Semi-Annual Environmental Monitoring Report

Project number: 43253-025

Period: January - June 2017

IND: Karnataka Integrated Urban Water Management Investment Program – Tranche 1

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Semi Annual Environmental Monitoring Report

ADB Loan Number 3148-IND
Period Covered: January to June 2017

India: Karnataka Integrated Urban Water Management Investment Program **(KIUWMIP)**

Tranche 1- 5th Report

October 2017

Prepared by
Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) Government of Karnataka for Asian Development Bank

ABBREVIATIONS

ADB	Asian Development Bank
ADB SPS	Asian Development Bank Safeguard Policy Statement
APMC	Agricultural Produce Market Committee
BOD	Bio-Chemical Oxygen Demand
BPL	Below Poverty Line
CAP	Corrective Action Plan
CBO	Community Based Organizations
CC	Complaint Cell
CC Drain	Cement Concrete Drain
CFE	Consent for Establishment
CFO	Consent for Operation
CGWB	Central Ground Water Board
CMC	City Municipal Council
CPCB	Central Pollution Control Board
dbA	Decibels
DI	Ductile Iron
DPR	Detailed Project Report
DS	Double Suction
EA	Executing Agency
EAC	Expert Appraisal Committee
EC	Environmental Clearance
EIA	Environmental Impact Assessment
ELSR	Elevated Storage Reservoir
EMP	Environmental Management Plan
GDP	Gross Domestic Product
GIL	Grasim Industries Limited
GoI	Government of India
GoK	Government of Karnataka
GLSR	Ground Level Service Reservoir
GRC	Grievance Redress Committee
HDPE	High Density Polyethylene
H&S	Health and Safety
IA	Implementing Agency
IEE	Initial Environmental Examination
IWRM	Integrated Water Resource Management
KIUWMIP	Karnataka Integrated Urban Water Management Investment Program
KMRP	Karnataka Municipal Reforms Project
KSPCB	Karnataka State Pollution Control Board
KSRTC	Karnataka State Road Transport Corporation
KTCP	Karnataka Town and Country Planning
KUIDFC	Karnataka Urban Infrastructure Development & Finance Corporation
KUWSDB	Karnataka Urban Water Supply & Drainage Board
M&M	Major and Medium
MFF	Multitranche Financing Facility
MoEFCC	Ministry of Environment, Forest & Climate Change
MSL	Mean Sea Level
NGO	Non-Government Organization
NKUSIP	North Karnataka Urban Sector Investment Program
NOx	Nitrogen Oxide

NRW	Non Revenue Water
OCRP	Office of Compliance Review Panel
OHT	Over Head Tank
OSPF	Office of the Special Project Facilitator
O&M	Operation & Maintenance
PC	Program Consultants
PCU	Project Co-ordination Unit
PMU	Program Management Unit
PMDCSC	Project Management Design and Construction Supervision Consultant
PIU	Program Implementation Unit
PWD	Public Works Department
RCC	Reinforced Cement Concrete
REA	Rapid Environmental Assessment
RF	Resettlement Framework
RP	Resettlement Plan
RPMU	Regional Program Management Unit
RSPM	Residual Suspended Particulate Matter
SC	Scheduled Caste
SEIAA	State Environmental Impact Assessment Authority
SPM	Suspended Particulate Matter
SPS	Sewage Pumping Station
ST	Scheduled Tribe
STP	Sewage Treatment plant
SW	Stone Ware
TMC	Town Municipal Council
ToR	Terms of References
UGD	under Ground Drainage
ULB	Urban Local Body
UDWSP	Urban Drinking Water & Sanitation Policy
USD	US Dollars
(U)WSS	(Urban) Water Supply & Sanitation

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I. INTRODUCTION

A. Background

1. 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 & 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 & sanitation within an IWRM context.

2. The Program will be implemented over a four-year period and will be funded by a loan via the Multitranche Financing Facility (MFF) of Asian Development Bank (ADB). 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). Initially Byadgi, Harihar, Ranebennur and Davangere are the four towns chosen to benefit from the first tranche of the investment. As the Detailed Project Report costs have exceeded substantially compared to the costs indicated on the basis of feasibility studies, ADB would finance water and sewerage infrastructure only in three towns namely (1) Davanagere, (2) Harihar and (3) Byadgi under Tranche-1 (investments on Ranebennur sewerage and water supply are proposed to be met out of NKUSIP savings and GoK exclusive funding respectively)

3. The programme proposes the MFF spread across two tranches over a period of ten years (2014-2024) with the total size of $225 M. The shares of ADB propose to be $150 million and counterpart funding from the state Government is estimated at $75 million. In addition to the Loan funds of $150M, the ADB has agreed to support the programme with an additional amount of $1.8 M as a grant fund out of its urban financing partnership facility.

4. In **Tranche 1** main outcome will be providing 24x7 Water supply and sewerage system including treatment of sewage at Byadgi, Harihar and Davangere. Location of project towns is shown in **Figure 1.**

5. The Program Management Unit (PMU) is located in Bangalore, Regional Program Management Unit (RPMU) in Davangere and Program Implementation Unit in the three Tranche 1 towns has been established. Project Management Design & Construction Supervision Consultant (PMDCSC) is also in placed.

B. Purpose of the Report

6. **Environmental Categorization**. KIUWMIP **Tranche 1** town has been categorized as ADB **Category B** for environment as per ADB Safeguard Policy (SPS 2009). Initial environmental examination reports (IEEs) were prepared for each subproject.

7. This report is the semi-annual environment monitoring report (SEMR) covering period **January to June 2017**. This SEMR describes the implementation of the environmental management plan (EMP) in each subproject IEE.

Figure 1: Location of project towns

II. IMPLEMENTATION PROGRESS

A. Status of Subprojects under Tranche 1

8. There are 6 sub projects in Tranche 1 (Project 1) under implementation. Two water supply packages, one at Byadgi and other at Harihar are awarded recently. Physical construction has been continued for one sub project at Byadgi (UGD-STP), one sub project at Harihar (UGD+STP) and two sub projects at Davangere (separate contract for UGD and STP). Status of sub projects is given in **Table 1.** Project implementation status is given in **Appendix 1.** Site photographs are attached as **Appendix 2.**

Table 1: Status of Sub Project under Tranche 1 (Upto 30th June 2017)

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
Byadgi	**01BDG01**	Design, Build, Operate & Maintain for 6 years for Byadgi comprehensive scheme from covering SBR STP (5 MLD), network (82.2 km), and 3202 manholes, construction of one septic tank (275 users, 0.03 ML) and provision of 6,206 nos HSCs	16.04.2016	36 months	15.04.2019	**Cumulative Progress Up to June-2017** **Sewer Pipe Line** **uPVC Pipes** • Laying of 21,952 m of 160 mm pipe completed. • Laying of 228 m of 200 mm pipe completed. **RCC Pipes** • Laying of 15 m of 150 mm pipe completed. **Total for Pipeline** • Laying of 22,195 m completed. **Manholes** • Construction of 869 manholes Completed. **House service Connection** • Total 540 m of 110mm pipe line work completed. **STP Works** • SBR base raft concreting	**21.9%**	No

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						completed. SBR tank reinforcement work under progress. • Compound wall plinth beam and wall brick work under progress. • PCC for chlorine contact tank completed and raft work under progress. • Earth work excavation for workshop under progress. • Earth work excavation for wet well under progress.		
Byadgi	**01BDG02**	Improvement of Water Supply System (bulk) in Byadgi Town -. Laying of 8.7 km water supply pipeline of 400mm Diameter.	18.05.2017	18 months	17.11.2018	**Preliminary activity started** • Supply of DI Pipes under progress. • Joint confirmatory survey under progress.	Work just started	-

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
Harihar	**01HRA01**	Expansion of the sewerage network (72.16 km sewers, 2640 nos. manholes, 4 nos. pumping stations, 18 MLD STP)	09.01.2015	30 months	08.07.2018	**Cumulative Progress Up to June -2017** **<u>Sewer Pipe Line RCC-NP3 class</u>** • Laying of 753 m of 500mm diameter pipes Completed. • Laying of 188 m of 450 mm diameter pipes Completed. • Laying of 1,358 m of 350 mm diameter pipes Completed. • Laying of 1,317 m of 300 mm diameter pipes Completed. • Laying of 1,478 m of 250mm diameter pipes Completed. • Laying of 509 m of 200mm diameter pipes Completed. • Laying of 2,301 m of 150mm diameter pipes Completed. **<u>uPVC pipes</u>** • Laying of 58,091 m of 160 mm diameter pipes Completed. • Laying of 3,368 m of 200 mm diameter	**72.4%**	No

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						pipes Completed. • Laying of 2,290 m of 250 mm diameter pipes Completed. Total for Pipeline • Total of 71,653 m of pipe line work completed. Manholes • Construction of 2,300 manholes Completed. **DI Pumping Main (K-7 Class)** • Laying of 1,263 m of 400 mm diameter pipes Completed. • Laying of 655 m of 300mm diameter pipes Completed. • Laying of 888 m of 200mm diameter pipes Completed. • Laying of 925m of 150 mm diameter pipes Completed. • Total 3,731 m of Pumping main pipe line work completed House service Connection		

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						• Total 40,582 m of 110mm pipe line work completed. **Other Works** **WET WELLS** • Wet well and Screen chamber work completed at Amaravathi wet well and pump house completed up to roof level. • Wet well and Screen chamber work completed at APMC wet well and pump house completed up to roof level. • Concrete work completed up to roof level for Pump house and screen chamber and wet well completed at Guttur wet well. • Wet well completed at Keshava Nagara and screen chamber work under progress and		

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						column cc work completed for pump house. **Sewage Treatment Plant** **Formation of Bunds** • FA-2 & FA-3 Bund formation work completed up to 4.5mtr. • MA- Branket and Floor Bed formation work completed. • MA-pond Bund formation work under progress. **Baffle Wall** • 5wall's-Completed &FA-1 Wall-A Concrete work is under progress. • Completed for Maturation Pond. **Foot Bridge** • 21 Nos. Aerator & 186 No Column Concrete work completed up to Foot Bridge level. • FA-3-A & FA-2-A Completed		

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						• Floor Slab Concrete work under progress. **Pre Treatment Unit** • Inlet Structure work under Progress.		
Harihar	**01HRA02**	Improvement of water supply system (bulk) in Harihara City. package • Dismantling of existing WTP. • Raw water transmission pipeline for 4.3 km of 400mm diameter. • Construction of new 20 MLD capacity Water treatment plant. • Clear water transmission pipeline for 11.51 km ranging from	18.05.2017	18 months	17.11.2018	**Preliminary activity started** • Dismantling of existing WTP completed. • Supply of DI Pipes under progress. • Joint confirmatory survey under progress. • Design mix for concrete works under progress.	Work just started	No

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
		450mm diameter to 200mm diameter. • Construction of two OHTs of 15 LL capacity and 10LL capacity.						
Davangere	**01DVG01**	Expansion of sewerage system (District 1 & 3) for Davangere -203.46 km sewers, 7581 nos. manholes	09.01.2015	36 months	08.01.2018	**Cumulative Progress Upto June -2017** **<u>RCC-NP3 pipes</u>** • Laying of 1,091 m for 600 mm diameter completed. • Laying of 402 m for 500 mm diameter completed. • Laying of 636 m for 450 mm diameter completed. • Laying of 920 m for 400 mm diameter completed. • Laying of 1613 m for 350 mm diameter completed. • Laying of 4,869 m	**59.79%**	No

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						for 300 mm diameter Completed. • Laying of 1,077 m for 250 mm diameter Completed. • Laying of 939 m for 200mm diameter Completed. <u>GSW Pipes</u> • Laying of 110 m laying of 250 mm pipe completed. • Laying of 37,245 m laying of 200 mm GSW pipe completed. • Laying of 9,692 m laying of 150 mm pipe completed. <u>uPVC Pipes</u> • Laying of 281 m laying of 200 mm pipe completed. • Laying of 14 m laying of 250 mm pipe completed. <u>DWC Pipes</u> • Laying of 41,285 m laying of 200 mm		

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						pipe completed. Total for pipeline • Total of 100.174 m of pipe line completed. Manholes • Installation of 3,454 No of manholes completed. House service Connection • Laying of 49,882 m House service connection of 110mm diameter completed. • 3481 no's of Brick masonry chamber completed. • 30 no's of Precast RCC receiving chamber completed. Other works Construction drawings issued for 147.16 Km as per new Condition survey to the Contractor.		
Davangere	**01DVG01A**	Improvements to sewerage system	28.09.2015	24 months	27.09.2017	5 MLD STP SBR TYPE • Pump House-	**86.96%**	No

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
		in Davangere (STP)- DBO for 20 MLD SBR STP & DBO for 5 MLD SBR STP				Mechanical erection completed. Finishing and painting work under progress. • Chlorine Contact Tank- Mechanical erection completed. Finishing and painting work under progress. • Toner Room- Mechanical erection completed. Finishing and painting work under progress. • Centrifuge Room- Mechanical erection completed. Finishing work under progress. • SBR- Mechanical erection completed. Finishing work and painting under progress. • Admin Building/Blower room- Mechanical erection completed.		

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						Finishing work and painting under progress. • PTU- Mechanical erection completed. Finishing work and painting under progress. • Staff quarters- Finishing and painting work under progress. • Construction of Nallah protection wall completed for 72m and finishing works under progress. • Watchman Cabin- Painting work under progress. • Sludge Treatment Unit- Mechanical erection completed. Finishing work and painting under progress. • Compound Wall- Finishing and painting work under progress.		

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						• Box Culvert- Finishing work under progress. • Road works- Completed and drain works under progress. <u>20 MLD STP SBR TYPE</u> • Blower Room- Mechanical erection completed. Painting under progress. • Toner Room- Mechanical erection completed. Painting under progress. • Centrifuge Room- Mechanical erection completed. Painting under progress. • SBR- Mechanical erection completed. Finishing work and painting under progress. • Chlorine Contact Tank- Mechanical erection completed. Finishing work and painting under		

Town	Package No.	Component	Start Date	Number of Days/Months to Complete Work	Schedule Completion date	Works completed/ under execution	% Physical Progress against total Quantity as of 30th June 2017	Package Completed as of 30th June 2017
						progress. • PTU- Mechanical erection completed. Finishing work and painting under progress. • Sludge Treatment Unit- Mechanical erection completed. Finishing work and painting under progress. • Compound Wall- Completed at three sides and one side is balance. • Road Works- Completed and drain works under progress.		

9. Other remaining Water supply packages to be implemented under Tranche 1 program and status of IEEs are as follows.

Sr. No.	Packages	Status of implementation as of 30 June 2017	Status of IEE
1	24 x 7 Water Supply System (BULK) to Byadgi Town. Package no.**01BDG02** • Replacement of part of transmission main length 8.7 km with DI K9 pipes.	IFB issued on 08.06.2016. Technical bid was opened on 2nd August 2016 and TBER was finalized on 14th October 2016. Price bid was opened on 4th Feb 2017 and contract awarded on 13th April 2017 Physical work to be started	Updated IEE report accepted by ADB and disclosed in KUIDFC and ADB website.
2	24 x 7 Water Supply System (BULK) to Harihar Town. Package no.**01HRA02** • Rehabilitation and augmentation of pumping machinery at existing Jack well • Construction of new 20 MLD WTP including installation of measuring devices at appropriate locations. • Providing new raw water main 4.3 km. • Treated water pumping main 10.77 km. • Construction of 2 nos. new ELSR and rehabilitation of 1 ELSR.	IFB issued on 08.06.2016. Technical bid was opened on 2nd August 2016 and TBER was finalized on 14th October 2016. Price bid was opened on 4th Feb 2017 and contract awarded on 13th April 2017 Physical work to be started	Updated IEE report accepted by ADB and disclosed in KUIDFC and ADB website.
3	24 x 7 Water Supply Distribution System to Byadgi Town. Package no.**01WS03** • Construction of one 1 LL capacity OHT at Nehru Nagara. • Distribution pipeline of 101.5 km ranging from 63mm diameter to 300mm diameter. • Providing 7389 number of House service connections.	IFB issued on 13.04.2017. Technical bid was opened on 6th June 2017 and TBER was finalized on 20th June 2017. Price bid was opened on 30th June 2017 and evaluation is under progress. Expected to be awarded by July 2017	Updated IEE report accepted by ADB and disclosed in KUIDFC and ADB website.
4	24 x 7 Water Supply Distribution System to Harihara City. Package no.**01WS04** • Distribution pipeline of 178 km ranging from 63mm diameter to 400mm diameter. • Providing 14,000 number of House service connections.	IFB issued on 26.04.2017. Technical bid will be opened on 3rd July 2017. Price bid to be opened shortly Expected to be awarded by September 2017.	Updated IEE report accepted by ADB and disclosed in KUIDFC and ADB website.
5	Design, Build and Operate (i) Improvement of Bulk Water Supply for 24x7 Water supply to Davanagere city – AND (ii) Operation and Maintenance of the Bulk Water Supply System for a period of three (3) months for Davanagere City Corporation in Karnataka. Package no.**01WS01**	The Letter of acceptance issued on 17 June 2017. Notice to proceed will be issued shortly. Contractor yet to mobilized	Updated IEE report accepted by ADB and disclosed in KUIDFC and ADB website.

