrically operated compaction vibrators shall be totally enclosed and be protected against overloads by suitable overload relays and shall be effectively earthed.
- Be sure that the sufficient length of cable is provided to the vibrator.
- Ensure electric starters are fixed firmly on the stand.
- While needle is inserted in the vibrator, be sure that needle load is firmly locked.
- Be sure to lubricate inner core of needle.

22.16. Overhead Hazards

Overhead protection shall be provided at any location where there is a hazard of falling objects. This shall particularly be observed around any scaffolding and in excavation.

Goalposts (wooden) shall be erected under all overhead power lines with minimum safe clearance to prevent the arms or jibs of crane/plant from approaching such lines.

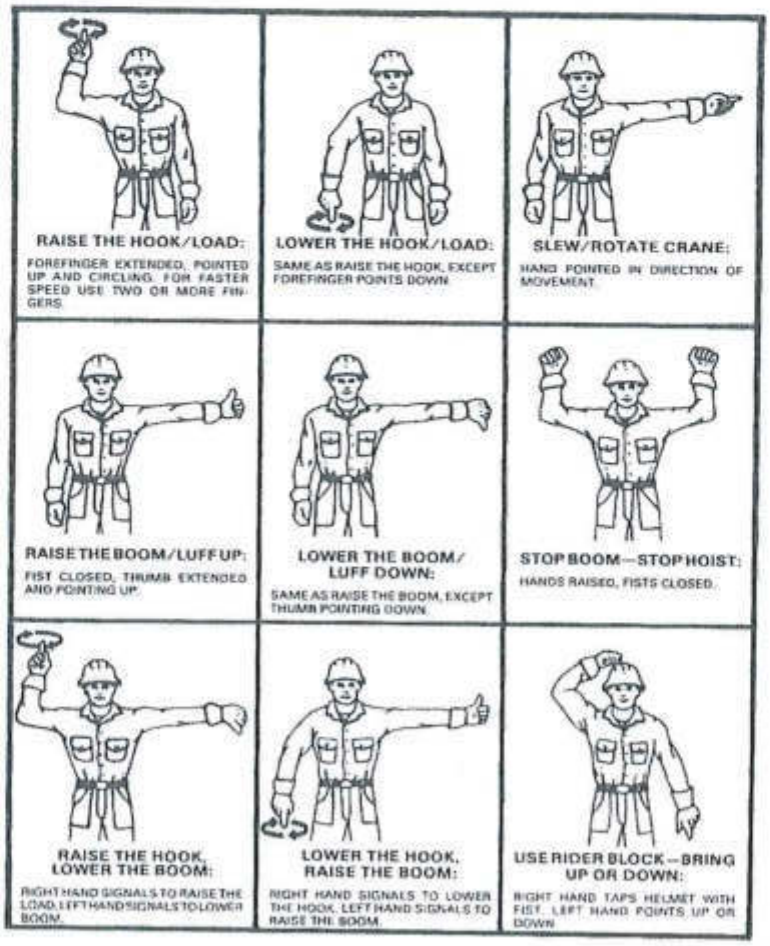
22.17. Cranes

All cranes must be tested and certified by competent authority and SWL of the crane shall be written on the crane. The capacity of the crane should be ascertained by user before use.

- Crane should never be overloaded.
- Crane should be operated by authorized person.
- Mobile cranes should be parked on hard soil or strong base. They should not be placed near the edge of the pit or excavation.
- Crane should be tested at least once in a year by competent person or according to local legislation requirement.
- Safe working load of any mobile crane depends on:
  - Operator's skill
  - Condition of the ground
  - Boom length
  - Radius of rotation and inclination of boom to the vertical while lifting the load
  - Out rigger blocked / free
- The safe working load is generally tabulated in the load chart of the crane. Sometimes cranes are de-rated due to the defects in welding, bend in angle, bracings and condition of clutch brake.
- Remember that the capacity of a crane is the total load hung from the hook including weight of hook, block, ropes, slings etc.
- Standard signaling code properly understood by the operator and trained signalman should be used. The crane operator shall respond to signals only from the appointed signaler but shall obey `stop' signal at any time no matter who gives it.
- Tag lines should be used while hoisting heavy and bulky materials.
- The brake, boom, hook, wire rope pulley and rope anchoring should be checked periodically by a maintenance person to ensure safe operation of a crane.
- The load being lifted should not touch the boom.
- The boom or any part of the crane should not come near any live electric line/ service line.
- Swinging of load should be done smoothly.
- Proper quality of packing should be used, and the outrigger should rest tightly on the packing placed on support.
- Nobody should stand below the boom or load.
- The operator should be positioned at high level to see the hook and load throughout the hoisting, swinging and unloading operation.
- During storm, the hook block should be anchored firmly and swing lock to be released.
- When an extended boom is used on the crane, the operator must use extreme care in lowering the load to the ground. An extended boom should never be lowered to

one side of the chassis as the stability of the crane is usually reduced at that position.

- During shifting the crane has to be crawled on a heavy timber mat in case soil does not have adequate bearing capacity.
- Any make shift methods to maximize utilization of crane such as blocking with timber or adding counter-weight, should not be permitted.
- In idle condition the crane operator should remove load from the hook and raise the hook block to a maximum height.
- The crane operator should keep the cabin deck free from any oil, mud and grease.
- Operator should always keep the windshield clear in order to have clear vision.
- Ensure at least two full winding of ropes always on the rope drum. After a boom extension, the hooks shall be lowered to the required lowest point to ensure that at least two dead coils remain on the drum and to the highest point to check that the drum capacity will not be exceeded.



22.18. Mobile Cranes

- Following precautions have to be taken while using tyre mounted mobile cranes in addition to the given above.
- When traveling up a gradient, the load shall be derrick out and when travelling down a gradient, the load shall be derrick into the minimum radius, and this position shall be corrected on reaching level ground. Otherwise, constant watch on the radius should be maintained while travelling on uneven surfaces.
- The mobile crane shall be fitted with suitable horn, headlights, and side lamps, rear and stoplights and flashing direction indicator.
- A cantilever type jib of crane when travelling without load should be lowered to a horizontal position.
- The pneumatic tires shall be maintained at the correct pressure at all times.

22.19. Chain Block/ Pull Lift

- Chain blocks of proper lifting capacity supported by Test Certificate should be used for lifting known loads.
- Chain block must be checked and tested periodically. It should be lubricated before every use.
- No cannibalizing should be done on chain block.
- Chain block should be tested against slip by suspending safe load.
- It should operate freely and the chain should not come out of pulleys.
- The anchorage should be strong and rigid.
- They should be check for cracks, excessive wearing, elongation, etc. Hook opened out should not be used.
- No chain block / puller which has been tampered, should be used unless it is thoroughly checked and tested by competent person.
- Chain block / pulley must be checked if stored for longer time, by subjecting to shock load to observe slipping of load, jamming of links etc.

22.20. Winches

- Safe working load with gearing arrangements should be marked on the winch and tested regularly by competent person.
- Winch should not be overloaded.
- It should be placed on a firm base and properly anchored.
- The brake, ratchet arrangement, gear and pinion including the meshing, wire rope and its clamping arrangements and direction of receiving rope drum / tie rods should be checked before using the winch.
- Ratchet arrangement should be kept in position while hoisting a load.
- Tie rod should be adjusted not to allow drum movement causing clutch arrangement to slip.

22.21. Bar Bending and Cutting Machines

- Only trained persons should be allowed to operate the equipment.
- Equipment should be grounded / earthed properly.
- Equipment should be placed on sound foundations for fixing properly.
- Bars used for cutting or bending should be of designated size as per manufacturer's catalogue of the machine.

22.22. D.G. Sets

- No unauthorized person should operate.
- Equipment should be mounted on foundation or on levelled ground with anti-vibrator pads.
- Equipment should be grounded / earthed properly as required.
- Ventilation should be proper. The exhaust piping should have less bends and no restrictions. Make and emission of DG sets shall be maintained as per the local standards.
- Safety devices should be checked / inspected before use / operation.

23. HOUSE KEEPING:

The SPPL / subcontractor shall maintain his work areas, site office and storage are clean and tidy.

- All cables shall be routed safely.
- Material storage at store or at erection site shall be done systematically at identified places only. In no condition the gangways, stairs or other work front can be disturbed by improper storage.
- After completion of work or end of day the subcontractor shall remove the surplus materials, scrap or debris generated during construction.

a) Stacking of materials:

The SPPL / subcontractor shall ensure, at a construction site that:

- All construction materials are stored or stacked in a safe and orderly manner to avoid obstruction of any vehicle movement, pedestrian etc.
- Material piles are stored or stacked in such a manner as to ensure stability
- Material or equipment is not stored upon any floor or platform in such quantity as to exceed its safe carrying capacity.

- Material or equipment is not stored or placed so close to any edge of a floor or platform as to endanger the safety of persons below or working in the vicinity.

b) Stacking of cement bags, pipes and other material:

The SPPL / subcontractor shall ensure, at a construction site that:

- A stack pile is not more than ten bags in height unless such stack pile is stacked in a suitable enclosure or otherwise adequately supported.
- While removing bags from the stack pile, the stability of such stack pile is ensued.
- Bags containing cement or lime are stored in dry places.
- The material like bricks, tiles or blocks are stored on a firm ground.
- Reinforcing steel is stored according to its shape, size and length, stack of reinforcing steel is kept as low as possible.
- No pipe is stored on rack or in stack where such pipe is likely to fall by rolling.
- The material or article are not stacked to such a height and in such a manner as would render the pile of such stack unstable and cause hazards to the workers or others.

24. DRINKING WATER:

The SPPL / subcontractor shall make in every place where construction work is in progress, effective arrangements to provide and maintain at suitable points conveniently situated for all person employed therein, a sufficient supply of wholesome drinking water.

25. RIGHT TO STOP WORK:

The SPPL Managers / Safety Officers /Engineers shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and / or property, and / or equipment. In such cases, the subcontractor shall be informed in writing about the nature of hazards and possible injury/ accident and he shall comply to remove shortcomings promptly. After taking all corrective measures subcontractor shall inform to the concerned authority for verification then only he can resume the stopped activity.

The subcontractor shall not be entitled for any damage/compensation for stoppage of work due to safety reasons and the period of such stoppage of work shall not be taken as an extension of time for completion of the facilities.

26. FAIR CULTURE

Fair Culture in H&S could be defined as a balanced approach in workplace which has three main pillars:

1. Encourage positive behavior:

Positive behaviors and ideas must be appreciated, motivated and recognized.

Therefore, employees leading with exemplary behavior, contributing feedback on safety and sharing good practices / innovative ideas must be recognized and rewarded.

2. Improve sharing:

Fair Culture policy allows errors and mistakes to be fearlessly reported and should be used as an opportunity for improvement. Safety culture where more sharing takes place is better culture because it's an open culture. In this case you not only identify the causes which are responsible for injuries / losses but also share them to alert others and prevent similar incidents to happen.

3. Do not tolerate the unacceptable behavior:

The third pillar of fair culture policy is "strict action against willful violations". To reprimand willful violations is part of service rule book of employees as per which willful violation are punishable to the level of responsibility of violator. This can even lead to termination of employment contract. Any breach of rule, violation of established procedure or norms is unacceptable to the organization.

27. STATUTORY PROVISION:

The SPPL / subcontractor shall comply with applicable Acts / Rules e.g. THE BUILDING AND OTHER CONSTRUCTION WORKERS (regulation of employment and conditions of service) ACT & RULES. & WORKMEN'S COMPENSATION ACT 1923.

28. PROCEDURE FOR COMMUNICATION OF SERIOUS INCIDENTS:

Following events to be considered as serious incidents:

- Accident resulting in fatalities or a life-threatening situation
- Serious injury
- Significant damage to property or the environment
- Significant security or safety issues
- Significant risk of liability to SPPL
- Major negative media impact
- Damage to the image of SPPL

Sl. No.	Communication	Responsibility
Communication at site level:		
1	Immediate communication to Site Manager / Safety officer and concerned subcontractor	Concerned Supervisor
2	Communication to clients	Site Manager
3	Communication with Hospitals/ Ambulance Room	Supervisor / Site Manager
4	Communication to local emergency services e.g. fire brigade etc.	Safety Officer / Supervisor
5	Communication to Project Director	Site / Project Manager
Communication to HO level:		
1	Communication to HSE manager	Project Manager / Director
2	Communication to CEO	HSE Manager / Project Director
3	Communication to local authorities and response agency	Project Director through client
4	Designated person for media contacts	Project director through client
5	Communication with families of the affected person if required	Project director through Client

29. EMERGENCY CONTACT NUMBERS

To be displayed in all site offices and work sites

SL	NAME OFFICE / AUTHORITY	CONTACT NO
IN CASE YOU SEE ANY DANGEROUS SITUATION OR ACCIDENT IN WORKSITE PLEASE INFORM TO:		
A	HSE OFFICER	78997 35202
B	PROJECT IN CHARGE	99000 21077
NUMBER OF AUTHORITIES FOR HELP IN CASE OF SERIOUS ACCIDENT		
1. NEAR BY POLICE STATIONS (Different Locations)		
A	Control Room	100
B	Police Station – Near Head Post Office	08251 - 230555
C		
2. NEAR BY HOSPITAL (Different Locations)		
A	Puttur City Hospital	08251 – 237782
B	Ambulance	108
3. NEAR BY BLOODBANK		
A	Rotary Campco Blood Bank, Puttur	08252 – 234242, +91 - 9449215502
4. NEAR BY AMBULANCE SERVICE		
A	Control Room	102
B	Ambulance	108
5. FIRE BRIGADE		
A	Control Room	101
B	Fire Station	08251 - 232101

30. HSE TRAININGS:

All employees to be inducted by concern manager / HSE manager before visiting site.

All employees including subcontractor employees to be inducted for site specific hazards and associated risks and safety rules to be observed during site work. Minimum hour training will be mandatory for Communicating HSE rules related to site. However, other specific topics e.g. Road Safety, Driving Safety, Safety in excavation work, first aid etc. can be giving in separate sessions to separate target groups as per the training needs identified.

HSE manager should keep record of all such trainings.

TRAINING ATTENDANCE SHEET

TRAINING PROGRAMME:

DATE: **TIME:** **CONDUCTED BY:**

Topic Covered:

- **Basic Trainings:** Induction to HSE mgmt., Project Familiarization, Construction Orientation, Environmental Awareness, Water, Air, Land Pollution, First Aid, Driving Safety/Road Transport, Hazard Spotting, PPE, Safe Working Practices, Manual Handling, Risk Assessment, Emergency Preparedness, Basic Fire Fighting, Permit to Work, Safe Handling of Chemicals
- **Skilled Workers:** ***Basic Training*** + Signs & Signals, Falls & Falling Objects, Electrical Hazards, Hand Tool Safety, Machinery Maintenance & Equipment Check, Spill Containment and Response.

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE-MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.				
2.				
3.				
4.				
5.				

31. MINIMUM STANDARDS FOR LABOR CAMPS:

Following minimum standards for labor camp to be maintained at site.

suez		Control H&S Risks and Environmental impact		CLLC-01
		MONTHLY CHECKLIST FOR LABOUR CAMPS		Rev. 1-Apr.2018
Contract:				
Subcontractor:				
Meaning of compliance levels: 0 = Unacceptable, 1 = Major corrections needed, 2 = Minor corrections needed, 3 = No corrective action needed				
		COMPLIANCE %	0.0	
Sl	**Check Points to ensure minimum safety, security & welfare standards at labour camp**		**Compliance Level (0,1,2,3)**	**Observations**
1	**General:**			
i	Isolation from active work site			
ii	Entry control, security & circulation			
iii	Cleanliness of common areas			
iv	Display of Life Saving Rules, Do's & Don'ts and emergency contact details			
2	**Living areas**			
i	Robust construction, space allotted (16ft x 12ft for 6 workmen, 192/6=32)			
ii	Individual mattress, bunk bed etc. facilities			
iii	Air circulation / fans / coolers			
iv	Cleanliness of living rooms			
3	**Housekeeping**			
i	Deployment of dedicated team for housekeeping			
ii	Availability of bins / skips in living and common areas			
iii	Disposal of waste on daily basis / Waste Mgmt.			
iv	Storage conditions - food stuffs and other items			
4	**Lightings**			
i	Dedicated feeder / panel / DB with ELCB for labour camp			
ii	Area lighting and lighting in living rooms			

iii	Condition of electrical cables & appliances		
iv	Periodic inspection by electrical engg. & H&S officer		
5	**Water & Sanitation**		
i	Maintaining drinking water facility in safe and clean condition (storage provision and availability of drinking water 20L/workmen)		
ii	Maintaining potable water facility for bathing (covered), washing of cloths etc. (Storage provision and availability of 50L/workmen)		
iii	Maintaining toilets in clean conditions (1 toilet for every 15 workmen / women separately)		
iv	Safe disposal of waste water & general cleanliness of area		
6	**Cooking & Canteen Facility**		
i	Maintain kitchen area in safe & clean condition		
ii	Cooking of food inside living rooms is prohibited		
iii	Maintain a reasonable eating space and canteen facility		
iv	Maintain arrangements for prevention and controls of fire		
7	**Health**		
i	Is there 6 monthly medical checkup camps		
ii	Does the doctor examines on communicable diseases?		
iii	Does the facility have arrangements for first and tieup with hospitals for nearby hopital for emergency medical cases.		
iv	Does there arrangements for insects, snakes etc. repellents		
8	**Other points**		
i	Common recreation facility at camp - Volleyball court / Carrom / Yoga		
ii	Weekly meetings between labour camp in charge and members (1 out of 25)		
iii	Maintaining following mandatory registers for record of: - workmen living in camp as per allotted living room number - Weekly / monthly control of camp - complain / suggestion register - health check-up records to avoid contagious etc. diseases		

	- record of kids with a dedicated care taker - fire extinguishers inspection record			
iv	Monthly joint inspection by labour camp in charge, H&S Manager, facility manager of subcontractor and SUEZ project manager / his representative			
	Signatures:			
	Labour Camp Sup.		Facility Mgr (Sub)	
	H&S Manager		Project Mgr.	

32. SITE VEHICLES:

Instructions for Drivers:

Drivers must have valid driving license, training and adequate experience. Following are vital aspects of good driving!

a. AWARENESS

- Know your vehicle
- Know the road conditions
- Mentally prepare yourself & avoid frustration
- Ensure statutory vehicle documents are available with you.

b. ANTICIPATION

- Plan for unexpected/others' unsafe acts
- Adjust speed for road condition/construction
- Observe surroundings e.g. schools, parks, walkways, etc.
- Always wear your seat belt before starting your car for your own safety. Also ask persons accompanying you to wear seat belt.
- Signal your intention to change lanes/turn
- Always obey & respect traffic signals.
- Jumping red light signal endangers your safety as well as safety of other road users
- Always adhere to the prescribed speed limits while driving.
- Slow down while approaching roundabouts, road crossing, speed breakers etc. and negotiate them safely.
- Don't indulge in zig-zag driving, wrong overtaking, improper lane changing etc.
- Don't mix drinking & driving.
- Drunken driving can prove fatal.
- Do not drive if you are under medication.

c. DRIVING AT NIGHT IS MORE DIFFICULT THAN DAY:

- Your Headlight illuminate only a portion of road.
- Have your headlights properly aimed. Misaimed headlights blind other drivers and reduce your ability to see the road.
- SLOW DOWN WHEN DRIVING AT NIGHT !!!!
- Keep safe distance.

d. BACKING / REVERSING RULES:

As far as possible avoid reversing; if vehicle must reverse then Signal the reverse light. Avoid reversing over long distance.

- If possible, get someone as reversing assistant; ask the person to stand at safe & visible place.
- Always look over your shoulders & check mirrors all time
- Keep one foot on brake Pedal
- Reverse Slowly
- Be careful of small children who may wander behind your vehicle.
- Follow and respect Traffic Signs.

Vehicle Inspection Checklist:

Vehicle must be inspected monthly with reference to the following checklist and compliance must be ensured.

suez	SUEZ PROJECTS PVT. LTD.	NO.: SPPL/CBE/VI-01 Rev.: 0 Date: APR. – 2018.

VEHICLE INSPECTION CHECKLIST

S N	VEHICLE REG. NUMBER	DATE	MIRRORS	HEAD LIGHTS	INDICATORS		REVERSE LIGHT	BRAKE LIGHT	HORN	SEAT BELT		FIRST AID BOX	FIRE EXTINGUISHER	VEHICLE DOCUMENTS				TYRE CONDITION	BRAKES	DRIVER'S NAME / SIGNATURE	REMARKS
					FRONT	REAR				FRONT	REAR			DRIVER LICENSE VALID UP TO	INSURANCE VALID UPTO	REGISTRATION CERTIFICATE	FITNESS CERTIFICATE				

33. INSTRUCTIONS FOR VISITORS:

- All cars to be parked in the designated parking area
- Firearms, weapon and consumption of alcohol is forbidden inside the work site.
- Be accompanied with company representative during site visit and follow his instructions during your visit.
- Please follow all safety instructions, signs and signals posted at site.
- Please be aware of hazards on site e.g. Traffic on the road, temporary accesses, deep tanks, excavated areas, Temporary electrical wires, tools, sharp objects, overhead hazards etc.
- Please be cautious, check the traffic on both the sides and then cross the road only when it is safe to do so.
- Keep away from work in progress and barricaded areas.
- Visitors are not allowed to climb any temporarily erected structure, enter electrical, chemical, chlorine, ATEX facility or any deep tanks / excavated areas without specific authorization of SPPL site manager.
- Specific risks related to this site will be communicated to you preferably on hazard map.
- Walk; don't run except in case of emergency.
- Don't touch any tools, equipment or objects without permission
- First aid kit is available at various locations in site & office.
- Please use bins for disposal of waste.
- Do not assume, if in doubt please ask.
- Please ask for **Risk Information Report (RIR)** forms, available in this site office. SPPL gives you (all stakeholders) right & opportunity.

To remove yourself from danger and notify potential risk or unsafe conditions you might encounter during your site visit.

To contribute your suggestions for improvement.

Instructions to be followed in case of emergency

- Emergency situation may arise due to any potential risk present on site.
- In case of emergency, assemble at nearest assembly point (in front of office / main gate)
- Seek help from company representative with you and wait for instructions of site manager.
- You can also call company site emergency coordinators on following numbers.

HSE Manager / Project Manager

PLEASE COOPERATE WITH US; WE WANT YOU TO REACH HOME SAFELY

I assure you that I have understood all the above instructions given to me by SPPL representative
and I will follow them during my site visit.

VISITOR'S NAME: DATE & TIME:

SIGNATURE:

APPENDIX 35: EHS PLAN- UDUPI

Suez Project Private Limited

Health and Safety Plan

Project: Construction of Distribution System for 24x7 Water Supply including Services for Operation and Management for Udupi City, Contract Package No 02UDP01

		Pradeep Shetty	Vishal Pattanshetti	Ramesh Patil	For Approval
Rev.	Date	Prepared By	Checked By	Validated By	Submission Purpose
00					

Contents

I. HEALTH, SAFETY AND ENVIRONMENT POLICY

HEALTH, SAFETY, ENVIRONMENT & INDUSTRIAL RISK POLICY

Excellence in safety, health and environment contributes directly to the performance of SUEZ and creates value for our clients. This is an ongoing and critical objective.

Everyone has an obligation to work safely and the duty to contribute on this by behaving responsibly.

All accidents can be avoided by implementing appropriate methods, equipment, training, controls and behaviors.

IN ORDER TO ACHIEVE THIS LEVEL OF SAFETY, HEALTH AND ENVIRONMENT, WE ASK THAT:

- All employees behave in an exemplary manner and comply with all applicable regulations, rules and commitments, including in disruptive situations. Our internal rules prevail when they offer greater protection than local regulation.
- We follow all applicable requirements including Life Saving Rules developed by company.
- Activities are organized so that they reduce risks to an acceptable level.
- Employees contribute to routine and incident feedback, and formalization of working instructions.
- Sustaining and improving health and wellbeing of our employees and temporary workmen.
- To develop fair culture approach where good behavior is recognized, error is seen as a source of progress and violation of the rules is not tolerated and sanctions are imposed as disciplinary action.
- Our clients get facilities that can be run in complete safety for people and for the environment.
- Partners and contractors contribute to continuous improvement actions and that they are selected on the basis of their commitment to do so.

MISSION AND DUTIES

Within their area of responsibility, each manager has the duty to ensure the health and safety of all personnel and the protection of property and the environment. Each manager is responsible for the communication and application of the rules and commitments and ensuring that messages and practices are consistent.

Each employee is aware of his / her personal role in protecting the environment and in preventing accidents. Employees are expected to deploy responsible behavior to their benefit and their co-worker.

The Sustainable Development and Risk Prevention Department establishes and ensures the deployment and continuous improvement of all Safety, Health and Environment related processes in our Omega Management system. It oversees its implementation and its effectiveness.

WHILE REINFORCING OUR COMMITMENT TO ABOVE WE SHALL FURTHER EMPHASIZE

- Compliance with SUEZ Health, Safety, Environment and Industrial Risk management rules and procedures to minimize Health & Safety risks, environmental impacts, machinery breakdown and damage to property.
- Prevention of pollution, continual improvement, ongoing detection/rectification of deficiencies and implementing changes wherever necessary.
- Conservation of key resources like chemicals, water and energy.
- Environmentally safe handling of chemicals and safe disposal of inevitable wastes.
- Elimination, minimization and/or control of occupational hazards and associated risks having potential for ill health and diseases.
- Sustaining and improving health and well-being of our employees and temporary workmen.

Mr. Shyam J Bhan
CEO – SUEZ Business Area India

Date & Rev.: 2nd Jan. 2017

II. INTRODUCTION

Suez ranks among the world's leaders in water and waste management services. It's objective: to meet the challenge of conserving natural resources. A human adventure spanning more than 120 years that continues to unfold day after day.

We believe we can reconcile economic performance, environmental performance and corporate responsibility. We are committed to helping our customers achieve their objectives and find the ideal solution tailored to their specific concerns.

SPPL, as SUEZ PROJECTS PRIVATE LIMITED follows highest standards of Health, Safety and Environment in lined with guidelines of SUEZ.

This standard defines mandatory requirements for ensuring safe working environment for employees and all stake holders working with us. Overall goal of implementing HSE standard, procedure and practices is to minimize loss, damage and/or workplace injury incidents and "Zero Loss Time Accidents" in our activities and services.

In this context all employees / workmen are required to strictly follow procedures / rules stated in this HSE standard.

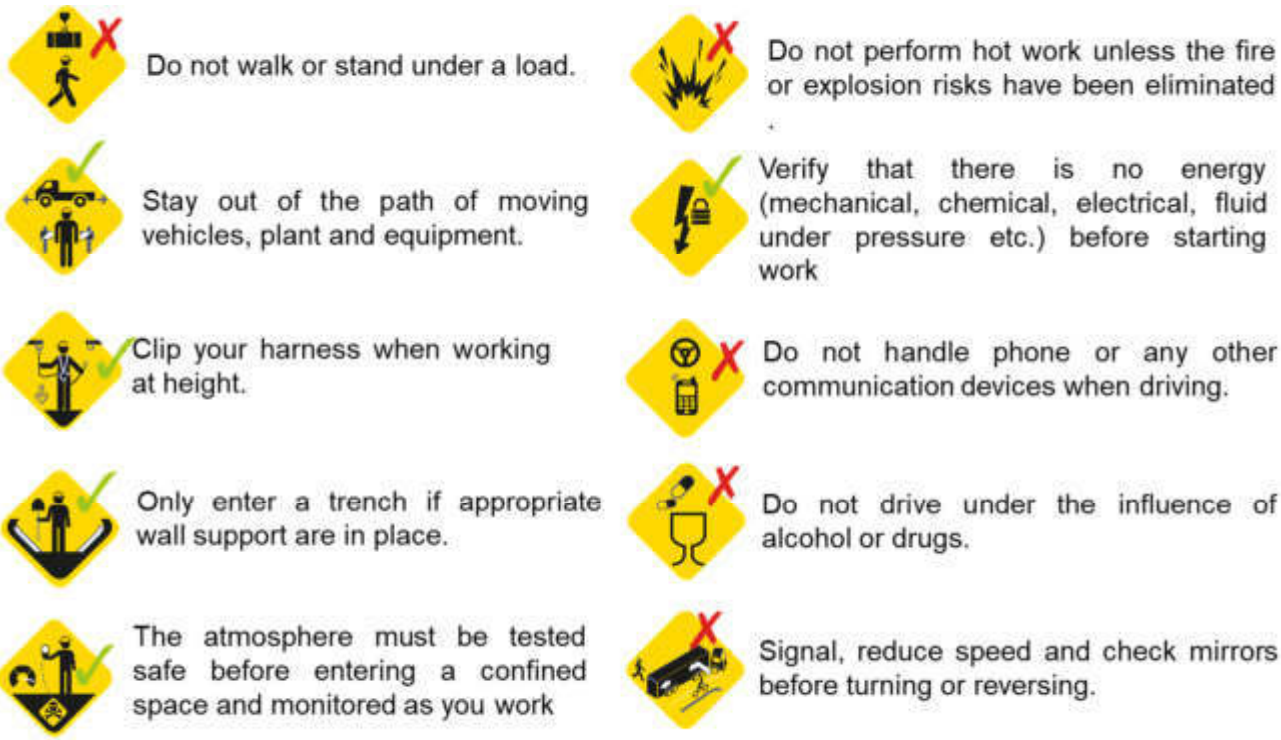
To ensure effective implementation of HSE rules in our activities, HSE department in coordination with concern manager or alone will carry out routine and non-routine, planned and surprise inspection of workplaces.

III. Health, Safety and Environment Standard:

LIFE SAVING RULES:

"In all our businesses, in all countries where the Group is present, fighting against serious accidents has always been our priority. To achieve this, we are committed to implement 11 "Life saving rules" in all our worksites. Each one of our employee and subcontractors including temporary workmen will play role to save his life and also that of others".

Here are these rules to be committed by each employee and follow as basic rules in all our sites.



1. PERSONAL PROTECTIVE EQUIPMENT (PPE):

Prior to commencement of any work, concern manger/ engineer/ subcontractor shall ensure that all the workers are having necessary protective equipment to perform his work safely. All PPE's must meet IS/EN/CE / equivalent standards and sound physical condition.

Helmets, safety boots, reflective vest shall be considered as **mandatory PPE** and shall be worn by all employees / workmen / visitors etc. on worksites. Sandals or sneakers must never be worn on the job.
In addition to mandatory PPE's, specific job-related PPE's must be worn by all employees e.g.

- Workmen working in dusty operations shall use suitable dust mask, goggles and hand gloves.
- While working in noisy operation, suitable ear plug, ear muff shall be used.
- Workmen engaged in welding, cutting and grinding suitable face shield, goggles and screens shall be used.
- Electrical hand gloves (rubber), shoe & goggles to be used while working with electrical panels (hazards)
- Workmen working at height more than 1.0 meter should wear full body safety belt / harness and it should be tied / anchored properly to a firm support or lifeline with a guy rope.

Responsibility of employee:
It is the responsibility of every employee/workmen to:

- To wear mandatory PPE while on the site
- To wear specific job-related PPE as per the requirement
- To maintain his PPE's in clean & sound condition

Any will full violation of rules will be viewed seriously, and strict action will be taken in such case.
To define and maintain minimum stock of PPE is responsibility of facility manager / subcontractor under whom respective staff is working.
Mandatory PPE's:

No	DESCRIPTION	SPECIFICATION	PICTURE
1	HELMET	IS- 2925 The Helmet needs to have adjustable suspension and complete chin strap	

2	SAFETY BOOTS	EN-345 or IS-15298 Safety boots with toe guard Suggestion to wear the socks for better protection and comfort	
3	HIGH VISIBILITY VEST	EN- 471 "Silver" Stabillo (Scot light).	
4	GOGGLES (Clear / tinted for indoor / outdoor works)	EN 166 FT CE Make:- Karam ES 006	

2. FIRST-AID:

First aid kit to be provided in all offices and worksites accessible to teams. This kit must contain sufficient items for 11 to 50 persons or as per the employee strength. Responsibility of providing this facility lies with each subcontractor and SPPL facility manager.
This first aid kit shall be kept in charge of either subcontractor's authorized person who will be on the site during all working hours to ensure that the first aid kit is available without delay.
The SPPL / subcontractor shall ensure that adequate numbers of first aid kits and trained personnel are available strategically at the site during working hours.

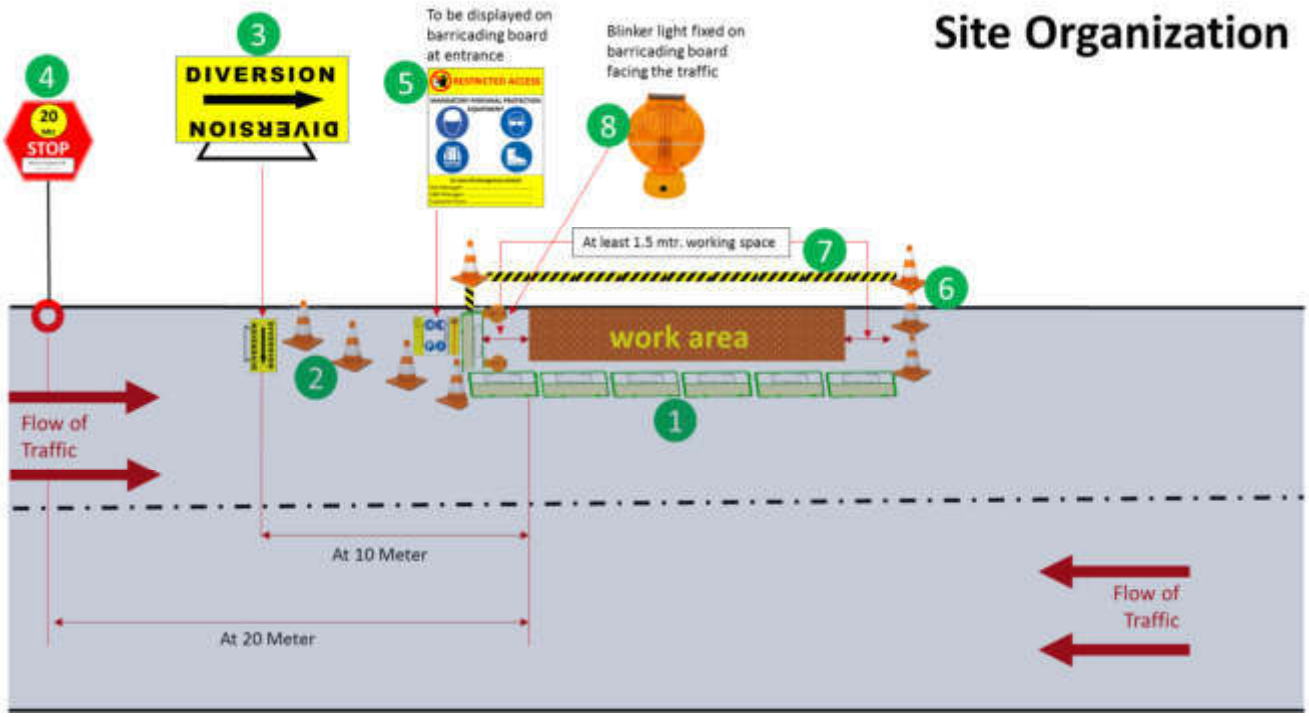
The SPPL / subcontractor will ensure availability of the emergency vehicle at the site during working hours and shall have his own arrangements / tie-ups with nearby hospitals for shifting and treatment of sick and injured.

3. SIGNALIZATION/ SAFETY SIGNAGE, BARRICADE FOR WORKS:

Working in public utilities / near busy roads involves risk to general public in addition to workmen performing their duties. Therefore, proper planning of diversion of traffic, putting signage / caution boards, installing barricade and deputing signaling man / watch man to be identified well before start of work.
Implementation of traffic plan with identified control measures is responsibility of each person in-charge of activity.

- **Following is the standard for organizing a work site**

1. Barricading boards
2. Traffic cones
3. Diversion sign board @ 10 Meter from work site
4. Stop Sign @ 20 Meter from work site
5. Mandatory PPE sign board
6. Traffic cones
7. Soft Barricading by caution tape
8. Blinker lights on barricading boards facing the traffic

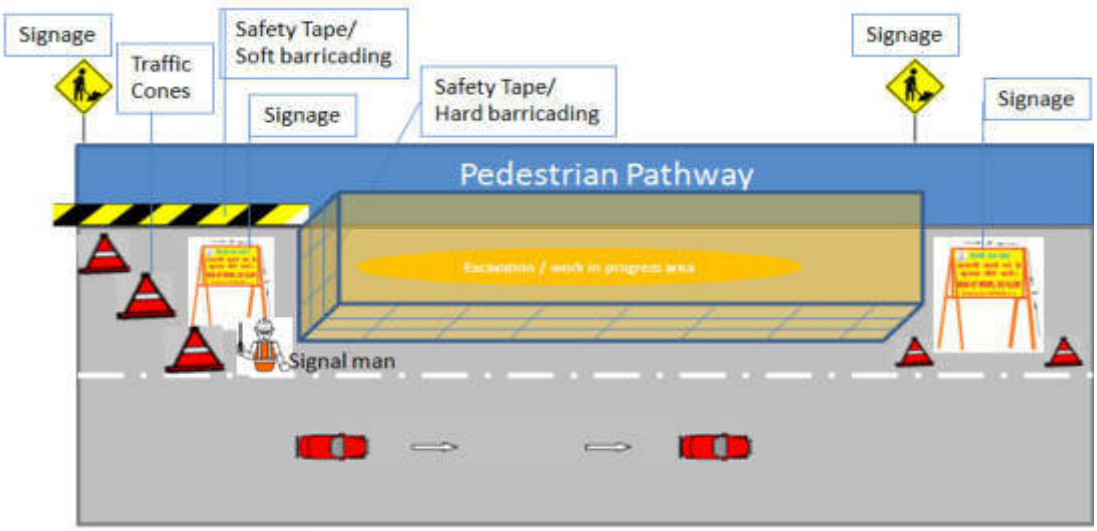


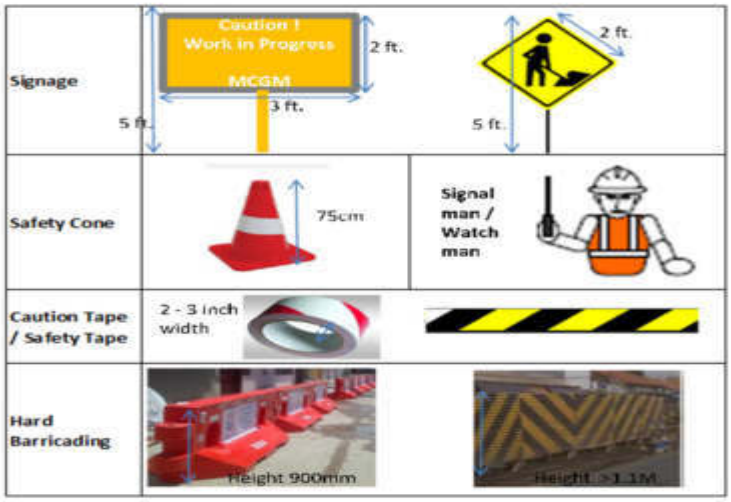
Following major risks are being identified and rules are being set-up for such works:

1. **Narrowing of roads or walkways may have potential risk of injuries and inconvenience to pedestrians:**
   - Ensure that pedestrian pathways are maintained free from obstacles.
   - Display signage to caution pedestrians.

- Barricade the excavated or work in progress areas prior to start of work.
- Keep watch on the area to maintain safe conditions all the time.

The SPPL / subcontractor has **obligation to signalize & barricade every single work** in order to prevent any incident to pedestrians or surrounding communities.
In general, if the walking space is less than 1 mtr. in Width (depending on pedestrian flow), or there is insufficient space left for fixing the barricading board, pedestrian movement can be blocked / diverted after obtain permission from concern authority.
Storage of loose materials or construction materials / machines should not be done on walkways. This may require continuous clearing of waste / unwanted materials from work areas.





2. Partial blocking of a traffic lane of road may cause potential risk of collision of vehicles resulting to serious injuries and inconvenience to commuters:

Blocking of a traffic lane to be planned and controls to defined and implemented prior to start of job. This may require permission from authorities and:

- Diversion of traffic to minimize bottle neck and impact on traffic load
- Placing hard barricades & safety cones to contain risks arising out of work in progress area
- Placing signage, caution notices & signals (lighting lamps / rotary lamps) for public and vehicles keeping day and night in mind
- Deputing a dedicated man as watch man / signaling man to guide traffic

The supervisor of works shall ensure that the signalization / safety signage, barricade of works are in place prior the start and during works.
All workmen including watch man / security guard to be inducted for hazards and associated risks and Do's & Don's instructions to be followed by each one of them.
Additional soft barricading to be provided for visual impact and better controls.
Continuous vigil to be kept to rectify and improve the controls as and when required.

Do's and **Don'ts** for an employee working beside busy roads.

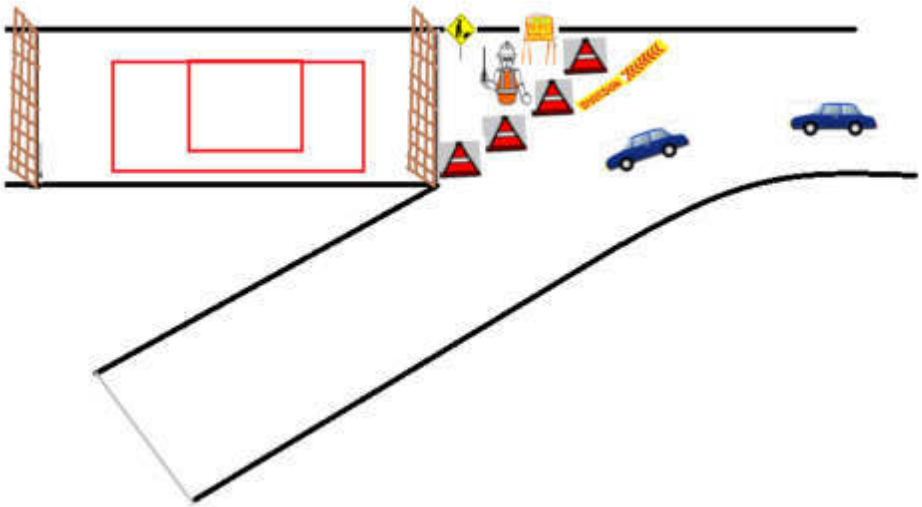
Sl.	Do's	Don't
1	Wear reflective vest, helmet and safety shoes for high visibility and protection from injuries.	Do not remove your PPE's while working on site
2	Stay out of path of moving vehicles, plant or equipment	Do not approach to traffic / roads or un-barricaded areas without permission
3	Follow traffic signals of police and watch man deputed on site	Do not take shortcuts or do not avoid dedicated paths
4	Ensure all machines & materials are placed safely.	Do not keep machines or materials etc. on pathways or outside the barricaded areas
5	Enter trenches only when appropriate wall support is in place	Do not enter deep trenches unless you are authorized by your supervisor
6	Be vigilant to your surroundings. In case you notice any abnormal conditions,	Do not ignore instructions given to you or danger noticed by you
	- Inform your supervisor - Alert your co-workers	- Do not put yourself or your co-workers in danger

3. Complete Closure of a road may cause potential risk of traffic congestion, and inconvenience to commuters and trespassing of vehicles resulting to serious injuries:

There may be situations where work plan requires complete closure of a road. In such cases good traffic planning and organization of work is desired even if it is planned in lean traffic timings.

- Diversion of traffic to minimize bottle neck and traffic congestion
- Complete closure of road / pathways using hard barricading & safety cones to contain risks arising out of work in progress area
- Placing direction signage, red light, caution notices & signals (lighting lamps / rotary lamps) for public and vehicles keeping day and night in mind
- Deputing a dedicated watch man / signaling man to guide traffic

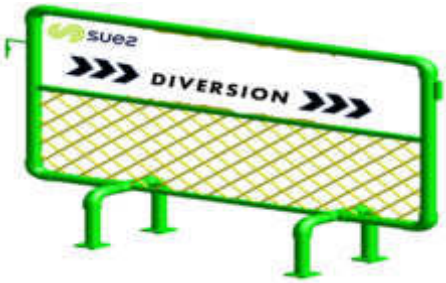
Manager of works along with subcontractor & Safety officer to inspect prior to start of works and review the situation periodically.
Supervisor of works to inspect the area every day before starting and at end of day's work or during recess to ensure no unsafe condition is left behind. There may be chance that barricading boards are temporarily removed or any materials / machines are left unattended in public places posing risk of trespassing or injury to general public.
Watchman to be dedicatedly deputed to guide traffic and keep control on unauthorized entries.



Road Diversion for complete closure

Description of Signalization/ safety signage, barricade:

Specification must be in accordance to EN / IS standards especially for standard color & high visibility. Ensure robust make and reputed manufactures for the same.

NO	DESCRIPTION	SPECIFICATION	PICTURE
1	MEN AT WORK, GO SLOW 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	
2	WORK IN PROGRESS 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	
3	DIVERSION 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	

4	CAUTION SAFETY TAPE	Material: Plastic Color: Red and white stripes	
5	TRAFFIC CONES	Height: 75cm Material: Rubber Base With reflection bar	
6	BARRIERS	Barricading block Interlocking wall effect, 90 degree turning radius <u>For wide road> 2000mm</u> Length- 2000mm Width- 600 mm Height- 900mm <u>For narrow street < 2000mm</u> Length- 1000mm Widgth- 300 mm Hieght- 800mm (low width barricades are acceptable for narrow spaces) GI sheet barricading as per requirement (min. two sheet width)	 

7	ROTARY LAMP (Must for traffic block / diversion)	Color: Yellow Rotating motor use motor system Environment friendly: no UV, IR, lead or mercury.	
8	BARRICADE LAMP (Must for barricade along running traffic and additional for traffic blocking / diversion)	Color: Red/ Orange	
9	STICK LAMP (Must for traffic controller / security man / Signaling man)	Color: Red/Orange	 
10	LIGHTING LAMP	Super Bright White LEDS	

4. IDENTIFYING HAZARDS, ASSOCIATED RISKS & DEFINING CONTROLS

4.1 HSE Management Plan

4.2 IDENTIFICATION OF DANGERS AND CONTROLS OF RISK

Considering all activities with respect to road works hazards and risks are identified and necessary control measures are suggested as below.

IDENTIFICATION OF DANGERS AND CONTROLS OF RISK			
ACTIVITY	**POTENTIAL HAZARDS**	**ASSOCIATED RISKS**	**CONTROL MEASURES**
Travelling by company car	Traffic hazards (Vehicle speed, condition and compliance)	Injury to driver or traveling employee due to hit / collision of vehicle	Fasten your seat belt while driving / traveling by vehicle
			Check condition of vehicle daily - by driver & periodic joint inspection of vehicles by H&S and Admin. Managers
			Install speed governor to limit speed to 60 KMPH & Follow speed limits
			Park the vehicle in designated areas
			Follow traffic signages and safety instructions given by H&S
Travelling by company motor cycle / Bicycle	Traffic hazard (vehicle speed, condition and compliance)	Injury to rider or travelling employees due to hit / collision of vehicles	Crash Helmet is mandatory for rider & pillion rider in case of motor cycle and Bicycle helmet & reflective vest is mandatory in case of Bicycle.
			Check condition of motor cycle before riding, periodic joint inspection by H&S and Admin
			Do not overspeed
			Follow traffic signs
Walking / visual surveying on	Vehicular Traffic	Traffic - Hit or over-run by vehicle	Use pedestrian pathways, plan your activity in case it is mid of the road.

the streets / roads			Use of PPE's - Safety helmet, Shoes, Reflective vest/jacket is mandatory
			Depute a signaling man with baton (light) to keep watch / control on traffic when working in group
Working on the road	Movement of vehicles pedestrians	Damage injury to general public	Display a sign board " CAUTION - WORK IN PROGRESS" with client logo
			Barricade the area using hard barricading boards.
			Depute a signaling man with baton (light) to control traffic, maintain barricades & control on movement of workmen working on job site
			Keep a vehicle standby and maintain first aid box, drinking water in the vehicle
Excavation work on road	Underground utilities, fall of person / vehicle in to the depth, collapse of soil / edges	Injury to person / damage to vehicles	Check for underground utilities before start of excavation and ensure to locate electric cables / other underground utilities and accordingly define safe work procedures.
			Barricade & signpost the area using hard barricading (1 meter away from edges) & depute a signaling man to guide the traffic, alert the workmen and maintain barricades
			Keep sufficient slope for protection against soil collapse
			Supervisor to inspect work location before start of works each day & periodically and ensure that area is not left unsecured, provide lighting during night

			Activity to start with work permit issued by concern engineer / manager.
Welding & grinding operation	Electric hazards, radiation - eye, rotating part - grinder, flying chips	Electric shock, Injury to eye, hand and other body parts	Use suitable welding machine and electric power source to avoid open connections / cables etc.
			Welder and his helper must use welding glass (Filter No. 12 or suitable), Leather hand gloves, apron and shoes
			Grinding technician must use suitable machine (rpm of wheel must be compatible to machine and wheel guard in place) leather hand gloves, shoes, eye protectors & ear plugs
			Welding inside the rooms, flammable areas, confined spaces to follow specific procedure for addressing specific risk controls.
Storage of materials beside the road	Blocking pedestrian pathways, roads causing restriction to circulation	Injuries / damages to pedestrians, restriction to vehicle movement	In case the activity requires any storage of material / machines on site: Limit the storage duration and qty., Barricade the material / machines & have visible signage to caution passerby, keep pathways clear
Emergency situation on site	Various hazards	human injuries	Prepare emergency response plan for various scenarios (such as Electrocution, damage to gas pipeline, vehicle collision, vehicle hitting worker etc) and display / place it inside the site vehicles
			Identify & tie-up with hospital nearby work location / areas

			Train Engineers, supervisors & other staff on site & practice it (Communication of serious incident and response of driver, supervisor and co-workers)
			List certified first aiders with each crew / team

Above IDCR (IDENTIFICATION OF DANGERS AND CONTROLS OF RISK) exercise gives few basic controls which need to be implemented in almost all project activities. As a result, 10 basic rules/checkpoints for implementation and enforcement are listed below in the form of checklist from risk prevention & control point of view.

Actual Risk assessment as per the Suez procedure to be performed at site covering all activities.

4.3 Evaluation of Performance of Subcontractors

Evaluation of performance of subcontractors - All		Week / Date: Note: Refer AP for details								
Contract:										
Sl. No.	Check points	Subcontractors / Partner / Services								
0 = No compliance: the requirement is almost imperceptible on site. **1 = Little compliance**: the requirement is most of the time not respected on site **2 = Partial compliance**: the requirement is most of the time respected on site but non-compliances were seen. **3 = Full compliance**: the requirement is strictly respected on site. No cases of non-compliances were seen										
1	**PPE**: The personnel wear their PPE (basic and work specific). The PPE are in good condition.									
2	**Tools/Equipment:** The tools and equipment used are in good condition (collective protection available, no hazardous wear and tear)									
3	**Housekeeping**: debris, scraps and other wastes are removed from the work place. Tools and equipment are properly stored.									

4	**Supervision**: A supervisor from the subcontractor is on site. He is active and reacts to abnormal situations.									
5	**TBT**: Tool-Box-Talks are organized at least once a week									
6	**Work permits**: They are available on site where the job is taking place.									
7	**Barricading:** work in progress areas are barricaded, signage is available & a signal man is deputed.									
8	**Lifting**: Loads are not lifted over persons and the workers do not position themselves under a suspended load. Necessary documents are available with lifting machine & operator.									
9	**Driving**: site vehicle driving rules are respected (speed, seat belt, stoppage/parking, authorized use, etc.)									
10	**Excavations**: excavated areas are barricaded, signage is available and the access is limited to authorized personnel.									
11	**Planning:** Check for underground utilities before start of excavation and ensure to locate electric cables / other underground utilities and accordingly define safe work procedures.									

5. RISKS IN EXCAVATION AND SAFETY PRECAUTIONS:

Excavation work is unavoidable for repairs and laying of new pipes.

Excavation work may pose various following hazards and related risks:

- Collapse of trench / excavation walls
- Unstable mobile equipment very close to excavated edges / uneven surface
- Contact with electrical power lines
- Breaking of pipes / underground utilities in service
- Injuries caused by the fall of an object
- Falling, from heights or otherwise
- Confined spaces - contaminated soil causing microbial infection

Different type of soils will have different bearing capacity and safe angle of repose will vary as per the bearing capacity i.e. stability of soil. While working on busy road / areas there is no possibility of maintaining safe angle of repose (slope) and therefore as a thumb rule, soil support is a must for excavation deeper than 1.5M.

Following precautions and controls to be taken for excavation works and excavated areas.

Before Start:

Plan the activity in advance and inform to all concerns (authorities / employees) to take necessary steps for minimum disturbance and impact to general public and traffic.

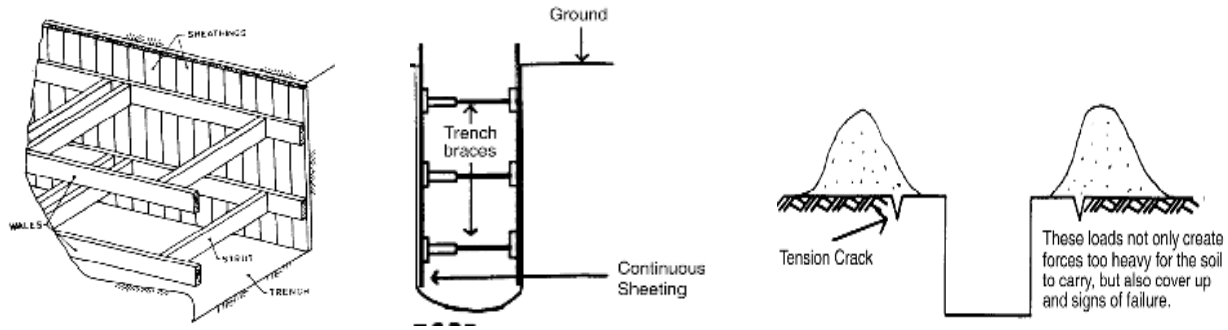
- Barricade all sides of the trenches
- Red danger lights for easy visibility from dusk to dawn at an internal of 15-20 m and at all the road crossings.
- Traffic signals and display boards giving direction for diversion of traffic at the appropriate places.
- Locate ground utilities & isolate them for avoiding interference with our activities Use cable and pipe locating tools, detector, and transmitter receiver instruments.
- Depute signaling man / security man for round the clock watch and ward for maintaining all safety regulations at the site of work and protecting the site from unauthorized intrusions.

During Works:

- In case of deep excavation, store excavated soil / spoil at least 1.5M away from edges.
- Support the soil from possible collapse by providing suitable benching, sloping or shoring.
- Shoring plates to be supported using trench braces at equidistance throughout the trench depth & length.
- Stop unauthorized entry to trench and maintain safe conditions surrounding trenches.

After the work:

- Ensure that area is leveled and restored to normal after completion of work.
- Inspect the area during recess / work intervals and periodically during the day.



Soil support to be provided as per the IS-3764 or OHSAS excavation standard

Avoid over loading of edges due to spoil / equipment

Other precautions while working in excavated areas:

- Where a road or footpath is to be kept opened up in the course of work, special care shall be taken to see that proper protection is provided to prevent any accidents from occurring. Work shall be done in such a manner that it will not unduly inconvenience pedestrians or occupants of building or obstruct road traffic
- Care shall be taken to see that apparatus, tools or other excavating implements are not left in a dangerous or insecure position as to fall or be knocked into the trench thereby injuring any workmen who may be working inside the trench.
- The flags and lams shall be placed in conspicuous position so as to indicate the pedestrians and drivers of vehicles the full extent, i.e. both width and length of the obstruction.
- Where any excavation is not clearly visible for a distance of 25 meters to traffic approaching from any direction or any part of the carriage way of the road, a warning notice shall be placed on the curb of all such roads to make excavated area well visible. Such warning shall be placed at a distance of 25 meters from the excavated area or at least 10 meters from the junction of an entering of intersecting road with in the road in which the excavation exists.
- All warning, in these cases shall be clearly visible and legible. All warning lamps shall exhibit a red light, but white lights may be used in addition to facilitate working at night. Wherever required a passage for pedestrians with foot bridge shall be provided. At excavation tools and all materials likely to offer obstruction shall be properly folded round and protected.
- In case there is any damage to underground gas pipes:
- Evacuate the area, keep everyone clear of leaking area.
- Enforce no smoking and no naked lights.
- Inform immediately SPPL authorized person & service provider company and follow instruction given to you

- Remember do not put yourself in to danger situation and also to others

Disposal of Debris:

Due to excavation on existing roads the debris will be generated and that waste to be disposed-off with due permission from client in environment friendly way. The debris should not be accumulated on roads causing inconvenience to public and shall be disposed on regular intervals.

These debris shall be dumped in approved debris disposal sites. Debris shall be collected in trucks and covered with dust nets and transported to the approved disposal site.

Avoid disposal of debris in or near water bodies / rivers / residential areas / forest areas.

6. FIRE PREVENTION & CONTROL

Basically, fire is a chemical reaction. Whenever fire occurs there is combustion or burning, in other words, oxidation of substance accompanied by heat, light and smoke. Three things are necessary for fire to occur Fuel, Heat and Oxygen. The danger of fire is greater during the period of construction than it is after the completion. To eliminate the causes of fire, it is important to locate how and where fire starts. The maximum frequency of fire cause is Electrical. There are various other causes like Smoking, Hot work etc.

Suitable quantity of fire extinguishers shall be maintained for each class as per the fire potential.

CLASS A FIRES - Wood, Textiles and paper.

CLASS B FIRES - Oil, petroleum, solvents, grease paint & the like.

CLASS C FIRES - Gaseous substance under pressure.

CLASS D FIRES - Reactive chemicals, active metals and the like.

All extinguishers provided at site shall be inspected periodically and maintained in good condition all the time.

7. PROCEDURE IN CASE OF ACCIDENT:

In the event of an incident/accident occurring on site, the SPPL / subcontractor shall provide first aid assistance and ensure transportation to a near hospital if necessary. Same shall be informed immediately to Project Manager SPPL & HSE officer by Phone & then the event shall record and report in writing in the prescribed form by the concern manager/ engineer/ subcontractor's representative to SPPL Project Manager and HSE officer within 24 hours.

Reporting of all kind of incidents is necessary to find root causes and avoid recurrence of similar incidents. This is not to develop blame game but to improve upon workplace conditions and minimize unsafe situations having potential to cause accidents.

The subcontractor has the obligation to report any accident by completing the Accident / Incident Notification Form enclosed below.

BU: **BA:** **SITE:** **DATE:** **TIME:**

1 - NATURE OF THE INCIDENT:

HUMAN	ENVIRONMENT	INDUSTRIAL SAFETY
☐ WORK ACCIDENT	☐ POLLUTION WATER ☐ AIR ☐ SOIL ☐	☐ TOXIC DISCHARGE AIR ☐ WATER ☐ SOIL ☐
☐ COMMUTING ACCIDENT	☐ WASTE	☐ EXPLOSION OF GAS ☐ OF DUST ☐
☐ NEAR MISS	☐ NUISANCE NOISE ☐ OLFACTORY ☐	☐ FIRE ☐ OTHER:

ACTUAL SEVERITY OF INCIDENT: ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

POTENTIAL SEVERITY OF INCIDENT ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

RELATED TO A LIFE-SAVING RULE?