Sr. No.	Packages	Status of implementation as of 30 June 2017	Status of IEE
	• Construction of 120 MLD capacity Intake well and Jackwell at Rajanahalli. • Raw water transmission pipeline for 13.405 km of 1100mm diameter. • Construction of new 40 MLD capacity Water treatment plant. • Pure water pumping main from WTP to break pressure tank at Bathi Hillock. • Construction of RCC bridge 150 m pipeline for crossing Sulekere nallah		
6	24 x 7 Water Supply Distribution System to Davanagere City. Package no.**01WS05** • Clear water transmission pipeline for 59.65 km ranging from 200mm diameter to 1000mm diameter. • Construction of 19 New OHTs. • Distribution pipeline of 1,162 km ranging from 75mm diameter to 500mm diameter (DI & HDPE) • Providing 97,777 number of House service connections. • Rehabilitation of Head works (Intake & Jackwell) & WTP-3 nos. , OHT-30 nos.	The IFB issued on 21.06.2017. The last date for bid submission on 17.08.2017	Updated IEE report accepted by ADB and disclosed in KUIDFC website.

B. Compliance to Safeguard Loan Covenants

10. The loan agreement for KIUWMIP Project 1 was signed on 30th December 2014 and available in ADB website (http://www.adb.org/sites/default/files/project-document/153027/43253-025-lbj.pdf). **Table 2** provides a summary of compliance to the loan covenants related to environmental safeguards.

Table 2: Compliance to Loan Agreements (Environmental Safeguards)

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
Schedule 4 Item 9	**Procurement of Goods, Works and Consulting Services** **<u>Conditions for Award of the Contract</u>** The Borrower shall ensure or cause the EA **to not award any Works contract** for a Subproject which **involves environmental impacts** until the EA has: a)Obtained the final approval of the IEE from the relevant environment authority of the Borrower and the State, and ADB; and b) Incorporated the relevant provisions from the EMP into the Works contract.	a) Obtained concurrence from ADB for Updated IEE sewerage packages of Davangere, Byadgi & Harihar. b) Incorporated EMP into the works contract of Davangere, Harihara and Byadgi sewerage works. Also obtained concurrence from ADB for Updated IEEs for new water supply packages for Davangere, Harihar and Byadgi
Schedule 5 Item 10	**Safeguards -Environment** The Borrower shall ensure or cause the EA to ensure that the preparation, design, construction,	**Under compliance** Document is prepared by complying all relevant State and National Laws, Safeguard

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
	implementation, operation and decommissioning of the Project, and all projects' facilities comply with (i) all applicable laws and regulations of the Borrower and the State relating to environment, health, and safety; (ii) the Environmental Safeguards; (iii) the EARF; and (iv) all measures and requirements set forth in the respective IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	Policy Statement (SPS 2009) of ADB, Environment Assessment Review Framework (EARF) for Tranche-1 program. Same will be followed for subsequent Tranches. For **Tranche 1** project Initial Environmental Examination (IEE), Environment Management Plan (EMP) report prepared and approved by ADB. IEE has been updated for Byadgi sewage package due to change in scope and treatment technology. Updated Byadgi sewerage IEE report submitted to ADB on 16 December 2016 was accepted by ADB on 16 January 2016.Further review will be conducted at implementation phase. Final design for Harihar UGD and STP package, Davangere sewerage package and Davangere STP package have been reviewed. IEE and EMP have been updated as per final design and scope at implementation stage. Updated Davangere sewerage package and Harihar sewerage package IEE/EMP accepted by ADB on December 2016 and January 2017 respectively. All updated reports already disclosed in ADB website. IEE has been prepared for water supply packages at Davangere, Harihar and Byadgi and all the reports accepted by ADB and disclosed during November 2016 to January 2017. All safeguard measures and requirements as prescribed in IEE/EIA and EMP being considered during implementation. Corrective or preventive action plans including personal protection will be reflected in Environment Monitoring Report and project implementation authority will be taken care.
Schedule 5 Item 14	Human and Financial Resources to Implement Safeguards Requirements The Borrower shall make available, or cause the EA to make available, all necessary budgetary and human resources to fully implement the EMP required.	**Complied** Budgetary provisions have been included in EMP of Tranche 1 sub projects. Environment Engineer (Asst. Executive Engineer) is placed in PMU Human resource (project consultant, i.e Environmental Specialist of PMDCSC) for implementation of EMPs is in place for regular compliance.
Schedule 5 Item 15	The Borrower shall ensure, or cause the EA to ensure, that all bidding documents and contracts	**Under compliance**

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
	for Works contain provisions that require contractors to: (a) comply with the measures and requirements relevant to the contractor set forth in the IEE, the EMP, the RP and the IPP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;	(a) Approved IEE, EMP for Tranche 1 project is attached in Bidding documents. This process will be followed for all the sub projects within the present Tranche and subsequent Tranche. In case of any change of scope, revised IEEs, EMPs will be prepared and corrective measures will be disclosed to contractor and same will be reflected in the "Environment Monitoring Report" For **Tranche 1** project Initial Environmental Examination (IEE), Environment Management Plan (EMP) report prepared and approved by ADB. IEE has been updated for Byadgi sewage package due to change in scope and treatment technology. Updated Byadgi sewerage IEE report submitted to ADB on 16 December 2016 was accepted by ADB on 16 January 2016. Further review will be conducted at implementation phase. Final design for Harihar UGD and STP package, Davangere sewerage package and Davangere STP package have been reviewed. IEE and EMP have been updated as per final design and scope at implementation stage. Updated IEE for Harihar UGD and STP accepted by ADB on 13th January 2017 Updated IEE for Davangere and STP accepted by ADB on 16th December 2016. All updated reports already disclosed in ADB website. IEE has been prepared for water supply packages at Davangere, Harihar and Byadgi and all the reports accepted by ADB and disclosed during November 2016 to January 2017. Corrective actions were taken on the contractor regarding 1) To ensure PPE at all ongoing sites 2) To ensure separate sanitation facility for men & women and 3) arrangement of public safety and 4) camp site management
	(b) make available a budget for all such environmental measures;	(b) IEE indicates budgetary provisions for implementation of EMP **Appendix 3** shows budgetary provision for safeguard implementation under different

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
		packages
	(c) provide the EA with a written notice of any unanticipated environmental risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, the RP or the IPP;	(c) With the development of sub project and implementation, in case of additional impacts/risks due to change in scope/area, that will be reflected in the revised IEEs, EMPs and Environment Monitoring Report and accordingly project Executing Agency will inform the Construction Agency for taking relevant corrective measures. Till date no unanticipated environmental risks or impacts reported
	(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and	(d) Haul roads will be marked properly (by avoiding residences and agricultural land) before commencement of transportation of materials.
	(e) fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	(e) Pathways, land which are likely to be affected for a short period during implementation of the sub project will be restored by concerned construction agency before acceptance of the work. Restoration status will be reflected in post construction monitoring report
Schedule 5 Item 16	Safeguards Monitoring and Reporting The Borrower shall cause the EA to do the following:	**Under compliance**
	(a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;	(a) This is 5th semi-annual Safeguards Monitoring Report is prepared for the period January to June 2017, 4th SEMR for the period July to December 2016 was approved by ADB on July 2017 and to be disclosed on KUIDFC website and respective ULB Websites shortly
	(b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEEs, the EMPs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and	(b) With the development of project and implementation, in case of additional impacts/risks due to change in scope/area, will be reflected in revised IEEs, EMPs and accordingly Executing Agency (EA) will inform the ADB along with corrective action plan which will be reflected in the Monitoring Report.
	(c) report any breach of compliance with the measures and requirements set forth in the EMPs, promptly after becoming aware of the breach.	(c) in case of any breach of compliance with the measures and requirements set forth in the EMP; EA will promptly inform ADB and suitable corrective action plan will be planned.

Serial no. as per loan agreement	Program Specific Covenants	Status / Issues
Schedule 5 Item 17	**Prohibited List of Investments** The Borrower shall ensure or cause the State to ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	**Complied** Under Tranche -1, there is no violation of prohibited investment activities as per ADB SPS (2009) Appendix 5. Same will be followed in subsequent Tranches
Schedule 5 Item 18	**Other Social Measures** The EA shall ensure that civil works contracts under the Project follow all applicable labor laws of the Borrower and the State, and that these further include provisions to the effect that contractors: (i) carry out HIV/AIDS awareness programs for labor and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; and (ii) follow and implement all statutory provisions on labor (including not employing or using children as labor, equal pay for equal work), health, safety, welfare, sanitation, and working conditions. Such contracts will also include clauses for termination in case of any breach of the stated provisions by the contractors.	**Complied in document and during implementation** Provision are included (as per EMP & BID document) to carry out HIV/AIDS awareness programs for construction contractor, application of all relevant labour laws for health and safety including child labour law and engagement of local labours (preferably from economically backward group) covering women labours. In case of any breach of provision, necessary corrective measures as per contract clauses shall be taken. All activities including awareness program will be reflected in “Monitoring Report”.

C. Implementation Arrangement

11. Overall Implementation Arrangement. Karnataka Urban Infrastructure Development & Finance Corporation (KUIDFC) is the Executing Agency (EA) responsible for implementing the Investment Program. Investment Program implementation activities is monitored by KUIDFC through a separate Investment Program Management Unit (PMU) for the IWRM Project, which setup within KUIDFC.

12. At the Executing Agency (i.e. KUIDFC), environmental issues will be coordinated centrally by an Environmental Specialist (Designated as Assistant Executive Engineer– Environment), reporting to the Task Manager, Assistant Executive Engineer– Environment will ensure that all subprojects comply with environmental safe guards. The IEE/ EIA reports prepared by the Consultant, and will be reviewed by the Assistant Executive Engineer– Environment as per the ADB’s Environmental Guidelines and forwarded to ADB for review and approval.

13. The consultant team includes an Environmental Specialist to supervise the implementation of environmental safeguards at the divisional level. The consultant team also includes a Construction Supervisor at each ULB/CMC/TMC responsible for the supervision of project implementation including environmental safeguards at the ULB/CMC/TMC level.

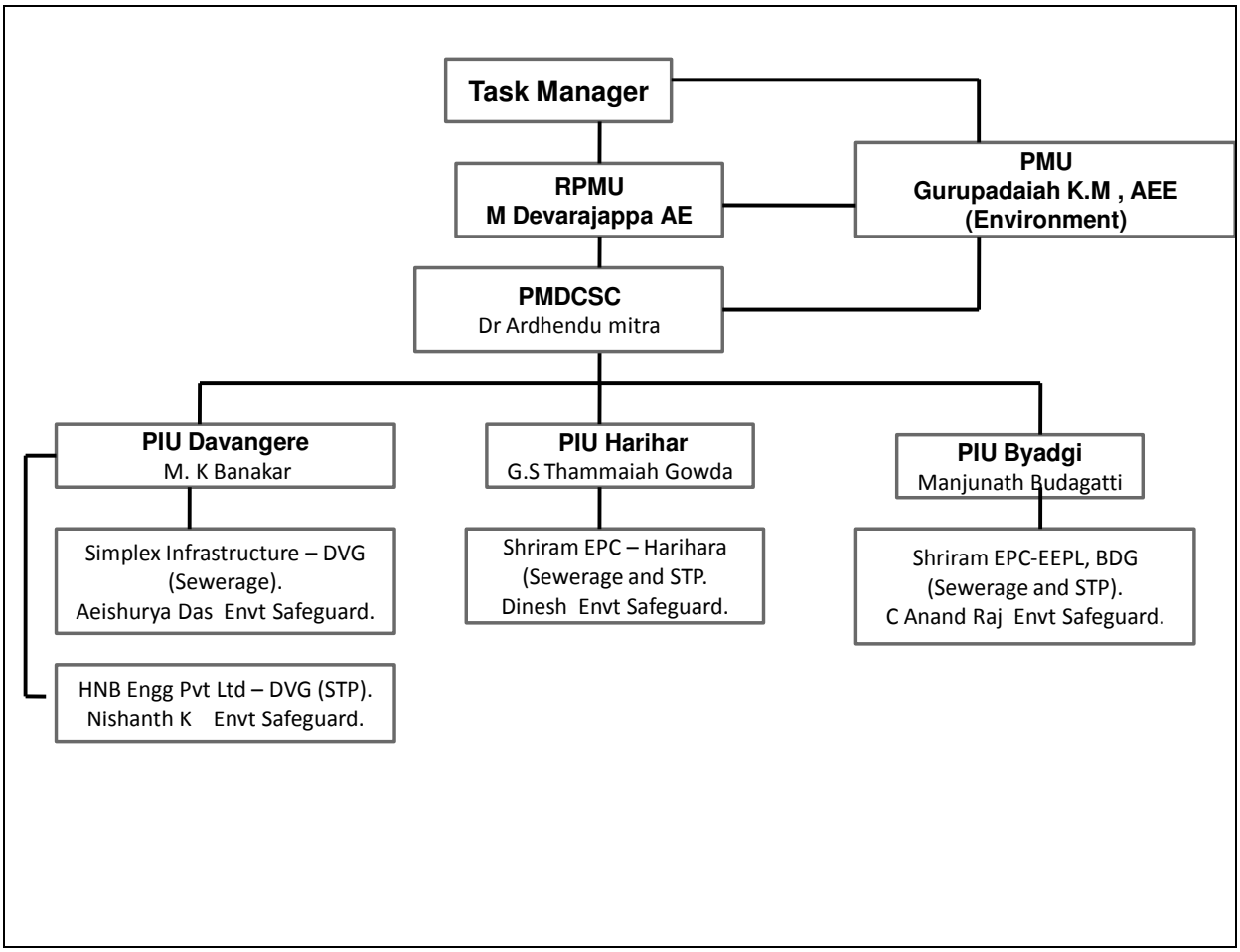
14. The contractor shall appoint one supervisor (environment & safety officer)who will be responsible on a day-to day basis for i) ensuring implementation of EMP ii) Coordinating the CS Engineer and environment specialists(all levels) iii) community liaison, consultation with interested/affected parties and grievance redressal and iv) reporting.

15. **Reporting arrangement**. Construction contractor monitoring safeguard implementation daily basis, while construction Supervisor (Resident Engineer) reviewed safeguard implementation weekly. After review they advised construction contractor for corrective measures. Monthly report summarizing observation, compliance & corrective measures is prepared by Environment Specialist of consultant on monthly basis. Then reports are forwarded from PIU to PMU for their observation and record. Based on monthly reports and site observations, Assistant Executive Engineer (Environment) of PMU, will review and consolidated the semi annual environment monitoring report for onward submission to ADB. **Table 3** shows activity and responsibility on safeguard implementation.

Table 3: Activity, Roles and Responsibility – Safeguard Implementation

Investment Program Phase	Activity	Details	Responsible Agency
Pre construction phase	Investment Program Categorization	Conduct Rapid Environmental Assessment (REA) for each subcomponents using REA checklists	ULB
		Reviewing the REA and assigning Investment Program category (A/B/C) based on KIUWMIP Environmental Assessment Guidelines and ADB Guidelines	PMU
	Conducting EA	Conducting IEE / EIA based on the Investment Program categorization Conducting Public Consultation and information disclosure Preparation of IEE / EIA	PMDCS consultant
	Investment program clearances	Fulfilling GoK/GoI requirement such as clearances from other Government Agencies	ULB
	Review of EIA/IEE	Reviewing the EIA/IEE Reports to ensure compliance thereof as per ADB Guidelines and approval of the same	PMU
	Disclosure of EIA/IEE	Information disclosure - IEE/EIA reports should be made available to the public, and on request IEE/EIA also made available.	ULB
	Incorporation of mitigation measures into Investment Program design	Incorporation of necessary mitigation measures identified in IEE/EIA in Investment Program design and in contract documents.	PMDCS consultant
	Review of design documents	Review of design and contractual documents for compliance of mitigation measures	PMDCS consultant
Construction Phase	Implementation of mitigation measures	Implementation of necessary mitigation measures	Contractor
	Environmental Monitoring	Environmental monitoring as specified in monitoring plan during construction stage; Monitoring of implementation of mitigation measures	PMDCS consultant
	Preparation of progress reports	Preparation of monthly progress reports to be submitted to PMU including a section on implementation of the mitigation measures	PMDCS consultant
	Review of progress reports	PMU to review the progress reports, consolidate and send to ADB review	PMU
Operation Stage	Environmental Monitoring	Conducting environmental monitoring, as specified in the environmental monitoring plan.	ULB/ Contractor
	Compliance Monitoring	Compliance monitoring to review the environmental performance of sub-project component, if required and as specified in Monitoring Plan.	KSPCB

16. **Figure 2** shows the implementation arrangement for environment safeguard. PMU includes a full-time Assistant Executive Engineer (Environment). As on 30th June 2017 position of Assistant Executive Engineer (Environment) is filled up and also Environment Specialist of PMDCSC (Program Consultant) has been placed.