INJURED PERSON:	WITNESS: ☐ YES ☐ NO	AUTHOR:
LAST NAME / FIRST NAME:	LAST NAME / FIRST NAME:	LAST NAME/ FIRST NAME:
POSITION:	POSITION:	POSITION:
COMPANY:	COMPANY:	DATE OF REPORT:
☐ Employee ☐ Temp	☐ Employee ☐ Temp	HIERARCHY NOTIFIED DATE: AT:
☐ Sub-contractor:	☐ Sub-contractor:	
☐ Third party:	☐ Third party:	

2 - DESCRIPTION OF THE INCIDENT

What happened (Who?, When?, What?, Where?, How?, estimated quantity?, affected people, duration?):

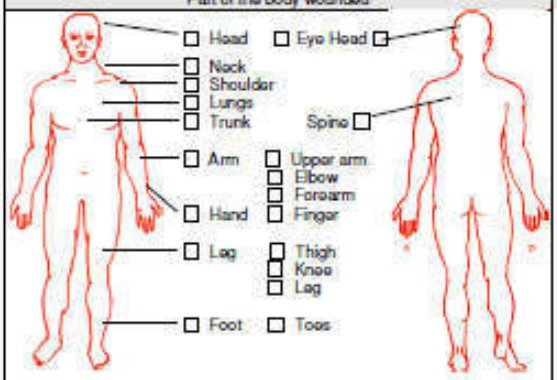
1- **Before** the incident (description of the situation prior to the incident : work done, *process conditions, etc*):

2- **At the time** of the incident (accidental event):

3- **After** the incident (what was done: *removal of a persistent danger, rescue of the victim, first corrective actions, etc*):

3 – ACTUAL CONSEQUENCES OF THE INCIDENT:

Part of the body wounded



Type of injury	Equipment / Process / Environmental damages
☐ Death	Type:
☐ Lumbago	
☐ Traumatism	
☐ Crushing	
☐ Contusion	
☐ Muscle tear	
☐ Sprain/dislocation	
☐ Fracture	
☐ Abrasion	Cost (if knows):
☐ Cut	
☐ Bite	
☐ Sting	
☐ Burn	
☐ Visual problems	Other:
☐ Auditory problems	
☐ Intoxication	
☐ Asphyxiation	
☐ Other:	

4 - FIRST ACTIONS TAKEN:

CARE:	CONFINEMENT:	ALERT:
First aid given: Yes ☐ No ☐	Confinement of a zone: Yes ☐ No ☐	Triggering of an alert: Yes ☐ No ☐
Victim transported to:	Name of the zone:	Client contacted: Yes ☐ No ☐
Local nurse ☐ Doctor ☐ Hospital/Clinic ☐	External means contacted: Yes ☐ No ☐	Administration contacted: Yes ☐ No ☐
Time off work: Yes ☐ Until:	Type of actions considered:	
No ☐		
Adapted assignment proposed: Yes ☐ No ☐		
Accepted by employee: Yes ☐ No ☐		

5 - ILLUSTRATIONS

Photos, diagrams illustrating the incident location, the material involved, the human, environmental or industrial damages

8. SAFE MEANS OF ACCESS & SCAFFOLD / WORKING PLATFORMS:

Adequate safety measures of access and exit shall be provided at all elevations using suitable means as per standards.

Suitable scaffoldings, ladders and platforms shall be provided for working at height more than 1.5 meter from the ground. Timber bamboo scaffoldings shall not be used.

Every scaffold and every component thereof is of adequate construction, made of sound material and free from defects and is safe for the purposes for which it is intended for use. All metal scaffold used in construction work conform to the relevant national standards.

All scaffoldings shall be examined by the competent person before use and stairways platforms etc. shall be suitably guarded.

The platform shall not project beyond the end support and ladders used as approach shall not be more than 8 meters in length. The upper end of the ladder shall be 1 meter above platform.

Scaffolding shall be properly designed and erected, with its intended use in mind. All hazards involved with the erection or dismantling shall be identified at the planning stage and the appropriate safety precautions taken. Proximity to live electrical equipment or interface problems may need to be considered. SPPL / subcontractor shall take all precautions to prevent any accidental collapse of scaffolding or fall of persons from scaffolding. SPPL / subcontractor shall ensure that scaffolding erection, dismantling and repairs should be done under the expert supervision. The scaffolding shall meet the required strength and other requirements for the purpose for which the scaffold is erected.

9. CONFINED SPACE WORK AND PRECATIONS:

Major Hazards and associated risks: -

- Asphyxiation due to lack of oxygen in air.
- Intoxication due to presence and inhalation of toxic gases.
- Fire /explosion due to presence of flammable gases and contact with ignition source
- Slip / fall and injuries due to physical hazards
- Electrocution and injuries due to electricity and machines

No person shall be required or allowed to enter any chamber, tank, vat, pit, pipe, flue or other confined space in any worksite in which any gas, fume, vapour or dust or other physical hazard is likely to be present to such an extent as to involve risk to persons being overcome thereby, unless it is provided with a man entry of adequate size i.e safe / effective means of access / egress.

No person shall be required or allowed to enter any confined space referred above, until all practicable measures have been taken to remove any gas, fume, vapour or dust and physical hazards which may be present so as to bring its level within the permissible limits and to prevent any ingress of such gas, fume, vapour or dust and unless: -

A) a certificate in writing has been given by a competent person, based on a test of confined space atmosphere is carried out by himself that the space is reasonably free from dangerous gas, fume, vapour or dust; or

B) such person is wearing suitable breathing apparatus and a belt securely attached to a rope the free end of which is held by a person outside the confined space or as appropriate

A dedicated signaling man should be placed near entrance with means to raise the alarm in case of any emergency & follow the intervention procedure specifically prepared for the activity after risk assessment.

All personnel working in confined space shall be adequately trained & medically fit for executing the job.

The SPPL / subcontractor shall ensure adequate ventilation / explosion proof lighting (24V hand lamp) in the work place.

Always perform risk assessment and use work permit, LOTO of all energies.

10. LIFTING MACHINES / TOOLS & TACKLES:

Major hazards and associated risks: -
Improper lifting (arrangements / methods) or failure of lifting devices resulting in fall of materials and consequential injuries to person and/or damage to materials
The SPPL / subcontractor shall ensure all the lifting appliances, tools & tackles including cranes etc. are in good condition, examined & certified by competent person before use and afterwards once in a year according to Section 29 of The Factories Act 1948.

- Copy of third party certificates to be submitted to SPPL before use / furnished on demand.
- SWL of all lifting appliances to be marked on it. Do not use lifting tools to lift loads access to it’s SWL.
- Method of use of a sling, chain pulley block etc. can reduce it’s SWL considerably when used at higher than recommended angle or in different position / use.
- Never stand below load being lifted. Barricade the area as far as practically possible.

11. WORKING AT HEIGHTS:

Major hazards and associated risks: -
Fall of person or materials from height and consequential injuries to person and/or damage to materials

Working at above 1 meter of height to be considered as height work and all safety precautions to be taken to avoid fall of workers from height.

Person working at height shall have: -

- Working platform with access and handrails
- Full body harness with anchoring point

All working platforms, walk ways etc. shall be maintained free from accumulations of debris or any other material causing obstructions and tripping / falling.

Every opening at elevation from ground level through which a person, material, equipment etc. may fall at a construction work shall be covered and or guarded suitably by the SPPL / subcontractor to prevent such falls.

12. WELDING AND GAS CUTTING:

Major hazards and associated risks: -

- Electric shock, Burn injuries, Fire / explosion
- Arc eye due to UV exposure
- Exposure to toxic fumes
- Operation shall be done by authorized persons only after issue of work permit.
- Remove flammable materials from surrounding area before start of welding / cutting / hot work.
- Gas cylinder in use shall be kept upright on a custom-built stand or trolley fitted with a bracket to accommodate the hoses & equipment or otherwise secured. The metal cap shall be kept in place to protect the valve when the cylinder is not connected for use.
- Hose clamp or clip shall be used to connect hoses firmly in both sides of cylinders and torches. Use of makeshift arrangements in place of clamp e.g. wires etc. to be strictly avoided.
- All gas cylinders shall be fixed with pressure regulator & dial gauge.
- Non-return valve & flashback arrestor shall be fixed at both the end of cylinder & torch.
- Domestic LPG cylinder shall not be used for gas welding & cutting purpose.
- DCP or CO2 type fire extinguisher not less than 5 kg shall be fixed at or near to welding process zone in an easily accessible location. Fire extinguisher should confirm to local standards.
- Use firewatchers if there is a possibility of ignition unobserved by the operator.
- Oxygen cylinder and flammable gas cylinders shall be stored separately.

13. FENCING OF ROTATING / DANGER PARTS OF A MACHINE:

Major hazards and associated risks: -

- Abrasion, puncture, cut injuries due to contact of body part with machine part in motion
- Electric shock
- Entanglement of lose cloth / caught in between

Rotating / reciprocating / transverse movement for cutting, punching, bending or other operations may have above potential risks. All machines should be placed safely and Dangerous parts of machines to be suitably guarded all the time. SPPL / Subcontractor shall ensure at a worksite that:

- All chains & friction gearing, dangerous & moving parts of machinery are securely fenced / guarded.
- The fencing of dangerous parts of machinery shall not be removed while such machinery is in motion or in use.
- Machine parts are cleaned when such machine is stopped.
- When a machine is stopped for servicing or repairs, adequate measures (Lock out/ tag out) should be adopted to ensure that such machine does not re-start inadvertently.
- After servicing machine guard shall be reinstalled immediately.

14. HAND TOOLS:

14.1. General

Trained manpower shall be engaged and periodically inducted to avoid accidents relating to hand tools. Accidents arising out of hand tools can be attributed to any one of the following reasons:

- Using the wrong tools.
- Using tools, which are in poor condition.
- Using the tool in a wrong way.
- Keeping tools in unsafe places.

If the above four conditions are taken care of, we can eliminate all the hand tool accidents. Also, concern engineer / supervisor must train all operators time to time.

SPPL / Subcontractors / users must carry out inspection of all machines and tools being used on site on monthly basis. Records of such inspections must be visible to identify that tool / machine is in sound condition and can be used. Defective tools shall be removed from the site.

14.2. Using the Wrong Tools

The weight, size and type of tool should be selected to suit the job being carried out. Using pliers or wrenches as hammers, using screw drivers as pinch or chisels, using double end spanners in place of ring spanners, using pipe wrenches as spanners area a few examples of using wrong tools.

14.3. Using Tools in Poor Condition

Tools provided with wooden handle should always be used with the handles intact. The handles should be tightened with wedges whenever necessary. Split or broken handles should be replaced immediately. Pipes or rods shall not be used as handles.

Sharp tools improve accuracy and are safer than dull tools. Accumulated dirt or grease should be wiped off immediately to avoid slippage. Shovel and pick handles should be free from splinters, splits and cracks. Insulated and non-conducting tools should be tested frequently for their electrical resistance. Mushroomed chisel is a serious source of hazard.

14.4. Using Tools in Wrong Ways

Wrenches should always be placed on nuts with the jaw opening facing the direction in which the wrench is to be rotated. Wrenches should not be pushed but be pulled.

Chisels should be held with steady but relaxed grip. Chisels being struck by other should be held by tongs or other holding devices. Always chip away from yourself and protect others by screening. Use goggles while chipping.

While using screwdriver, the object should not be held in hand or thigh.

Blades of hacksaw should always point forward and the entire length of the blade should be using din the forward cutting stroke. The stroke should be steady and firm to avoid jumping of blade.

14.5. Keeping Tools in Work Places

Hand tools should not be allowed to lie on workbenches, scaffolding, etc. where from they can be tipped down. They should be stored properly after the work is over. Sharp tools like screwdriver, etc. Should not be kept in pockets. Hand tools shall not be held in hand while climbing up or down through a ladder. Tools should never be thrown up or down.

14.6. Jacks

Select jacks heavy enough to raise and hold the load safely. Jacks should rest on firm level foundation, adequate to support the load. Jack of same capacity and type should be used while using number of jacks. Simultaneously be sure that the jack does not tip and

is in line with the vertical movement of load. Wooden block should be given over the jack also to avoid metal to metal contact. Load must rest on firm packing before releasing the jack or before allowing persons to work below the raised load.

Inspect frequently and use only the proper grade and clean oil. It is advisable to shore up any load that must remain in a raised position for any length of time.

14.7. Portable Electric Tools

- Maintenance of electric tools should be systematic.
- Safety guards provided in the tools should not be tampered with.
- Gloves, safety shoes, goggles, etc. should be worn by the operator wherever necessary.
- Only experienced and authorized personnel should be permitted to operate power tools.
- For all electric power tools, a running earth must be maintained, and the supply cable should be handled very carefully.
- Electric supply should be disconnected before attempting any repairs or servicing. Even a change of wheel in the grinding machine requires the supply to be disconnected.

14.8. Drilling Machine

- A prick punch or pilot hole should always be provided to guide the drill bit.
- Suitable drill bit should be selected for the material being drilled.
- If bit is long enough to pass through the object, care should be taken to avoid damage or injury on the far side.
- If the object is small, it should be secured to prevent spinning.
- Care should be taken to prevent sleeves and other clothing from being wound around drill.

14.9. Portable Grinders

- HOOD GUARD provided in the machine should be maintained in place always.
- Wheels of proper rpm rating should be used. Date of expiry of wheels should always be checked before mounting. If in doubt, a tap test may be conducted to check for minor cracks and the machine be allowed to run under no load in a safe place for some time.
- The grinding wheel shall be stored and handled properly. It shall never be allowed to be dropped and stored in damp places.
- Mounting blotter should be used when provided in the machine the spindle nut should not be over tightened.
- Only experienced and skilled grinders shall be engaged.

- The grinding machine shall not be allowed to be kept on the ground when the wheel is in rotation.

14.10. Pneumatic Tools

- Air hoses of pneumatic tools should be protected against whipping. They should also be protected against damage by vehicles.
- The airline should be depressurized before opening any joint.
- Compressed air should not be directed against self or others. It should not be used for removing dirt from the clothes, etc.
- Air hoses taken over head or vertically should be sufficiently supported.

15. ELECTRICAL FACILITIES:

Major hazards and associated risks: -

- Electric shock, Burn injuries
- Fire / explosion
- Working on site and offices requires electricity for operating equipment and area lightings etc. Providing electricity often requires temporary arrangement which is more hazardous.
- Temporary electrical facilities to be provided with following minimum standards:
- All temporary distribution boxes must be robust and provided with rain protection & main switch to supply/cutoff power of DB.
- Each DB must have earthing of metallic parts, 30mA ELCB, rubber mat and lockable to avoid unauthorized working.
- Only authorized persons should be allowed to work with electricity.
- Display danger sign and provide physical barrier to prevent entry of unauthorized persons in electrical facility.
- Put numbering on each DB and inspect them periodically for safe and sound condition.
- Maintain minimum inventory of temporary boards with industrial cable and plug tops, power tools / machines required for their job.

Before start of works, the SPPL / subcontractor shall ascertain that all sources of electricity e.g. cables / wires / machines (underground / above ground) etc. are identified and isolated suitably to prevent mishap due to possible interference with planed activity in proposed working area.

The SPPL / subcontractor should ensure that all electrical installations at the construction work comply with the requirements of local electricity acts/rules & site rules.

The SPPL / subcontractor shall take all adequate measures to prevent any worker from coming into physical contact with any electrical equipment or apparatus, machines or live electrical circuits which may cause electrical hazards during the construction work. The subcontractor shall provide the sufficient ELCBs / RCCBs for all the portable equipment, electrical switchboards, distribution panel etc. to prevent electrical shocks.

The SPPL / subcontractor should ensure use of single/double insulated hand tools or low voltage i.e. 110 volts hand tools.

The SPPL / subcontractor should also ensure that all temporary electrical installations at the construction works are provided with **Earth Leakage Circuit Breakers**.

16. OVERHEAD ELECTRICAL POWER LINES:

Wooden goal post shall be erected under all overhead lines by keeping safe clearance distance subjected to the lines for avoiding any contacts by moving machinery. Safe clearance distance shall be confirmed by local electricity rules / authority.

17. HEAVY EQUIPMENT (Cranes, Excavators, Hydra, Bulldozers, etc.):

The SPPL / subcontractor shall provide heavy construction equipment in good condition, suitable for safe operation. All safety features shall be operating as fitted by the manufacturers e.g. reversing alarms, seat belts, limit switches etc.

- A valid vehicle fitness certificate/ operator license as per local legislation shall be produced by the subcontractor.

18. SCAFFOLDING:

For any work that cannot be done from ground level or from part of any permanent structure of from other available means of support, soundly constructed scaffoldings of adequate strength shall be used as a safe means of access. A scaffold or its components should be designed to support 4 times the maximum intended load. During erection and dismantling, neither the scaffolding components nor tools shall never be allowed to be thrown up or down. Slippery conditions on scaffolds must be eliminated as soon as they occur.

18.1. Wooden Scaffoldings

As far as possible, wooden scaffolding shall be avoided. However, when it is unavoidable following precautions shall be taken.

- Vertical poles of scaffoldings should not be more than two meters apart.
- Diagonal bracings should be provided at the level of each joint. The joints in scaffoldings being the weakest points should be inspected regularly and maintained

in proper condition. Diagonal bracings should be sufficient to prevent buckling of the scaffoldings due to wind pressure or side thrust.

- No welding or gas cutting work shall be carried out in above or near wooden scaffoldings. In addition, suitable firefighting provision (preferably water hose) shall be made available.
- A shuttering supervisor exclusively shall be placed to check, monitor and ensure that no failure occurs while pouring concrete.

18.2. Hanging Scaffolding / Swing Scaffolding / Continuous Scaffolding

- Chain, ropes or other lifting materials used for the suspension of scaffolding must be of adequate strength and of suitable tested quality. In any case, the rope shall not be less than 20 mm dia. The chain or rope used for suspension scaffold should be properly fastened to safe anchorage points and not to hand railing, etc.
- In continuous scaffolding, more than 2 persons should not stand. The scaffold must be inspected and tested every day before use.
- The working platform shall be sufficiently wide and provided with handrails of about 1 Meter height with one top rail, mid rail and toe board
- If the platform is long and provided with two lifting arrangements, lowering/ lifting of the scaffolding should be done simultaneously at both the ends. A safety rope shall be provided in addition to the main supporting rope.
- A tag tie should always be used to control the movement of the scaffolding.

18.3. Steel Scaffolding

- Before starting the scaffolding erection, the surface on which it has to be erected must be made firm and level.
- Once the surface is ready, sole plates have to be kept. It can be a timber sleeper or steel plate Sole plates should be long enough to hold at-least two vertical pipes and should extend 600 mm beyond the vertical pipes. Sole plates may be avoided in case if the scaffold is erected on a firm ground. (Ref Fig. 16.3 (i)).

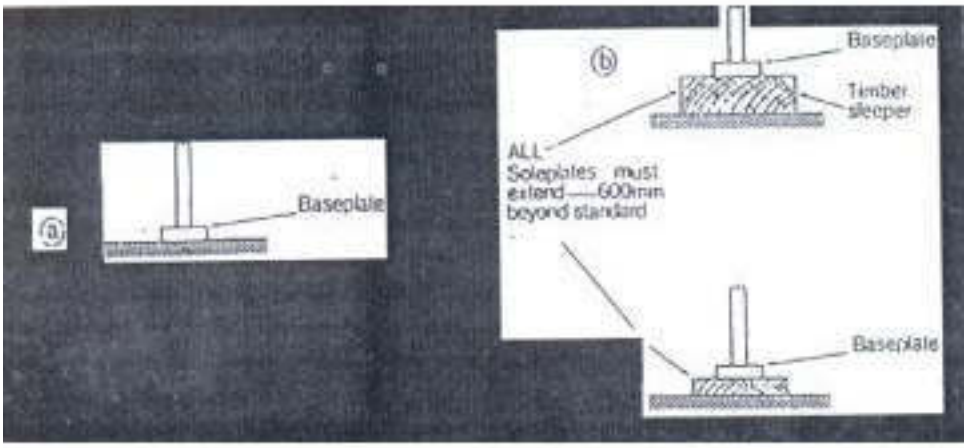


Fig. 16.3 (i)

- However, base plates are a must, irrespective of where the scaffolding is erected. It should be 200 x 200 x 10 mm steel plate. Sole plates and base plates support the entire load of the scaffolding. They distribute the load and prevent the scaffold from sinking.
- Vertical members should not be kept more than 3 M apart.
- Right angle coupler and swivel coupler used in the erection of scaffolding are tested for 1.2 tonnes without slipping (Fig. 16.3(ii)).

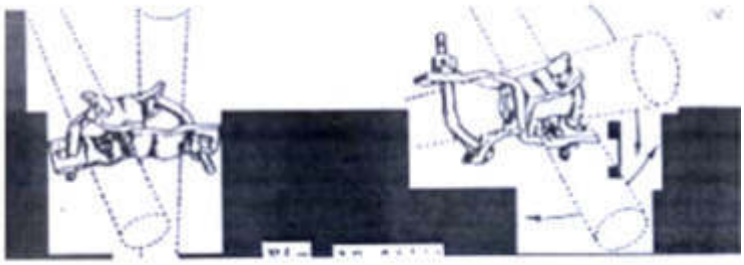


Fig. 16.3 (ii)

- Single bolt coupler can take only a load of 508 kgs without slipping. The putlog coupler can take only 129 kgs without slipping (Fig. 16.3(iii)).
- Joint pin connects the pipes internally. This can be used only to connect vertical pipes (Fig. 16.3(iv)).
- Sleeve couplers are fixed on the outside of two tubes to connect them. This can be used to connect vertical, horizontal and slanting pipes.

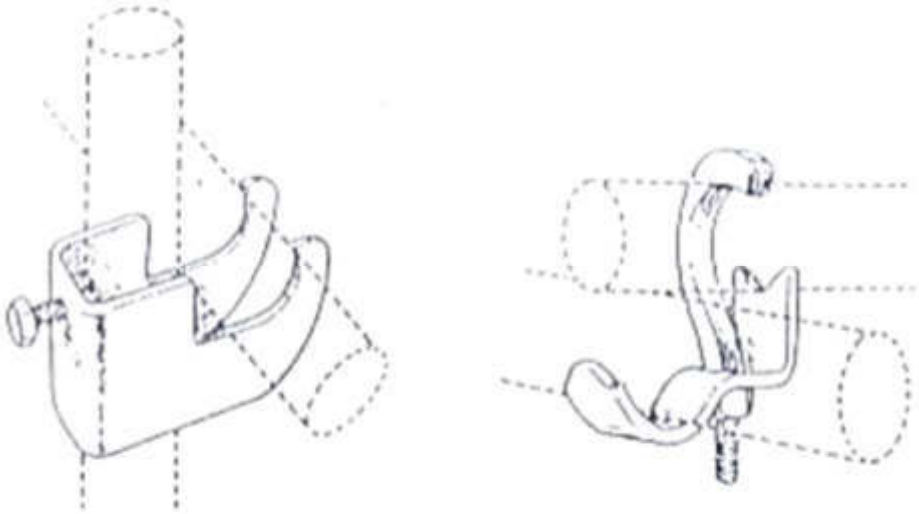


Fig. 16.3 (iii)

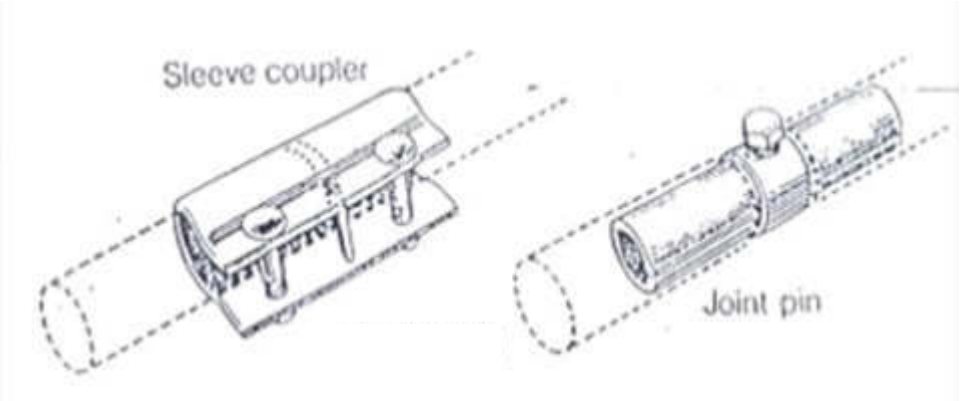


Fig. 16.3 (iv)

- DO NOT USE PIPES WHICH are (a) split along their length, (b) bent or kinked, (c) thin at the ends, (d) heavily pitted and (e) having badly cut or ragged ends.
- Do not use corroded or deformed couplers and make sure that the threads are in good condition.
- Allowable maximum span between support for:

a) 40 mm thick plank is 1.5 M and
b) 50 mm thick plank is 2.6 M.
c) Wooden jallies is 1.0 M.
d) Steel jallies is 1.5 M.

- The Overhang of a scaffold plank should be at least 50 mm but not more than 4 times the thickness of board.
- Knots or knot holes in the scaffolding board should not exceed 50 m in diameter across the edge. The board must not be split even partway. The grain should be reasonably straight.
- Dropping or throwing materials from the top and from bottom to top should not be entertained. A rope shall be used for that purpose.

18.4 Common Faults in Scaffolding

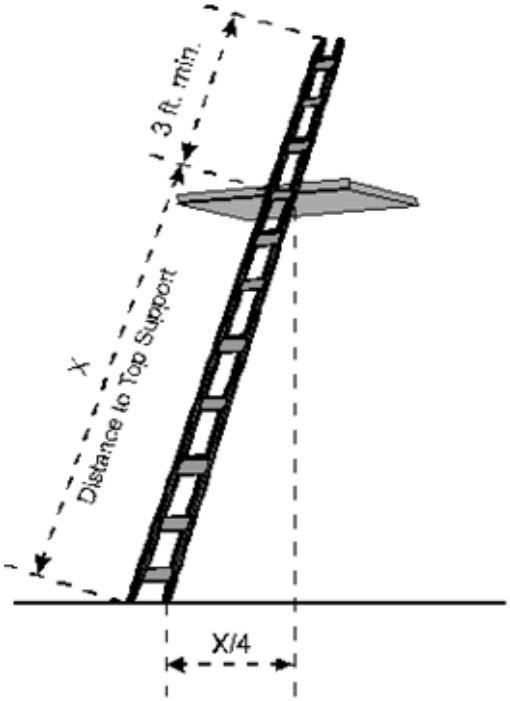
- Supporting of boards inadequate and therefore liable to tilt.
- Absence of toe-boards and guard rails where necessary.
- Faulty alterations made without approval.
- Erected on uneven ground.
- Supported by scaffold lashings instead of wire ropes.
- Couplers misused; use of putlog coupler where load bearing coupler to be used.
- Absence of ties where necessary.
- Foundations insecure.
- False supports, for example, drums, ladders, piles of brick etc.
- Outdated and damaged couplers.
- Lack of bracings.

- Defective boards, large knots, splits etc.
- Inadequate access.
- Not wide enough - three planks is normally the minimum.
- Gangways obstructed.

19. LADDERS:

The following practices should be observed when placing ladders:

- Place a ladder so that the horizontal distance from the base to the vertical plane of the support is approximately one fourth the ladder length between supports. For example, place a 4 M ladder so that the bottom is 1 M away from the object against which the top is leaning.
- Do not use ladder in a horizontal position as runways or as scaffolds. Single and extension ladder is designed for use in a nearly vertical position and not be used in horizontal position.
- Never place a ladder in front of a door that opens towards the ladder unless the door is locked, blocked or guarded.
- Place the ladder feet on a substantial, firm and level base, and not on any other objects, like barrels, wooden boxes etc.
- When using a ladder for access to high places, securely lash or otherwise fasten the ladder to prevent its slipping.
- Secure both bottom and top to prevent displacement when using a ladder for access to a scaffold.
- Extend the ladder side rails at least 1 meter above the top landing.
- Do not use a metal ladder close to live electric wiring or any operational piping like acid, gas, etc. which could be damaged.
- While ascending or descending, the user shall face the ladder, sue both hands and place his feet near the ends of the rungs rather than the middle. Be sure the shoes are not greasy, muddy or slippery before ascending or descending.
- Extension ladder should be sufficiently propped.



- All ladders of vertical height more than 10 meters hall is provided with an intermediate landing with guard rail, mid rail and toe board.
- No portable single ladder should be over 6 meters in length.
- Ladders should not be hung from brackets, as it tends to pull out the rungs.

Landing - Tie-up the ladder with this.

Aisle - Do not place ladders blocking this.

Doors - Do not keep ladders against this.

Descend - Do not ascend or descend with some materials in the hands.

Elec. Equip. - Do not use metal ladders to work in this.

Rungs - Do not have make shift methods, in case this breaks.

20. DEMOLITION:

- Before any demolition work is commenced and also during progress of work the following safety precautions are to be taken:
- A definite demolition procedure shall be worked out after studying the entire structure and followed strictly throughout the demolition work.

- All the roads and open areas adjacent to the work site shall be protected and caution Boards / Danger sign in local language, Hindi English shall be displayed at prominent places. Unauthorized entry to the building under demolition shall be effectively controlled.
- No electric cables or apparatus, which is liable to be a source of danger, shall remain electrically charged. Water and gas connections, if any, have to be removed, but a separate water source must be available nearby for quenching operations.
- Glass panels of doors and windows are to be removed first.
- When only a portion of a structure is to be demolished adequate props should be provided to prevent damage to the remaining portion due to shock and vibrations. Shoring of other buildings may be necessary when the demolition operation exposes or breaches and adjoining wall.
- Debris shall not allow to be thrown from heights. Remove all debris promptly, using chutes or through internal holes. Try to minimize production of dust, by watering.
- Permit no employee to work below others.
- Safety appliances like safety belt, goggles, foot protection, gloves, etc. should be used, wherever necessary.
- Use only proper and tested tackles while lowering heavy materials.
- The cages, hoists, tackles should not be overloaded.
- Before demolishing buildings with over hangs, chajjas, etc. they should be properly supported and demolished first before demolishing superstructure of the buildings.
- The work should be carried out under strict supervision of a responsible supervisor. Only one man who is well experienced should give signal.
- All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.
- While breaking roof slabs, workmen should not be allowed to sit on the same floor. A separate platform with independent supports shall be used for the demolition purpose.
- Walls should not be left in an unstable condition where they may be toppled by wind or other force. Walls may need temporary support unless designed to be free standing.

21. PROTECTION FROM EXCESSIVE NOISE:

The SPPL / subcontractor shall take adequate measures to protect the workers against the harmful effect of excessive noise. The noise should not exceed the limit prescribed under the local regulation.

- Provide engineering controls and PPE's to reduce noise as far as practically possible.

22. PLANT & EQUIPMENT

22.1. General

In this section of "Plant & Equipment" the accident preventive measures to be followed for all Diesel/Petrol engines and Light/Heavy Vehicles, in general, have been covered in two separate sub-sections. These procedures and practices are applicable for all plants and equipment, which have engines or are treated as vehicles.

The specific safety measures for any particular plant or equipment has been further elaborated and detailed in the relevant equipment items subsequently.

22.2. Hydraulic Excavators / Power Shovels

- Trained and authorized persons should operate.
- Warning boards should be displayed where excavation is going on. Put barricades around the excavated area. "KEEP AWAY" from the "SWING AREA"
- Before starting movement of the machine check the inside, outside and down side of the machine.
- Never grab joysticks or other control levers while getting on/off the machine.
- During operation, do not read, drink or eat. Do not divert your attention away from the attachment / control board
- Never swing the load over persons.
- Never allow anyone to ride in the machine.
- Never try to operate the machine except from the seat of the operator as the machine may go out of control.
- Do not load a dumper / truck unless the driver is in a safe location.
- Working in the vicinity of electrical lines, contact the electrical department before beginning excavation.
- Treat all power lines as energized even when it is known that the power is shut off and the line is grounded.
- Always maintain more than the minimum specified clearance between the machine and the power lines, employ a qualified or experienced signalman, if required.
- Slow down the operation cycles when operating in the vicinity of power lines.
- Remember death can occur in case of an accident caused due to electric shock from the energized power line.
- Never exceed the lifting capacity of the machine.
- Keep the machine away from the edge of an excavation. Avoid cutting under the machine.
- Operating on a slope is risky.
- Heavy items to be lifted by a hydraulic excavator should be hung from the designated lifting point. Never exceed the specified lifting values as shown in the chart. Failure of the bucket/ sling can occur even if the wire ropes used for the boom suspension as well as for the shovel / bucket shall be of the specified diameter.

- Always use the proper equipment for the job to be undertaken.
- While moving on a road, travel with the headlights on even in the day light. While taking a turn allow for boom overhand and other structural clearance if any. Watch for boom clearance while travelling.
- Be careful while parking the machine. Do not park the machine where there is a possibility of the ground caving-in or at low-lying areas where the rainwater might accumulate.
- The attachment is held in position by the trapped hydraulic oil in a cylinder or a motor when the machine is not working (Hydrostatic locking). If there is any leakage of hydraulic oil, the attachment might come down suddenly endangering anyone or anything who/which may be below the attachment. Make sure that attachment is firmly resting on the ground.
- Power shovels / Excavators shall be so operated as not to endanger their stability.
- Power shovels that are equipped with unit for deep digging shall either be so designed that the bucket teeth should not come nearer the under-carriage more than 40 cm or be provided with reliable stop that prevents the bucket to come nearer than the specified distance.
- The boom shall not be pulled tight against the emergency stops while supporting a load.
- The bucket or grab of the shovel shall be pulled out of the bank as soon as it is full. When not in use, the bucket shall be kept resting on stable ground and shall not be left hanging.
- The bucket or grab of a power shovel shall be fixed to restrict movement while it is being repaired.
- While operating near edge of excavations or embankment substantial space shall be provided to prevent it from approaching a dangerous position and the sides of the excavation shall be adequately shored. Heavy equipment such as excavating machinery and road traffic shall be kept back from the excavated sides at a safe distance.
- The height of benches in overburden shall not be more than the height of the boom of the machine used for digging excavation of removal.

22.3. Tippers / Dumpers

- No unauthorized persons should operate the vehicle.
- Tipping system should be used only after positioning the vehicle for unloading (Tilt cylinder lever should not be tempered with).
- Rear view mirrors should be provided on both the sides of the cabin for reversing, loading or unloading of the vehicle.
- All tippers/ dumpers should be equipped with reverse horn.

22.4. Water Tankers (Truck Mounted Type)

- No unauthorized person should operate the vehicle.
- Rear view mirrors should be provided on the cabin on both the sides for reversing the vehicle.
- The vehicle should be placed on a firm ground for filling or emptying the tank.

22.5. Tractors

- No unauthorized persons should operate the vehicle.
- Tilting and lifting should be done only when required.
- Vehicles should be used for towing, levelling or ploughing purposes only.
- Workers should not be allowed to travel on a tractor.

22.6. Vibratory Compactors

- A trained operator should be allowed to run the machine.
- If the compactor is electrically operated, the wiring/ cables should be properly laid so that movement of the machine is not restricted.
- Electrically operated compactor must be earthed properly.

22.7. Vibratory Rollers / Road Rollers

- A trained/ Authorized person should operate the machine.
- Caution boards should be displayed at the site of work.
- In the vicinity of the weak structures, vibration should be minimized and to bed own with precautions.
- Vibration should not be continued while the roller is not in motion.

22.8. Tar Boiler

- Only trained person should be allowed to operate the equipment.
- Burner and the connections should be checked against blockade/ leakage.
- Equipment should be anchored properly before loading and firing.
- Fuel tank should always be kept at a distance from boiler.
- Never use petrol with diesel for burner firing.
- Exhaust pipes should be checked / inspected against blockade.
- Keep your hands and face away from the inspection hole while burner is in operation / started firing.

22.9. Pavement Breakers / Concrete Drills

- Safety goggles should be worn by the operator while working.

- All the pneumatic hose connections should be checked to detect any leakage, before starting the machine/tools.
- Whips to be provided with all compressed air hoses.
- Damaged hoses should be replaced immediately.

22.10. Pneumatic Compressor

- Compressor should be checked against any crack in the air receiver and pipe connection.
- Safety valves should be checked periodically for their effective functioning at the specified / set pressure.
- Pressure gauges should be checked regularly.
- Compressor should not be installed / placed near excavation pits / blasting area.
- Air hose ends should not be kept free to avoid whipping.
- No one should use compressed air to clean his dress or body. It should not be directed on others; no horseplay is allowed with compressed air.
- Supply of compressed air to pneumatic tools should be controlled by valves and connected with oil lubricator.
- Goggles should be used while the air compressor tools are in operation.

22.11. Concrete Batching and Mixing Plant

- Skip, weigh batcher and drum should be clearly visible to the operator in the cabin.
- Trained persons only should operate the plant.
- Weighing attachment should not be tampered with / nothing should fall on it.
- Mixing drum should be cleaned after completion of each and every delivery.
- Workmen should be kept away from the area of operation of scrapper unit.
- Plant should have proper earthing.
- Periodic inspections of wire ropes should be done.
- Overloading of the scrapper/ skip unit and drum should be avoided.
- Any unwarranted mechanical noise should be carefully probed into for corrective action.
- All operators and laborer for cement filling should use dust masks and helmets.

22.12. Transit Mixer

- Only trained/ valid license holding person should be allowed to operate the equipment.
- Rear view mirrors should be provided for reversing the vehicle.
- Mixing drum should be cleaned regularly.
- Inspection covers of the drum should be bolted properly.
- Water and air connections should be checked before operation.

22.13. Mixers

- All gears, chains and rollers of concrete mixer should be adequately guarded to prevent damage / danger.
- Concrete mixer hopper shall be protected by side railing to prevent workers from passing under them. Operators shall make sure before lowering the skip that the operational space is absolutely clear.
- Wire rope used for hopper hoisting has to be checked thoroughly and periodically.
- Hopper hoist and anchoring brake should be checked for proper functioning.
- Be sure that motor fan guard is secured.
- Be sure that wiring is properly connected and insulated.

22.14. Concrete Pump

- Only the trained persons should operate the equipment.
- The pipes, bends and the snap couplings should be checked against leakages/cracks.
- O-Ring with the proper size only should be used between the joints / connections.
- The equipment should be greased periodically.
- Slurry should be passed before pumping the concrete.
- Elephant hose should be held in position with the help of rope while discharging concrete.
- Electrical connections and earthing of the equipment should be properly done.
- Proper anchoring should be done between piping and equipment.

22.15. Concrete Vibrators

- Vibrating unit shall be completely enclosed and the belt transmitting power to the unit to be adequately guarded.
- Electrically operated compaction vibrators shall be totally enclosed and be protected against overloads by suitable overload relays and shall be effectively earthed.
- Be sure that the sufficient length of cable is provided to the vibrator.
- Ensure electric starters are fixed firmly on the stand.
- While needle is inserted in the vibrator, be sure that needle load is firmly locked.
- Be sure to lubricate inner core of needle.

22.16. Overhead Hazards

Overhead protection shall be provided at any location where there is a hazard of falling objects. This shall particularly be observed around any scaffolding and in excavation.

Goalposts (wooden) shall be erected under all overhead power lines with minimum safe clearance to prevent the arms or jibs of crane/plant from approaching such lines.

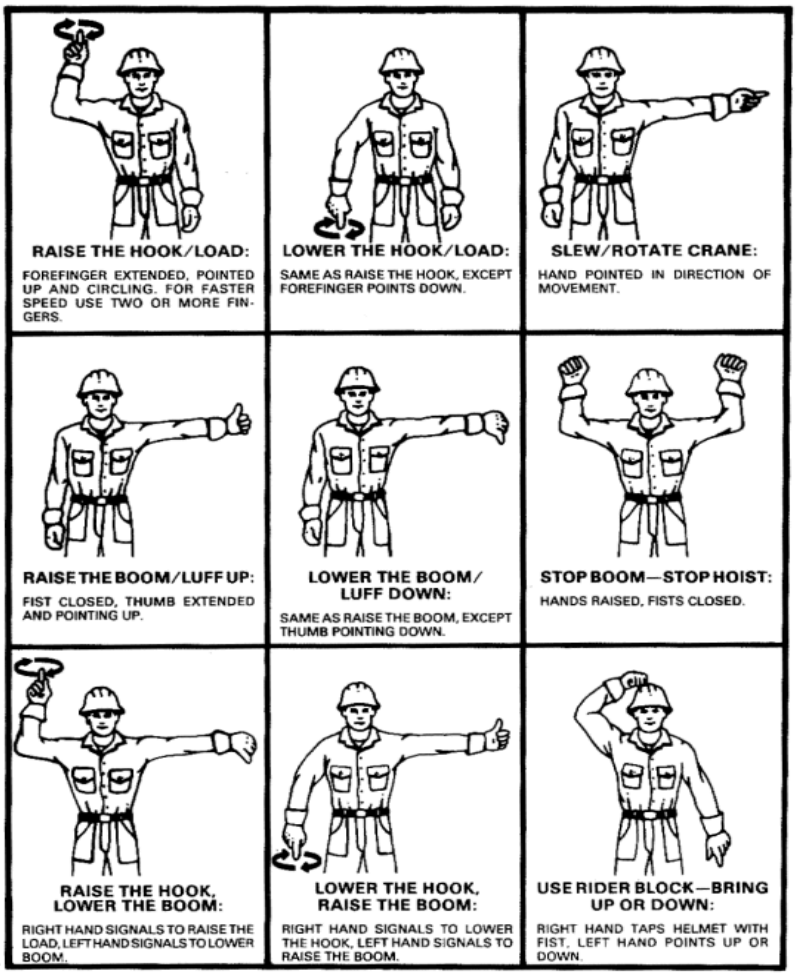
22.17. Cranes

All cranes must be tested and certified by competent authority and SWL of the crane shall be written on the crane. The capacity of the crane should be ascertained by user before use.

- Crane should never be overloaded.
- Crane should be operated by authorized person.
- Mobile cranes should be parked on hard soil or strong base. They should not be placed near the edge of the pit or excavation.
- Crane should be tested at least once in a year by competent person or according to local legislation requirement.
- Safe working load of any mobile crane depends on:
  - Operator's skill
  - Condition of the ground
  - Boom length
  - Radius of rotation and inclination of boom to the vertical while lifting the load
  - Out rigger blocked / free
- The safe working load is generally tabulated in the load chart of the crane. Sometimes cranes are de-rated due to the defects in welding, bend in angle, bracings and condition of clutch brake.
- Remember that the capacity of a crane is the total load hung from the hook including weight of hook, block, ropes, slings etc.
- Standard signaling code properly understood by the operator and trained signalman should be used. The crane operator shall respond to signals only from the appointed signaler but shall obey `stop' signal at any time no matter who gives it.
- Tag lines should be used while hoisting heavy and bulky materials.
- The brake, boom, hook, wire rope pulley and rope anchoring should be checked periodically by a maintenance person to ensure safe operation of a crane.
- The load being lifted should not touch the boom.
- The boom or any part of the crane should not come near any live electric line/ service line.
- Swinging of load should be done smoothly.
- Proper quality of packing should be used, and the outrigger should rest tightly on the packing placed on support.
- Nobody should stand below the boom or load.
- The operator should be positioned at high level to see the hook and load throughout the hoisting, swinging and unloading operation.
- During storm, the hook block should be anchored firmly and swing lock to be released.
- When an extended boom is used on the crane, the operator must use extreme care in lowering the load to the ground. An extended boom should never be lowered to

one side of the chassis as the stability of the crane is usually reduced at that position.

- During shifting the crane has to be crawled on a heavy timber mat in case soil does not have adequate bearing capacity.
- Any make shift methods to maximize utilization of crane such as blocking with timber or adding counter-weight, should not be permitted.
- In idle condition the crane operator should remove load from the hook and raise the hook block to a maximum height.
- The crane operator should keep the cabin deck free from any oil, mud and grease.
- Operator should always keep the windshield clear in order to have clear vision.
- Ensure at least two full winding of ropes always on the rope drum. After a boom extension, the hooks shall be lowered to the required lowest point to ensure that at least two dead coils remain on the drum and to the highest point to check that the drum capacity will not be exceeded.



22.18. Mobile Cranes

- Following precautions have to be taken while using tyre mounted mobile cranes in addition to the given above.
- When traveling up a gradient, the load shall be derrick out and when travelling down a gradient, the load shall be derrick into the minimum radius, and this position shall be corrected on reaching level ground. Otherwise, constant watch on the radius should be maintained while travelling on uneven surfaces.
- The mobile crane shall be fitted with suitable horn, headlights, and side lamps, rear and stoplights and flashing direction indicator.
- A cantilever type jib of crane when travelling without load should be lowered to a horizontal position.
- The pneumatic tires shall be maintained at the correct pressure at all times.

22.19. Chain Block/ Pull Lift

- Chain blocks of proper lifting capacity supported by Test Certificate should be used for lifting known loads.
- Chain block must be checked and tested periodically. It should be lubricated before every use.
- No cannibalizing should be done on chain block.
- Chain block should be tested against slip by suspending safe load.
- It should operate freely and the chain should not come out of pulleys.
- The anchorage should be strong and rigid.
- They should be check for cracks, excessive wearing, elongation, etc. Hook opened out should not be used.
- No chain block / puller which has been tampered, should be used unless it is thoroughly checked and tested by competent person.
- Chain block / pulley must be checked if stored for longer time, by subjecting to shock load to observe slipping of load, jamming of links etc.

22.20. Winches

- Safe working load with gearing arrangements should be marked on the winch and tested regularly by competent person.
- Winch should not be overloaded.
- It should be placed on a firm base and properly anchored.
- The brake, ratchet arrangement, gear and pinion including the meshing, wire rope and its clamping arrangements and direction of receiving rope drum / tie rods should be checked before using the winch.
- Ratchet arrangement should be kept in position while hoisting a load.
- Tie rod should be adjusted not to allow drum movement causing clutch arrangement to slip.

22.21. Bar Bending and Cutting Machines

- Only trained persons should be allowed to operate the equipment.
- Equipment should be grounded / earthed properly.
- Equipment should be placed on sound foundations for fixing properly.
- Bars used for cutting or bending should be of designated size as per manufacturer's catalogue of the machine.

22.22. D.G. Sets

- No unauthorized person should operate.
- Equipment should be mounted on foundation or on levelled ground with anti-vibrator pads.
- Equipment should be grounded / earthed properly as required.
- Ventilation should be proper. The exhaust piping should have less bends and no restrictions. Make and emission of DG sets shall be maintained as per the local standards.
- Safety devices should be checked / inspected before use / operation.

23. HOUSE KEEPING:

The SPPL / subcontractor shall maintain his work areas, site office and storage are clean and tidy.

- All cables shall be routed safely.
- Material storage at store or at erection site shall be done systematically at identified places only. In no condition the gangways, stairs or other work front can be disturbed by improper storage.
- After completion of work or end of day the subcontractor shall remove the surplus materials, scrap or debris generated during construction.

a) Stacking of materials:

The SPPL / subcontractor shall ensure, at a construction site that:

- All construction materials are stored or stacked in a safe and orderly manner to avoid obstruction of any vehicle movement, pedestrian etc.
- Material piles are stored or stacked in such a manner as to ensure stability
- Material or equipment is not stored upon any floor or platform in such quantity as to exceed its safe carrying capacity.

- Material or equipment is not stored or placed so close to any edge of a floor or platform as to endanger the safety of persons below or working in the vicinity.

b) Stacking of cement bags, pipes and other material:

The SPPL / subcontractor shall ensure, at a construction site that:

- A stack pile is not more than ten bags in height unless such stack pile is stacked in a suitable enclosure or otherwise adequately supported.
- While removing bags from the stack pile, the stability of such stack pile is ensued.
- Bags containing cement or lime are stored in dry places.
- The material like bricks, tiles or blocks are stored on a firm ground.
- Reinforcing steel is stored according to its shape, size and length, stack of reinforcing steel is kept as low as possible.
- No pipe is stored on rack or in stack where such pipe is likely to fall by rolling.
- The material or article are not stacked to such a height and in such a manner as would render the pile of such stack unstable and cause hazards to the workers or others.

24. DRINKING WATER:

The SPPL / subcontractor shall make in every place where construction work is in progress, effective arrangements to provide and maintain at suitable points conveniently situated for all person employed therein, a sufficient supply of wholesome drinking water.

25. RIGHT TO STOP WORK:

The SPPL Managers / Safety Officers /Engineers shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and / or property, and / or equipment. In such cases, the subcontractor shall be informed in writing about the nature of hazards and possible injury/ accident and he shall comply to remove shortcomings promptly. After taking all corrective measures subcontractor shall inform to the concerned authority for verification then only he can resume the stopped activity.

The subcontractor shall not be entitled for any damage/compensation for stoppage of work due to safety reasons and the period of such stoppage of work shall not be taken as an extension of time for completion of the facilities.

26. FAIR CULTURE

Fair Culture in H&S could be defined as a balanced approach in workplace which has three main pillars:

1. Encourage positive behavior:

Positive behaviors and ideas must be appreciated, motivated and recognized.

Therefore, employees leading with exemplary behavior, contributing feedback on safety and sharing good practices / innovative ideas must be recognized and rewarded.

2. Improve sharing:

Fair Culture policy allows errors and mistakes to be fearlessly reported and should be used as an opportunity for improvement. Safety culture where more sharing takes place is better culture because it's an open culture. In this case you not only identify the causes which are responsible for injuries / losses but also share them to alert others and prevent similar incidents to happen.

3. Do not tolerate the unacceptable behavior:

The third pillar of fair culture policy is "strict action against willful violations". To reprimand willful violations is part of service rule book of employees as per which willful violation are punishable to the level of responsibility of violator. This can even lead to termination of employment contract. Any breach of rule, violation of established procedure or norms is unacceptable to the organization.

27. STATUTORY PROVISION:

The SPPL / subcontractor shall comply with applicable Acts / Rules e.g. THE BUILDING AND OTHER CONSTRUCTION WORKERS (regulation of employment and conditions of service) ACT & RULES. & WORKMEN'S COMPENSATION ACT 1923.

28. PROCEDURE FOR COMMUNICATION OF SERIOUS INCIDENTS:

Following events to be considered as serious incidents:

- Accident resulting in fatalities or a life-threatening situation
- Serious injury
- Significant damage to property or the environment
- Significant security or safety issues
- Significant risk of liability to SPPL
- Major negative media impact
- Damage to the image of SPPL

Sl. No.	Communication	Responsibility
Communication at site level:		
1	Immediate communication to Site Manager / Safety officer and concerned subcontractor	Concerned Supervisor
2	Communication to clients	Site Manager
3	Communication with Hospitals/ Ambulance Room	Supervisor / Site Manager
4	Communication to local emergency services e.g. fire brigade etc.	Safety Officer / Supervisor
5	Communication to Project Director	Site / Project Manager
Communication to HO level:		
1	Communication to HSE manager	Project Manager / Director
2	Communication to CEO	HSE Manager / Project Director
3	Communication to local authorities and response agency	Project Director through client
4	Designated person for media contacts	Project director through client
5	Communication with families of the affected person if required	Project director through Client

29. EMERGENCY CONTACT NUMBERS

To be displayed in all site offices and work sites

SL	NAME OFFICE / AUTHORITY	CONTACT NO
IN CASE YOU SEE ANY DANGEROUS SITUATION OR ACCIDENT IN WORKSITE PLEASE INFORM TO:		
A	HSE MANAGER	74060 09720
B	SITE MANAGER	91487 01365
C	PROJECT MANAGER	91487 01365
D	PROJECT DIRECTOR	96321 51617
E	CONTRACTOR	TBD
F	CONTRACTOR	TBD
NUMBER OF AUTHORITIES FOR HELP IN CASE OF SERIOUS ACCIDENT		
1. NEAR BY POLICE STATIONS (Different Locations)		
A	Control Room	100
B	Police Station – City Police	0820 - 2520444
C		
2. NEAR BY HOSPITAL (Different Locations)		
A	Adarsha Hospital, Udupi	0820 – 2535289
B	Government Hospital, Hospital	0820 – 2536666
C	Ambulance	108
3. NEAR BY BLOODBANK		
A	Blood Bank, Udupi	0820 – 2520555
B	Blood Bank, KMC Manipal	0820 – 2922331
4. NEAR BY AMBULANCE SERVICE		
A	Control Room	102
B	Ambulance	108
5. FIRE BRIGADE		
A	Control Room	101
B	Fire Station	0820 – 2520333

30. HSE TRAININGS:

All employees to be inducted by concern manager / HSE manager before visiting site.

All employees including subcontractor employees to be inducted for site specific hazards and associated risks and safety rules to be observed during site work. Minimum hour training will be mandatory for Communicating HSE rules related to site. However, other specific topics e.g. Road Safety, Driving Safety, Safety in excavation work, first aid etc. can be giving in separate sessions to separate target groups as per the training needs identified.
HSE manager should keep record of all such trainings.

TRAINING ATTENDANCE SHEET

TRAINING PROGRAMME:

DATE: **TIME:** **CONDUCTED BY:**

Topic Covered:

- **Basic Trainings:** Induction to HSE mgmt., Project Familiarization, Construction Orientation, Environmental Awareness, Water, Air, Land Pollution, First Aid, Driving Safety/Road Transport, Hazard Spotting, PPE, Safe Working Practices, Manual Handling, Risk Assessment, Emergency Preparedness, Basic Fire Fighting, Permit to Work, Safe Handling of Chemicals
- **Skilled Workers:** ***Basic Training*** **+** Signs & Signals, Falls & Falling Objects, Electrical Hazards, Hand Tool Safety, Machinery Maintenance & Equipment Check, Spill Containment and Response.

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE-MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.				
2.				
3.				
4.				
5.				

31. MINIMUM STANDARDS FOR LABOR CAMPS:

Following minimum standards for labor camp to be maintained at site.

		Control H&S Risks and Environmental impact		CLLC-01
		MONTHLY CHECKLIST FOR LABOUR CAMPS		Rev. 1-Apr.2018
Contract:				
Subcontractor:				
Meaning of compliance levels: 0 = Unacceptable, 1 = Major corrections needed, 2 = Minor corrections needed, 3 = No corrective action needed				
		COMPLIANCE %	0.0	
Sl	**Check Points to ensure minimum safety, security & welfare standards at labour camp**		**Compliance Level (0,1,2,3)**	**Observations**
1	**General:**			
i	Isolation from active work site			
ii	Entry control, security & circulation			
iii	Cleanliness of common areas			
iv	Display of Life Saving Rules, Do's & Don'ts and emergency contact details			
2	**Living areas**			
i	Robust construction, space allotted (16ft x 12ft for 6 workmen, 192/6=32)			
ii	Individual mattress, bunk bed etc. facilities			
iii	Air circulation / fans / coolers			
iv	Cleanliness of living rooms			
3	**Housekeeping**			
i	Deployment of dedicated team for housekeeping			
ii	Availability of bins / skips in living and common areas			
iii	Disposal of waste on daily basis / Waste Mgmt.			
iv	Storage conditions - food stuffs and other items			
4	**Lightings**			
i	Dedicated feeder / panel / DB with ELCB for labour camp			
ii	Area lighting and lighting in living rooms			

iii	Condition of electrical cables & appliances		
iv	Periodic inspection by electrical engg. & H&S officer		
5	**Water & Sanitation**		
i	Maintaining drinking water facility in safe and clean condition (storage provision and availability of drinking water 20L/workmen)		
ii	Maintaining potable water facility for bathing (covered), washing of cloths etc. (Storage provision and availability of 50L/workmen)		
iii	Maintaining toilets in clean conditions (1 toilet for every 15 workmen / women separately)		
iv	Safe disposal of waste water & general cleanliness of area		
6	**Cooking & Canteen Facility**		
i	Maintain kitchen area in safe & clean condition		
ii	Cooking of food inside living rooms is prohibited		
iii	Maintain a reasonable eating space and canteen facility		
iv	Maintain arrangements for prevention and controls of fire		
7	**Health**		
i	Is there 6 monthly medical checkup camps		
ii	Does the doctor examines on communicable diseases?		
iii	Does the facility have arrangements for first and tieup with hospitals for nearby hopital for emergency medical cases.		
iv	Does there arrangements for insects, snakes etc. repellents		
8	**Other points**		
i	Common recreation facility at camp - Volleyball court / Carrom / Yoga		
ii	Weekly meetings between labour camp in charge and members (1 out of 25)		
iii	Maintaining following mandatory registers for record of: - workmen living in camp as per allotted living room number - Weekly / monthly control of camp - complain / suggestion register - health check-up records to avoid contagious etc. diseases		

	- record of kids with a dedicated care taker - fire extinguishers inspection record			
iv	Monthly joint inspection by labour camp in charge, H&S Manager, facility manager of subcontractor and SUEZ project manager / his representative			
	Signatures:			
	Labour Camp Sup.		Facility Mgr (Sub)	
	H&S Manager		Project Mgr.	

32. SITE VEHICLES:

Instructions for Drivers:

Drivers must have valid driving license, training and adequate experience. Following are vital aspects of good driving!

a. AWARENESS

- Know your vehicle
- Know the road conditions
- Mentally prepare yourself & avoid frustration
- Ensure statutory vehicle documents are available with you.

b. ANTICIPATION

- Plan for unexpected/others' unsafe acts
- Adjust speed for road condition/construction
- Observe surroundings e.g. schools, parks, walkways, etc.
- Always wear your seat belt before starting your car for your own safety. Also ask persons accompanying you to wear seat belt.
- Signal your intention to change lanes/turn
- Always obey & respect traffic signals.
- Jumping red light signal endangers your safety as well as safety of other road users
- Always adhere to the prescribed speed limits while driving.
- Slow down while approaching roundabouts, road crossing, speed breakers etc. and negotiate them safely.
- Don't indulge in zig-zag driving, wrong overtaking, improper lane changing etc.
- Don't mix drinking & driving.
- Drunken driving can prove fatal.
- Do not drive if you are under medication.

c. DRIVING AT NIGHT IS MORE DIFFICULT THAN DAY:

- Your Headlight illuminate only a portion of road.
- Have your headlights properly aimed. Misaimed headlights blind other drivers and reduce your ability to see the road.
- SLOW DOWN WHEN DRIVING AT NIGHT !!!!
- Keep safe distance.

d. BACKING / REVERSING RULES:

As far as possible avoid reversing; if vehicle must reverse then Signal the reverse light. Avoid reversing over long distance.

• If possible, get someone as reversing assistant; ask the person to stand at safe & visible place.
• Always look over your shoulders & check mirrors all time
• Keep one foot on brake Pedal
• Reverse Slowly
• Be careful of small children who may wander behind your vehicle.
• Follow and respect Traffic Signs.

Vehicle Inspection Checklist:

Vehicle must be inspected monthly with reference to the following checklist and compliance must be ensured.