, AEE: Assistant Executive Engineer, PIU: Project Implementation Unit, PMDCSC: Project Management & Design Supervision Consultant, PMU: Project Management Unit, RPMU: Regional Project Management Unit

Figure 2: KIUWMIP Safeguards Implementation Arrangement

17. **Table 4** shows detail of environment safeguard team for KIUWMIP. Environment Specialist of PMDCSC and Asst. Executive Engineer (Environment) KIUWMIP-KUIDFC visit to project site almost every month to review EMP implementation.

Table 4: Details of KIUWMIP Environmental Safeguard Team

Designation	Name and Contact Details
Asst. Executive Engineer (Environment) KIUWMIP-KUIDFC Project Management Unit (PMU)	**Name:** Mr. K.M.Gurupadaiah **Office Address** Karnataka Urban Infrastructure Development & Finance Corporation Ltd Urban Infrastructure Bhavan Building, #22, 17 'F' Cross Binnamangala, 2nd Stage, Old Madras Road Indiranagar, Bangalore – 560 038. **Phone**: 080-22232021,, 09632717930

Designation	Name and Contact Details
	Email: Gurupadaiah@kuidfc.com
Assistant Executive Engineer, AEE, PIU, Davangere, Package 01DVG01	Name: Mr. Ravikumar D L **Office Address**: KUIDFC-KIUWMIP #1976/9, Corporation zonal office besides Ashraya Hospital, Shamnur road, Mcc 'a' block, Davangere-04 **Phone:** 07676190997 **Email:** piukiuwmip.dvg@gmail.com
Assistant Engineer, AE, PIU, Davangere, Package 01DVG01 In-charge Environment safeguard compliance	Name: Mr. M K Banakar **Office Address**: KUIDFC-KIUWMIP #1976/9, Corporation zonal office besides Ashraya Hospital, Shamnur road, Mcc 'a' block, Davangere-04 Ph: 9591705661
Assistant Executive Engineer, AEE, PIU, Davangere, Package 01DVG01A	Name: Mr. Manjunath Rao N R **Office Address**: KUIDFC-KIUWMIP #1976/9, Corporation zonal office besides Ashraya Hospital, Shamnur road, Mcc 'a' block, Davangere-04 **Phone:** 09535077449 **Email:** piukiuwmip.dvg@gmail.com
Assistant Engineer, AE, PIU, Davangere, Package 01DVG01A In-charge Environment safeguard compliance	Name: Mr. M K Banakar **Office Address**: KUIDFC-KIUWMIP #1976/9, Corporation zonal office besides Ashraya Hospital, Shamnur road, Mcc 'a' block, Davangere-04 Ph: 9591705661
Assistant Executive Engineer, AEE, PIU, Harihar, Package 01HRA01	Name: Mr. K Siddanagowdar **Office Address**: KUIDFC-KIUWMIP Harihara City municipal Council **Phone:** 09482396067 **Email:** ksgowdar@gmail.com
Assistant Engineer, AE, PIU, Harihar, Package 01HRA01 In-charge Environment safeguard compliance	Name: Mr. G S Thammaiah Gowda **Office Address**: KUIDFC-KIUWMIP Harihara City municipal Council **Phone: 9448019202**
Assistant Executive Engineer,, AEE, PIU, Byadgi, Package 01BDG01	Name: Mr. Naveen Kumar H V **Office Address**: KUIDFC-KIUWMIP #Town Municipal Council, Byadgi, Haveri District **Phone:** 9986542126 **Email:** aeekiuwmipbyadgi@gmail.com
Assistant Engineer,, AE, PIU, Byadgi, Package 01BDG01 In-charge Environment safeguard compliance	Name: Mr. Manjunath Budagatti **Office Address**: KUIDFC-KIUWMIP #Town Municipal Council, Byadgi, Haveri District **Phone: 9880174404**
PMDCSC, Environment Specialist	**Name**: Dr. Ardhendu Mitra

Designation	Name and Contact Details
	Office Address: PMDCSC, KUIDFC-KIUWMIP #1976/9, Corporation zonal office besides Ashraya Hospital, Shamnur road, Mcc 'a' block, Davangere-04 **Phone:** 09830415953 **Email:** ardhendumitra@gmail.com , gkw.Davangere@gmail.com
PMDCSC, Support staff – Environment monitoring	Name: Mr. Vishal Shenoy **Office Address**: PMDCSC, KUIDFC-KIUWMIP #1976/9, Corporation zonal office besides Ashraya Hospital, Shamnur road, Mcc 'a' block, Davangere-04 **Phone:** 09886775454 **Email:** ranjalshenoy.vishal@gmail.com gkw.davanagere@gmail.com
Simplex Infrastructure Ltd. Contractor – Package 01DVG01 Environment Safety Officer	**Name**: Mr. A. Das **Office Address**: Door No. 314, 3rd Main, 1 st cross S. Nijjalinguppa layout, Davangere **Phone:** 7978152229 **Email:** md.eunush@simplexinfra.com ,
HNB Engineers Pvt. Ltd Contractor – Package DVG01A Environment Safety Officer	**Name:** Mr. Nishant C Kolambkar **Office Address**: #3370/11-12, 1st Cross MCC "B" Block, Shamanur Road, Near Lakshmi Flour Mill Davangere-577 004, State Karnataka **Phone:** 9448282479 **Email:** davanageresite@hnbc.in
Shriram EPC Ltd. Contractor – Package 01HRA01 Environment Safety Engineer	**Name:** Mr. Dinesh **Office Address:** 54 B Block, Amaravati Housing Board Colony, Harihar 577601, Davangere Dist. **Phone:** 9789920690, **Email:** vigneshwara@shriramepc.com
Shriram EPC Ltd- Eurotek Environment Pvt Ltd (JV) Contractor – Package 01BDG01 Environment Safety Engineer	**Name:** Mr. Anand Raj **Office Address:** #37, 4th cross, 4 th ward, Nehru Nagara, Byadgi, Haveri Dist, Karnataka- 581106 **Phone:** 9148976809 **Email:** anandtkvl@gmail.com.com

18. Contractor team carried out regular environment monitoring. Budget for environment monitoring is disclosed in **Appendix 3.**

III. ENVIRONMENTAL PROCEDURE REVIEW

A. Environmental Legal Requirement

19. **Table 5** provides a list of national and state laws, rules, policies and regulations applicable to KIUWMIP Project 1.

Table 5: Environmental Legal Requirements Applicable to KIUWMIP Project 1

Component	Applicable Legislation	Compliance	Action Required for Project 1 Subprojects
1. Tree felling – if required	Karnataka Preservation of	This Act has put restriction on felling of trees in the	Compensatory plantation as per rule

Component	Applicable Legislation	Compliance	Action Required for Project 1 Subprojects
	Trees Act, 1976 and Karnataka Preservation of Trees Rules, 1977	State unless until permitted by the Forest Officer. None of the components of this sub project require cutting of trees as per present design. If required permission will be taken.	
2. Sewage Treatment Plant (STP)	Water (Prevention and Control of Pollution)Act 1974 Air (Prevention and Control of Pollution) Act of 1981, Rules of 1982 and amendments.	Consent for Establish (CFE) and Consent for Operate (CFO) from Karnataka State Pollution Control Board (KSPCB), Government of Karnataka In addition for the project, the following will require CFE and CFO from KSPCB: (i) diesel generators; (ii) hot mix plants; and (iii) stone crushers, if installed for construction.	Based on project review and site inspection, KSPCB provides CFE before construction, and stipulates the disposal standards to be met during operation. After completion of construction, CFO is issued confirming compliance with the CFE conditions, if any Compliance against CFE condition is attached as **Appendix 4**
		Renewal of CFO during operation of STP	Based on the performance of the STP and its compliance with the disposal standards CFO to be renewed every year.

B. Compliance with Environmental Legal Requirements (Consents & Statutory clearances)

20. **Table 6** provides the status of compliance of subprojects to national and state laws, rules, policies and regulations applicable to KIUWMIP Project 1.

Table 6: Status of Compliance with National and State Legal Requirements (30th June 2017)

Town	Package No.	Components	National and State Legal Requirement	Status	Conditions of the Clearance/NOCs
Harihar	**01HRA01**	Expansion of the sewerage network (72.16 km sewers, 2640 nos. manholes, 4 nos. pumping stations, 18 MLD Sewage Treatment Plant)	Water (Prevention and Control of Pollution) Act 1974 Consent for Establish (CFE) from Karnataka State Pollution Control Board	CFE for expansion of STP received on 22 January 2015 validity period – 5 years	Compliance against CEF condition is attached in **Appendix 4**

Town	Package No.	Components	National and State Legal Requirement	Status	Conditions of the Clearance/NOCs
			(KSPCB), Government of Karnataka for expansion of STP from 8.84 MLD to 18 MLD		
			Statutory permission from State Highways Authority for road cutting	NA	-
			Statutory permission from Irrigation Dept. – work under jurisdiction of Irrigation	NA	-
			Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Approved on 15 June 2015 and is valid for one year. Renewal has been done on 14.06.2017 and which valid upto 14.06.2018	Labour licence enclosed as **Appendix 5**
			Labour compensation insurance	Received. Insurance renewed and Validity upto 25.06.2018	Labour compensation insurance certificate attached as **Appendix 6**
Davangere	**01DVG01**	Expansion of sewerage system (District 1 & 3) for Davangere - 203.46 km sewers, 7581. Manholes and 46981HSC	Statutory permission from Indian Railways - work on the land under their Jurisdiction	Concurrence obtained in January 2015	Supervision charges remitted
			Statutory permission from National Highways Authority for road cutting	Concurrence obtained in Feb 2015	Supervision charges paid to National Highways Authority

Town	Package No.	Components	National and State Legal Requirement	Status	Conditions of the Clearance/NOCs
			Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Approved on 24 Feb 2015 and is valid for one year. Renewal has been done on 23.02.2017 and which valid upto 23.02.2018	Labour licence enclosed as **Appendix 5**
			Labour compensation insurance	Received. Renewed and validity upto 29.01.2018	Labour insurance certificated attached as **Appendix 6**
Davangere	**01DVG01A**	Improvements to sewerage system in Davangere (STP)- DBO for 20 MLD SBR STP at Shiva nagar, DavangereTaluk & DBO for 5 MLD SBR STP at Avaragere village at Davangere Taluk	Water (Prevention and Control of Pollution)Act 1974 Consent for Establish (CFE) from Karnataka State Pollution Control Board (KSPCB), Government of Karnataka for establishment of 20 and 5 MLD STP Also requirement of CFE for Batching plant	CFE for both 20 MLD and 5 MLD received on 25th February 2015 and validity period of CFE – 5 years i.e 25th February 2020 CFE needs to be collected from Pollution Control Board for setting up Batching plant. For getting consent for 2 Batching plants online application submitted to pollution control board. Consent received on 24.06.2016, which valid for 2 years	Compliance against CEF condition is attached in **Appendix 4** Concrete Batching plant consent with condition attached as **Appendix 7** Compliance status included in **Appendix 7**

Town	Package No.	Components	National and State Legal Requirement	Status	Conditions of the Clearance/NOCs
			Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Approved on 05.11.2015 and is valid for one year, i.e 05.11.2016. Renewal has been done for the package and which valid upto 04.11.2017	Labour licence enclosed as **Appendix 5**
			Labour compensation insurance	Received on 03.10.2016 and valid upto 02.10.2017	Labour insurance certificated attached as **Appendix 6**
Byadgi	**01BDG01**	Design, Build, Operate & Maintain for 6 years for Byadgi comprehensive scheme covering SBR type STP (5 MLD), Sewerage Network 82.20 km, 3202 manholes, construction of one septic tank (275 users, 0.03 ML) and provision of 6,206 nos HSCs	Water (Prevention and Control of Pollution) Act 1974 Consent for Establish (CFE) from Karnataka State Pollution Control Board (KSPCB), Government of Karnataka for 5MLD SBR Type STP from	CFE for 5 MLD STP obtained from KSPCB on 12.07.2016 and valid for 5 years	Compliance against CEF condition is attached in **Appendix 4**
			Labour licence under The Contract Labour (Regulation & Abolition) Act, 1970. (Central Act w.e.f. 07-09-70)	Approved on 16.04.2017 and is valid for one year, i.e 16.04.2018	Labour licence enclosed as **Appendix 5**
			Labour compensation insurance	Received and which effective from December 2016 for one year New insurance in name of JV has been	Labour insurance certificated attached as **Appendix 6**

Town	Package No.	Components	National and State Legal Requirement	Status	Conditions of the Clearance/NOCs
				done on 24.03.2016 and which valid upto 23.12.2018	

Note: Permissions will be obtained on utilities like BSNL, BESCOM as & when required

IV. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

21. Civil works (mainly pipe laying and construction work) continued for all the UGD and STP awarded packages. Site-specific EMP was prepared by the contractor and submitted to PMDCSC for approval. Site specific EMPs are attached as **Appendix 8.**

22. Monitoring will be started shortly for newly awarded packages of Harihar and Byadgi water supply packages. Preliminary work continued for those packages at present.

23. Daily, weekly and monthly monitoring is continued for all the running packages. The overall compliance status for all the 4 packages during report period is satisfactory. Improvement is noted for all the running packages. Compliance status of mitigation measures against impact field is given in **Table 7 to 10.**

24. There are few partial compliance status has been noted for the running packages.

- Advance information to the locals and shopkeepers at pipe laying area of Davangere, Harihar and Byadgi is not always provided. Time period for construction work for particular area and contact details of PIU, consultant in project display board for any grievances or suggestion should be included
- Need to improve use of PPE by contractor's workers. Use of PPE should be at all times as per site condition and work type. Particularly use of shoes, use of ear plugs by the equipment operator during operation of concrete road breaker is not done
- Disposal of excess earth/ spoil not done on regular basis from working sites and drains particularly for Harihar UGD, Davangere UGD and Byadgi UGD packages. Disposal of scrap and construction materials needed from Davangere STP package, since work almost completed.
- Dust suppression not done on regular basis for Harihar STP package
- Temporary placement of caution tape is noted for all the packages. Improvement/ complete use of caution tape at working areas required

Table 7: Compliance to EMP of the Package- Sewerage System in Davangere City, (District 1 & 3), Package No. 01DVG01

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
Design & Pre Construction phase								
Design: Drinking water supply lines may be contaminated due to leakage from sewers	• Limit the sewer depth where possible. • Sewers shall be laid away from water supply lines and drains(at least 1m, wherever possible)	Design report	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer PIU	Continuous	Complied as and when required
Disturbance/ damage to existing utilities on the sites (Telephone lines, electric poles and wires, water lines within proposed project sites)	• List of affected utilities if any and operators • Bid document to include requirement for a contingency plan for service interruptions • In case of disruption of water supply, alternative supply ,through tankers shall be provided	• List of affected utilities if any and operators • Bid document to include requirement for a contingency plan for service interruptions	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist/ PIU	Before start of physical work & Continuous	Complied in design and as & when required Utility services are being restored on the same day or least possible time.
Construction work camps, stockpile areas, storage areas, and disposal areas (disruption to traffic flow and sensitive areas and receptors)	• Planning for setting up worker camps, hot mix plant, stockpile area, storage and disposal areas • Prioritize areas within or nearest possible vacant space in the sub project location • Non use of residential area • Arrangement of toilet and drinking water facility • No disposal of waste in water	List of selected location for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas	Proposed camp site	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist / PIU	Before start of physical work & Continuous	Complied. Labour camp construction – done Stockpile and storage areas selected within camp area and construction locations. Toilet facility provided properly. No hot mix plant is required
Emergencies such as leaks, overflows, bursts	• Develop Emergency Response Plan for all emergencies such as leaks, overflows, burst	• Emergency response plan	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist / PIU	Before start of physical work & Continuous	Not required now
Construction								
Impacts due to excess excavated	Prepare and submit a Construction Management Plan,	Document related to construction	Working locations	Contractor	Observation and document	PMDCSC's Environment	Daily by construction	Complied mostly Excess excavated