	SUEZ PROJECTS PVT. LTD.	No.: SPPL/CBE/VL-01 Rev.: 0 Date: APR. – 2018

VEHICLE INSPECTION CHECKLIST

S N	VEHICLE REG. NUMBER	DATE	MIRRORS	HEAD LIGHTS	INDICATORS		REVERSE LIGHT	BRAKE LIGHT	HORN	SEAT BELT		FIRST AID BOX	FIRE EXTINGUISHER	VEHICLE DOCUMENTS				TYRE CONDITION	BRAKES	DRIVER'S NAME / SIGNATURE	REMARKS
					FRONT	REAR				FRONT	REAR			DRIVER LICENSE VALID UP TO	INSURANCE VALID UP TO	REGISTRATION CERTIFICATE	FITNESS CERTIFICATE				

33. INSTRUCTIONS FOR VISITORS:

- All cars to be parked in the designated parking area
- Firearms, weapon and consumption of alcohol is forbidden inside the work site.
- Be accompanied with company representative during site visit and follow his instructions during your visit.
- Please follow all safety instructions, signs and signals posted at site.
- Please be aware of hazards on site e.g. Traffic on the road, temporary accesses, deep tanks, excavated areas, Temporary electrical wires, tools, sharp objects, overhead hazards etc.
- Please be cautious, check the traffic on both the sides and then cross the road only when it is safe to do so.
- Keep away from work in progress and barricaded areas.
- Visitors are not allowed to climb any temporarily erected structure, enter electrical, chemical, chlorine, ATEX facility or any deep tanks / excavated areas without specific authorization of SPPL site manager.
- Specific risks related to this site will be communicated to you preferably on hazard map.
- Walk; don't run except in case of emergency.
- Don't touch any tools, equipment or objects without permission
- First aid kit is available at various locations in site & office.
- Please use bins for disposal of waste.
- Do not assume, if in doubt please ask.
- Please ask for **Risk Information Report (RIR)** forms, available in this site office. SPPL gives you (all stakeholders) right & opportunity.

To remove yourself from danger and notify potential risk or unsafe conditions you might encounter during your site visit.

To contribute your suggestions for improvement.

Instructions to be followed in case of emergency

- Emergency situation may arise due to any potential risk present on site.
- In case of emergency, assemble at nearest assembly point (in front of office / main gate)
- Seek help from company representative with you and wait for instructions of site manager.
- You can also call company site emergency coordinators on following numbers.

HSE Manager / Project Manager

PLEASE COOPERATE WITH US; WE WANT YOU TO REACH HOME SAFELY

I assure you that I have understood all the above instructions given to me by SPPL representative
and I will follow them during my site visit.

VISITOR'S NAME: DATE & TIME:

SIGNATURE:

APPENDIX 36: TRAFFIC MANAGEMENT PLAN-KUNDAPURA

Appendix – 47

TRAFFIC MANAGEMENT PLAN

PROJECT: 24X7 WSS PROJECT KUNDAPURA

ContractNo: 02KDP01

PROGRAM: KUNDAPURA TRAFFIC MANAGEMENT PLAN

EMPLOYER: KARNATAKA URBAN INFRASTRUCTURE

DEVELOPMENT AND FINANCE COPORATION (KUIDFC)

CONTRACTOR: - LAXMI CIVIL ENGINEERING SERVICES PVT. LTD.

Preparedby

LAXMI CIVIL ENGINEERING SERVICES .PVT.LTD

LOCATION(Kundapura)

TrafficDiversion:Kundapura Old bustand to shashtri circle
Basrur to M kodi and Halekote to kodi (harebhajan temple)

1.0	**PURPOSE**
	Toprovidea clearandsimplywordedproceduretobeunderstoodbymost employeesonpreventinginjurytopersonsanddamagetopropertyarisingfrom sitetrafficandsitetransport.
2.0	**SCOPE**
	TheprocedureisapplicabletoLCESPLsitesandother areas
3.0	**RESPONSIBILITY**
	Itistheresponsibility oftheProjectInchargeandDepartment Headtoimplement this procedureandensure Thatdelegatedstaffundertheirsupervisioncarriesitout.
4.0	**DEFINITIONS**
	Project Incharge:Personresponsiblefortheexecutionoftheproject.
5.0	**LEGALREQUIREMENT**
	TheBuildingandOtherConstructionWorkers(Regulations ofEmployment and Conditions ofService) Act1996 andCentral Rule1998Rule48,88and95, MotorVehicleAct1988
6.0	**REQUIREMENTS**
6.1	General
	• All road works create inconvenience and are apotential hazard to the safetyofallroadusersandthoseemployedincarryingoutthework. • All the effects should be mitigated or reduced to the minimum, and to ensurethattheworksareproperlyguarded,lightedandsigned. • Aclearandearlywarning ofanyobstruction toallroadusersshouldbe provided. • All areas where work is going on should be clearly demarcatedby barricading and entry into these areas should be restricted to only authorizedpersonnel.
6.2	Planningstage
	• The client and DSC's Engineer should be consulted as regards the execution of theworks and the safety measures which would beputin place. • Particularattentionshouldbegivento: ○ trafficsigns; ○ cones; ○ barriers; ○ roadhazardwarninglights;

	○ informationboards;and ○ sitelighting • Consider necessity oftrafficcontrol systems suchastemporary Stop/Go boards. • Accessshouldbeplannedtoeliminatedangerousmovementsofsitetraffic (e.g. reversing of vehicles) and personnel (e.g. crossing dual carriageways). • Provisionofadequatelighting.
6.3	Onsite
	• Theworkingareaintheliveroad/footwayisdefined. • Theworkingspaceisdefined–thisincludes theareaofstorage oftools andequipmentandspacetomovearoundthejob. • Provision ofsafetyzone-itiskeptclearofallwork,materialstorage and peopleandisclearofworkingradiusofallplant.
6.4	**Operators/Drivers**
	• Experiencedoperatorsand driverswithvalidlicensedhasbeenappointed. • Onecopyof licensehasbeencollectedbySafetyDepartment.
6.5	**Equipment**
	• Drivers are made a daily inspection of their vehicles include steering, brakes,mirrors,lights,horn,tyresandwindshieldwipers. • Safety Department along with Plant department has been checking the vehiclesmonthlybasis • Allvehicleshavereversehornsanditisinworkingproperly. • Allvehicles,periodicalmaintenancehasconducted.
6.6	**Roads**
	Forsafeoperationwearefollowingthebellowsafetymeasure: • Safewidthhasbeenprovided. • Speedlimitisvariedasperthesite. • Safewalkwaywithproperguardhasbeenprovided. • Cautionboardhasbeenplacedineverylocationwithinthesite. • Duringnightalertlighthasbeenprovided. • ConductingToolboxtrainingasregularbasis. • Roadwillbeclosedwithproperpermission(ifrequired). • ReflectivetypeDiversionboardhasbeenplacedinrequiredplaces. • Roaddiversiondrawinghasbeensubmitted(Ref.Attacheddrawing)
6.7	**Loadingandunloading**
	• Onlyauthorizedpersonswereengageforloading/unloading. • Materialsloadedwithinthepermittedsafeweighlimitforthetruck, • Dimensionsofloadscarriedonavehicleinstrictaccordance withrelevant provisions. • Areflagisbeingusedatthereare extremityofanoverhangingload. • Duringthehoursofdarkness orinpoorvisibilityconditions, awhitelight showingaheadateachsideofthefrontextremityandaredlightshowing totherareextremityofthehangingloadarehasbeenprovided. • DuringToolboxtalkIntimationhasbeendeliveredtoalldrivers/operators thatwhenthedriverleavesthedrivingseat,theengineofthetruckshallbe switched off, thegear engaged and parking brakes applied. Onslopes, wheelblocksshallbeapplied. • Helperhasbeenprovidedwithallvehicles.

6.8

	WorkingArea The workingareaintheliveroad/footwayhasdefinedandbarricaded. The workingareahasbeenrestrictedfromunauthorizedentry. The workingspacehasbeendefined–thisincludesthearea ofstorageof toolstoolsandequipmentandspacetomovearoundthejob. Particularattentionhasbeentakeninworkingarea: trafficsigns; cones; barriers; roadhazardwarninglights; informationboards;and sitelighting Adequatelightinghasbeenprovided.

Figure 1: Aerial View of the Town Center of Kundapura

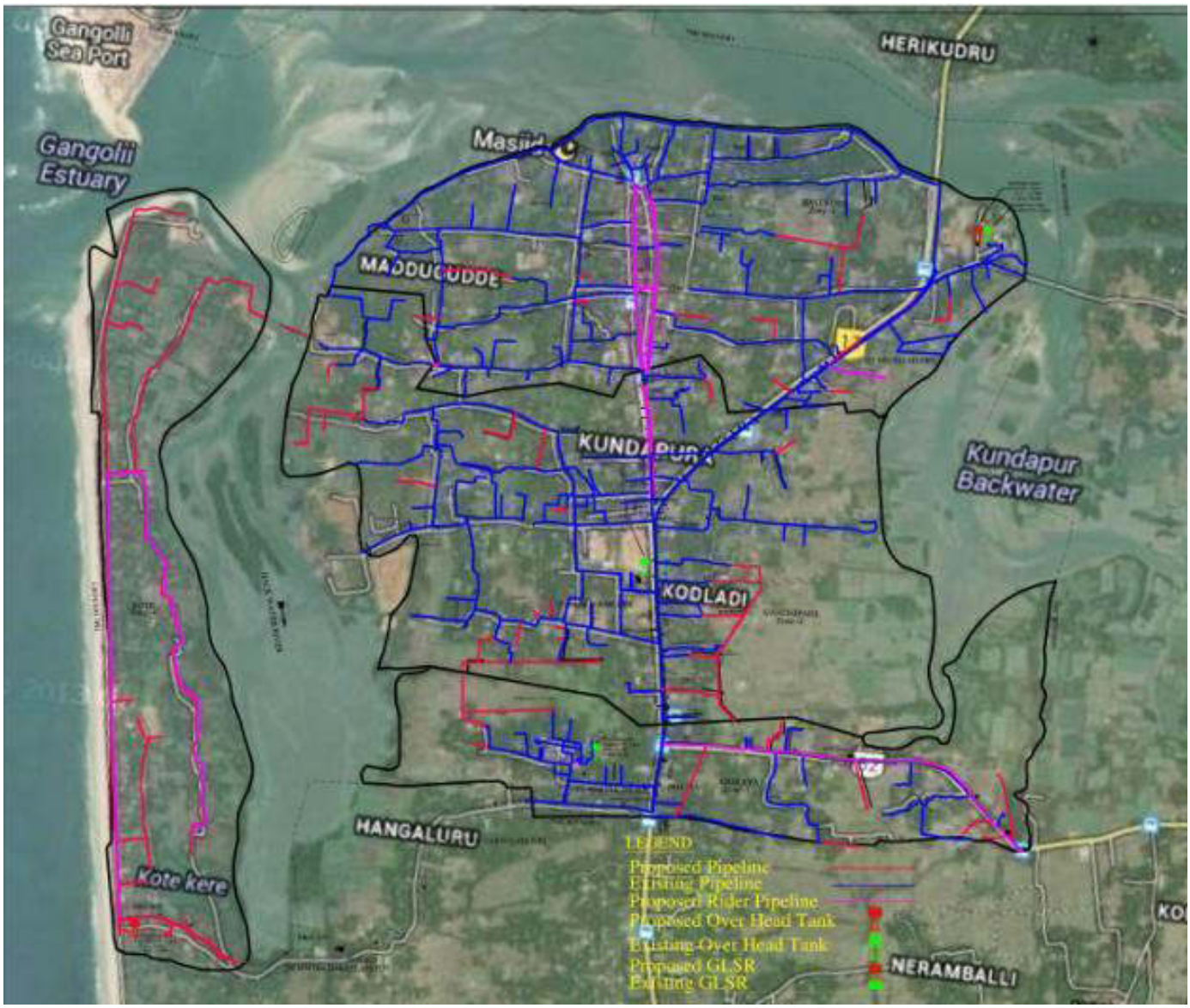


Figure 2: Figure 6: Distribution Mains Alignment

	
PROVIDING A SIGN BOARDS TO CONTROLL ALL PHYSICAL AND EROGNOMICAL ACCIDENTS AS PER IRC SP 55 SIGNS	TRAINING TO WORKERS IN TOPIC OF TRAFFFIC ACCIDENTS
	
FLAG MAN FOR A TRAFFIC SIGNALING AND CONTROLLING. TO AVOID EXCAVTOR MOVEMENT ACCIDENTS .	BARRICADING TO EXCAVATED AREA TO AVOID TRIP,SLIP,FALL ACCIDENTS

TrafficManagement Plan

Package: 24X7 WSS project Work

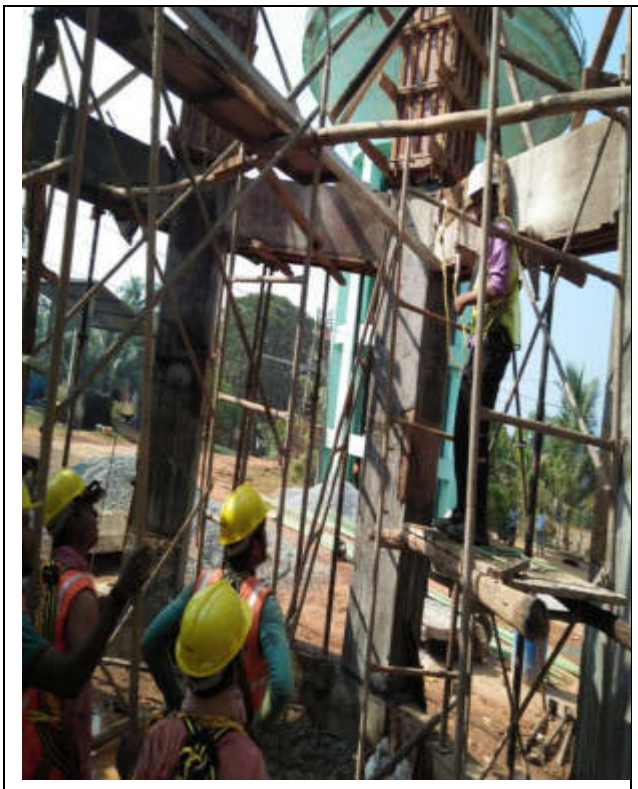
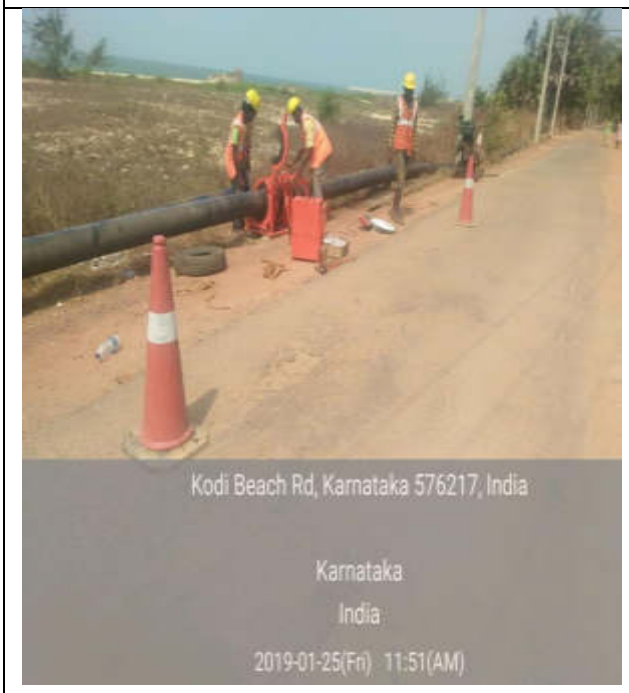
SAFETY &HEALTH OPERATION CONTROLPROCEDURES LOCATION:

KODI TO OLD BUSTAND ROAD

1.0	PURPOSE
	To provide a clear and simply worded procedure to be under stood by most employees on Preventing injury to persons and damage to property arising from site traffic and site transport.
2.0	SCOPE
	Over Head Tank and Pipe laying HDPE and DI pipes in Kundapura city .
3.0	RESPONSIBILITY
	Is the responsibility of the project In Charge and Depot Head to implement this procedure And ensure that delegated staff under their supervision carries it out.
4.0	Definitions
	Project In Charge :Person responsible for the execution of the project.
5.0	LEGALREQUIREMENT
	The Building and Other Construction Workers (Regulation of employment and Conditions Of Service)Act.1996 andCentralRule1998Rule48,88,and95,MotorVehicleAct1998.
6.0	REQUIREMENTS
6.1	General
	☒ All road works create inconvenience and area potential hazard to the safety of all Road users and those employed in carrying out the work. ☒ All the effects should be mitigated or 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 barricading and entry into these areas should be restricted to only authorize personnel.
6.2	Planning Stage
	☒ The client and Engineer should be consulted as regards the execution of The works and the safety measures which would be put in place. ☒ Particular attention should be given to: ✐Traffic signs; ✐Safety Cones ✐Road Barriers; ✐Road hazard warning lights; ✐Caution board and ✐Site lighting ☒ Considernecessaryoftrafficcontrolsystemssuchastemporarytrafficlightsor Stop/Go boards. ☒ Access should be planned to eliminate dangerous movements of site traffic and personnel. ☒ Provision of adequate lighting. ☒ All persons working on or near the road shall wear highly is visibility jackets or across belt.

6.3	OnSite
	☒ Theworkingareathe liveroad/footwayshallbedefined. ☒ Theworkingspaceshallbe defined–thisincludesthearea of storageof toolsand equipmentandspacetomovearoundthe job. ☒ Provisionof safetyzone–itshallbe keptclearofallwork,materialstorageandpeople and shallbe clearofworkingradiusof allplant.
6.4	Operators/Drivers
	✐Experiencedoperatorsanddriverswithvalidlicensedhasbeenappointed. ✐Onecopyiflicensehaswillbe collectedbysafetydepartment.
6.5	Equipment
	✐Driverswillbemadeadailyinspectionoftheirvehiclesincludesteering,brakes,mirrors, lights,horn,andwindshieldwipers,etc. ✐SafetyDepartmentalongwithplantdepartment willbecheckingthe vehiclesmonthly basis. ✐Allvehicleswillbereversehornandltis inworkingproperly. ✐Allvehicles,periodicalmaintenancewillbeconducted.
6.6	Roads
	Forsafeoperationweshallbefollowingthebelowsafetymeasure: ✐Safewidthshallbeprovided. ✐One-waytrafficroadswillbeused. ✐Speedlimitisnotgreaterthan15Km/hrwithinthe site. ✐Safewalkwaywithproperguardwillbeprovided. ✐Cautionboardhaswillbeprovided. ✐WorkersareworkingwithreflectedjacketsaswellasrequiredPPE's. ✐ConductingToolboxtrainingasregularbasis. ✐Roaddiversiondrawinghasbeensubmitted.
6.7	Loadingandunloading
	✐Onlyauthorizedpersonswereengageforloading/unloading. ✐Materialsloadedwithinthepermittedsafeweigh t limitforthetruck. ✐Dimensionsof loadscarriedon avehiclein strictaccordancewithrelevantprovisions. ✐DuringToolboxtalksintimationhasbeendeliveredtoalldrivers/operatorsthatwhenthe driverleavesthedrivingseat,theengineofthetruck shallbeswitchedoff,thegear engagedandparkingbrakesapplied.On slopes,wheelblocksshallbeapplied. ✐Helperhasbeenprovidedwithall vehicles.

	
Using Sign boards and traffic batrons , reflective cone for night road side works	Providing Barricades for Excavated Area in road side and any where to protect traffic.
	
Closing a Road/Diverting Traffic to another way .	Caution board for a safe movement

	
Conducting safety Training for a workers in the topic of WORK AT HIEGHT	**Conducting safety Training for a workers in the topic of WORK AT HIEGHT**
	
Providing a Reflective cones for road side work	Providing a Reflective cones for road side work

APPENDIX 37: TRAFFIC MANAGEMENT PLAN-PUTTUR

Suez Projects Private Limited

Traffic Management Plan

Project :- Construction Of Works and Services for Operation and Management of 24X7 Water Supply System for Puttur Town
Contract Package NO 02PTR 01

		Amruth Yedugani	Vishal Pattanshetti	Pramod Kumar B.K	For Approval
Rev.	Date	Prepared By	Checked By	Validated By	Submission Purpose
00				Pramod Kumar B.K	

Contents

1.0 OBJECTIVE

The 2 primary objective of temporary traffic control is to manage the traffic as efficiently and safely as possible under all work conditions and second objective is to lay down procedures to be adopted by field engineers to ensure the safe and efficient movement of traffic and also to ensure the safety of workers at site.

Traffic control aims to give adequate warning and clear information to motorists about the nature of works on site. This will translate into correct actions required in order to pass the work site safely. Traffic control shall also include measures to safeguard pedestrians when necessary. Proper traffic control also protects those who are directly involved in carrying out the works.

2.0 GUIDING PRINCIPLES

The guiding principles for safety in road construction zones are to:

i. Warn the road user clearly and sufficiently in advance

ii. Provide safe and clearly marking lanes for guiding road users

iii. Provide adequate measures that control driver behavior through construction zones.

3.0 PHASES OF TRAFFIC CONTROL

There are five phases of traffic control for major projects:

- **Planning Phase:** To identify and include traffic control requirements in the contract specification, work program & method of construction.

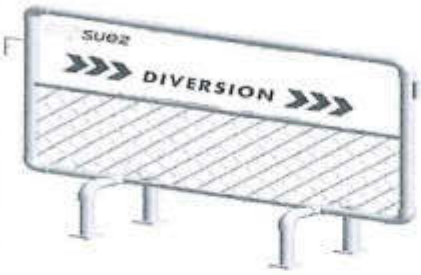
- **Design Phase**: To design the Traffic Control Plan in detail, with regards to types, location and layout of traffic control devices for submission to the authority for approval.

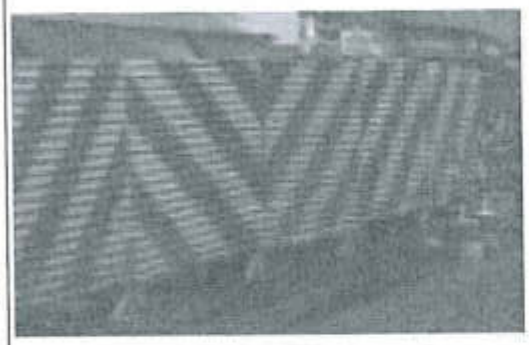
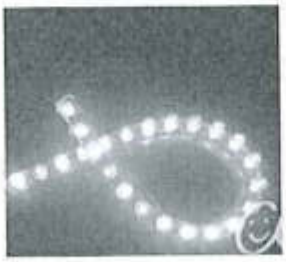
- **Implementation:** - To install the temporary traffic control devices safely in accordance with the approved traffic control Plan.

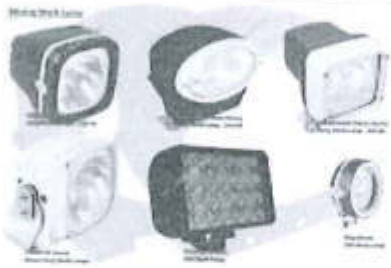
- **Operation and Maintenance Phase**: - To inspect the Traffic Control Plan and devices regularly by day and night to ensure that they are effective and absolutely safe.
- **Close out Phase**: - To remove all the traffic control devices safely and reinstate the permanent traffic scheme

4.0 TRAFFIC CONTROL DEVICES

NO	DESCRIPTION	SPECIFICATION	PICTURE
1	MEN AT WORK, GO SLOW 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	
2	WORK IN PROGRESS 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	

3	DIVERSION  	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	
4	CAUTION SAFETY TAPE	Material: Plastic Color: Red and white stripes	
5	TRAFFIC CONES	Height: 75cm Material: Rubber Base With reflection bar	

6	BARRIERS	Barricading block Interlocking wall effect, 90 degree turning radius <u>For wide road> 2000mm</u> Length- 2000mm Width- 600 mm Height- 900mm <u>For narrow street < 2000mm</u> Length- 1000mm Widgth- 300 mm Hieght- 800mm (low width barricades are acceptable for narrow spaces) GI sheet barricading as per requirement (min. two sheet width)	 
7	ROTARY LAMP (Must for traffic block / diversion)	Color: Yellow Rotating motor use motor system Environment friendly: no UV, IR, lead or mercury.	
8	BARRICADE LAMP (Must for barricade along running traffic and additional for traffic blocking / diversion)	Color: Red/ Orange	

9	STICK LAMP (Must for traffic controller / security man / Signaling man)	Color: Red/Orange	 
10	LIGHTING LAMP	Super Bright White LEDS	

5.0 SIGN PLACEMENT

The correct positioning and size of signs will ensure that it will be observed and recognized, thereby providing the driver with more time to react and act.

The following principles will govern the positioning of signs:

a) Their location will have clear visibility

b) They will be so placed that driver would have adequate time for responses

c) As a general rule, signs will be placed on the left-hand side of the road. Where special emphasis is required

d) The signs will be covered or removed when they are not required

6.0 TRAFFIC CONES

Traffic cones will be 800mm high and 300mm to 500mm in diameter or in square shape at base and are often made of plastic or rubber and normally have retro-refectories red and white band. Their advantages are that they:

i. Cause minor impediments to traffic flow and capacity,

ii. Are well recognized and understood, without damaging vehicle when hit,

iii. Will be easily stored and transported,

iv. Will be fastened to the pavement and self-restoring when hit

7.0 BARRICADES

Barricades are intended to provide containment without significant deflection or deformation under impact and to redirect errant along the barrier. They are designed to be easily relocated and have four specific functions to:

(i) Prevent traffic from entering work areas, such as excavations or material storage sites;

(ii) Provide protection to workers;

(iii) Separate two-way traffic; and

(iv) Protect construction such as false work for culverts and other exposed objects.

8.0 FLAGMEN

The control of traffic through work area is an essential part of road construction and maintenance operations. Flagmen with hand signaling devices such as flags and traffic batons play crucial role in this direction. The flagmen at the work sites are expected to stop traffic intermittently and to maintain continuous traffic past a work

site at reduced speeds to help protect the workmen. For both functions, the flagmen will, at all-time be clearly visible to approaching traffic for a distance sufficient to permit proper response by the drivers to the flagging instruction and to permit traffic to reduce speed before entering the work site. This distance is basically related to approach speed and site conditions; however, 60 m to 100 m is desirable.

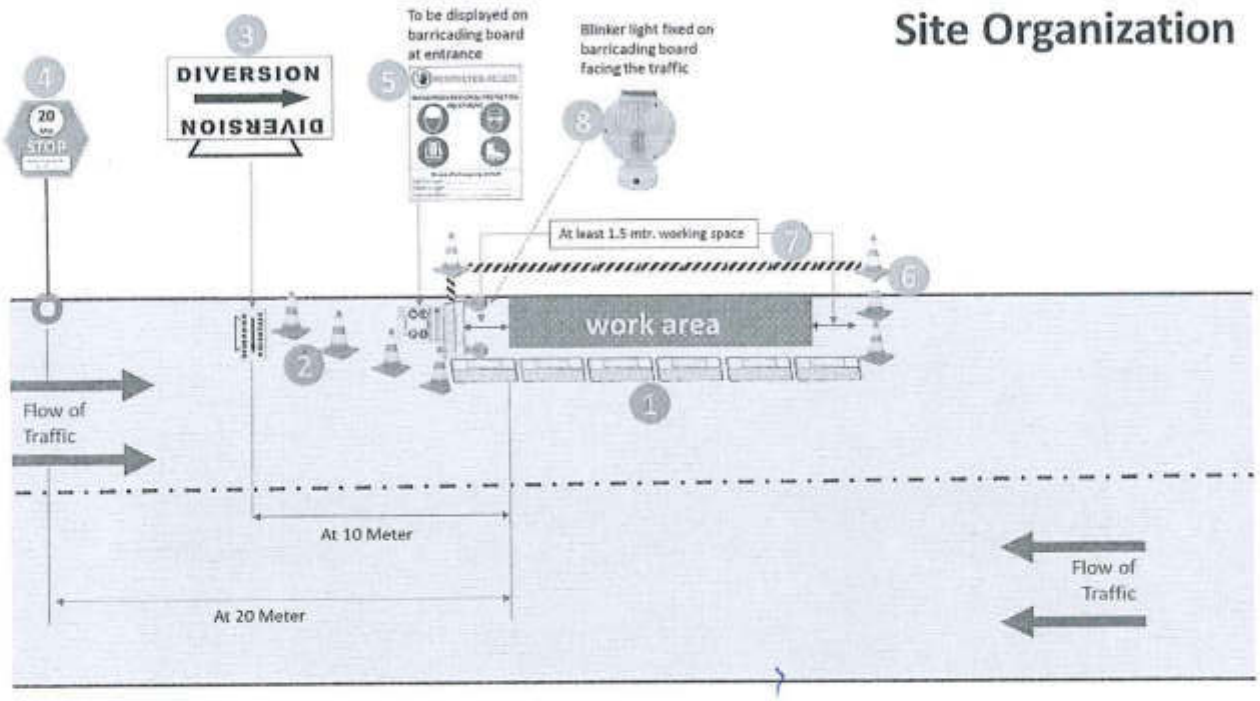
Working in public utilities / near busy roads involves risk to general public in addition to workmen performing their duties. Therefore, proper planning of diversion of traffic, putting signage / caution boards, installing barricade and deputing signaling man / watch man to be identified well before start of work.

Implementation of traffic plan with identified control measures is responsibility of each person in-charge of activity.

9.0 SITE ORGANIZATION

- **Following is the standard for organizing a work site**

1. Barricading boards
2. Traffic cones
3. Diversion sign board @ 10 Meter from work site
4. Stop Sign @ 20 Meter from work site
5. Mandatory PPE sign board
6. Traffic cones
7. Soft Barricading by caution tape
8. Blinker lights on barricading boards facing the traffic



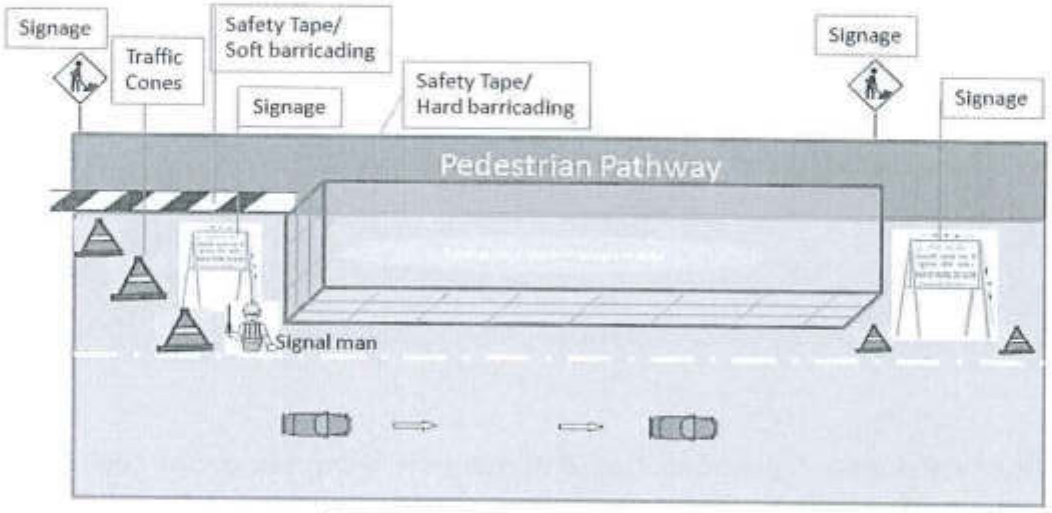
Following major risks are being identified and rules are being set-up for such works:

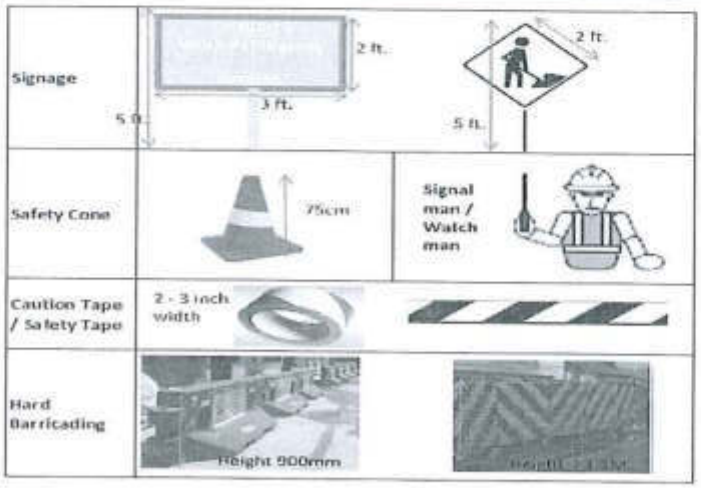
9.1 Narrowing of roads or walkways may have potential risk of injuries and inconvenience to pedestrians:

- Ensure that pedestrian pathways are maintained free from obstacles.
- Display signage to caution pedestrians.
- Barricade the excavated or work in progress areas prior to start of work.
- Keep watch on the area to maintain safe conditions all the time.

The SPPL / subcontractor has **obligation to signalize & barricade every single work** in order to prevent any incident to pedestrians or surrounding communities.

In general, if the walking space is less than 1 mtr. in Width (depending on pedestrian flow), or there is insufficient space left for fixing the barricading board, pedestrian movement can be blocked / diverted after obtain permission from concern authority. Storage of loose materials or construction materials / machines should not be done on walkways. This may require continuous clearing of waste / unwanted materials from work areas.





9.2 Partial blocking of a traffic lane of road may cause potential risk of collision of vehicles resulting to serious injuries and inconvenience to commuters:

Blocking of a traffic lane to be planned and controls to defined and implemented prior to start of job. This may require permission from authorities and:

- Diversion of traffic to minimize bottle neck and impact on traffic load
- Placing hard barricades & safety cones to contain risks arising out of work in progress area
- Placing signage, caution notices & signals (lighting lamps / rotary lamps) for public and vehicles keeping day and night in mind
- Deputing a dedicated man as watch man / signaling man to guide traffic

The supervisor of works shall ensure that the signalization / safety signage, barricade of works are in place prior the start and during works.
All workmen including watch man / security guard to be inducted for hazards and associated risks and Do's & Don's instructions to be followed by each one of them.
Additional soft barricading to be provided for visual impact and better controls.
Continuous vigil to be kept to rectify and improve the controls as and when required.

Do's and **Don'ts** for an employee working beside busy roads.

Sl.	Do's	Don't
1	Wear reflective vest, helmet and safety shoes for high visibility and protection from injuries.	Do not remove your PPE's while working on site
2	Stay out of path of moving vehicles, plant or equipment	Do not approach to traffic / roads or un-barricaded areas without permission
3	Follow traffic signals of police and watch man deputed on site	Do not take shortcuts or do not avoid dedicated paths

4	Ensure all machines & materials are placed safely.	Do not keep machines or materials etc. on pathways or outside the barricaded areas
5	Enter trenches only when appropriate wall support is in place	Do not enter deep trenches unless you are authorized by your supervisor
6	Be vigilant to your surroundings. In case you notice any abnormal conditions,	Do not ignore instructions given to you or danger noticed by you
	- Inform your supervisor - Alert your co-workers	- Do not put yourself or your co-workers in danger

9.3 Complete Closure of a road may cause potential risk of traffic congestion, and inconvenience to commuters and trespassing of vehicles resulting to serious injuries:

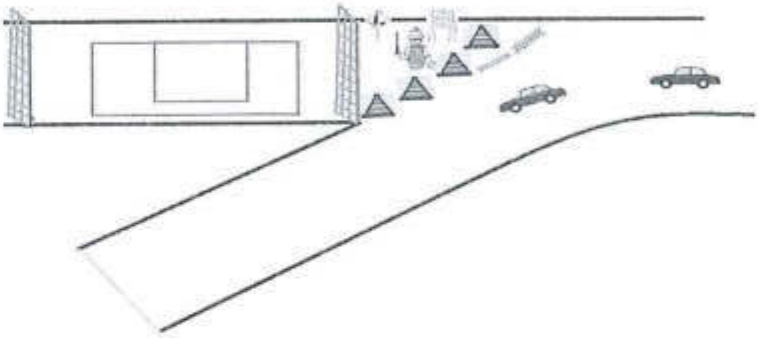
There may be situations where work plan requires complete closure of a road. In such cases good traffic planning and organization of work is desired even if it is planned in lean traffic timings.

- Diversion of traffic to minimize bottle neck and traffic congestion
- Complete closure of road / pathways using hard barricading & safety cones to contain risks arising out of work in progress area
- Placing direction signage, red light, caution notices & signals (lighting lamps / rotary lamps) for public and vehicles keeping day and night in mind
- Deputing a dedicated watch man / signaling man to guide traffic

Manager of works along with subcontractor & Safety officer to inspect prior to start of works and review the situation periodically.

Supervisor of works to inspect the area every day before starting and at end of day's work or during recess to ensure no unsafe condition is left behind. There may be chance that barricading boards are temporarily removed or any materials / machines are left unattended in public places posing risk of trespassing or injury to general public.

Flagman to be dedicatedly deputed to guide traffic and keep control on unauthorized entries.



Road Diversion for complete closure

10.0LIFE SAVING RULE

Life saving rules related to driving safety must be followed at site

1. Do not handle your phone or any other communication device when driving.

2. Do not work and do not drive under the influence of alcohol or drugs.

3. Signal, reduce speed and check mirrors before turning or reversing.

11.0INSPECTION OF VEHICLES

All Site vehicles shall be inspected once in a month as per following checklist.

suez	Safety Department		Date:
			Rev:
	Vehicle Inspection Checklist		Doc:

S. No.	Vehicle Reg. Number	License of Driver	Emission certificate	Insurance Documents	Fitness Certificate	Head Light	Tail Light	Indicators	Horn	Reverse Horn	Fire Extinguisher	First aid Box	Break	Remarks
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														

12.0TRAFFIC SAFETY RULES

Rules and Regulations related to driving license, registration of motor vehicles, control of traffic, construction & maintenance of motor vehicles etc. are governed by the Motor Vehicles Act, 1988 (MVA) and the Central Motor Vehicles rules 1989 (CMVR). Al these rules must be obeyed wherever applicable

APPENDIX 38: TRAFFIC MANAGEMENT PLAN-UDUPI

Suez Project Private Limited

Traffic Management Plan

Project: Construction of Distribution System for 24x7 Water Supply including Services for Operation and Management for Udupi City,
Contract Package No 02UDP01

		Pradeep Shetty	Vishal Pattanshetti	Ramesh Patil	For Approval
Rev.	Date	Prepared By	Checked By	Validated By	Submission Purpose
00					

Contents

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- **Implementation:** - To install the temporary traffic control devices safely in accordance with the approved traffic control Plan.

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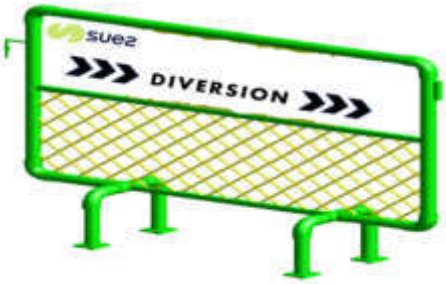
1	MEN AT WORK, GO SLOW 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	
2	WORK IN PROGRESS 	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	

3	DIVERSION  	Material: MS Pipe, MS sheet, Height: 1150 MM Width : 1500 MM The signalization shall respect color, be visible from distance and robust. However, design of boards & logo may vary.	
4	CAUTION SAFETY TAPE	Material: Plastic Color: Red and white stripes	
5	TRAFFIC CONES	Height: 75cm Material: Rubber Base With reflection bar	

6	BARRIERS	Barricading block Interlocking wall effect, 90 degree turning radius <u>For wide road> 2000mm</u> Length- 2000mm Width- 600 mm Height- 900mm <u>For narrow street < 2000mm</u> Length- 1000mm Widgth- 300 mm Hieght- 800mm (low width barricades are acceptable for narrow spaces) GI sheet barricading as per requirement (min. two sheet width)	 
7	ROTARY LAMP (Must for traffic block / diversion)	Color: Yellow Rotating motor use motor system Environment friendly: no UV, IR, lead or mercury.	
8	BARRICADE LAMP (Must for barricade along running traffic and additional for traffic blocking / diversion)	Color: Red/ Orange	

9	STICK LAMP (Must for traffic controller / security man / Signaling man)	Color: Red/Orange	 
10	LIGHTING LAMP	Super Bright White LEDS	

5.0 SIGN PLACEMENT

The correct positioning and size of signs will ensure that it will be observed and recognized, thereby providing the driver with more time to react and act.

The following principles will govern the positioning of signs:

a) Their location will have clear visibility

b) They will be so placed that driver would have adequate time for responses

c) As a general rule, signs will be placed on the left-hand side of the road. Where special emphasis is required

d) The signs will be covered or removed when they are not required

6.0 TRAFFIC CONES

Traffic cones will be 800mm high and 300mm to 500mm in diameter or in square shape at base and are often made of plastic or rubber and normally have retro-refectories red and white band. Their advantages are that they:

i. Cause minor impediments to traffic flow and capacity,

ii. Are well recognized and understood, without damaging vehicle when hit,

iii. Will be easily stored and transported,

iv. Will be fastened to the pavement and self-restoring when hit

7.0 BARRICADES

Barricades are intended to provide containment without significant deflection or deformation under impact and to redirect errant along the barrier. They are designed to be easily relocated and have four specific functions to:

(i) Prevent traffic from entering work areas, such as excavations or material storage sites;

(ii) Provide protection to workers;

(iii) Separate two-way traffic; and

(iv) Protect construction such as false work for culverts and other exposed objects.

8.0 FLAGMEN

The control of traffic through work area is an essential part of road construction and maintenance operations. Flagmen with hand signaling devices such as flags and traffic batons play crucial role in this direction. The flagmen at the work sites are expected to stop traffic intermittently and to maintain continuous traffic past a work

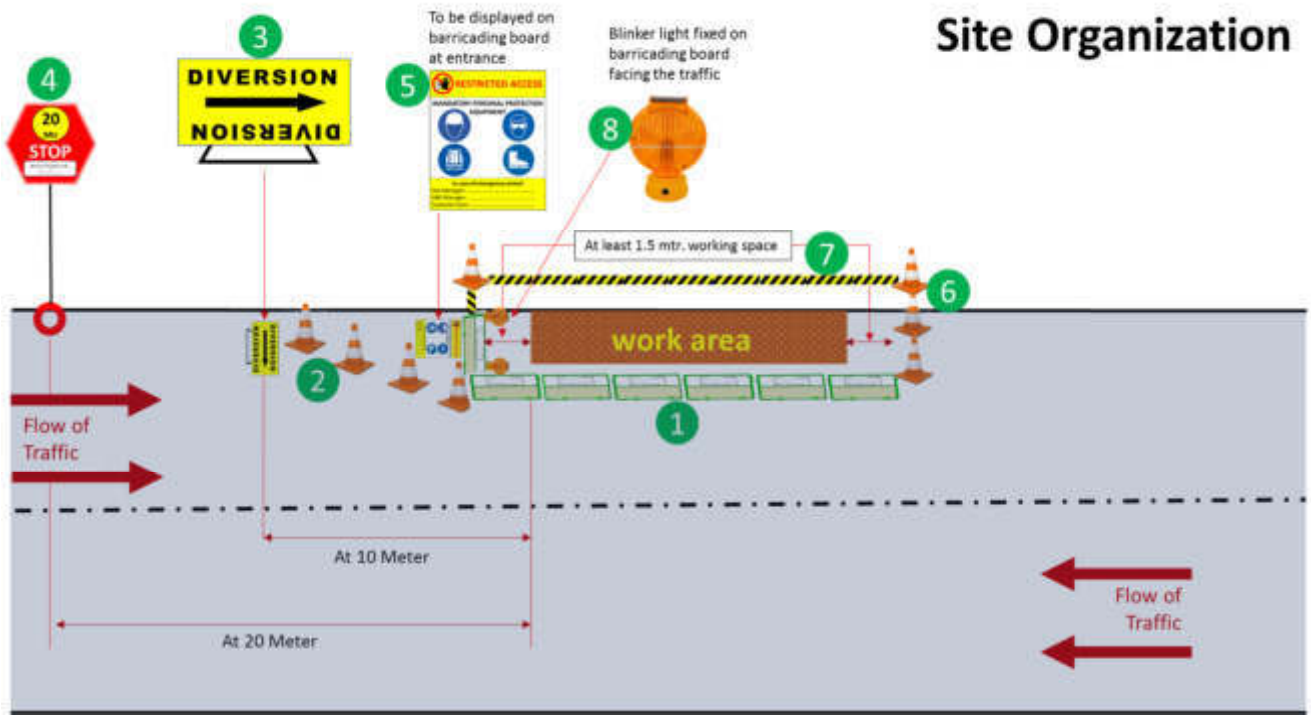
site at reduced speeds to help protect the workmen. For both functions, the flagmen will, at all-time be clearly visible to approaching traffic for a distance sufficient to permit proper response by the drivers to the flagging instruction and to permit traffic to reduce speed before entering the work site. This distance is basically related to approach speed and site conditions; however, 60 m to 100 m is desirable.

Working in public utilities / near busy roads involves risk to general public in addition to workmen performing their duties. Therefore, proper planning of diversion of traffic, putting signage / caution boards, installing barricade and deputing signaling man / watch man to be identified well before start of work.
Implementation of traffic plan with identified control measures is responsibility of each person in-charge of activity.

9.0 SITE ORGANIZATION

- **Following is the standard for organizing a work site**

1. Barricading boards
2. Traffic cones
3. Diversion sign board @ 10 Meter from work site
4. Stop Sign @ 20 Meter from work site
5. Mandatory PPE sign board
6. Traffic cones
7. Soft Barricading by caution tape
8. Blinker lights on barricading boards facing the traffic



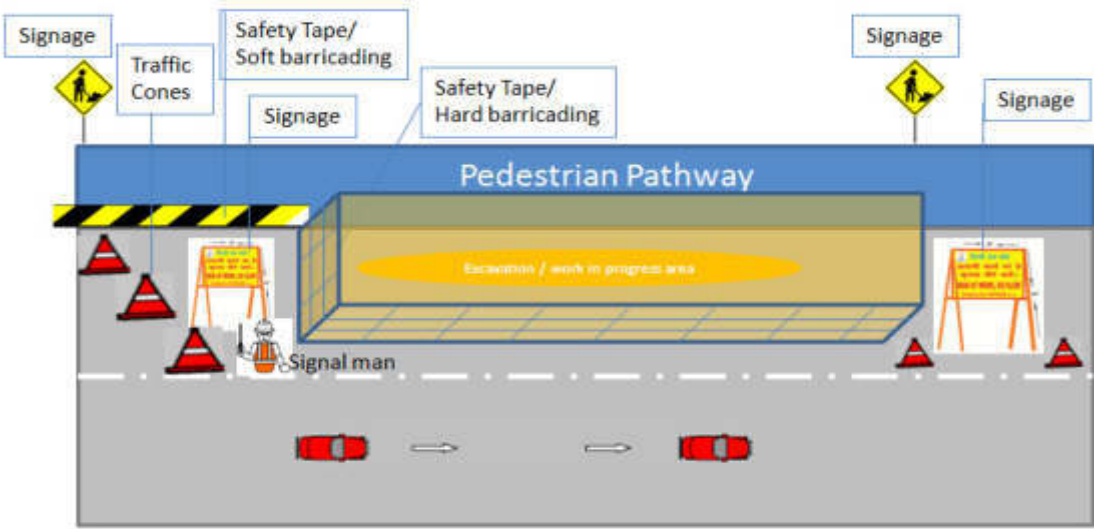
Following major risks are being identified and rules are being set-up for such works:

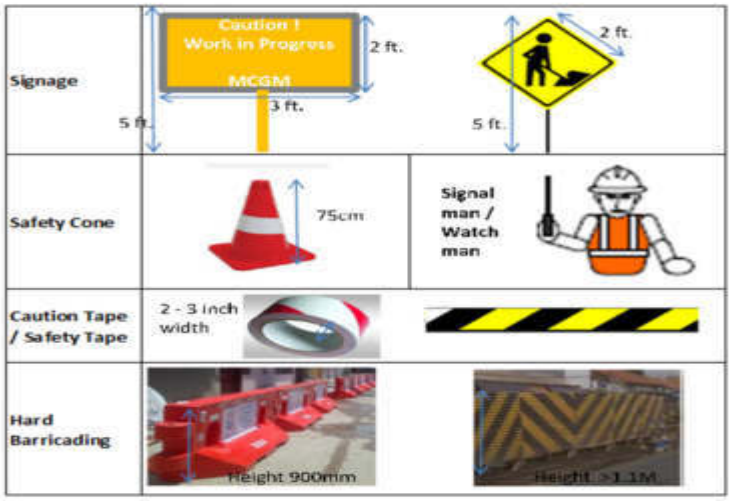
9.1 Narrowing of roads or walkways may have potential risk of injuries and inconvenience to pedestrians:

- Ensure that pedestrian pathways are maintained free from obstacles.
- Display signage to caution pedestrians.
- Barricade the excavated or work in progress areas prior to start of work.
- Keep watch on the area to maintain safe conditions all the time.

The SPPL / subcontractor has **obligation to signalize & barricade every single work** in order to prevent any incident to pedestrians or surrounding communities.

In general, if the walking space is less than 1 mtr. in Width (depending on pedestrian flow), or there is insufficient space left for fixing the barricading board, pedestrian movement can be blocked / diverted after obtain permission from concern authority. Storage of loose materials or construction materials / machines should not be done on walkways. This may require continuous clearing of waste / unwanted materials from work areas.





9.2 Partial blocking of a traffic lane of road may cause potential risk of collision of vehicles resulting to serious injuries and inconvenience to commuters:

Blocking of a traffic lane to be planned and controls to defined and implemented prior to start of job. This may require permission from authorities and:

- Diversion of traffic to minimize bottle neck and impact on traffic load
- Placing hard barricades & safety cones to contain risks arising out of work in progress area
- Placing signage, caution notices & signals (lighting lamps / rotary lamps) for public and vehicles keeping day and night in mind
- Deputing a dedicated man as watch man / signaling man to guide traffic

The supervisor of works shall ensure that the signalization / safety signage, barricade of works are in place prior the start and during works.
All workmen including watch man / security guard to be inducted for hazards and associated risks and Do's & Don's instructions to be followed by each one of them.
Additional soft barricading to be provided for visual impact and better controls.
Continuous vigil to be kept to rectify and improve the controls as and when required.

Do's and **Don'ts** for an employee working beside busy roads.

Sl.	Do's	Don't
1	Wear reflective vest, helmet and safety shoes for high visibility and protection from injuries.	Do not remove your PPE's while working on site
2	Stay out of path of moving vehicles, plant or equipment	Do not approach to traffic / roads or un-barricaded areas without permission
3	Follow traffic signals of police and watch man deputed on site	Do not take shortcuts or do not avoid dedicated paths

4	Ensure all machines & materials are placed safely.	Do not keep machines or materials etc. on pathways or outside the barricaded areas
5	Enter trenches only when appropriate wall support is in place	Do not enter deep trenches unless you are authorized by your supervisor
6	Be vigilant to your surroundings. In case you notice any abnormal conditions,	Do not ignore instructions given to you or danger noticed by you
	- Inform your supervisor - Alert your co-workers	- Do not put yourself or your co-workers in danger

9.3 Complete Closure of a road may cause potential risk of traffic congestion, and inconvenience to commuters and trespassing of vehicles resulting to serious injuries:

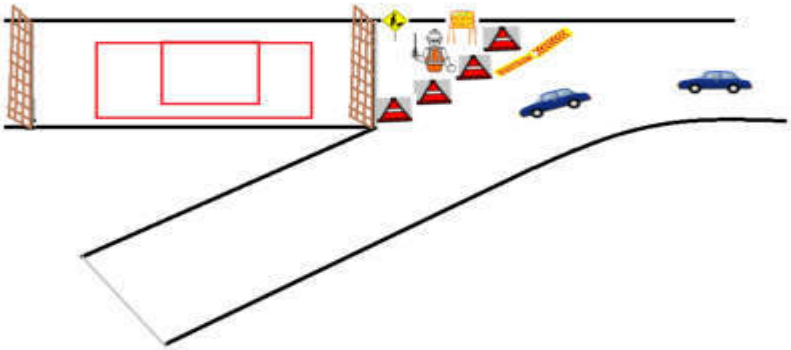
There may be situations where work plan requires complete closure of a road. In such cases good traffic planning and organization of work is desired even if it is planned in lean traffic timings.

- Diversion of traffic to minimize bottle neck and traffic congestion
- Complete closure of road / pathways using hard barricading & safety cones to contain risks arising out of work in progress area
- Placing direction signage, red light, caution notices & signals (lighting lamps / rotary lamps) for public and vehicles keeping day and night in mind
- Deputing a dedicated watch man / signaling man to guide traffic

Manager of works along with subcontractor & Safety officer to inspect prior to start of works and review the situation periodically.

Supervisor of works to inspect the area every day before starting and at end of day's work or during recess to ensure no unsafe condition is left behind. There may be chance that barricading boards are temporarily removed or any materials / machines are left unattended in public places posing risk of trespassing or injury to general public.

Flagman to be dedicatedly deputed to guide traffic and keep control on unauthorized entries.



Road Diversion for complete closure

10.0 LIFE SAVING RULE

Life saving rules related to driving safety must be followed at site

1. Do not handle your phone or any other communication device when driving.

2. Do not work and do not drive under the influence of alcohol or drugs.

3. Signal, reduce speed and check mirrors before turning or reversing.

11.0 INSPECTION OF VEHICLES

All Site vehicles shall be inspected once in a month as per following checklist.

suez

Safety Department:

Date:

Rev:

Doc:

Vehicle Inspection Checklist:

S. No.	Vehicle Reg. Number	License of Driver	Emission certificate	Insurance Documents	Fitness Certificate	Head Light	Tail Light	Indicators	Horn	Reverse Horn	Fire Extinguisher	First aid Box	Sveak	Remarks
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														

12.0TRAFFIC SAFETY RULES

Rules and Regulations related to driving license, registration of motor vehicles, control of traffic, construction & maintenance of motor vehicles etc. are governed by the Motor Vehicles Act, 1988 (MVA) and the Central Motor Vehicles rules 1989 (CMVR). Al these rules must be obeyed wherever applicable

APPENDIX 39: Health Check-Up-Mangalore UGD

Annexure-44

Health Check-up-Mangalore UGD

CAMP REPORT

To

The vice president

AJIMS

Through

The Dean

AJIMS

Respected Sir,

Subject: - Camp Report

Date of Camp - 01/12/2019

Organiser - DRS INFRATECH Pvt-Ltd.

Place of Camp - SHAKTHINAGARA

Departments - 1 OPHTHALMOLOGY

- 2 GENERAL MEDICINE
- 3 DERMATOLOGY
- 4 ENT

Total Number of PATIENTS - 58

Total Number of Patients Referred To AJIMS AND RC:- 18

DEPARTMENTS	NUMBER OF PATIENTS SEEN	NUMBER OF PATIENTS REFFERED
OPHTHALMOLOGY	38	10
GENERAL MEDICINE	20	--
DERMATOLOGY	35	06
ENT	15	02

DR. ASHOK HEGDE

forwarded to VP

2.12.19

DOCTORS ATTENDED

DEPARTMENTS	CONSULTANTS	POST GRADUATES	INTERNS
OPHTHALMOLOGY	DR PRIYA	DR.PRERANA DR.AISHWARYA	DR ANIRUDH DR.TEENA
GENERALMEDICINE	DR. PRASHANTH	DR THEJASVI	DR. SWATHI
ENT	DR MAHESH	DR AYUSHA	DR ROOPANJAN DR ANVITHA
DERMATOLOGY	DR VINMA SHETTY	DR RAMYA	DR RUCHITHA

MEDICAL SOCIAL WORKER: JAYARAJ SUVARNA

KRITHI B.H

THANKING YOU

YOURS SINCERELY

DATE :-02/12/2019

PLACE :- MANGALORE


REDMI NOTE 8 PRO
64MP QUAD CAMERA

APPENDIX 40: Health Check-Up-KUNDAPURA

PHYSICAL FITNESS CERTIFICATE

1. I do hereby Certify that I have examined 0656

Shri/~~Smt.~~/Kumari ....Vittal.....

a candidate for....Employment....

.....

and that I cannot discover that he/she has any disease, constitutional affiction of bodily infirmity except ....Nil....

.....

I do not consider this a disqualification for employment in the office of .....

.....

2. I am also satisfied by personal examination / from certificates produced by

.....

that he/she was vaccinated / re-vaccinated within one week prior to the date of the certificate.

3. ....Mr Vittal....'s age is according to his/her own statement ....38....

....38....year's and by appearance

.....year's.

Signature : Nmakar

Place : Kundapura

Date : 1/8/17

(Name.....)

Designation Senior Specialist Taluk General Hospital Kundapura

(SEAL).

TALUK GENERAL HOSPITAL KUNDAPURA

UHID: 20190036195

Udupi district, Karnataka
"Taluk General Hospital Kundapura Udupi Karnataka"
Udupi district, Karnataka

CONSULTING ROOM NO : 5
CLINIC: General Surgery TOKEN NO: 24

OUT PATIENT RECORD

EHR ID :20190100065198 13

Name : MR. VITTAL
Department : General Surgery
Dept No. : 2019/084/0017652
Date of Registration : 01-08-2019 03:52:32 PM
Unit: UNIT-I
Family Income/Year : ₹ 0 to 19999
Billing Type : GENERAL
Mobile No. : *******473
Address : KODI UDUPI, KARNATAKA, INDIA

Fees : ₹ 5
Sex : Male
S/O SIDAPPA
Age : 38Y

Religion : HINDU
Occupation : OTHER
Education : OTHERS
Patient Type : NON MLC Prepared By : Mr.Abhishek k

Date and Time of initial assessment:
Clinical History :

Examination Findings :

Investigation :

BP 110/70 mmHg
RBS

Diagnosis :

Treatment :

Follow-up advice :

Doctor's Name:

Signature / Date

Patient Consent : I, the holder of the above mentioned mobile number , herewith give my consent to share my electronic health information with 'MyHealthRecord', an initiative of Govt. of India. I understand that I can revoke/ withhold this consent through site (https://myhealthrecord.nhp.gov.in)

PHYSICAL FITNESS CERTIFICATE

0657

1. I do hereby Certify that I have examined Shri/~~Smt.~~/Kumari Yallappa a candidate for Employment.

and that I cannot discover that he/she has any disease, constitutional affiction of bodily infirmity except —Nil—

I do not consider this a disqualification for employment in the office of .....

2. I am also satisfied by personal examination / from certificates produced by .....

that he/she was vaccinated / re-vaccinated within one week prior to the date of the certificate.