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
earth, excess construction materials, solid waste etc. Occupational hazards which can occur to workers and public during work.	every month, Which cover location map, use of PPE, materials management, waste management, personal safety arrangement etc.	management format			checking	Specialist and Construction supervisor	supervisor-Resident Engineer Weekly / bi weekly by Construction Manager. Verification by Environment Specialist of PMDCSC and Asst .Executive Engineer (Environment) KIUWMIP-KUIDFC On monthly basis	soil after back filling is reused to fill trenches if any or shifted from the sites. Excess earth needs to be removed urgently from few locations (DCM layout, St. John school, Bhumikanagar, 26 ward) .
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	• Contractor should obtain material from existing mines approved / licensed by Mines and Geology Department /Revenue Department. • Verify suitability of all material sources and obtain approval of implementing agency • No new quarry sites shall be developed for the sub project purpose • Submit a monthly statement of construction material procured indicating material type, source and quantity.	• List of approved quarry sites and sources of materials • Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary • Construction Contractor documentation	Quarries and material source areas	Contractor	• Checking of records • visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Under Compliance. All materials procurement certified by implementation agency

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
Dust and emissions from construction activity may degrade the air quality	• Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; • Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; • Bring materials (aggregates, sand, etc gravel) as and when required; • Use tarpaulins to cover sand and other loose material when transported by vehicles; • Clean wheels and undercarriage of vehicles prior to leaving construction site • Ensure valid Pollution Under Control (PUC) Certificates for all vehicles and equipment used in the construction activity	• Location of stockpiles • Complaints from sensitive receptors • Monitoring data • Heavy equipment and machinery with air pollution control • Water sprinkling arrangement • Cover materials	All construction site, stockpile areas	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Excavated earth is used to refill the trench. Materials are brought to the site whenever necessary covered by tarpaulin. Water sprinkling done as and when required Air quality monitoring done during the report period. Result certificate is attached as **Appendix 9** Location map of sampling stations attached as Appendix 10 PUC certificates are obtained
High noisy construction activities may have adverse impacts on sensitive receptors and structures	• Plan activities in consultation with the PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; • 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;	• Complaints from sensitive receptors • Use of silencers in noise-producing equipment and sound barriers • Monitoring data	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied mostly Prior information is not always provided to locals. Instruction has been given to contractor for more active awareness No such noise producing machinery mobilized at site Noise quality monitoring is done during the report

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	• 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; • Maintain maximum sound levels not exceeding 80 decibels (db) when measured at a distance of 10 m or more from the vehicle/s							period Result certificate is attached as **Appendix 9** Location map of sampling stations attached as Appendix 10
Impacts on surface drainage and water quality due to contaminated runoff from construction areas in monsoon	• Avoid stock piling of earth file specially during the monsoon season unless covered by tarpaulins or plastic sheets • Stock piles shall be provided with temporary bunds • Prioritize re-use of excess spoils and materials in the construction works. • Place storage are as for fuels and lubricants away from any drainage leading to water bodies • Dispose any wastes generated by construction activities in designated sites	• Areas for stockpiles, storage of fuels and lubricants and waste materials • Number of silt traps installed along drainages (in slope) leading to water bodies • Utilization of spoils	All construction sites	Contractor	Site observation	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Stockpiling avoided as far as possible Fuel and lubricants stored separately Wastes dispose as per advice of engineer. water bodies nearby the present construction sites
Impacts on landscape and aesthetics due to construction activity	• Prepare and implement Waste Management Plan–it should present how the surplus waste generated will temporarily stocked at the site, transported and disposed properly. The Waste Management Plan will be part of the Construction Management Plan. • Avoid stock piling of excess excavated soils as far as possible	• Waste Management List • Complaints from sensitive receptors • PMU/PIU/PMD CSC to report in writing that the necessary environmental restoration work has been done	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied partially Excess earth needs to be removed at earliest. Spoil management plan will be applied as per EMP (Attached as **Appendix 11)**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	• Coordinate with PIU for beneficial uses of excess excavated soils or immediately dispose to designated areas							
Damage to protected structures due to construction along the areas near to protected monuments	• All necessary and adequate care should be taken to minimize the impact on protected properties. If articles such as fabrics, coins, artefacts, structures or other geologically or archeologically important materials are discovered, the excavation should be stopped and the Archaeological Department should be intimated at the earliest and all the articles received during the sewer laying should be handed **over to** ASI • PMDCSC should include the above instruction in the contract document.	Chance find protocol	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Not yet arise. Action will be taken as per requirement Instruction has been given to all workers on chance find
Hindrance to traffic movement/ accessibility	• Plan pipeline (sewer lines) work in consultation with the traffic police • Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; • Provide for immediate consolidation of back filling material to desired compaction- this will allow immediate road restoration and therefore will minimised is turbance to the traffic movement; • Do not close the road	• Traffic Management Strategy • Complaints from sensitive receptors • Number of signage's placed at subproject location.	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. partially Construction works are completing in least possible time. Sign board and Traffic diversion boards are placed mostly. Replacement of old board is required Partial use of caution tape – noted at few locations (Uttam layout, ward no. 36, ,

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	completely, ensure that work is conducted on to edge of the road; allow traffic to move on one line; • In unavoidable circumstances of road closure, provide alternative routes, and ensure that public is informed about such traffic diversions;							Bhumikanagar) Alternative routes provided in case of road closure Traffic Management plan is attached as **Appendix 12** Site photo attached as **Appendix 2**
Impact on sensitive receptors- Schools, hospitals and religious places	• No material should be stocked in this area; material shall be brought to the site as and when required • Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles • No work should be conducted near the religious places during religious congregations • Material transport to the site should be arranged considering school timings; material should be in place before school starts; • 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	• Materials storage strategy • Complaints from sensitive receptors • Construction strategy near sensitive areas	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied Schools, Hospitals and religious places were notified before the work.

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	report – dust and noise control, public safety, traffic management, strictly at the sites.							
Socio-Economic: Livelihood Impediment of access to houses and business	• Leave space for access between mounds of excavated soil • Provide wooden planks / foot bridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required • Consult affected business people; inform hem in advance when work will occur • Address livelihood issues; implement the Resettlement Plan(RP) to address these issues • 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 • Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns / complaints.	• Safety arrangement • Complaint from sensitive receptors • Sign board/ caution board availability with required information	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied partially Advance information are not always given to the shopkeepers. Instruction has been given for more awareness Sign board provided at most of the working locations. Time of construction not informed in the board Site photo in **Appendix 2**
Socio-Economic: Employment generation	Employ at least 50%of the labour force, or to the maximum extent, local persons if man power is available Procure construction materials from local market.	Employment record	All construction sites	Contractor	Checking of records	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Mostly local people are employed where ever possible.
Workers occupational health &safety	(i) Develop and implement site-specific Health and Safety (H&S) Plan which will include measures such as:	• Site-specific Health and Safety (H&S) Plan • Equipped first-	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction	Do	Partially Complied. Health and safety measures are followed. PPEs are given to

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	(a) excluding public from the site; (b) ensuring all workers are provided with and use Personal Protective Equipment like helmet, gum boot, gloves, nose mask and earplugs; (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; (ii) Designate a safeguard focal person and undertake safeguards orientation by PMU/PIU; (iii) Ensure H&S plan is easily understandable to workers and labourers. Keep in mind that this plan will be used on-site and workers/labourers may not always understand highly technical terms; (iv)Strict compliance of H&S plan and requirements of wearing personal protective equipment (PPE) during work hours; (v)Provide specific guidance for suitable PPE for every on-site work assignment (vi) Ensure that qualified first- aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the project site; (vii) Provide medical insurance coverage for workers; (viii) Secure all installations from unauthorized intrusion and accident risks; (ix) Provide supplies of potable drinking water at working sites; (x) Provide clean eating areas where workers are not exposed to	aid stations; • Medical insurance coverage for workers • Number of accidents • Supplies of potable drinking water; • Record of H&S orientation trainings • Personal protective equipments • Sign boards for hazardous areas such as energized electrical devices and lines, service rooms				supervisor		the workers but used partially. Instruction has been given to contractor for improvement First aid box available at l working locations Tool box training for workers done Drinking water available at working sites Site photo attached in **Appendix 2.** Internal training document sample copy attached in **Appendix 13** Insurance arranged for the labourer. Attached as **Appendix 6**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	hazardous or noxious substances; and (xi) 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; (xii) 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; (xiii) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; (xiv) Ensure moving equipment is out fitted with audible back- up alarms; (xv) 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 (xvi) Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8hours per day without hearing protection. The use of hearing protection shall be enforced							

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	actively.							
Community Health & safety	• Provide wooden bracing for all deep excavations (>2m); identify buildings at risk prior to start of excavation work and take necessary precautions for safe work • Plan material and waste routes to avoid times of peak-pedestrian activities • Liaise with Davangere CMC in identifying risk areas on route cards/maps; identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work • Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure • Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads • Overall, the contractor should comply with IFC EHS Guidelines on Community Health and Safety	• Traffic Management Strategy • Complaints from sensitive receptors	All construction sites	Contractor	Visual inspection	PMDCSC's Environment Specialist and Construction supervisor	Do	Caution tape provided at excavation areas, At few locations (Uttam layout, ward no. 36, , Bhumikanagar) partial use of caution tape noted Road signage noted Transportation of materials done as per convenient time without disturbing locals
Temporary worker camps	• Establishment of temporary camps with drinking water, sanitary and solid waste management arrangement • Train employees in the storage and handling of materials • Remove all wreckage, rubbish, or temporary	• Complaints from sensitive Receptors • Water and sanitation facilities for employees • Housekeeping – regular disposal	All construction sites	Contractor	Site observation	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Camps established with toilet (gender specific), drinking water facility, first aid box available. Site photo is attached as **Appendix 2**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	structures	of solid waste						

Table 8: Compliance to EMP of the Package- Improvements to sewerage system in Davangere (STP)- DBO for 20 MLD SBR STP & DBO for 5 MLD SBR STP, Package No. 01DVG01A

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
Design & Pre Construction phase								
Design: Drinking water supply lines may be contaminated due to leakage from sewers	• Limit the sewer depth where possible. • Sewers shall be laid away from water supply lines and drains(at least 1m, wherever possible)	Design report	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer PIU	-	Not applicable as per nature of work
Disturbance/ damage to existing utilities on the sites (Telephone lines, electric poles and wires, water lines within proposed project sites)	• List of affected utilities if any and operators • Bid document to include requirement for a contingency plan for service interruptions • In case of disruption of water supply, alternative supply ,through tankers shall be provided	• List of affected utilities if any and operators • Bid document to include requirement for a contingency plan for service interruptions	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist/ PIU	-	Work at isolated area. Not applicable as per nature of work
Construction work camps, stockpile areas, storage areas, and disposal areas (disruption to traffic flow and sensitive areas and receptors)	• Planning for setting up worker camps, hot mix plant, stockpile area, storage and disposal areas • Prioritize areas within or nearest possible vacant space in the sub project location • Non use of residential area • Arrangement of toilet and drinking water facility • No disposal of waste in water	List of selected location for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas	Proposed camp site	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist / PIU	Before start of physical work & Continuous	Complied. Labour camp constructed- improvement noted on housekeeping Stockpile and storage areas selected within camp area and construction locations. No hot mix plant is required Concrete batching plant established with NOC from

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
								Pollution Control Board. NOC copy attached as **Appendix 7**
Emergencies such as leaks, overflows, bursts	• Develop Emergency Response Plan for all emergencies such as leaks, overflows, burst	• Emergency response plan	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist / PIU	Before start of physical work & Continuous	Not required now
For STP- Design Nuisance due to location of the site in a developing area	• Select a treatment process that is compact, aesthetically good, and generates no or fewer odours. • Provide a green buffer zone of 10-15 m wide around the STP • Screen around the facility and will improve the aesthetic appearance. • Regulate the surrounding land use in strict compliance with Davangere Master Plan. And declared no development zone around the STP sites. • Design the layout plan of the facility such that potential odour generating units – inlet and primary treatment units and sludge thickener, are located away as far as possible from the nearest development, and be provided with green buffer zone. • Provide backup power facilities for continuous and uninterrupted operation	Review& Check the inclusion/ provision in DPR, as appropriate	STP site	PIU / Design Consultant	Observation and document checking	PMU/ PIU/ PMDCSC's Resident Engineer	Before start of physical work & as per requirement	Design has been developed accordingly To be comply at operation phase
For STP- Design	The Treatment Plants should	Review &	STP site	PIU / Design	Observation	PMU/ PIU/	Before start	Design is developed

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
and development of Treatment plans as per disposal standards set by CPCB (Pollution of surface water, ground water and land resources)	be designed for following treated water disposal standards	Check the inclusion/ provision in DPR, as appropriate		Consultant	and document checking	PMDCSC's Resident Engineer and Environment Specialist	of physical work & as per requirement	considering discharge standard of CPCB
For STP- Emergencies Events like release of bad odours	Develop an emergency response system for events like release of bad odours	Review & Check the inclusion/ provision in DPR, as appropriate	STP site	PIU / Design Consultant	Observation and document checking	PMU/ PIU/ PMDCSC's Resident Engineer and Environment Specialist	Before start of physical work & as per requirement	To be comply at operation phase
Construction								
Impacts due to excess excavated earth, excess construction materials, solid waste etc. Occupational hazards which can occur to workers and public during work.	Prepare and submit a Construction Management Plan, every month, Which cover location map, use of PPE, materials management, waste management, personal safety arrangement etc.	Document related to construction management format	Working locations	Contractor	Observation and document checking	PMDCSC's Environment Specialist and Construction supervisor	Daily by construction supervisor Weekly / bi weekly by Construction Manager. Verification by Environment Specialist of PMDCSC and Asst. Executive Engineer (Environment) KIUWMIP-KUIDFC On monthly basis	Excess earth utilized within STP for development of land

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
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	• Contractor should obtain material from existing mines approved / licensed by Mines and Geology Department /Revenue Department. • Verify suitability of all material sources and obtain approval of implementing agency • No new quarry sites shall be developed for the sub project purpose • Submit a monthly statement of construction material procured indicating material type, source and quantity.	• List of approved quarry sites and sources of materials • Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary • Construction Contractor documentation	Quarries and material source areas	Contractor	• Checking of records • visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Under Compliance. All materials procurement certified by implementation agency
Dust and emissions from construction activity may degrade the air quality	• Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; • Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; • Bring materials (aggregates, sand, etc gravel) as and when required; • Use tarpaulins to cover sand and other loose material when transported by vehicles; • Clean wheels and undercarriage of vehicles prior to leaving construction site	• Location of stockpiles • Complaints from sensitive receptors • Monitoring data • Heavy equipment and machinery with air pollution control • Water sprinkling arrangement • Cover materials	All construction on site, stockpile areas	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Excavation and construction going on Excavated earth utilized locally Materials not covered by tarpaulin. Water sprinkling is done as and when required During construction Air quality monitoring – done Result certificate is attached as **Appendix 9** Location of sampling stations shown in **Appendix 10**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	• Ensure valid Pollution Under Control (PUC) Certificates for all vehicles and equipment used in the construction activity							PUC certificates obtained for vehicles and equipments. Sample copy attached as Appendix 15
High noisy construction activities may have adverse impacts on sensitive receptors and structures	• Plan activities in consultation with the PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; • 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; • 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; • Maintain maximum sound levels not exceeding 80 decibels (db) when measured at a distance of 10 m or more from the vehicle/s	• Complaints from sensitive receptors • Use of silencers in noise-producing equipment and sound barriers • Monitoring data	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied Construction work limited to day time only No such noise producing machinery mobilized at site During construction Noise quality monitoring – done Result certificate is attached as **Appendix 9** Monitoring locations shown in **Appendix 10.**
Impacts on surface drainage and water quality	• Avoid stock piling of earth file specially during the monsoon season unless	• Areas for stockpiles, storage of fuels	All construction sites	Contractor	Site observation	PMDCSC's Environment Specialist	Do	Complied. Stockpiling avoided as far as possible.

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
due to contaminated runoff from construction areas in monsoon	covered by tarpaulins or plastic sheets • Stock piles shall be provided with temporary bunds • Prioritize re-use of excess spoils and materials in the construction works. • Place storage are as for fuels and lubricants away from any drainage leading to water bodies • Dispose any wastes generated by construction activities in designated sites	and lubricants and waste materials • Number of silt traps installed along drainages (in slope) leading to water bodies • Utilization of spoils				and Construction supervisor		Fuel and lubricants stored separately Wastes dispose as per advice of engineer No water bodies nearby the present construction sites
Impacts on landscape and aesthetics due to construction activity	• Prepare and implement Waste Management Plan–it should present how the surplus waste generated will temporarily stocked at the site, transported and disposed properly. The Waste Management Plan will be part of the Construction Management Plan. • Avoid stock piling of excess excavated soils as far as possible • Coordinate with PIU for beneficial uses of excess excavated soils or immediately dispose to designated areas	• Waste Management List • Complaints from sensitive receptors • PMU/PIU/PMDCSC to report in writing that the necessary environmental restoration work has been done	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Under Compliance Excavation and construction under progress. Excess earth utilized within the plant. Since work at completion stage disposal of construction waste is required. Spoil management plan will be applied as per EMP (Attached as **Appendix 11)**
Damage to protected structures due to construction along the areas near to protected	• All necessary and adequate care should be taken to minimize the impact on protected properties. If articles such as fabrics, coins,	Chance find protocol	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Not yet arise. Action will be taken as per requirement Instruction has been given to all workers

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
monuments	artefacts, structures or other geologically or archeologically important materials are discovered, the excavation should be stopped and the Archaeological Department should be intimated at the earliest and all the articles received during the sewer laying should be handed **over to** ASI • PMDCSC should include the above instruction in the contract document.							on chance find
Hindrance to traffic movement/ accessibility	• Plan pipeline (sewer lines) work in consultation with the traffic police • Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; • Provide for immediate consolidation of back filling material to desired compaction- this will allow immediate road restoration and therefore will minimised is turbance to the traffic movement; • Do not close the road completely, ensure that work is conducted on to edge of the road; allow traffic to move on one line; • In unavoidable circumstances of road	• Traffic Management Strategy • Complaints from sensitive receptors • Number of signage's placed at subproject location.	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Isolated location no needs for traffic management at site. Only during transportation of materials necessary mitigation measures applied

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	closure, provide alternative routes, and ensure that public is informed about such traffic diversions;							
Impact on sensitive receptors- Schools, hospitals and religious places	• No material should be stocked in this area; material shall be brought to the site as and when required • Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles • No work should be conducted near the religious places during religious congregations • Material transport to the site should be arranged considering school timings; material should be in place before school starts; • 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	• Materials storage strategy • Complaints from sensitive receptors • Construction strategy near sensitive areas	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	No Schools, Hospitals and religious places nearby

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	management, strictly at the sites.							
Socio-Economic: Livelihood Impediment of access to houses and business	• Leave space for access between mounds of excavated soil • Provide wooden planks / foot bridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required • Consult affected business people; inform hem in advance when work will occur • Address livelihood issues; implement the Resettlement Plan(RP) to address these issues • 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 • Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns / complaints.	• Safety arrangement • Complaint from sensitive receptors • Sign board/ caution board availability with required information	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied No impact expected as per nature of work Partial use of caution tape noted at few excavated areas within STP. Instruction has been given for arrangement of caution tape Sign board are provided **Appendix 2 –** site photographs
Socio-Economic: Employment generation	Employ at least 50%of the labour force, or to the maximum extent, local persons if man power is available Procure construction materials from local market.	Employment record	All construction sites	Contractor	Checking of records	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Mostly local people are employed where ever possible.
Workers occupational	(i) Develop and implement site-specific Health and Safety	• Site-specific Health and	All constructi	Contractor	• Checking of records	PMDCSC's Environment	Do	Complied. Health and safety

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
health &safety	(H&S) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use Personal Protective Equipment like helmet, gum boot, gloves, nose mask and earplugs; (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; (ii) Designate a safeguard focal person and undertake safeguards orientation by PMU/PIU; (iii) Ensure H&S plan is easily understandable to workers and labourers. Keep in mind that this plan will be used on-site and workers/labourers may not always understand highly technical terms; (iv)Strict compliance of H&S plan and requirements of wearing personal protective equipment (PPE) during work hours; (v)Provide specific guidance for suitable PPE for every on-site work assignment (vi) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the project site;	Safety (H&S) Plan • Equipped first-aid stations; • Medical insurance coverage for workers • Number of accidents • Supplies of potable drinking water; • Record of H&S orientation trainings • Personal protective equipments • Sign boards for hazardous areas such as energized electrical devices and lines, service rooms	on sites		• Visual inspection of sites	Specialist and Construction supervisor		measures are followed. PPEs are given to the workers. They used mostly First aid box available Tool box training for workers arranged and recorded. Drinking water available at working sites Site photo attached in **Appendix 2.** Labour compensation insurance attached as **Appendix 6.**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	(vii) Provide medical insurance coverage for workers; (viii) Secure all installations from unauthorized intrusion and accident risks; (ix) Provide supplies of potable drinking water at working sites; (x) Provide clean eating areas where workers are not exposed to hazardous or noxious substances; and (xi) 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; (xii) 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; (xiii) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; (xiv) Ensure moving equipment is out fitted with audible back-up alarms; (xv) 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							

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	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 (xvi) Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8hours per day without hearing protection. The use of hearing protection shall be enforced actively.							
Community Health & safety	• Provide wooden bracing for all deep excavations (>2m); identify buildings at risk prior to start of excavation work and take necessary precautions for safe work • Plan material and waste routes to avoid times of peak-pedestrian activities • Liaise with Davangere CMC in identifying risk areas on route cards/maps; identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work • Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure • Provide road signs and flag persons to warn of dangerous conditions, for	• Traffic Management Strategy • Complaints from sensitive receptors	All construction sites	Contractor	Visual inspection	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied Project site at isolated location. Caution tape provided partially at excavation areas Transportation of materials done as per convenient time without disturbing locals Site photo attached in **Appendix 2.**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	all the sites along the roads • Overall, the contractor should comply with IFC EHS Guidelines on Community Health and Safety							
Temporary worker camps	• Establishment of temporary camps with drinking water, sanitary and solid waste management arrangement • Train employees in the storage and handling of materials • Remove all wreckage, rubbish, or temporary structures	• Complaints from sensitive Receptors • Water and sanitation facilities for employees • Housekeeping – regular disposal of solid waste	All construction sites	Contractor	Site observation	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Labour camp constructed with toilet facility Drinking water facility, first aid box available Removal of scrap and unused construction material done but improvement is required. Site photo attached in **Appendix 2.**

Table 9: Compliance to EMP of the Package- Providing expansion of sewage system in Harihar city – Package No. 01HRA01

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
Design & Pre Construction phase								
Design: Drinking water supply lines may be contaminated due to leakage from sewers	• Limit the sewer depth where possible. • Sewers shall be laid away from water supply lines and drains (at least1m, wherever possible)	Design report	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer / PIU	Continuous	Complied as and when required
Disturbance/ damage to existing utilities on the sites (Telephone lines, electric poles and wires,	• List of affected utilities if any and operators • Bid document to include requirement for a contingency plan for service interruptions	• List of affected utilities if any and operators • Bid document to include requirement for a	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist / PIU	Before start of physical work & Continuous	Complied in design and as & when required Utility services are being restored on the same day or least possible time.

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
water lines within proposed project sites)	• In case of disruption of water supply, alternative supply, through tankers, shall be provided	contingency plan for service interruptions						
Construction work camps, stockpile areas, storage areas, and disposal areas (disruption to traffic flow and sensitive areas and receptors)	• Planning for setting up worker camps, hot mix plant, stockpile area, storage and disposal areas • Prioritize areas within or nearest possible vacant space in the sub project location • Non use of residential area • Arrangement of toilet and drinking water facility • No disposal of waste in water	List of selected location for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas	Proposed camp site	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist / PIU	Before start of physical work & Continuous	Complied. Labour camp construction – done at STP site. Presently labouers stay at rented house Stockpile and storage areas selected nearby camp area and construction locations. No hot mix plant is required
Emergencies such as leaks, overflows, bursts	• Develop Emergency Response Plan for all emergencies such as leaks, overflows, burst	• Emergency response plan	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist / PIU	Before start of physical work & Continuous	Not required now
For STP- Design Nuisance due to location of the site in a developing area	• Select a treatment process that is compact, aesthetically good, and generates no or fewer odours. • Provide a green buffer zone of 10-15 m wide around the STP • Screen around the facility and will improve the aesthetic appearance. • Regulate the surrounding land use in strict compliance with Master Plan. And declared no development zone around the STP sites.	Review& Check the inclusion/ provision in DPR, as appropriate	STP site	PIU / Design Consultant	Observation and document checking	PMU/ PIU/ PMDCSC's Resident Engineer	Before start of physical work & as per requirement	Design has been developed accordingly. To be comply at operation phase

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	• Design the layout plan of the facility such that potential odour generating units – inlet and primary treatment units ands ludge thickener, are located away as far as possible from the nearest development, and be provided with green buffer zone. • Provide backup power facilities for continuous and uninterrupted operation							
For STP- Design and development of Treatment plans as per disposal standards set by CPCB (Pollution of surface water, ground water and land resources)	The Treatment Plants should be designed for following treated water disposal standards	Review& Check the inclusion/ provision in DPR, as appropriate	STP site	PIU / Design Consultant	Observation and document checking	PMU/ PIU/ PMDCSC's Resident Engineer and Environment Specialist	Before start of physical work & as per requirement	Design is developed considering discharge standard of CPCB
For STP- Emergencies Events like release of bad odours	Develop an emergency response system for events like release of bad odours	Review & Check the inclusion/ provision in DPR, as appropriate	STP site	PIU / Design Consultant	Observation and document checking	PMU/ PIU/ PMDCSC's Resident Engineer and Environment Specialist	Before start of physical work & as per requirement	To be comply at operation phase
Construction								
Impacts due to excess excavated earth, excess construction materials, solid waste etc. Occupational	Prepare and submit a Construction Management Plan, every month, Which cover location map, use of PPE, materials management, waste management, personal safety arrangement etc.	Document related to construction management format	Working locations	Contractor	Observation and document checking	PMDCSC's Environment Specialist and Construction supervisor	Daily by construction supervisor Weekly / bi weekly by Construction Manager. Verification	Complied. Mostly. Excess excavated soil after backfilling is reused to fill trenches if any or shifted from the sites. Disposal as per permission from PIU. Appendix 16 shows

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
hazards which can occur to workers and public during work.							by Environment Specialist of PMDCSC and Asst. Executive Engineer (Environment) KIUWMIP-PMU On monthly basis	further instruction from project management authority for disposal of excess earth at low laying areas and utilization for road construction. Excess earth from pipe laying is also used in STP
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	• Contractor should obtain material from existing mines approved/ licensed by Mines and Geology Department / Revenue Department. • Verify suitability of all material sources and obtain approval of implementing agency • No new quarry sites shall be developed for the sub project purpose • Submit a monthly statement of construction material procured indicating material type, source and quantity.	• List of approved quarry sites and sources of materials • Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary • Construction Contractor documentation	Quarries and material source areas	Contractor	• Checking of records • visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Under Compliance. All materials procurement certified by implementation agency
Dust and emissions from construction activity may degrade the air quality	• Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; • Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; • Bring materials	• Location of stockpiles • Complaints from sensitive receptors • Monitoring data • Heavy equipment and machinery with air pollution control • Water sprinkling	All construction site, stockpile areas	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Mostly Excavated earth is used to refill the trench,. Improvement noted. Materials are brought to the site whenever necessary covered by tarpaulin, not always. Water sprinkling is not done on continuation basis..

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	(aggregates, sand, etc gravel) as and when required; • Use tarpaulins to cover sand and other loose material when transported by vehicles; • Clean wheels and undercarriage of vehicles prior to leaving construction site • Ensure valid Pollution Under Control (PUC) Certificates for all vehicles and equipment used in the construction activity	arrangement • Cover materials						Air quality monitoring has been done during the report period. Result certificate is attached as **Appendix 9.** Sampling locations are shown in Appendix 10. PUC certificates submitted
High noisy construction activities may have adverse impacts on sensitive receptors and structures	• Plan activities in consultation with the PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; • 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; • 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; • Maintain maximum sound levels not exceeding 80	• Complaints from sensitive receptors • Use of silencers in noise-producing equipment and sound barriers • Monitoring data	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied Construction work limited to day time only During construction noise monitoring done. Result attached in **Appendix 9.** Sampling locations are shown in Appendix 10

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	decibels (db) when measured at a distance of 10 m or more from the vehicle/s							
Impacts on surface drainage and water quality due to contaminated runoff from construction areas in monsoon	• Avoid stock piling of earth specially during the monsoon season unless covered by tarpaulins or plastic sheets • Stock piles shall be provided with temporary bunds • Prioritize re-use of excess spoils and materials in the construction works. • Place storage areas for fuels and lubricants away from any drainage leading to water bodies • Dispose any wastes generated by construction activities in designated sites	• Areas for stockpiles, storage of fuels and lubricants and waste materials • Number of silt traps installed along drainages (in slope) leading to water bodies • Utilization of spoils	All construction sites	Contractor	Site observation	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Stockpiling avoided as far as possible Fuel and lubricants stored separately Wastes dispose as per advice of engineer No water bodies nearby the present construction sites
Impacts on landscape and aesthetics due to construction activity	• Prepare and implement Waste Management Plan – it should present how the surplus waste generated will temporarily stocked at the site, transported and disposed properly. The Waste Management Plan will be part of the Construction Management Plan. • Avoid stockpiling of excess excavated soils as far as possible • Coordinate with PIU for beneficial uses of excess excavated soils or immediately dispose to designated areas	• Waste Management List • Complaints from sensitive receptors • PMU/PIU/PMDCSC to report in writing that the necessary environmental restoration work has been done	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied mostly Excess earth stockpiled and reused . Excess earth from pipe laying is also used in STP Improvement noted. Housekeeping needs to be improve at STP, particularly disposal of scrap materials Spoil management plan will be applied as per EMP (Attached as **Appendix 11)**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
Damage to protected structures due to construction along the areas near to protected monuments	• All necessary and adequate care should be taken to minimize the impact on protected properties. If articles such as fabrics, coins, artifacts, structures or other geologically or archeologically important materials are discovered, the excavation should be stopped and the Archaeological Department should be intimated at the earliest and all the articles received during the sewer laying should be handed over to ASI • PMDCSC should include the above instruction in the contract document.	Chance find protocol	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Not yet arise. Action will be taken as per requirement Instruction has been given to all workers on chance find
Hindrance to traffic movement/ accessibility	• Plan pipeline (sewer lines) work in consultation with the traffic police • Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; • Provide for immediate consolidation of back filling material to desired compaction-this will allow immediate road restoration and therefore will minimise disturbance to the traffic movement; • Do not close the road completely, ensure that work is conducted on to edge of the road; allow	• Traffic Management Strategy • Complaints from sensitive receptors • Number of signages placed at subproject location.	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied mostly. Construction works are completing in least possible time. Road closure board placed. Alternative routes provided in case of road closure Caution tape provided at closure site. At few sites (Harlapura, Kesavnagar) partial use of caution tape noted. Instruction has been given for improvement Traffic Management plan

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	traffic to move on oneline; • In unavoidable circumstances of road closure, provide alternative routes, and ensure that public is informed about such traffic diversions;							is attached as **Appendix 12**
Impact on sensitive receptors- Schools, hospitals and religious places	• No material should be stocked in this area; material shall be brought to the site as and when required • Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles • No work should be conducted near the religious places during religious congregations • Material transport to the site should be arranged considering school timings; material should be in place before school starts; • 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	• Materials storage strategy • Complaints from sensitive receptors • Construction strategy near sensitive areas	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Not required now Schools, Hospitals and religious places are notified before the work.

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	sites.							
Socio-Economic: Livelihood Impediment of access to houses and business	• Leave space for access between mounds of excavated soil • Provide wooden planks / foot bridges for pedestrians and metal sheets for vehicles to allow access across trenches to premises where required • Consult affected business people; inform them in advance when work will occur • Address livelihood issues; implement the Resettlement Plan (RP) to address these issues • 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 • Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns / complaints.	• Safety arrangement • Complaint from sensitive receptors • Sign board/ caution board availability with required information	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied mostly Advance information is given to the shopkeepers and locals Sign board provided. But caution and time of construction not always informed in the board Site photo in **Appendix 2.** Instruction has been given to the contractor for improvement
Socio-Economic: Employment generation	Employ atleast 50% of the labour force, or to the maximum extent, local persons if manpower is available Procure construction materials from local market.	Employment record	All construction sites	Contractor	Checking of records	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Local people are mostly employed
Workers occupational health &safety	(i) Develop and implement site-specific Health and Safety(H&S) Plan which will include measures such as:	• Site-specific Health and Safety (H&S) Plan	All construction sites	Contractor	• Checking of records • Visual inspection	PMDCSC's Environment Specialist and	Do	Complied mostly. Health and safety measures are followed.