3. Sri Yallappa's age is according to his/her own statement 35 35 year's and by appearance .....year's.

Place : Kundapura

Date : 1/8/19

Signature : [illegible]

(Name) Senior Specialist

Designation Taluk General Hosp Kundapura

TALUK GENERAL HOSPITAL KUNDAPURA

(SEAL)

Udupi district, Karnataka
"Taluk General Hospital Kundapura Udupi Karnataka"
Udupi district, Karnataka

UHID: 20190036194

CONSULTING ROOM NO : 5
CLINIC: General Surgery TOKEN NO: 23

OUT PATIENT RECORD

EHR ID :20190100065197 98

Name : MR. YELLAPPA
Department : General Surgery
Dept No. : 2019/084/0017647
Date of Registration : 01-08-2019 03:52:00 PM
Unit: UNIT-I
Family Income/Year : ₹ 0 to 19999 .
Billing Type : GENERAL
Mobile No. : *******473
Address : KODI UDUPI, KARNATAKA, INDIA

Fees : ₹ 5
Sex : Male
S/O HANUMANTHAPPA
Age : 35Y

Religion : HINDU
Occupation : OTHER
Education : OTHERS
Patient Type : NON MLC Prepared By : Mr.Abhishek k

Date and Time of initial assessment:
Clinical History :

Examination Findings :

Investigation :

BP 110/80 mmHg .
RBS

Diagnosis :

Treatment :

Follow-up advice :

Doctor's Name:

Signature / Date

Patient Consent : I, the holder of the above mentioned mobile number , herewith give my consent to share my electronic health information with 'MyHealthRecord', an initiative of Govt. of India. I understand that I can revoke/ withhold this consent through site (https://myhealthrecord.nhp.gov.in)

PHYSICAL FITNESS CERTIFICATE

0655

1. I do hereby Certify that I have examined
Shri/~~Smt.~~/Kumari ..... Durgappa .....
a candidate for..... Employee .....
.....

and that I cannot discover that he/she has any disease, constitutional affiction of bodily infirmity except ..... Nil .....
.....

I do not consider this a disqualification for employment in the office of .....
.....

2. I am also satisfied by personal examination / from certificates produced by
.....

that he/she was vaccinated / re-vaccinated within one week prior to the date of the certificate.

3. ..... Sri Durgappa .....'s age is according to his/her own statement ..... 45 .....
..... 45 .....year's and by appearance
.....year's.

Place : Kundapura
Date : 1/8/18

Signature : .....
(Name..... Senior Specialist
Designation..... Taluk General Hospital Kundapura

(SEAL)

TALUK GENERAL HOSPITAL KUNDAPURA

UHID: 20190036185

Udupi district, Karnataka
"Taluk General Hospital Kundapura Udupi Karnataka"
Udupi district, Karnataka

CONSULTING ROOM NO : 8
CLINIC: General Medicine TOKEN NO: 147

OUT PATIENT RECORD

EHR ID :201901000651844L

Name : MR. DURGAPPA
Department : General Medicine
Dept No. : 2019/078/0069552
Date of Registration : 01-08-2019 03:18:26 PM
Unit: UNIT-I
Family Income/Year : ₹ 0 to 19999
Billing Type : GENERAL
Mobile No. : *******473
Address : KODI UDUPI, KARNATAKA, INDIA

Fees : ₹ 5
Sex : Male
S/O NAGARAJ
Age : 40Y

Religion : HINDU
Occupation : OTHER
Education : OTHERS
Patient Type : NON MLC Prepared By : Mr.Abhishek k

Date and Time of initial assessment:
Clinical History :

Examination Findings :

- Ht :
- Wt : 70 kg
- physician Firnem

Investigation :

BP 140/90 mmHg.
RBS

Diagnosis :

Treatment :

Follow-up advice :

Doctor's Name:

Signature / Date

Patient Consent : I, the holder of the above mentioned mobile number , herewith give my consent to share my electronic health information with 'MyHealthRecord', an initiative of Govt. of India. I understand that I can revoke/ withhold this consent through site (https://myhealthrecord.nhp.gov.in)

APPENDIX 41: TIE-UP WITH HOSPITAL-UDUPI

सत्यमेव जयते

INDIA NON JUDICIAL

Government of Karnataka

e-Stamp

Certificate No.	:	IN-KA77855385985449R
Certificate Issued Date	:	21-Aug-2019 04:26 PM
Account Reference	:	NONACC (FI)/ kaksfcl08/ UDUPI10/ KA-UD
Unique Doc. Reference	:	SUBIN-KAKAKSFCL0879736677962506R
Purchased by	:	CITY HOSPITAL UDUPI
Description of Document	:	Article 12 Bond
Description	:	AGREEMENT
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	CITY HOSPITAL UDUPI
Second Party	:	SPPL SIPL DRS infra JV
Stamp Duty Paid By	:	CITY HOSPITAL UDUPI
Stamp Duty Amount(Rs.)	:	20 (Twenty only)

SOUHARDA SAHAKARI SAKUTA (N) UDUPI PILLA L.No. 1009/2015-16 Ground Floor Anantha Tower Opp. Dist Court UDUPI-576101

Please write or type below this line

MEMORANDUM OF UNDERSTANDING FOR INPATIENT (HOSPITALISATION) AND OUT PATIENT TREATMENT

This Memorandum of Understanding made and entered into on this 22th **day of** August 2019, between:

CITY HOSPITAL, udupi situated at vidyaranya marga ,Udupi HO,Udupi-576101,Karnataka, through its Managing Director **DR.Vishwanath Shanbhag** , duly authorized (here in after referred as the "Hospital" which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors and permitted assigns) of the First Part.

AND

SPPL-SIPL-DRS Infra JV, having its Registered Office at Unitech Business Park, Tower-A, 2nd Floor,

Dr. Vishwanath Shanbhag
B.S.M.S., D.Ortho., M.S. Ortho.
CITY HOSPITAL
Behind Sunker Theatre
UDUPI-576 101
Regn No. 16350

SPPL-SIPL-DRS INFRA JV

Statutory Alert:
1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and/or its authenticity should be reported to the competent Authority.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the competent Authority

South City-1,Gurgaon-122001, Haryana, – 577005,through its Dy General Manager, **Sri Ramesh Kallappa Patil** , duly authorized (herein after referred to as the "SPPL-SIPL-DRS Infra JV" which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors and permitted assigns)of the Second Part.

WHEREAS

1. The Hospital provides "in-patient" medical and/or surgical treatment to SPPL -SIPL-DRS Infra JV employees and the SPPL-SIPL-DRS Infra JV reimburses the charges of the Hospital for provision of such "in-patient" medical and/or surgical treatment.

2. The parties have now decided to enter into a Memorandum of Understanding and agreement between the Parties with regard to treating the SPPL-SIPL-DRS Infra JV employees.

NOW THEREFORE IT IS AGREED as follows:

1. Hospital agrees to provide OPD consultation to SPPL-SIPL-DRS Infra JV Employees.

2. Hospital shall treat the SPPL-SIPL-DRS Infra JV Employees in a courteous manner and according to good business practices.

3. Hospital shall extend admission facilities to the SPPL-SIPL-DRS Infra JV Employees round the clock.

4. Hospital shall ensure the best and complete diagnostic, therapeutic and follow-up services based on standard protocols and medical practices/recommendations are extended to the SPPL-SIPL-DRS Infra JV Employees.

5. Hospital agrees to provide quality medicines, standard prostheses, implants and disposals while treating the SPPL-SIPL-DRS Infra JV Employees.

6. The authorization letter to be sent by SPPL -SIPL-DRS Infra JV in original along with their employees for treatment.

7. Admission sought by the SPPL-SIPL-DRS Infra JV patient during emergency may be permitted on the basis of Identity Card provisionally. The authorization letters are to be produced on the next working day. In such cases the hospital may issue a certificate about the emergency condition of the patient. In case failure to produce the

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CITY HOSPITAL
Behind Alankar Theatre
UDUPI - 576 101
Reg. No. 16353

SPPL-SIPL-DRS INFRA JV

authorization letter on the next working day due to any valid reasons, the employee/labour shall execute an undertaking letter to the hospital that the employee/labour shall be responsible to settle the bills at the time of discharge.

8. The Hospital will raise the bills for the SPPL-SIPL-DRS Infra JV patient treated on the basis of current tariff and if any rates are revised the same will be intimated as and when the revision takes place.

9. The SPPL-SIPL-DRS Infra JV agrees to settle the hospital bills within 30 working days. Delayed payment beyond the period of credit will attract interest at the rate of 12% p.a. which should be remitted along with the bills payment.

10. Hospital agrees provide Medical Health checkup camp at your site and agrees to depute Medical Practitioners and other staffonce in three months as requested by city hospital and the same will billed on city hospital for payment, and the SPPL-SIPL-DRS Infra JV agrees to provide the transportation facility for visiting Medical Practitioners and other staff to your site.

11. Hospital agrees to provide the bank details for electronic fund transfer for settling the claims.

12. All stakeholders undertake to protect the secrecy of all the data and trade or business secrets of, and will not share the same with any unauthorized person for any reason whatsoever within or without consideration.

13. This agreement shall be for an initial term of Three (03) years commencing from 22.08.2019.

14. Both parties have right to terminate this agreement by assigning proper reason and giving 60 days advance notice to other party.

15. Any dispute or difference between the parties to this agreement or in connection therewith or arising there from or involving any interpretation of any terms thereof, will be settled amicably through discussions within fifteen days of receipt of written notification by one party from the other party regarding differences or dispute arisen, failing which, the same shall be settled by way or arbitration proceedings by process of Arbitration of a tribunal comprising three arbitrators, one of each to be appointed by Hospital and the SPPL-SIPL-DRS Infra JV and the third arbitrator to be appointed jointly by the two arbitrators so appointed who shall be the presiding arbitrator.

16. The arbitration proceedings shall be governed by the provisions of the Indian

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Behind Alankar Theatre
UDUPI - 576 101
Reg. No. 16353

SPPL-SIPL-DRS INFRA JV

Arbitration and Conciliation ACT 1996, or any re-enactments or statutory modifications thereof for the time being in force.

17. The venue of the arbitration shall be at udupi, India only. This agreement shall be subject to the jurisdiction of the appropriate courts at udupi, India only.

IN WITNESS WHEREOF the Parties have caused this Agreement to be executed by their respective duly authorized representatives on the day and year first set forth hereinabove.

18. Any Employee/Labour shall be guaranteed admission in Hospital without payment of cash deposit.

19. Emergency contact person and Number (Hospital) in case of emergency. 1) Dr. vishwanath Shanbhag - 9448240089 2) Dr.venkatesh shanbhag-9448158493 3.Ambulance Driver-8762556479 4) Reception Hospital:- 8762556458

20. The Employee/Labour should produce referral letter from the authorized signatory at time of admission. In case of emergency, treatment will be provided on the basis of the identity card produced by staff or telephone call from our authorized staff, Mr.Ramesh K Patil(DGM)-9148701365, Srudeep Chandran(senior engineer)-805003635,Pradeep Shetty(safety officer)-7406009720

21. In-patient admission for services and treatment is however subject to availability of Hospital beds.

For City Hospital

Dr. Vishwanath Shanbhag
M.Sc., M.B.B.S., D.Ortho., M.S. Ortho.
CITY HOSPITAL
Behind Alankar Theatre
UDUPI - 576 101
Reg. No. 16353

DR. Vishwanath Shanbhag
Managing Director

For SIPL-DRS Infra JV

SIPL-DRS INFRA

Ramesh K Patil
DGM

Witness: -

1.

2

APPENDIX 42: HEALTH CHECK-UP-UDUPI

Appendix-47

Health Check-up-Udupi


suez
CITY MUNICIPAL UDUPI
SUEZ PROJECTS PRIVATE LIMITED
KIUWMIP-24X7 Water Supply Projects

APPENDIX 43: TOOL BOX TRAINING-KUNDAPURA

	LAXMI CIVIL ENGINEERS PVT . LTD	EHS-TBT Page 1 of 1
Project Name: 24x7 WSS project Kundapura. Format S.I.NO:	Pep Talk and Tool Box Talk	Date: Time: 03/10/2019 8:30AM

Topics highlighted in the meeting:

1. Height work safety
2. Housekeeping importance.
3.
4.

Sl.No	Name	Designation	Company/Contractor	Signature
1).	Sushanth	Skilled labour	Shridhar shetty	
2).	Deepak	skilled labour	Shridhar shetty	
3).	Kittu	unskilled "	Shridhar shetty	
4).	Shubhshankar	unskilled "	Shridhar shetty	
5).	Radha	unskilled "	Shridhar shetty	
6).	Karthik	unskilled "	Shridhar shetty.	

Conducted By Name & Designation: Vijay S.	Witnessed by Name & Designation:
Signature: Safety engineer.	Signature:

APPENDIX 44: TOOL BOX TRAINING-PUTTUR

suez	SUEZ PROJECTS PVT. LTD. PUTTUR Training Attendance Sheet	No. Rev.000 Date. 24 Aug 2019 Page. 1 of 1

Training program: Tool Box meeting

Date: 24/08/19 Time: 11:20 am to 11:50 am Conducted by: Y Amruth

Topics Covered: Electrical Safety, gas cutting safety precautions

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Rakesh	DRS Infratech	welder	Rakesh
2.	Pancham	DRS Infratech	fitter	Pancham
3.	Rajesh	DRS Infratech	Helper	Rajesh
4.	Pramod Sheety	DRS Infratech	Engineer	[illegible]
5.	Chandram	DRS Infratech	Supervisor	[illegible]
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

Man Hours: 2 1/2 hours

Sign of Trainer:

SUEZ

TRAINING ATTENDANCE SHEET

TRAINING PROGRAMME: - Induction HS&E

DATE: - 24/08/19 TIME: - 11:30 am to 12:00 am CONDUCTED BY:- Y. Anwesh

TOPIC COVERED:- Safety Induction

*BASIC TRAININGS:-Induction to HSE mgmt,Project Familiarization, Construction Orientation, Environmental Awareness,Water,Air,Land Pollution,First Aid,Driving safety/Road Transportation, Hazards Spotting ,PPEs, Safe working Practice, Manual Handling, Risk Assessment, Emergency Preparedness', Basic Fire Fighting, Permit to work, Safe Handling of Chemicals.

*SKILLED WORKER: *BASIC TRAINING* Sign & Signals, Falls & Falling Objects Electrical Hazards ,Hand tools Safety, Machinery Maintenance & Equipment Check, Spill Containment & Response

*OPERATORS *Above Training* Heavy Equipments, Safe Access/Egress, Confined Space

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT	DESIGNATION	SIGNATURE
1	Srinidhi Chauhan	DRS Infratech	Supervisor	
2	Pramod Shetty	DRS Infratech	engineer	
3				
4				
5				
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18				
19				

TRAINER: - Y. Anwesh CO-TRAINER:-

TOTAL MAN HOURS:- 01 hour

suez

TRAINING ATTENDANCE SHEET

TRAINING PROGRAMME: - Tool Box meeting HS&E

DATE: - 10-09-2019 TIME: - 11.45 am CONDUCTED BY:- Y. Amruth

TOPIC COVERED:- Hand Safety during material Handling

*BASIC TRAININGS:-Induction to HSE mgmt,Project Familiarization, Construction Orientation, Environmental Awareness,Water,Air,Land Pollution,First-Aid,Driving safety/Road Transportation, Hazards Spotting ,PPEs, Safe working Practice, Manual Handling, Risk Assessment, Emergency Preparedness', Basic Fire Fighting, Permit to work, Safe Handling of Chemicals.

*SKILLED WORKER: *BASIC TRAINING* Sign & Signals, Falls & Falling Objects Electrical Hazards ,Hand tools Safety, Machinery Maintenance & Equipment Check, Spill Containment & Response

*OPERATORS *Above Training* Heavy Equipments, Safe Access/Egress, Confined Space

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT	DESIGNATION	SIGNATURE
1	Rakesh	DVS-Infratech	~~Helper~~	
2			welder	RAKESH
3	Ramkumar	DVS Infratech	fitter	Ramkumar
4	Rajesh	DVS Infratech	Helper	Rajesh
5				
6				
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9				
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12				
13				
14				
15				
16				
17				
18				
19				

TRAINER: -

CO-TRAINER:-

TOTAL MAN HOURS:- 08 hrs

suez	SUEZ PROJECTS PVT. LTD. PUTTUR Training Attendance Sheet	No. Rev.000 Date. SEP 2019 Page. 1 of 1

Training program: Tool box meeting

Date: 05/10/19 Time: 12.05 Pm Conducted by: Y. Amruth

Topics Covered: * Safety Rules & Regulations
* Security safety procedures

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Jitesh	Agilent secu	Security guard	
2.	Jeevana	Agilent Security	Security guard	
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

Man Hours: 01 hour.

Sign of Trainer:

suez	SUEZ PROJECTS PVT. LTD. PUTTUR Training Attendance Sheet	No. Rev.000 Date. 04/10/19 2019 Page. 1 of 1

Training program: Tool Box Talk. (meeting)

Date: 04/10/19 Time: 11.35 am Conducted by: Y. Amruth

Topics Covered: Electrical Safety

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Prakash	DRS Infratech	Helper	[illegible]
2.	Santosh	DRS Infratech	m/c	[illegible]
3.	Hitesh	DRS Infratech	m/c	[illegible]
4.	Ravi	DRS Infratech	Helper	[illegible]
5.	Krishna	DRS Infratech	m/c	[illegible]
6.	Chanda	DRS Infratech	m/c	[illegible]
7.	Satish	DRS Infratech	m/c	[illegible]
8.				
9.				
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14.				
15.				

Man Hours:

Sign of Trainer: (Amruth)

suez	SUEZ PROJECTS PVT. LTD.	No.
	PUTTUR	Rev.000
	Training Attendance Sheet	Date.23SEP 2019 Page. 1 of 1

Training program: TOOL box meeting

Date: 23-10-19 Time: 9.00 am to 9.30 am Conducted by: Y. Ammen

Topics Covered: (1) site safety rules Shabbir
(2) daily observation Adarsh

ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Srinivas V	Sathish	unskilled labour	V. Srinivasu
2.	Peddivanna			
3.	Bajavaraj			
4.	Sanveevanna			
5.	Veeranna			
6.	Hanumantha			
7.	Gopala			
8.	Lakshmana			
9.	Ravi	Satish		
10.	Kumar	Satish		
11.				
12.				
13.				
14.				
15.				

Man Hours: 5 hours

Sign of Trainer:

suez	SUEZ PROJECTS PVT. LTD. PUTTUR Training Attendance Sheet	No. Rev.000 Date. 23-10-2019 Page. 1 of 1

Training program: Tool Box Talk

Date: 23-10-2019 Time: 10:15 am 10:45 am Conducted by: Y. Amreth

Topics Covered:
* Traffic Rules
* Signage placing

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Poncham	Drs Infra	Fitter	Poncham
2.	Rajesh	Drs infra	Helper	Rajesh
3.	Santosh	Drs infra	unskilled	संतोष
4.	Dinesh	Drs infra	unskilled.	दिनेश
5.				
6.				
7.				
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15.				

Man Hours: 6.00 hrs

Sign of Trainer:

suez

TRAINING ATTENDANCE SHEET

TRAINING PROGRAMME: - Tool box Talk HS&E

DATE: - 10-02-19 TIME: - 9.00 am CONDUCTED BY:- Amrutha

TOPIC COVERED:- Electrical Safety & Fire Safety

*BASIC TRAININGS:-Induction to HSE mgmt,Project Familiarization, Construction Orientation, Environmental Awareness,Water,Air,Land Pollution,First-Aid,Driving safety/Road Transportation, Hazards Spotting ,PPEs, Safe working Practice, Manual Handling, Risk Assessment, Emergency Preparedness', Basic Fire Fighting, Permit to work, Safe Handling of Chemicals.

*SKILLED WORKER: *BASIC TRAINING* Sign & Signals, Falls & Falling Objects Electrical Hazards ,Hand tools Safety, Machinery Maintenance & Equipment Check, Spill Containment & Response

*OPERATORS *Above Training* Heavy Equipments, Safe Access/Egress, Confined Space

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT	DESIGNATION	SIGNATURE
1	Kumar	SVRR	unskilled	[illegible]
2	Srinivas .V	SVRR,	unskilled	SRINIVAS
3	Laxmaiah	SVRR	unskilled	
4				
5				
6				
7	manikya	SVRR	unskilled	[illegible]
8	Abbas Nayeem	SVRR	fitter	K. [illegible]
9	S. venkataramana	SVRR	fitter	[illegible]
10	K.T. Raja	SVRR	fitter	[illegible]
11				
12				
13				
14				
15				
16				
17				
18				
19				

TRAINER: - [illegible]

CO-TRAINER:- Sachin

TOTAL MAN HOURS:- [illegible] hours
07 hours

suez

TRAINING ATTENDANCE SHEET

TRAINING PROGRAMME: - Tool Box meeting/HS&E

DATE: 14/12/19 TIME:- 11.30 am to 12.30 pm CONDUCTED BY:- Y. Amruth

TOPIC COVERED:- vehicle movements

*BASIC TRAININGS: Induction to HSE mgmt,Project Familiarization, Construction Orientation, Environmental Awareness,Water,Air,Land Pollution,First-Aid,Driving safety/Road Transportation, Hazards Spotting ,PPEs, Safe working Practice, Manual Handling, Risk Assessment, Emergency Preparedness', Basic Fire Fighting, Permit to work, Safe Handling of Chemicals.

*SKILLED WORKER: *BASIC TRAINING* Sign & Signals, Falls & Falling Objects Electrical Hazards ,Hand tools Safety, Machinery Maintenance & Equipment Check, Spill Containment & Response

*OPERATORS *Above Training* Heavy Equipments, Safe Access/Egress, Confined Space

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT	DESIGNATION	SIGNATURE
1	manjunath			
2	Rajesh			
3	Anand			
4	Peter			
5	Shreemidhi darwan			
6	Prasad			
7				
8				
9				
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12				
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14				
15				
16				
17				
18				
19				

TRAINER: - 6 hours

CO-TRAINER:- Amruth. Y

TOTAL MAN HOURS:-

suez	SUEZ PROJECTS PVT. LTD. PUTTUR Training Attendance Sheet	No. Rev.000 Date. 16 Dec. 2019 Page. 1 of 1

Training program:1 . Safety Induction

Date: 16-12-19 Time: 10.00 am to 10.45 am Conducted by: Vishnu

Topics Covered: * Safety Induction
* Site Safety Rules

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Budhan Kumar	SVRR	Helper	[illegible]
2.	Nitesh	SVRR	fitter	Nitesh
3.	Manish Kumar	SVRR	fitter	[illegible]
4.	Santosh	SVRR	fitter	[illegible]
5.	Abhay Kumar	SVRR	Helper	[illegible]
6.	~~Paras~~ Ram Tusla Diya	SPPL	operator	[illegible]
7.	Amal Ravi	SPPL	PEM Engineer	[illegible]
8.				
9.				
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11.				
12.				
13.				
14.				
15.				

Man Hours: 3.15 hrs.

Sign of Trainer:

APPENDIX 45: TOOL BOX TRAINING photos-PUTTUR


2019/12/14 11:50

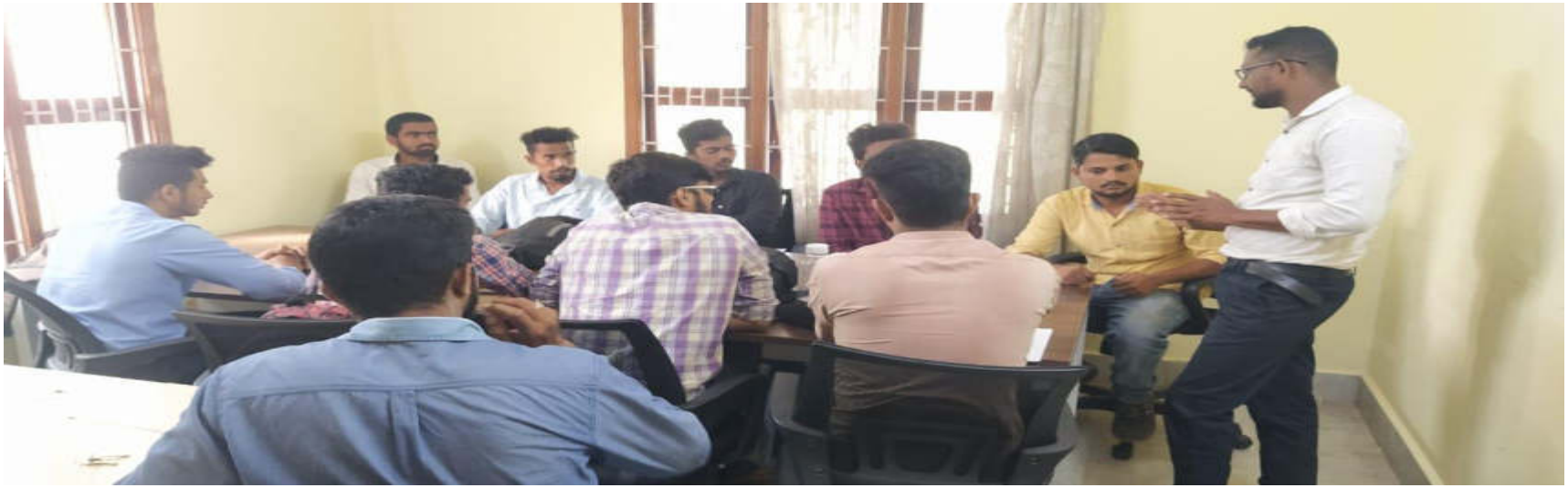

2019/12/14 11:50


Chlorine Room


2019/11/29 11:56

APPENDIX 46: TOOL BOX TRAINING PHOTOS--UDUPI

Safety Training for Workmen



Safety Training for Workers:

APPENDIX 47: TOOL BOX TRAINING-UDUPI

suez	SUEZ PROJECTS PVT. LTD.	No.
	Udupi	Rev.000
	Training Attendance Sheet	Date. Jan' 2019
		Page. 1 of 1

Training program: TBT Meeting.

Date: 30/12/19 Time: 9:45 to 10:00 Conducted by: Pradeep Shetty

Topics Covered: (1) Site Safety General Safety
(2) PPE
(3) Crowbar Sleeves using.

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Shri Ram	Krishanand	Helper	Srirama
2.	Lokesh	"	"	లోకేష్
3.	Jai ram	"	"	జైరాం
4.	Devraja	"	"	దేవరాజు
5.	Nagesh	"	"	నాగేష్
6.	Hanumantha	"	"	హనుమంత
7.	Shobha	"	"	శోభ
	Sunitha	"	"	సునిత
9.	Chandrappa	"	"	చంద్రప్ప
10.	Hanumakka	"	"	హనుమక్క
11.	Shantha	"	"	శాంత
12.	Suresh	"	"	సురేష్
13.	harisha.	"	"	హరీష్
14.	Pavithra	"	"	పవిత్ర
15.	Kumara	"	"	కుమార
16.	Meena	"	"	మీన
17.	OMkar	"	"	ఓంకార్
18.	Girijamma	"	"	గిరిజమ్మ
19.	Nagendra	"	"	నాగేంద్ర
20.	Manjouna	"	"	మంజుల
21.	Govinda.	"	"	గోవింద

Man Hours: 315 min

Sign of Trainer: Pradeep.

suez	SUEZ PROJECTS PVT. LTD.	No.
	Udupi	Rev.000
	Training Attendance Sheet	Date. Jan' 2019
		Page. 1 of 1

Training program: Safety Induction.

Date: 23/12/19 Time: 9:30 to 10:00 A.m Conducted by: Pradeep Shetty

Topics Covered: Safety Induction. General Site Safety Rules.

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Sriram	Krishanand	Helper	Sriram
2.	Lokesh	"	"	లోకేష్
3.	Jairam	"	"	జైరాం
4.	Devaraja	"	"	దేవరాజ
5.	Nagesh.	"	"	నాగేష్
6.	Hanumantha	"	"	హనుమంత
7.	Shobha.	"	"	శోభ
8.	Sunitha.	"	"	సునిత
9.	Chandrappa.	"	"	చంద్రప్ప
10.	Hanumatha.	"	"	హనుమత్
11.	Shantha.	"	"	శాంత
12.	Suresh.	"	"	సురేష్
13.	harisha.	"	"	హరీష్
14.	pavithra.	"	"	పవిత్ర
15.	kumara.	"	"	కుమార
16.	Meena	"	"	మీన
17.	OMkar.	"	"	ఓంకార్
18.	Girijamma.	"	"	గిరిజమ్మ
19.	Nagendra	"	"	నాగేంద్ర
20.	Manjanna	"	"	మంజన్న
21.	Govinda	"	"	గోవింద

Man Hours: 630 minuts

Sign of Trainer: Pradeep

suez	SUEZ PROJECTS PVT. LTD.	No.
	Udupi	Rev.000
	Training Attendance Sheet	Date. Jan' 2019
		Page. 1 of 1

Training program: TBT Meeting.

Date: 17/12/19 Time: 9:45 to 10:00 Conducted by: Pradeep Shetty

Topics Covered:

PPE wearing.

Traffic Rules & control

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Ravi Rathod	Helper - SUEZ		ರವಿ ಧಿ ರಾಠೋಡ
2.	Ravi	Helper - SUEZ		ರವಿ
3.	Shamu Chavan	Helper - SUEZ		ಶಿಮೂ
4.	Prakash Pawar	Helper - SUEZ		ಪ್ರಕಾಶ್ ಪವಾರ್
5.				
6.				
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15.				

Man Hours: 60 minutes.

Sign of Trainer: Pradeep Shetty

suez	SUEZ PROJECTS PVT. LTD.	No.
	Udupi	Rev.000
	Training Attendance Sheet	Date. Jan' 2019
		Page. 1 of 1

Training program: TBT Meeting.

Date: 14/12/19 Time: 9:20 A.m to 10:50 Conducted by: Pradeep Shetty

Topics Covered: TBT Meeting Excavation Safety PPE Usel, Traffic Safety.

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	Sign ~~COMPANY / DEPTT.~~	DESIGNATION	~~SIGNATURE~~ company DEP.
1.	Raju	RAJU	Helper	Santhosh
2.	Govind	Govind	"	"
3.	Mangamma.	[illegible]	"	"
4.	Nagendra	V. NAGENDRA	"	"
5.	Venkappa.	VENKAPPA	"	"
6.	Sudhamma	[illegible]	"	"
7.	Nagaraju.	[illegible]	"	"
8.	Shathamakka	[illegible]	"	"
9.	Nagesh	[illegible]	"	"
10.	Venkatesh	[illegible]	"	"
11.	G. Ramesh	G. RAMESH	"	"
12.	Anjanappa	[illegible]	"	"
13.	Chittamma	[illegible]	"	"
14.	Durgappa	[illegible]	"	"
15.	Manjamma	[illegible]	"	"

Man Hours: 450 mintus.