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	(a) excluding public from the site; (b) ensuring all workers are provided with and use Personal Protective Equipment like helmet, gumboot, gloves, nose mask and earplugs; (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; (ii) Designate a safeguard focal person and undertake safeguards orientation by PMU/PIU; (iii) Ensure H&S plan is easily understandable to workers and labourers. Keep in mind that this plan will be used on-site and workers/labourers may not always understand highly technical terms; (iv) Strict compliance of H&S plan and requirements of wearing personal protective equipment (PPE) during work hours; (v)Provide specific guidance for suitable PPE for every on-site work assignment (vi) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the project site; (vii) Provide medical insurance coverage for workers; (viii) Secure all installations from	• Equipped first-aid stations; • Medical insurance coverage for workers • Number of accidents • Supplies of potable drinking water; • Record of H&S orientation trainings • Personal protective equipments • Sign boards for hazardous areas such as energized electrical devices and lines, service rooms			of sites	Construction supervisor		PPEs are given to the workers. Used mostly. First aid box available Tool box training for workers arranged Drinking water available at working sites Site photo attached in **Appendix 2.** Internal training document sample copy attached in **Appendix 13** Insurance arranged for the labourer. Attached as **Appendix 6**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	unauthorized intrusion and accident risks; (ix) Provide supplies of potable drinking water at working sites; (x) Provide clean eating areas where workers are not exposed to hazardous or noxious substances; and (xi) Provide H&S orientation training to all new workers to ensure that they are apprised of the basics rules of work at the site, personal protective protection, and preventing injuring to fellow workers; (xii) 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; (xiii) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; (xiv) Ensure moving equipment is out fitted with audible back-up alarms; (xv) 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							

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	general public as appropriate; and (xvi) Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.							
Community Health & safety	• Provide wooden bracing for all deep excavations(>2m); identify buildings at risk prior to start of excavation work and take necessary precautions for safe work • Plan material and waste routes to avoid times of peak-pedestrian activities • Liaise with Davangere CMC in identifying risk areas on route cards/maps; identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work • Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure • Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads • Overall, the contractor should comply with IFC EHS Guidelines on Community Health and Safety	• Traffic Management Strategy • Complaints from sensitive receptors	All construction sites	Contractor	Visual inspection	PMDCSC's Environment Specialist and Construction supervisor	Do	Partially Complied Caution tape provided at excavated areas, improvement required. Transportation of materials done as per convenient time without disturbing locals
Temporary	• Establishment of temporary	• Complaints from	All	Contractor	Site	PMDCSC's	Do	Complied.

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
worker camps	camps with drinking water, sanitary and solid waste management arrangement • Train employees in the storage and handling of materials • Remove all wreckage, rubbish, or temporary structures	sensitive Receptors • Water and sanitation facilities for employees • Housekeeping – regular disposal of solid waste	construction sites		observation	Environment Specialist and Construction supervisor		Labour camp construction – done at STP site with toilet and drinking water facility.. Presently labourers stay at rented house Stockpile and storage areas selected nearby camp area and construction locations. No hot mix plant is required

Table 10: Compliance to EMP of the Package- Providing expansion of sewage system in Byadgi Town – Package No. 01BDG01

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
Design & Pre Construction phase								
Design: Drinking water supply lines may be contaminated due to leakage from sewers	• Limit the sewer depth where possible. • Sewers shall be laid away from water supply lines and drains (at least1m, wherever possible)	Design report	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer / PIU	Continuous	Complied as and when required
Disturbance/ damage to existing utilities on the sites (Telephone lines, electric poles and wires, water lines within proposed project sites)	• List of affected utilities if any and operators • Bid document to include requirement for a contingency plan for service interruptions • In case of disruption of water supply, alternative supply, through tankers, shall be provided	• List of affected utilities if any and operators • Bid document to include requirement for a contingency plan for service interruptions	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist / PIU	Before start of physical work & Continuous	Complied in design and as & when required Utility services will be restored on the same day or least possible time.
Construction work camps, stockpile areas, storage areas,	• Planning for setting up worker camps, hot mix plant, stockpile area, storage and disposal areas	List of selected location for construction work camps, hot mix	Proposed camp site	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer &	Before start of physical work & Continuous	Rented house arranged for workers Photo shows in Appendix 2

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
and disposal areas (disruption to traffic flow and sensitive areas and receptors)	• Prioritize areas within or nearest possible vacant space in the sub project location • Non use of residential area • Arrangement of toilet and drinking water facility • No disposal of waste in water	plants, stockpile areas, storage areas, and disposal areas				Environment Specialist / PIU		At STP site toilet and drinking water facility available
Emergencies such as leaks, overflows, bursts	• Develop Emergency Response Plan for all emergencies such as leaks, overflows, burst	• Emergency response plan	-	PIU / Design Consultant	Observation and document checking	PMDCSC's Resident Engineer & Environment Specialist / PIU	Before start of physical work & Continuous	Not required now
For STP- Design Nuisance due to location of the site in a developing area	• Select a treatment process that is compact, aesthetically good, and generates no or fewer odours. • Provide a green buffer zone of 10-15 m wide around the STP • Screen around the facility and will improve the aesthetic appearance. • Regulate the surrounding land use in strict compliance with Master Plan. And declared no development zone around the STP sites. • Design the layout plan of the facility such that potential odour generating units – inlet and primary treatment units ands ludge thickener, are located away as far as possible from the nearest development, and	Review& Check the inclusion/ provision in DPR, as appropriate	STP site	PIU / Design Consultant	Observation and document checking	PMU/ PIU/ PMDCSC's Resident Engineer	Before start of physical work & as per requirement	Design to be developed accordingly. To be comply at operation phase

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	be provided with green buffer zone. • Provide backup power facilities for continuous and uninterrupted operation							
For STP- Design and development of Treatment plans as per disposal standards set by CPCB (Pollution of surface water, ground water and land resources)	The Treatment Plants should be designed for following treated water disposal standards	Review& Check the inclusion/ provision in DPR, as appropriate	STP site	PIU / Design Consultant	Observation and document checking	PMU/ PIU/ PMDCSC's Resident Engineer and Environment Specialist	Before start of physical work & as per requirement	Design under finalization considering discharge standard of CPCB
For STP- Emergencies Events like release of bad odours	Develop an emergency response system for events like release of bad odours	Review & Check the inclusion/ provision in DPR, as appropriate	STP site	PIU / Design Consultant	Observation and document checking	PMU/ PIU/ PMDCSC's Resident Engineer and Environment Specialist	Before start of physical work & as per requirement	To be comply at operation phase
Construction								
Impacts due to excess excavated earth, excess construction materials, solid waste etc. Occupational hazards which can occur to workers and public during work.	Prepare and submit a Construction Management Plan, every month, Which cover location map, use of PPE, materials management, waste management, personal safety arrangement etc.	Document related to construction management format	Working locations	Contractor	Observation and document checking	PMDCSC's Environment Specialist and Construction supervisor	Daily by construction supervisor Weekly / bi weekly by Construction Manager. Verification by Environment Specialist of PMDCSC and Asst.. Executive Engineer	Excess excavated soil after backfilling will be reused to fill trenches if any or shifted from the sites. Disposal as per permission from PIU. Appendix 16 shows further instruction from project management authority for disposal of excess earth at low laying areas and utilization for road construction. Excess earth from pipe

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
							(Environment) KIUWMIP-KUIDFC on monthly basis	laying will be used in STP. Instruction has already been given.
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	• Contractor should obtain material from existing mines approved/ licensed by Mines and Geology Department / Revenue Department. • Verify suitability of all material sources and obtain approval of implementing agency • No new quarry sites shall be developed for the sub project purpose • Submit a monthly statement of construction material procured indicating material type, source and quantity.	• List of approved quarry sites and sources of materials • Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary • Construction Contractor documentation	Quarries and material source areas	Contractor	• Checking of records • visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Under Compliance. All materials procurement certified by implementation agency
Dust and emissions from construction activity may degrade the air quality	• Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; • Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; • Bring materials (aggregates, sand, etc gravel) as and when required; • Use tarpaulins to cover sand and other loose material when transported by vehicles;	• Location of stockpiles • Complaints from sensitive receptors • Monitoring data • Heavy equipment and machinery with air pollution control • Water sprinkling arrangement • Cover materials	All construction site, stockpile areas	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Excavated earth is used to refill the trench Materials are brought to the site whenever necessary covered by tarpaulin, not always. Water sprinkling is not required now, but will be done as per site and weather condition. During construction air quality monitoring done during the report period. Result certificate is attached as **Appendix**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	• Clean wheels and undercarriage of vehicles prior to leaving construction site • Ensure valid Pollution Under Control (PUC) Certificates for all vehicles and equipment used in the construction activity							**9** Sampling locations are shown in **Appendix 10.** PUC certificate submitted
High noisy construction activities may have adverse impacts on sensitive receptors and structures	• Plan activities in consultation with the PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; • 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; • 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; • Maintain maximum sound levels not exceeding 80 decibels (db) when measured at a distance of 10 m or more from the vehicle/s	• Complaints from sensitive receptors • Use of silencers in noise-producing equipment and sound barriers • Monitoring data	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied Construction work limited to day time only Prior information is provided to locals Result certificate is attached as **Appendix 9** Sampling locations are shown in **Appendix 10**
Impacts on surface drainage and water	• Avoid stock piling of earth specially during the monsoon season unless	• Areas for stockpiles, storage of fuels	All construction sites	Contractor	Site observation	PMDCSC's Environment Specialist	Do	Partially Complied.-disposal of waste Stockpiling avoided as

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
quality due to contaminated runoff from construction areas in monsoon	covered by tarpaulins or plastic sheets • Stock piles shall be provided with temporary bunds • Prioritize re-use of excess spoils and materials in the construction works. • Place storage areas for fuels and lubricants away from any drainage leading to water bodies • Dispose any wastes generated by construction activities in designated sites	and lubricants and waste materials • Number of silt traps installed along drainages (in slope) leading to water bodies • Utilization of spoils				and Construction supervisor		far as possible Fuel and lubricants stored properly Removal of waste from drain and disposal of same at earliest No water bodies nearby the present construction sites
Impacts on landscape and aesthetics due to construction activity	• Prepare and implement Waste Management Plan – it should present how the surplus waste generated will temporarily stocked at the site, transported and disposed properly. The Waste Management Plan will be part of the Construction Management Plan. • Avoid stockpiling of excess excavated soils as far as possible • Coordinate with PIU for beneficial uses of excess excavated soils or immediately dispose to designated areas	• Waste Management List • Complaints from sensitive receptors • PMU/PIU/PMDCSC to report in writing that the necessary environmental restoration work has been done	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Excess earth stockpiled and reused. Sometime disposal of excess earth needed from drain nearby the pipe laying site. Coordination has been done. Spoil management plan will be applied as per EMP (Attached as **Appendix 11)**
Damage to protected structures due to construction along the areas near to protected	• All necessary and adequate care should be taken to minimize the impact on protected properties. If articles such as fabrics, coins, artifacts, structures or other geologically or	Chance find protocol	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Action will be taken as per requirement Instruction has been given to all workers on chance find

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
monuments	archeologically important materials are discovered, the excavation should be stopped and the Archaeological Department should be intimated at the earliest and all the articles received during the sewer laying should be handed over to ASI • PMDCSC should include the above instruction in the contract document.							
Hindrance to traffic movement/ accessibility	• Plan pipeline (sewer lines) work in consultation with the traffic police • Plan work such that trench excavation, pipe laying, and refilling including compacting, at a stretch is completed in a minimum possible time; • Provide for immediate consolidation of back filling material to desired compaction-this will allow immediate road restoration and therefore will minimise disturbance to the traffic movement; • Do not close the road completely, ensure that work is conducted on to edge of the road; allow traffic to move on oneline; • In unavoidable circumstances of road closure, provide alternative routes, and ensure that public is informed about such traffic diversions;	• Traffic Management Strategy • Complaints from sensitive receptors • Number of signages placed at subproject location.	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Construction works are completing in least possible time. Road closure board placed. Alternative routes provided in case of road closure Caution tape provided at closure site. At few sites improvement is required. Hard barricading needs to be provided at the UGD network site Traffic Management plan is attached as **Appendix 12** **Appendix 2** shows site photographs.

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
Impact on sensitive receptors- Schools, hospitals and religious places	• No material should be stocked in this area; material shall be brought to the site as and when required • Conduct work manually with small group of workers and less noise; minimize use of equipment and vehicles • No work should be conducted near the religious places during religious congregations • Material transport to the site should be arranged considering school timings; material should be in place before school starts; • 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.	• Materials storage strategy • Complaints from sensitive receptors • Construction strategy near sensitive areas	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Not required now Schools, Hospitals and religious places are notified before the work.
Socio-Economic: Livelihood Impediment of access to houses and	• Leave space for access between mounds of excavated soil • Provide wooden planks / foot bridges for pedestrians and metal sheets for	• Safety arrangement • Complaint from sensitive receptors • Sign board/	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied mostly Advance information is given to the shopkeepers and locals Sign board provided. But caution and time of

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
business	vehicles to allow access across trenches to premises where required • Consult affected business people; inform them in advance when work will occur • Address livelihood issues; implement the Resettlement Plan (RP) to address these issues • 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 • Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns / complaints.	caution board availability with required information						construction not always informed in the board Site photo in **Appendix 2.** Site photo in **Appendix 2**
Socio-Economic: Employment generation	Employ atleast 50% of the labour force, or to the maximum extent, local persons if manpower is available Procure construction materials from local market.	Employment record	All construction sites	Contractor	Checking of records	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. Local people are mostly employed
Workers occupational health &safety	(i) Develop and implement site-specific Health and Safety(H&S) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use Personal Protective Equipment like helmet, gumboot, gloves, nose	• Site-specific Health and Safety (H&S) Plan • Equipped first-aid stations; • Medical insurance coverage for workers • Number of	All construction sites	Contractor	• Checking of records • Visual inspection of sites	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied. mostly Health and safety measures are followed. PPEs are given to the workers. They using mostly First aid box available Tool box training for

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	mask and earplugs; (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; (ii) Designate a safeguard focal person and undertake safeguards orientation by PMU/PIU; (iii) Ensure H&S plan is easily understandable to workers and labourers. Keep in mind that this plan will be used on-site and workers/labourers may not always understand highly technical terms; (iv) Strict compliance of H&S plan and requirements of wearing personal protective equipment (PPE) during work hours; (v)Provide specific guidance for suitable PPE for every on-site work assignment (vi) Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the project site; (vii) Provide medical insurance coverage for workers; (viii) Secure all installations from unauthorized intrusion and accident risks; (ix) Provide supplies of potable drinking water at working sites; (x) Provide clean eating areas where workers are not exposed to hazardous or noxious	accidents • Supplies of potable drinking water; • Record of H&S orientation trainings • Personal protective equipments • Sign boards for hazardous areas such as energized electrical devices and lines, service rooms						workers arranged Drinking water available at working sites Site photo attached in **Appendix 2.** Internal training document sample copy attached in **Appendix 13** Workman compensation insurance has been collected Attached as **Appendix 6**

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	substances; and (xi) Provide H&S orientation training to all new workers to ensure that they are apprised of the basics rules of work at the site, personal protective protection, and preventing injuring to fellow workers; (xii) 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; (xiii) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; (xiv) Ensure moving equipment is out fitted with audible back-up alarms; (xv) 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 (xvi) Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing							

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	protection shall be enforced actively.							
Community Health & safety	• Provide wooden bracing for all deep excavations(>2m); identify buildings at risk prior to start of excavation work and take necessary precautions for safe work • Plan material and waste routes to avoid times of peak-pedestrian activities • Liaise with Davangere CMC in identifying risk areas on route cards/maps; identify buildings at risk prior to start of excavation work and take necessary precautions for safe conduct of work • Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure • Provide road signs and flag persons to warn of dangerous conditions, for all the sites along the roads • Overall, the contractor should comply with IFC EHS Guidelines on Community Health and Safety	• Traffic Management Strategy • Complaints from sensitive receptors	All construction sites	Contractor	Visual inspection	PMDCSC's Environment Specialist and Construction supervisor	Do	Complied Caution tape provided at most of the excavation areas., but improvement is required Transportation of materials done as per convenient time without disturbing locals
Temporary worker camps	• Establishment of temporary camps with drinking water, sanitary and solid waste management arrangement • Train employees in the storage and handling of materials • Remove all wreckage,	• Complaints from sensitive Receptors • Water and sanitation facilities for employees • Housekeeping –	All construction sites	Contractor	Site observation	PMDCSC's Environment Specialist and Construction supervisor	Do	Rented house arranged for workers

Impacts	Mitigation Measures	Parameters Monitored	Location	Responsible for mitigation	Method of Monitoring	Responsible for Monitoring	Date of Monitoring Conducted	Compliance status
	rubbish, or temporary structures	regular disposal of solid waste						

V. ENVIRONMENTAL MONITORING AND EVALUATION

25. In addition to desk reviews and site inspections, monitoring of selected environmental parameters have been conducted during the reporting period. The frequencies of the environmental monitoring activities are commensurate to the type and significance of the impacts. For Project 1 subprojects, the parameters to be monitored are ambient air quality and noise levels.