Sign of Trainer:

suez	SUEZ PROJECTS PVT. LTD.	No.
	Udupi	Rev.000
	Training Attendance Sheet	Date. Jan' 2019
		Page. 1 of 1

Training program: TBT meeting.

Date: 13/12/19. Time: 10:00 to 10:20 A.M. Conducted by: Pradeep Shetty

Topics Covered: 1. Traffic Rules.
2. PPES.

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Hanumanthappa	Krishanand	Helper	[illegible]
2.	Raju	"	"	Raju.
3.	Rafi	"	"	[illegible]
4.	Chalan Kumar.	"	"	[illegible]
5.	Ravichandra	"	"	Ravichandra
6.	Alam Amagari	"	operator.	Alam
7.	Ravinalar.	"	oper	Ravindra
	Pradeep	"	Super.	[illegible]
9.				
10.				
11.				
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15.				

Man Hours: 160 mintus.

Sign of Trainer: Pradeep.

suez	SUEZ PROJECTS PVT. LTD.	No.
	Udupi	Rev.000
	Training Attendance Sheet	Date. Jan' 2019
		Page. 1 of 1

Training program:

Date: 9/12/19 Time: 10:30 to 10:50 Conducted by: Pradeep Shetty

Topics Covered: Safety Induction. General Site Safety Rules.

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Sharan.	Ravi Contactor	Supervisor	
2.	padin ap.		operator	
3.	Mallappa.		Helper	
4.	Sanjivapp.		"	
5.	Ashok a.		"	
6.				
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Man Hours: 100 man hours

Sign of Trainer:

suez	SUEZ PROJECTS PVT. LTD.	No.
	Udupi	Rev.000
	Training Attendance Sheet	Date. Jan' 2019
		Page. 1 of 1

Training program: TBT meeting.

Date: 4/12/19 **Time:** 9:30 to 10:00 **Conducted by:** Pradeep Shetty.

Topics Covered: * General Site Safety Rules.

I ACKNOWLEDGE THAT I HAVE UNDERSTOOD THE ABOVE MENTIONED TOPICS

S/N	NAME	COMPANY / DEPTT.	DESIGNATION	SIGNATURE
1.	Raju	Sathish Labour	Helper	RAJU
2.	Govindhappa	"	"	
3.	Venkatappa	"	"	
4.	Nemnchra	"	"	V. NAGENDRA
5.	Nagesh	"	"	
6.	Shivu	"	"	
7.	Ramanjaneya	"	"	
	Ishwara	"	"	
9.	durgappa	"	"	
10.	Manjamma	"	"	
11.	Nagaraju	"	"	
12.	Senthimalchra	"	"	
13.	Ramesh	"	"	
14.	Anjanappa.	"	"	
15.	Anathappa.	"	"	

Man Hours: 225 minutes

Sign of Trainer:

APPENDIX 48: Letter no 86 - Utility Sifting - MESCOM -Electrical pole

Karnataka Urban Infrastructure Development & Finance Corpn.Ltd.,
Karnataka Integrated Urban Water Management and Investment Programme "Jalasiri"-Tranche-2

Office of the Executive Engineer, Programme Implementation Unit,
3rd Floor, Mangalore City Corporation, Lalbagh, Mangaluru 575003
Email id: [illegible]

No: KIUWMIP/PIU-MNG/CR-02/2019-20 | 86 Date: 29-04-2019

Assistant Executive Engineer
MESCOM
Vamanjoor

Sir,

Sub: "Replacement of old sewerage pumping mains and Rehabilitation of sewerage system for Mangaluru city Package No:D2/MNG/2" - Requesting for relocation of electrical pole at WW-6 shaft - reg.

Ref: 1. DRS Infratech Pvt. Ltd., Letter no: DRS/TPL-KUIDFC/MSG/2019-20/012 dated: 30.04.2019.

****

With reference to above, the above said work is taken up on tender basis and the said work is awarded to M/s. DRS Infratech Pvt. Ltd., Hyderabad and the laying of 450mm dia UCD pipe from WW-6 shaft to RMP near Canca church is in progress. Along the alignment one electrical pole is obstructing for laying of pipe. Hence it is requested to kindly make arrangement for shifting of electrical pole. It is requested to entrust this job work to any of licensed electrical contractor for which the agency M/s. DRS Infratech Pvt. Ltd., Hyderabad pay the cost incurred.

This is for information and needful action.

Yours faithfully

Assistant Executive Engineer
KUIDFC-KIUWMIP-PIU
Mangaluru

Received.
30/4
ಸಹಾಯಕ ಇಂಜಿನಿಯರ್ (ಪ್ರ)
ಕೆ. ಎ. ಇ. ಸಂ.
ಕ ನೀ, ಮಂ ಕಾಲೆ, ಮಂಗಳೂರು

APPENDIX 49: Damaged Utility latter to BSNL Copper cable damage charge. 16.03.2019(BSNL) – Kundapura

BHARATH SANCHAR NIGAM LIMITED

Office of the Sub-Divisional Engineer Phones (External) Kundapura

To,

The Asst. Executive Engineer
KIUWMIP-PIU
Kundapura.

No.N-10/Damage-Cables/KND/2018-19/82 Dated @. Kundapur the 8-3-2019

Sir,

Sub: Regarding payment of copper cable damage charges.

With reference to the above, it is requested to instruct your contractor M/s. Laxmi Civil Engineering Services PVT. LTD to pay the enclosed Demand Note towards damage charges of underground Telephone cable, Opp. Usha Hotel main road Kundapura on 06-03-2019 & 07-03-2019 while laying water pipe work by using JCB.

In the interest of public telephone service, the cable damage fault has been attended immediately and the telephone service restored.

Kindly instruct your contractor to pay the amount and payment particulars may please be intimated to this office

Thanking You,

Yours faithfully

उप मंडल अभियंता फोन्स (बाहरी), कुंदापुर
Sub-Divisional Engineer
Phones (Extnl), Kundapur - 576 201.

Copy to,

1. M/s. Laxmi Civil Engineering Services PVT. LTD, through AEE KIUWMIP-PIU Kundapura.
2. AGM (NOW) B.S.N.L. Kundapura

KIUWMIP PIU 415 16/3/19

ENG-53

BHARATH SANCHAR NIGAM LIMITED

D.K. TELECOM DIST., MANGALORE

Office of Sub-Divisional Engineer Phones (External) Kundapura

DEMAND NOTE

Demand Note No.: KND-025 Date: 08-03-2019

DETAILS OF CHARGE

Sl. No.	Type of Materials	Rate	Amount in Rs.
1	400 pair JF cable	Rs. 571 / m x 30 m	17130-00
2	200 pair JF cable	Rs. 372 / m x 10 m	3720-00
3	100 pair JF cable	Rs.299 / m x 20 m	5980-00
4	50 pair JF cable	Rs. 157 / m x 10 m	1570-00
5	Modular connector	Rs. 20 x 5 = 100 X 80	8000-00
6	U.Y Connector	Rs. 1.25 / unit x 2000 nos	2500-00
7	TSF - V Jointing Kit	Rs.1071 / 1 kit x 2	2142-00
8	TSF - IV Jointing Kit	Rs.978 / 1 kit x 2	1956-00
9	TSF - III Jointing Kit	Rs.649 / 1 kit x 8	5192-00
10	TSF - II Jointing Kit	Rs.330 / 1 kit x 2	660-00
11	Labour	6 Mazdoor @ Rs. 700 / day	4200-00
		(Materials + Mazdoor) Total	Rs.53050-00
		Overhead charges (35%)	Rs.18567-00
		Grand Total	Rs.71617-00
		Rupees: Seventy one thousand six hundred seventeen only)	

To

M/S LAXMI CIVIL ENGINEERING SERVICES PVT LTD
GURUKRUPA NILAYA OPP DASHAMI RECIDENCY
RAM MANDIR ROAD - 576201

उप मंडल अभियंता फोन्स (बाहरी), कुंदापुर
Sub-Divisional Engineer
Phones (Extnl), Kundapur - 576 201.

Karnataka Urban Infrastructure Development & Finance Corpn.Ltd.,
Karnataka Integrated Urban Water Management and Investment Programme - "jalasiri"- Tranche-2
Office of the Asst. Executive Engineer Programme Implementation Unit, Kundapura
Email Id : jalasiritranche2aeekdp@gmail.com

Letter No: KIUWMIP/PIU/KDP/CR-03/2017-18 | 116 Date : 07-03-2019

To,

The Project Manager,
M/s Laxmi Civil Engineering Services Pvt Ltd,
Opp Dashami Apartments,
Kundapur

GENTLEMEN,

Sub:- "Construction of works and Services for Operation & Management of 24x7 Water Supply System for Kundapura Town in Karnataka Package No. 02KDP01": **Damages of utilities at main road – Reg.**

Ref:- 1. Agreement Dated: 19.12.2018
2. Notice to Proceed/WO Issued Dated: 22.12.2018

Adverting the above, it is advised & instructed to you while executing the work at main road, Mechanical Excavation may create damages to existing utilities. So it is safer to go the manual excavation of trenches to avoid damages of utilities. But you ignored the PIU instruction and promised to be executed the work at your own risk & cost. In this regard, connection the BSNL cables are damaged by your JCB, Hence the BSNL services get interrupted to that area because of your work. We have received the complaints on your damages since the cables of BSNL is concerned we are not aware of any damages. Hence it is directed as per contractual clause **GCC 12.1 & GCC 51.1** to you sort out the issue as early as possible.

If any legal issue may arise the said responsibilities has to be borw to clear at your own risk & cost. Penalty if may imposed from affected departments to be cleared from your end. Please note .

****

Asst Executive Engineer,
KIUWMIP - PIU,
Kundapura

Dispatched on 8/3/2019
Signature

Received for 3.19

Corpn.Ltd.,
Karnataka Integrated Urban Water Management and Investment
Programme "Sakshi" Tranche 2
Office of the Asst. Executive Engineer Programme
Implementation Unit, Kundapura
Email Id: [illegible]

Date: 22-02-2019

Ltr No. KIUWMIP/PIU/KDP/CR- 03 /2017-18 1 1 64

To,
The Project Manager,
M/s Laxmi Civil Engineering Services Pvt Ltd,
Opp Dashami Apartments,
Kundapur

GENTLEMEN,

Sub:- "Construction of works and Services for Operation & Management of 24x7 Water Supply System for Kundapura Town in Karnataka Package No. 02KDP01":
Restricted Permission for Mechanical Excavation with JCB at main road from shastri circle to church road – Reg.

Ref: 1. Agreement Dated: 19.12.2018
2. Notice to Proceed/WO Issued Dated: 27.12.2018
3. Site Order Book Instruction Dated: 22.02.2019

Adverting the above, It is instructed to you in site order book dated 22.02.2019 while executing the work at main road Mechanical Excavation with JCB is created damages to existing running line 110dia at main road near shastri circle. In this regard, Local public representatives & chief officer is complained on you and strictly urged on you to proceed with manual excavation for 200dia DI pipe laying from Shastri Circle to Church Road. Hence it is restricted your work executing with JCB & proceed with manual excavation for avoiding damages for existing utilities & better safe executing work. Further any issue may arise you will be responsible for damages as per contractual clause **GCC 12.1 & GCC 51.1.** You are responsible for any legal complaints & penalties if may arise in future. Please note.

****

Asst Executive Engineer,
KIUWMIP - PIU,
Kundapura

GCC Approved by Executive Engineer

Dispatched on 22-02-2019
Signature

Received for

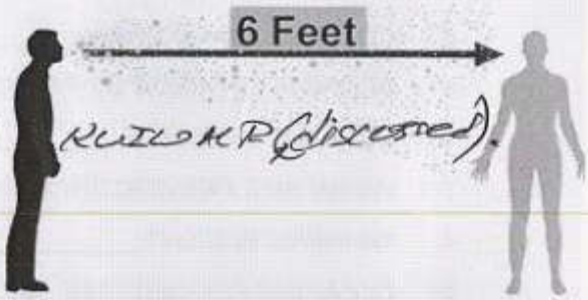
APPENDIX 50: SOP-H&S Plan issued by KUIDFC

Final H&Plan

2020

SOP-Health and Safety Plan

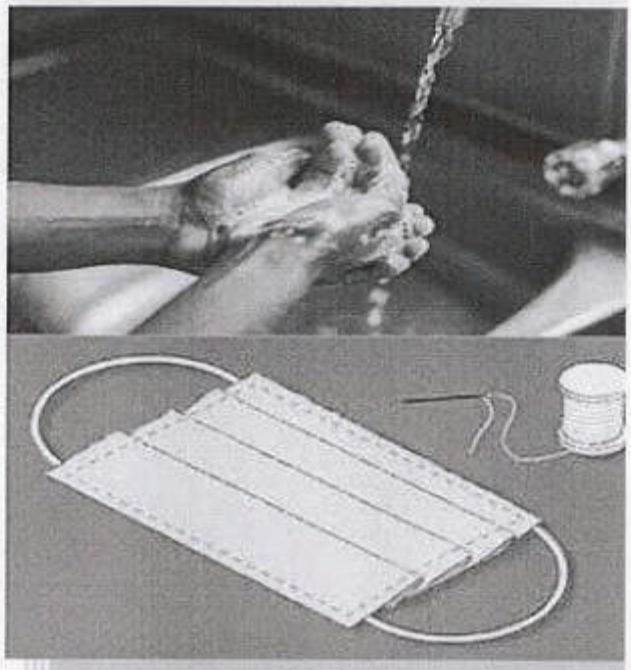
STOP the SPREAD of COVID-19



Comments of TM, KUWASHP, TM KUILOKP (discussed) and GH tech incorporated.

TOR, REVIEWED

7/5/2020.



By KUIDFC

May 2020

CONTENTS

1 INTRODUCTION[1]

- This document is intended to supplement formal H&S policies, procedures and plans that the contractor/agency has in place for its employees and staff working on KUIDFC projects. Hence, this document is not intended to replace any formalized procedures currently in place for the Contractor. Where this guideline does not meet or exceed the standards put forth by the Contractor, the Contractor shall abide by the most stringent procedure available.
- This approved project specific Health and Safety Plan (H&SP) shall be modified to require that the COVID-19 Officer[2] at the Contractor's worksite (appointed by Contractor and agreed by PIU) submit a written daily report to the Client's Representative (PIU Head). The COVID-19 Officer shall certify that the Contractor and all subcontractors are in full compliance with these guidelines.
- The COVID-19 officer should be present on site at all times, when the work is on at the premise.
- Any issue of non-compliance with these guidelines shall be a basis for the suspension of work. The Contractor will be required to submit a corrective action plan (on the next day or immediately as per the nature of issue) detailing each issue of non-conformance and a plan to rectify the issue(s). The Contractor will not be allowed to resume work until the plan is approved by the Client (PIU). Any (additional) issues of non-conformance may be subject to action against the Contractor's health & safety/safeguard clauses of the contract.
- Construction sites operating during the Covid-19 pandemic need to ensure that they are protecting their WORKFORCE and minimising the risk of spread of infection.
- This guidance is intended to introduce consistent measures on sites of all sizes in line with the Government's recommendations on social distancing.
- These are exceptional circumstances and the industry must remain abreast of and comply with the latest Government advice on COVID-19 at all times.
- The health and safety requirements of any construction activity must also not be compromised at this time. If an activity cannot be undertaken safely due to a lack of suitably qualified personnel being available or social distancing being implemented, it should not take place.
- It is to be noted that emergency services are also under great pressure and may not be in a position to respond as quickly as usual.
- Sites should remind the workforce at every opportunity of the Worksite Procedures which are aimed at protecting them, their colleagues, their families and the Karnataka population.

If a worksite is not consistently implementing the measures in this document, it may be required to shut down, till corrective measures are implemented and approved by employer.

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[1] This document may be made available in the local language, and the salient features would be displayed through signages at the appropriate locations throughout work sites and stretches by the Contractor for wider dissemination and awareness.

[2] The existing safeguards officer OR health & safety officer OR supervisor of the contractor OR PMC-team member can be designated as COVID-19 officer by undergoing the training available at
(a) https://www.who.int/emergencies/diseases/novel-coronavirus-2019/training/online-training
(b) https://openwho.org/courses/eprotect-acute-respiratory-infections
(c) https://openwho.org/courses/COVID-19-IPC-EN

2 PRINCIPLES OF WORKER PROTECTION

- Consistently practice social distancing
- Cover coughs and sneezes
- Maintain hand hygiene
- Clean surfaces frequently

3 MAXIMUM PRECAUTION FOR PERSONS/LABOURERS REPORTING TO WORK

- IF SICK, STAY HOME!
- IF SICK, GO HOME!
- IF SOMEONE SICK, SEND THEM HOME AND REPORT TO COVID OFFICER !

Contractor to provide face masks (of the type approved by Government for use to protect persons from COVID-19) to all persons working in or visiting the worksite. This along with procedures set out in this document is for maximum precaution to protect all persons/labourers at all times.

4 COVID-19 TYPICAL SYMPTOMS

- Fever
- Cough
- Shortness of Breath
- Sore Throat

All persons at the worksite should have their temperature screened by COVID-19 officer with Infrared Thermometer daily before start of work (handheld non-contact), twice a day (both morning and evening)

5 SELF-ATTESTATION BY PERSONS/LABOUR PRIOR TO WORK

Prior to starting a work (on daily basis), each labour /worker will self-attest to the supervisor:

- no signs of COVID-19 symptoms within the past 24 hours.
- No contact with an individual diagnosed with COVID-19. (contact means living with a positive person, being within 6 ft of positive person OR sharing things of positive person)
- Not undergone quarantine or isolation (in case of any labourer /worker who has been quarantined or isolated previously, the engagement shall be only after obtaining the requisite clearance)

The engagement of workers falling in the high-risk category such as workers over the age of 55 years, with underlying medical conditions or health issues, etc. should be done only after obtaining the requisite clearance from trained and registered medical practitioners.

The self-attestation would be verified in collaboration with trained and registered medical practitioners deployed at site through discussions with laborers /workers and/or preliminary checks such as temperature checks, etc. prior to their engagement at site.

In addition, the Contractor shall mandatorily follow all medical test requirements for the workers prior to their engagement and/or mobilization at site as per the guidelines issued by the Central and State government agencies and WHO from time to time.

Persons/Labourers showing COVID-19 symptoms or not providing self-attestation shall be directed to leave the work site and transported to/report to the fever clinic/quarantine centre immediately, at the cost of contractor. Labour not to return to the work site until cleared by fever clinic/quarantine centre.

6 GENERAL DIRECTION

- No handshake, Only Namaste
- Non-essential physical work that requires close contact between workers should not be carried out
- Work requiring physical contact should not be carried out. Scope for automation/mechanisation shall be explored in such cases
- Plan all other work to avoid contact between workers and/or ensure social distancing
- Wash hands often (every 1-2 hrs or as frequently as possible) with soap for at least 20 seconds
- Use hand sanitizer
- No person should enter the work site other than the authorized persons mentioned by supervisor during start of work
- Everyone at work site should practice social distancing by maintaining a minimum distance of 6-feet from others[3] at all times to eliminate the potential of cross contamination.
- Avoid face to face meetings – critical situations requiring in-person discussion must follow social distancing i.e., 6 ft from others.
- Conduct all meetings via conference calls/video, if possible. Do not convene meetings of more than 10 people. Recommend use of cell phones, texting, web meeting sites and conference calls for project discussion
- All individual work group meetings/ talks should follow social distancing
- At each job briefing /toolbox talk, employees are to be asked if they are experiencing any symptoms, and are sent home if they reply in positive
- Each worksite should display laminated COVID-19 safety guidelines and handwashing instructions at suitable locations
- All restroom /toilet facilities should be cleaned (min twice a day), and handwashing facility must be provided with soap, hand sanitizer and paper towels
- All surfaces should be regularly cleaned, including mobiles, tabletops /surfaces, door handles, laptops, records, etc.
- All common areas and meeting areas are to be regularly cleaned (min twice a day) and disinfected at least twice a day
- All persons to maintain their own water bottle, and should not be shared.
- To avoid external contamination, it is recommended everyone bring food from home
- Please maintain Social Distancing separation during breaks and lunch.
- Cover coughing or sneezing with a tissue, then throw the tissue in the trash and wash hands, if no tissue is available then cough /sneeze into your upper sleeves or elbow. Do not cough or sneeze into your hands.
- Clean your hands after coughing or sneezing thoroughly by using soap and water (minimum for 20 seconds). If soap and water are not available, please use a hand sanitizer. The Contractor shall ensure adequate quantities of sanitizer and soap are

[3] Social distancing may not be practical for undertaking certain specific activities within the workplace. It is therefore important to review the work method statements for these types of activities to assess impact and how to find safe ways of doing in line with best available guidance.

made available at all locations including site offices, meeting rooms, corridors, washrooms /toilets, etc. as appropriate.

- Avoid touching eyes, nose, and mouth with your hands
- To avoid sharing germs, please clean up after Yourself. DO NOT make others responsible for moving, unpacking and packing up your personal belongings
- If you or a family member is feeling ill, stay home![4]
- Work schedules are adjusted to provide time for proper cleaning and disinfecting as required.
- Ensure separate disposal of used masks/used hand tissues, etc.

7 WORK-SITE PREVENTION PRACTICES

- At the start of each shift, confirm with all employees that they are healthy and inform all workers of reusable and disposable PPE.
- Outside person(s) should be strictly prohibited at worksite
- All construction workers will be required to wear cut-resistant gloves or the equivalent.
- Use of eye protection (reusable safety goggles/face shields) is recommended. The supply of eye protection equipment to the workers is considered as a standard part of PPE during construction works.
- In work conditions where required **social distancing is impossible** to achieve, such employees shall be supplied with standard face mask, gloves, and eye protection.
- All employees shall drive to work site in a single occupant vehicle. Staff shall not ride together in the same vehicle
- When entering a machine or vehicle which you are not sure whether you were the last person to enter, make sure that you wipe down the interior and door handles with disinfectant (with 1% sodium hypochlorite solution daily) prior to entry. Adequate quantity of the disinfectant shall be provided by the Contractor at all such site-specific locations.
- Workers should maintain separation of 6' from each other.
- Multi person activities will be limited where feasible (two persons lifting activities)
- Gathering places on the site such as sheds and/or break areas will be eliminated, and instead small break areas will be used with seating limited to ensure social distancing.
- Contact the cleaning person of the worksite and ensure proper COVID-19 sanitation processes. Increase cleaning/disinfection visits to at least 2 times a day. Cleaning person(s) to be provided with gloves, gown and face mask for each cycle of cleaning. The Contractor shall make available adequate supply of PPE and chemicals while the threat of COVID-19 continues.
- Clean all high contact surfaces a minimum of twice a day in order to minimize the spread of germs in areas that people touch frequently. This includes but is not limited to desks, laptops and vehicles
- All employees to maintain good health by getting adequate sleep; eating a balanced, healthy diet, avoid alcohol/tobacco; and consume plenty of fluids.
- Continuation of works in construction project with workers available on site and no workers to be brought in from outside, without prior approval of Deputy Commissioner of originating and destination locations.

[4] The workers with no sick-leave would be supported with additional leave while affected by COVID-19 by the Contractor. The workers who have to stay home because of COVID19 affected family member(s), the Contractor shall pay for the days for staying away from the work.

- The site offices shall have adequate ventilation. The air conditioning or ventilation systems installed at the site offices would have high-efficiency air filters to reduce the risk of infection. The frequency of air changes may be increased for areas where close personal proximity cannot be fully prevented such as control rooms, elevators, waiting rooms, etc.
- The Contractor shall carry out contactless temperature checks for the workers prior to site entrance, during working hours and after site works to identify persons showing signs of being unwell with the COVID-19 symptoms

8 WASHING FACILITY

- All worksites should have access to toilet and hand washing facility.
- Providing hand cleaning facilities at entrances and exits. There should be soap and water wherever possible or hand sanitiser if water is not available
- Washing facility with hot water, and soap at fire hydrants or other water sources to be used for frequent handwashing for all onsite employees
- All onsite workers must help to maintain and keep stations clean
- If a worker notices soap or towels are running low or out, immediately notify supervisors. Proactively supervisor should make sure shortage situation never occurs.
- Garbage bins to be placed next to the hand wash facility for discarding of used tissues/towels with regular removal and disposal facility (end of each day)

9 CLEANING PROCEDURES

Increase cleaning/disinfection visits to at least 2 times a day. Cleaning person(s) to be provided with gloves, gown and face mask for each cycle of cleaning.

Each worksite should have enhanced cleaning and disinfection procedures that are posted and shared including sheds, gates, equipment, vehicles, etc. and shall be posted at all entry points to the sites, and throughout the project site. These include common areas and high touch points like

- Taps and washing facilities
- Toilet flush and seats
- Door handles and push plates
- Handrails on staircases and corridors
- Lift and hoist controls
- Machinery and equipment controls
- Food preparation and eating surfaces
- Telephone equipment / mobiles
- Keyboards, photocopiers and other office equipment

Re-usable PPE should be thoroughly cleaned after use and not shared between workers

10 LABOUR CAMP

Contractor shall follow a zero-tolerance policy on wearing of masks.

Masks (homemade[5] can be thought of) to be provided to all the persons/labourers for use at the camp site as well as at the worksite. Increase cleaning/disinfection visits to at least 2 times

[5] Advisory on use of Homemade Protective Cover for Face & Mouth by GOI

a day. Cleaning person(s) to be provided with disposable gloves, gown and face mask for each cycle of cleaning.

10.1 Toilet Facility

- Restrict the number of people using toilet facility at any one time e.g. appoint one welfare attendant among the labours.
- Wash hands before and after using the facilities
- Enhance the cleaning regimes for toilet facilities particularly door handles, locks and the toilet flush
- Portable toilets should be avoided wherever possible, but where in use these should be cleaned and emptied more frequently
- Provide suitable and sufficient rubbish bins for hand towels with regular removal and disposal.

10.2 Eating/snacks Arrangements

- With eateries having been closed (restricted) across Karnataka, providing permanent (till society is safe from COVID-19) on-camp/off-camp cook/helpers can be implemented. Make sure that the "Guidelines for food handling, preparation and distribution during COVID-19" and it regular updates are being followed.
- Whilst there is a requirement for construction camps to provide a means of heating food and making hot water, these are exceptional circumstances and where it is not possible to introduce a means of keeping equipment clean between use, etc. must be removed from use.
- Contractor to arrange all daily need items and grocery at site itself and no worker is allowed to go to shops for daily need items.
- Dedicated eating areas should be identified on camp to reduce food waste and contamination
- Break times should be staggered to reduce congestion and contact at all times
- Hand cleaning facilities or hand sanitiser should be available at the entrance of any room where people eat and should be used by workers when entering and leaving the area
- Workers should sit 2 metres apart from each other whilst eating and avoid all contact
- Where catering is provided on camp, it should provide pre-prepared and wrapped food only
    - Payments should be taken by contactless options wherever possible
    - Crockery, eating utensils, cups etc. should be avoided wherever possible
- Drinking water should be provided with enhanced cleaning measures of the tap mechanism introduced
- Tables should be cleaned between each use
- All rubbish should be put straight in the bin and not left for someone else to clear up; only covered pedal operated bins should be used and the bins should be cleared and cleaned regularly, with strict adherence to safety protocols for disposal and hygiene maintenance (including proper PPE's such as gloves, mask and apron worn by the waste handler/cleaner and disposal at a designated place);
- All areas used for eating must be thoroughly cleaned at the end of each break and shift, including chairs, door handles, etc.

10.3 Changing Facilities, Showers and Drying Areas

- Introduce staggered start and finish times to reduce congestion and contact at all times
- Introduce enhanced cleaning of all facilities throughout the day and at the end of each day

- Consider increasing the number or size of facilities available on camp if possible
- Based on the size of each facility, determine how many people can use it at any one time to maintain a distance of two metres
- Provide suitable and sufficient garbage bins in these areas with regular removal and disposal.
- Visitor log should be strictly maintained that the labour camp.

COVID-19 officer will ensure compliance with prevention issues at the labour camp(s).

11 UPDATES ON COVID-19

The Contractor shall be in touch with the Department of Health & Family Welfare and Labour Department to identify any potential worksite exposures relating to COVID-19, including:

- Strictly follow the guidelines issues by Ministry of health and OSHA
- Other workers, vendors, inspectors, or visitors to the worksite with close contact to the individual
- Labour Camps / Work areas such as designated workstations or rooms /sheds
- Work tools and equipment
- Common areas such as break rooms, tables and sanitary facilities
- Take up insitu health check up camps

Also refer the following websites from time to time for regular updates.

https://www.mohfw.gov.in/
https://karunadu.karnataka.gov.in/hfw/Pages/home.aspx

This document can be updated from time to time based on the advisories or directions of the Govt.

12 TRAINING

- RPMU/PIU to ensure all workers get training on above requirements before start of any construction activity
- During construction period frequent visual and verbal reminders to workers can improve compliance with hand hygiene practices and thus reduce rates of infection. Handwashing posters should also be displayed at work site and labour camps

13 EMERGENCY CONTACT

- Provide emergency contact number(s) at work site and labour camp for reporting COVID-19 symptoms

Ensure all staff and personal use enrol and use the Aarogya Setu app, recommended by GOI for tracking COVID-19 patients.

N. 15/5/2020
N. SRINIVAS
General Manager (Technical)
K.U.I.D.F.C Limited
Govt. of Karnataka Undertaking
Bangalore - 560 038.

Managing Director
K.U.I.D.F.C. Bangalore