26. The ambient air quality monitoring results are presented in **Table 11**. Results indicate that concentrations of parameters as measured " during construction" at all the UGD and STP project sites are with the CPCB limit. There is marginal increase in "during concentration" SO_2 and NO_2 in compared to base line concentration level at Davangere underground drainage package working locations. Both PM_{10} and $PM_{2.5}$ concentration levels marginally increased "during construction" stage for that package. For Davangere STP package during construction monitoring has been done. Concentrations of all parameters are within the standard. There is no as such variation of concentration of SO_2 and NO_2, but concentration of both PM_{10} and $PM_{2.5}$ are increased in compared to base line level. Suppression of dust through water sprinkling is required for those packages. Similarly there is no as such variation of concentration of SO_2 and NO_2 at Harihar pipe laying and STP location. There is marginal decrease in average concentration of PM_{10} and $PM_{2.5}$ during construction phase, which indicates improvement of application of mitigation measures during construction. At Harihar project sites concentrations of all parameters are within the standard. At Byadgi project sites (UGD and STP) concentration of SO_2 , NO_2, PM_{10} and $PM_{2.5}$ are within the standard. There is marginal increase of all parameters during construction in compared to base line level. In the report period (January to June 2017) base line monitoring has been conducted for Byadgi and Harihar bulk water supply package sites. Concentration of SO_2 and NO_2 are within the standard but concentration of PM_{10} and $PM_{2.5}$ are above the standard Therefore application of mitigation measures like dust suppression is required at all the construction sites. **Appendix 9** shows monitoring result certificates for all the packages. **Appendix 10** shows monitoring locations. Mitigation measures, like dust suppression will be applied as per EMP. Instruction has been given to the contractor for improvement of application of mitigation measures.

Table 11: Ambient Air Quality Monitoring at Sites of construction

Town	Phase	Sampling Locations	Date of Monitoring	Parameters			
				SO_2 µg/m^3	NO_2 µg/m^3	$PM_{2.5}$ µg/m^3	PM_{10} µg/m^3
Davangere (Package no. 01DVG01)	Base line	Ashraya valley Near NH 4	20.05.2015	4.24	9.33	48.23	78.97
		SPS Nagar	20.05.2015	4.34	9.08	50.26	81.32
		Pune Bangalore Road near Sagar Motors	20.05.2015	4.25	9.37	51.18	90.72
	Average Baseline			**4.28**	**9.26**	**49.9**	**83.67**
	During Construction	Pre casting yard near Kendagi Road	23.12.2015	5.93	14.02	52.28	96.24
		Ward 1 Ashok nagar	23.12.2015	5.08	13.38	44.62	86.60

Town	Phase	Sampling Locations	Date of Monitoring	Parameters			
				SO_2 µg/m^3	NO_2 µg/m^3	$PM_{2.5}$ µg/m^3	PM_{10} µg/m^3
		Ward 36 (part 1) Shivkumar Badavane	23.12.2015	5.52	13.74	58.72	99..51
	Average During construction			**5.51**	**13.7**	**51.9**	**91.4**
	During Construction	2nd Main Vinoba nagar	24.06.2016	4.66	9.95	38.34	66.93
		P B Road near Avaragere bus stop	24.06.2016	4.65	9.94	41.34	72.84
		Jaynagar B block , Opposite to Church	24.06.2016	4.61	9.63	39.73	68.72
	Average During construction			**4.64**	**9.84**	**39.80**	**69.50**
	During Construction	Ward no. 4 SSM Nagar	30.12.2016	5.99	12.68	59.90	96.57
		Ward no. 8 SMK Nagar	30.12.2016	5.50	15.40	43.65	87.60
		Ward no. 36 Shivakumar Badavane	30.12.2016	6.50	12.72	57.70	98.45
	Average During construction			**5.99**	**13.6**	**53.75**	**94.21**
	During Construction*	Shiv Kumar Swami Badavane	13.05.2017	6.22	11.68	58.45	95.86
		Shankar Layout	13.05.2017	5.89	12.64	59.40	97.30
		Jaya Nagar B Block	13.05.2017	6.10	11.99	57.43	96.45
	Average During construction*			**6.07**	**12.10**	**58.42**	**96.53**
Davangere (Package No. 01DVG01A)	Base line	20 MLD STP	08.12.2015	4.34	10.16	37.8	84.2
		5 MLD STP	08.12.2015	4.03	10.03	33.95	78.79
	Average Baseline			**4.18**	**10.1**	**35.9**	**81.5**
	During Construction	20 MLD STP	16.03.2016	5.07	11.12	44.26	80.64
		5 MLD STP	16.03.2016	5.48	11.45	48.66	88.96
	Average During construction			**5.27**	**11.28**	**46.46**	**84.80**
	During Construction	20 MLD STP	21.06.2016	4.66	9.63	29.86	57.33
		5 MLD STP	21.06.2016	4.91	9.77	32.73	60.10
	Average During construction			**4.78**	**9.7**	**31.29**	**58.71**
	During Construction	20 MLD STP	13.09.2016	4.28	9.28	41.76	70.85
		5 MLD STP	13.09.2016	4.22	9.17	38.43	67.92
	Average During			**4.25**	**9.22**	**40.09**	**69.38**

Town	Phase	Sampling Locations	Date of Monitoring	Parameters			
				SO_2 µg/m^3	NO_2 µg/m^3	$PM_{2.5}$ µg/m^3	PM_{10} µg/m^3
	construction						
	During Construction	20 MLD STP	03.12.2016	4.48	9.58	55.23	94.64
		5 MLD STP	03.12.2016	4.45	9.52	51.88	90.23
	Average During construction			**4.46**	**9.55**	**53.55**	**92.43**
	During Construction*	20 MLD STP	04.03.2017	4.54	9.75	57.78	96.57
		5 MLD STP	04.03.2017	4.49	9.65	51.22	89.76
	Average During construction*			**4.51**	**9.7**	**54.5**	**93.16**
Harihar (Package no. 01HRA01)	Base line	Guttur Colony Near Panchyat office	05.05.2015	4.26	9.21	52.41	72.48
		Keshavapura Near Railway Station	05.05.2015	4.24	9.12	68.48	108.54
		Vidyanagar Extension “C” Block	05.05.2015	4.14	9.25	48.15	86.76
	Average Baseline			**4.2**	**9.2**	**56.3**	**89.3**
	During Construction	Gutur colony near Panchyat office	15.12.2015	4.22	9.80	53.26	73.45
		STP site near Kirloskar factory	15.12.2015	4.40	9.35	49.21	87.76
		Near Anjaneya Temple Amaravathi	15.12.2015	4.30	9.50	49.25	89.25
	Average During construction			**4.30**	**9.55**	**50.6**	**83.5**
	During Construction	Vidyanagar	28.06.2016	4.29	9.48	48.18	87.34
		STP site near Kirloskar factory	28.06.2016	4.20	9.27	51.17	85.26
		Guttur near Govt. School	28.06.2016	4.21	9.78	53.26	72.37
	Average During construction			**4.23**	**9.51**	**50.87**	**81.65**
	During Construction	Prasanth Nagar	24.10.2016	4.10	9.48	52.18	85.56
		STP site near Kirloskar factory	24.10.2016	5.21	9.10	50.17	80.16
		A K Colony, Guttur	24.10.2016	3.21	9.18	42.26	77.37
	Average During construction			**4.17**	**9.25**	**48.20**	**81.03**
	During Construction*	Benki Nagar	06.01.2017	5.50	10.95	53.15	88.35
		Keshava Nagar	06.01.2017	3.21	9.18	42.26	77.37
		STP site	06.01.2017	5.25	9.95	51.36	81.50
	Average During Construction*			**4.65**	**10.02**	**48.92**	**82.40**

Town	Phase	Sampling Locations	Date of Monitoring	Parameters			
				SO_2 µg/m^3	NO_2 µg/m^3	$PM_{2.5}$ µg/m^3	PM_{10} µg/m^3
Byadgi UGD 01BDG01	Base Line monitoring	Bettaad Malleshwar Social Welfare Office (Ashray Colony)	16.09.2016	4.04	9.06	35.78	61.53
		Old Police station	16.09.2016	4.13	9.13	42.56	68.49
		STP land	16.09.2016	4.17	9.16	46.93	73.71
		Near Nehru Chawak (KSRTC Bus stand)	16.09.2016	4.15	9.11	38.27	63.94
		Near Town Municipal office	16.09.2016	4.22	9.21	48.61	76.19
	Average Base line			**4.14**	**9.13**	**42.43**	**68.77**
	During Construction*	Near Shivapur Badavane	09.06.2017	4.20	9.39	49.18	88.24
		Vinayak Nagar	09.06.2017	4.18	9.34	46.37	85.22
		Agasanalli Plot(Melagiri Plot)	09.06.2017	4.52	9.61	52.98	92.54
		Someshawar Nagar	09.06.2017	4.25	9.50	51.22	90.82
		Sangameshwar Nagar	09.06.2017	4.16	9.30	45.96	84.25
	Average During Construction*			**4.26**	**9.43**	**49.14**	**88.21**
Byadgi WS (01BDG02)	**Base line***	Near Kadaramandalgi Japping point and existing MS pipeline	26.06.2017	4.61	9.71	57.98	96.12
		Near Asundi	26.06.2017	4.58	9.65	51.26	90.91
		Near Jinning mill, Ranebenur bypass	26.06.2017	4.85	9.88	103.77	162.38
	Average Base line*			**4.68**	**9.74**	**71.0**	**116.4**
Harihar WS (01HRA02)	**Base line***	Near Indian Oil Petrol pump, Kumar Pattan	26.06.2017	4.93	9.95	94.86	148.73
		WTP site, Harihar	26.06.2017	4.75	9.81	84.32	116.24
		OHT site near Gajanan Temple, Amaravathi colony	26.06.2017	4.72	9.74	58.93	95.47
	Average Base line*			**4.8**	**9.83**	**79.37**	**120.14**
		Standard as per CPCB		**80.0**	**80.0**	**60.0**	**100.0**

Note: CPCB - Central Pollution Control Board, BDL - below detection limit

* Monitoring conducted during report period January to June 2017

Package no. 01DVG01= 3 samples on 13.05.2017

Package No. 01DVG01A= 2 samples on 04.03.2017

Package no. 01HRA01= 3 samples on 06.01.2017

Package no. 01BDG01 = 5 samples on 09.06.2017

Package no. 01BDG02= 3 samples on 26.06.2017

Package no. 01HRA02= 3 samples on 26.06.2017

27. The noise level monitoring has also been carried out for construction sites. **Table 12** shows noise level data. **Appendix 9** shows monitoring result certificates for 6 packages. **Appendix 10** shows monitoring locations. It is noted from the results that night time noise levels at Davangere underground sewerage project location is above the standard for commercial and residential areas. There is marginal increase of noise level at Davangere pipe laying sites in compared to base line value. At most of the cases noise level at Davangere STP is within the standard. There is marginal increase of noise level during construction. Day time noise level at Harihar project area is within the standard when comparing with commercial standard but above the limit when compared with residential area noise limit. Night time noise is always above the standard. During construction Noise level above the standard at Byadgi UGD and STP construction sites. . Base line noise level monitoring is also conducted for Byadgi and Harihar water supply packages. At all the cases base line noise levels above the standard as prescribed for residential and commercial areas. Noise level monitoring to be continued as per environment monitoring program throughout the construction period for understanding increase or decrease trend of noise level at project locations. To mitigate high noise levels contractor to apply mitigation measures like control use of noise producing equipment, maintenance of equipments and finally use of PPE by worker or mitigation measures as prescribed in EMP.

28. The next environmental monitoring activities will be conducted within July to December 2017 to measure concentrations of parameters as done earlier and covering all running construction sites. The cost of the environmental monitoring is arranged from contractor budget (Ref. **Appendix 3**).

Table 12: Noise Level Monitoring at project sites of Davangere , Harihar and Byadgi

Town	**Phase**	**Sampling Locations**	Date of Monitoring	Day Time			Night Time Leq dB(A)			Noise Zone
				L Min dB(A)	L Max dB(A)	Leq dB(A)	L Min dB(A)	L Max dB(A)	Leq dB(A)	
Davangere (Package no. 01DVG01)	Base line	Ashraya valley Near NH 4	20.05.2015	62.2	73.3	70.3	51.4	62.5	59.5	R
		Near SPS Nagar school	20.05.2015	65.4	69.0	67.6	53.5	64.6	61.6	S
		Pune Bangalore Road near Sagar Motors	20.05.2015	63.1	74.2	71.2	54.1	65.2	62.2	C
	Average Base line			**63.5**	**72.2**	**69.7**	**53.0**	**64.1**	**61.1**	
	During Construction	Pre casting yard near Kendagi Road (near DG set room)	23.12.2015	71.9	74.5	73.9	58.8	69.9	66.9	I
		Ward 1 Ashok nagar	23.12.2015	56.8	67.9	64.9	55.3	58.2	56.4	R
		Ward 36 (part 1) Shivkumar Badavane	23.12.2015	69.1	70.8	69.9	57.3	68.4	65.4	R
	Average During			**65.9**	**71.0**	**69.6**	**57.1**	**65.5**	**62.9**	

Town	Phase	Sampling Locations	Date of Monitoring	Day Time			Night Time Leq dB(A)			Noise Zone
				L Min dB(A)	L Max dB(A)	Leq dB(A)	L Min dB(A)	L Max dB(A)	Leq dB(A)	
	construction									
	During Construction	2nd Main Vinoba nagar	24.06.2016	72.6	75.6	74.0	58.2	63.0	59.6	R
		P B Road near Avaragere bus stop	24.06.2016	68.2	80.3	72.9	55.3	68.3	61.1	R
		Jaynagar B block , Opposite to Church	24.06.2016	69.8	74.5	71.5	58.3	65.3	61.6	S
	Average During construction			**70.2**	**76.8**	**72.8**	**57.3**	**65.5**	**60.8**	
	During Construction	Ward no. 4 SSM Nagar (day time work)	30.12.2016	65.4	69.0	67.6	-	-	-	R
		Ward no. 8 SMK Nagar (day time work)	30.12.2016	53.5	64.6	61.6	-	-	-	R
		Ward no. 36 Shivakumar Badavane (night time work)	30.12.2016	-	-	-	54.1	65.2	62.2	R
		Pre - Casting Yard DG Shed Room	30.12.2016	58.8	69.9	66.9	71.9	74.5	73.9	I
	Average During construction			**59.2**	**67.8**	**65.3**	**63.0**	**69.8**	**68.0**	
	During Construction*	Shiv Kumar Swami Badavane(night time work)	13.05.2017	-	-	-	70.9	73.6	72.5	R
		Shankar Layout(night time work)	13.05.2017	-	-	-	58.1	67.3	64.2	R
		Jaya Nagar B Block(night time work)	13.05.2017	-	-	-	65.5	69.2	67.3	R
	Average During construction*						**64.83**	**70.03**	**68.0**	
Davangere (Package No. 01DVG01A)	Base line	20 MLD STP	08.12.2015	49.4	55.6	53.5	-	-	-	I
		5 MLD S|TP	08.12.2015	60.8	70.1	65.7	-	-	-	I
	Average Base line			**55.1**	**62.8**	**59.6**	-	-	-	
	During Construction	20 MLD STP	16.03.2016	62.4	68.9	68.1	-	-	-	I
		5 MLD S|TP	16.03.2016	62.1	69.8	68.6	-	-	-	I
	Average			**62.2**	**69.3**	**68.3**	-	-	-	

Town	Phase	Sampling Locations	Date of Monitoring	Day Time			Night Time Leq dB(A)			Noise Zone
				L Min dB(A)	L Max dB(A)	Leq dB(A)	L Min dB(A)	L Max dB(A)	Leq dB(A)	
	During construction									
	During Construction	20 MLD STP	21.06.2016	53.8	57.8	55.3	-	-	-	I
		5 MLD S|TP	21.06.2016	50.3	56.0	52.1	-	-	-	I
	Average During construction			**52.0**	**56.9**	**53.7**	-	-	-	
	During Construction	20 MLD STP	13.09.2016	66.7	70.0	68.5	-	-	-	I
		5 MLD S|TP	13.09.2016	68.8	72.5	70.4	-	-	-	I
	Average During construction			**67.7**	**71.2**	**69.4**				
	During Construction	20 MLD STP	03.12.2016	64.2	74.0	70.7	-	-	-	I
		5 MLD S|TP	03.12.2016	68.5	74.0	71.2	-	-	-	I
	Average During construction			**66.3**	**74.0**	**70.9**				
	During Construction*	20 MLD STP	04.03.2017	62.7	66.0	64.0	-	-	-	I
		5 MLD S|TP	04.03.2017	65.0	72.8	66.2	-	-	-	I
	Average During construction*			**63.85**	**69.4**	**65.1**				
Harihar (Package no. 01HRA01)	Base line	Near STP site Kirloskar Factory	05.05.2015	60.0	68.6	63,0	54.3	65.4	62.4	I
		Near Anjaneya Temple Amaravathi	05.05.2015	49.3	61.6	61.1	50.4	61.5	58.5	S
		Guttur Colony Near Panchyat office	05.05.2015	58.9	69.7	62.7	53.6	64.7	61.7	R
	Average Base line			**56.0**	**66.6**	**61.9**	**52.8**	**63.9**	**60.9**	
	During Construction	Near STP site Kirloskar Factory	15.12.2015	58.0	67.5	62.75	52.3	62.5	57.40	I
		Near Anjaneya Temple Amaravathi	15.12.2015	51.2	63.5	57.35	47.85	59.25	53.55	S
		Guttur Colony Near Panchyat office	15.12.2015	57.5	68.6	63.05	54.5	68.8	59.15	R
	Average During construction			**55.6**	**66.5**	**61.05**	**51.5**	**63.5**	**56.7**	
	During Construction	Near STP site Kirloskar Factory	28.06.2016	58.0	67.5	62.75	53.28	61.47	58.30	I
		Vidyanagar	28.06.2016	51.20	63.50	57.35	47.74	58.35	53.46	R
		Guttur near Govt. School	28.06.2016	57.40	69.10	63.05	54.38	63.70	59.28	S
	Average			**55.5**	**66.7**	**61.0**	**51.8**	**61.7**	**57.0**	

Town	Phase	Sampling Locations	Date of Monitoring	Day Time			Night Time Leq dB(A)			Noise Zone
				L Min dB(A)	L Max dB(A)	Leq dB(A)	L Min dB(A)	L Max dB(A)	Leq dB(A)	
	During construction									
	During Construction	Prasanth Nagar	24.10.2016	41.20	53.50	47.35	40.74	51.23	45.98	R
		STP site near Kirloskar factory	24.10.2016	55.0	62.50	58.75	50.28	59.47	54.88	I
		A K Colony, Guttur	24.10.2016	57.40	69.10	63.05	54.38	63.70	59.28	R
	Average During construction			**51.2**	**61.7**	**56.4**	**48.5**	**58.1**	**53.4**	
	During Construction*	Benki Nagar	06.01.2017	42.53	54.30	48.42	41.35	52.25	46.80	R
		Keshava Nagar	06.01.2017	55.65	68.60	62.13	54.27	63.18	58.73	R
		STP site	06.01.2017	55.20	63.21	59.21	50.35	60.29	55.32	I
	Average During construction*			**51.12**	**62.03**	**56.58**	**48.65**	**58.57**	**53.61**	
Byadgi UGD 01BDG01	Base Line monitoring	Bettaad Malleshwar Social Welfare Office (Ashray Colony)	16.09.2016	66.8	70.3	69.5	-	-	-	R
		Old Police station	16.09.2016	69.4	75.8	72.7	-	-	-	R
		STP land	16.09.2016	67.3	71.0	69.5	-	-	-	I
		Near Nehru Chawak (KSRTC Bus stand)	16.09.2016	70.3	75.6	74.5	-	-	-	R
		Near Town Municipal office	16.09.2016	69.4	74.8	72.4	-	-	-	C
	Average Base line			**68.6**	**73.5**	**71.7**				
	During Construction*	Near Shivapur Badavane	10.06.2017	68.4	72.7	70.8	-	-	-	R
		Vinayak Nagar	10.06.2017	62.5	71.4	64.7	-	-	-	R
		Agasanalli Plot(Melagiri Plot)	10.06.2017	60.1	72.1	67.7	-	-	-	R
		Someshawar Nagar	10.06.2017	60.4	73.3	68.3	-	-	-	R
		Sangameshwar Nagar	09.06.2017	61.6	68.4	66.4	-	-	-	R
	Average During Construction*			**62.6**	**71.58**	**67.58**				
Byadgi WS (01BDG02)	**Base line***	Near Kadaramandalgi Japping point and existing MS	26.06.2017	69.9	73.3	72.3	-	-	-	R

Town	Phase	Sampling Locations	Date of Monitoring	Day Time			Night Time Leq dB(A)			Noise Zone
				L Min dB(A)	L Max dB(A)	Leq dB(A)	L Min dB(A)	L Max dB(A)	Leq dB(A)	
		pipeline								
		Near Asundi	26.06.2017	70.1	76.8	73.4	-	-	-	R
		Near Jinning mill, Ranebenur bypass	26.06.2017	72.2	76.2	74.5				C
	Average Base line*			**70.73**	**75.43**	**73.4**				
Harihar WS (01HRA02)	**Base line***	WTP site, Harihar	26.06.2017	68.5	73.3	72.4				I
		OHT site near Gajanan Temple, Amaravathi colony	26.06.2017	67.1	73.8	69.7				R
	Average Base line*			**67.8**	**73.55**	**71.05**				

* Monitoring conducted during report period January to June 2017
Package no. 01DVG01= 3 samples on 13.05.2017
Package No. 01DVG01A= 2 samples on 04.03.2017
Package no. 01HRA01= 3 samples on 06.01.2017
Package no. 01BDG01 = 5 samples on 09.06.2017
Package no. 01BDG02= 3 samples on 26.06.2017
Package no. 01HRA02= 2 samples on 26.06.2017

CPCB Limits for Industrial area (I): Day Time= 75 dB(A), Night Time (9 PM to 6 AM)= 70 dB(A)
Commercial (C)area: Day Time= 65 dB(A), Night Time (9 PM to 6 AM)= 55 dB(A)
Residential (R) area :Day Time= 55 dB(A), Night Time (9 PM to 6 AM)= 45 dB(A)
Silence Zone (S): Day Time= 50 dB(A), Night Time (9 PM to 6 AM)= 40 dB(A)

29. For Davangere STP package monitoring has been conducted for drinking water and borewell water. All concentrations are within the limit. Result certificate attached as **Appendix 9.**

30. A performance monitoring fact sheet has been prepared to facilitate tracking and quick reference on environmental monitoring of Project 1 subproject packages (**Tables 13 and 14**).

Table 13: Performance Fact Sheet for Required Environmental Consents/Clearances of KIUWMIP Project 1 (Package-wise)

	Package	Name of Contractor	EMP Part of contract Document(Yes / No)	Environmental Consents / Clearances Required					
				Tree Cutting	Crusher	Batching Plant	Hot Mix Plant	Diesel Generator Set	Pollution Under Control (PUC) Certificates for Contractor's Vehicles
1	Providing expansion of sewage system in Harihar city – **Package No. 01HRH01**	SHRIRAM EPC Ltd.	Yes	Not required till date	Not required	Not required as per present work	Not required as per present work	Not required as per present work	Obtained
2	Expansion of Sewage System in Davangere City (District 1 & 3) – **Package No. 01DVG01**	SIMPLEX Infrastructure Limited	Yes	Not required till date	Not required	Not required as per present work	Not required as per present work	Not functioning	Obtained for contractor's vehicle & equipment
3	Improvements to sewerage system in Davangere (STP)- DBO for 20 MLD SBR STP & DBO for 5 MLD SBR STP, **Package No. 01DVG01A**	HNB Engineers Pvt. Ltd.	Yes	Not required till date	Not required	Established Consent to Operate received	Not required	Required Consent obtained	Obtained
4	Design, Build, Operate & Maintain for 6 years for Byadgi comprehensive scheme from covering SBR STP (5 MLD), network and manholes, construction of one septic tank and provision of HSCs, **Package No. 01BDG01**	Shriram EPC-Eurotek Environmental Private Limited - JV	Yes	Not required till date	Not required	Not required till date	Not required	Not required	Obtained

Table 14: Performance Fact Sheet for EMP Implementation of KIUWMIP Project 1 (Package-wise)

	Package Number	Name of Contractor	EMP Part of contract Document(Yes / No)	Contractor Social/ Environment Person[1]	Overall Status of EMP Implementation	Field to be Monitored as per EMP												
						Source of Materials	Camp Sites	Landscape and Aesthetics	Air Quality	Noise Level	Traffic	Ecological Resources – Terrestrial	Accessibility	Water Quality	Occupational Health & safety	Community Health & safety	Socio cultural resources	Employment generation
					In compliance (2) / Partial Compliance (1) / Not in compliance (0) / Not applicable (n/a)													
1	Providing expansion of sewage system in Harihar city – **Package No. 01HRA01**	SHRIRAM EPC Ltd.	Yes	Nominated	Complied	2	2	1	2	2	2	NA	2	NA	1	1	2	2
2	Expansion of Sewage System in Davangere City (District 1 & 3) – **Package No. 01DVG01**	SIMPLEX Infrastructure Limited	Yes	Nominated	Complied	2	2	1	2	2	2	NA	2	NA	1	1	2	2
3	Improvements to sewerage system in Davangere (STP)- DBO for 20 MLD SBR STP & DBO for 5 MLD SBR STP, **Package No. 01DVG01A**	HNB Engineers Pvt. Ltd.	Yes	Nominated	Complied	2	2	1	2	2	NA	NA	2	NA	2	1	NA	2
4	Design, Build, Operate & Maintain for 6 years for Byadgi comprehensive scheme from covering SBR STP (5 MLD), network and manholes, construction of one septic tank and provision of HSCs, **Package No. 01BDG01**	Shriram EPC-Eurotek Environmental Private Limited - JV	Yes	Nominated	Complied	2	2	1	2	2	2	NA	2	NA	2	1	2	2

Note calculation of numerical value for determining performance status- Calculation is based on addition of numerical value like below-
Package No. 01HRA01= Total score- 2+21+2+2+2+2+1+1+2+2= 19. Number of operated field=11, **Then- 19/11=1.72≈ 2, More than 1.5, Complied**
Package No. 01DVG01= Total score- 2+2+1+2+2+2+2+1+1+2+2= 19. Number of operated field= 11. **Then – 19/11=1.72≈ 2, More than 1.5, Complied**
Package No. 01DVG01A= Total score- 2+2+1+2+2+2+2 +1+2= 16. Number of operated field= 9. **Then – 16/9=1.77 ≈ 2, More than 1.5, Complied**
Package No. 01BDG01= Total score- 2+2+1+2+2+2+2+2+1+2+2= 20, Number of operated field= 11. **Then – 20/11=1.8 ≈ 2, More than 1.5, Complied**
(Partial impact on landscape and aesthetic s due to incomplete disposal of excess earth/ waste, Partial compliance for occupational health and safety due to partial use of PPEs, Partial compliance of community health and safety due to partial use of caution tape)

[1]Nomination of Environmental & Social Safeguard Officer by Contractor(Nominated / Yet to be Nominated)

VI. CONSULTATIONS AND DISCLOSURES CONDUCTED

31. As per approved IEE, consultations and disclosure will be a continuous process throughout Project 1 implementation involving public consultations and focus group discussions. Field level consultation has been done at Davangere, Harihar and Byadgi during the report period. Sample filled public consultation format is attached as **Appendix 14.**

32. During implementation of project general discussion has been done with the local public at Davangere, Harihar and Byadgi along pipe laying locations of impact zone. Such consultation is basically one to one discussion with public and generally to be continued throughout the construction period. The issues like requirement of restoration of utility services, removal of overburden soil, road restoration done or not, dust and noise pollution during implementation of the project, community safety arrangement, availability of public access have been discussed and views has been tabulated.

33. Outcome of consultation as follows,

- ✓ There is no issue on impact of utility services like PHE line etc.
- ✓ Excess earth removed in most of the cases. Public have no complaint on that
- ✓ Road restoration done without affecting the public
- ✓ There is minimum impact due to generation of dust and noise from project activity
- ✓ Arrangement of caution tape is done in most of the cases. No public complaint
- ✓ Local movement of public is not affected. Alternate access provided

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

Table 15: Indicative Schedule for Consultations and Disclosure

Type of Consultation/Disclosure	Target Date	Location	Target Participants	Responsible Person and Source of Funds
Local level consultation	Weekly – to be continued	At all construction locations	General public, shop keepers, pedestrian population	Construction supervisor, Environment & safety officer of contractor Project budget – continuous process
Consultation – safety issues, implementation of EMP	By-monthly	Davangere, Byadgi and Harihar	Supervisor Engineer, PIU Engineer, all safety and environment staff of contractors	Resident Engineer, Environment specialist of PMDCSC, Asst Executive Engineer (Environment) PMU

35. During the report period safeguard orientation program on safety and environment has been arranged for contractor, supervisor's engineers of PMDCSC, engineers of PIU at Davangere. Training program has been arranged for new construction packages of Harihar and Byadgi bulk water supply. Training details is attached as **Appendix 17.**

36. Environment consultant from ADB and Environmental Specialist from PMU conducted refresher orientation training on "Environmental Safeguards " at Davangere on 19th January 2017 for consultant, contractors, PIU and RPMU staffs. Details attached in **Appendix 17.**

VII. GRIEVANCE REDRESS MECHANISM

37. As per approved IEE, a project-specific grievance redress mechanism (GRM) being established to receive, evaluate and facilitate the resolution of affected people's concerns, complaints and grievances about the social and environmental performance at the level of the Project. The GRM aims to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project. The project-specific GRM is not intended to bypass the government's own redress process; rather it is intended to address affected people's concerns and complaints promptly, making it readily accessible to all segments of the affected people and is scaled to the risks and impacts of the project.

38. The GRC/SC for the project will be headed by Dy. Commissioner (DC) of the district with members as followed: (1) ULB Commissioners of project towns, (2) Revenue Department (Registrar) official, (3) RPMU Social safeguard/ R&R Officer of KIUWMIP, (4) ULB officer who will convene the periodic meeting of GRC and will shoulder responsibility of keeping records of grievances/ complaints in details with help from resettlement NGO. Other members, such as, NGO/CBO representatives, wards council representatives, DPs' representatives will be selected by the ULB Commissioner to represent in the GRC/SC meeting. NGO should also deploy one person in the team who will be responsible for coordinating with all GRC members and the DPs for grievance redress.

39. In the event when the established GRM is not in a position to resolve the issue, Affected Person also can use the ADB Accountability Mechanism (AM) through directly contact (in writing) to the Complaint Receiving Officer (CRO) at ADB headquarters or to ADB Indian Resident Mission (INRM). The complaint can be submitted in any of the official languages of ADB's DMCs. The ADB Accountability Mechanism information will be included in the PID to be distributed to the affected communities, as part of the project GRM. A Grievance Redress Mechanism is shown in the **Figure 3.**

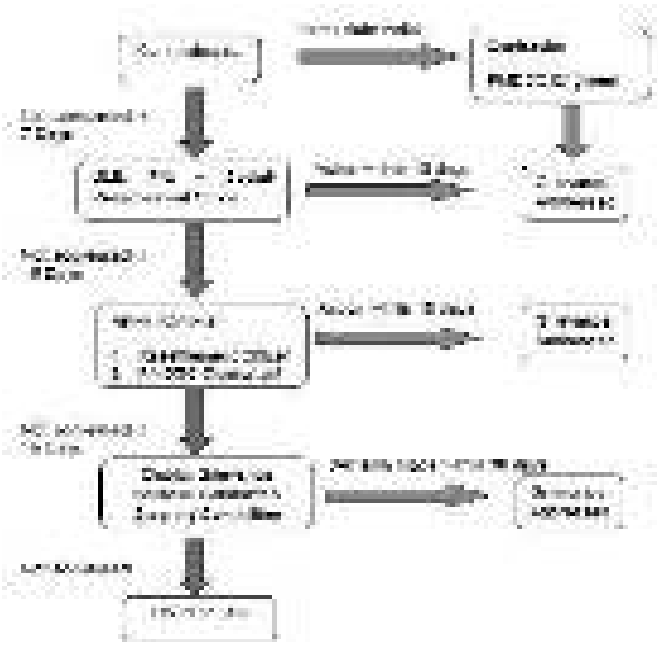


Figure 3: Grievance Redress Process

40. The PIUs will make the public aware of the GRM through public awareness campaigns. Grievances can be filed in writing using the Complaint Register and Complaint

Form or by phone with any member of the PIU. The contact phone number of the respective PIUs and the RPMU will serve as a hotline for complaints and will be publicized through the media and placed on notice boards outside their offices and at construction sites.

41. Project level GRC has been set up on 7th August 2015. Office memorandum is attached as **Appendix 18.**

42. Already complaint register and accident register open at contractor level. Sample copy of registration of grievances and addressing of grievances is attached as **Appendix 19.** Till date all grievances are resolved at contractor level. Accident record is available with the contractor. The status of accident is shown in **Appendix 20.** There is only one fatal accident is reported from Harihar during the report period.

VIII. FINDINGS AND RECOMMENDATIONS

43. Based on environmental monitoring conducted during January to June 2017, KIUWMIP Project 1 is in mixed (partial to fully complied) compliance level of environmental safeguards. The main non-compliances include:

- Advance information to the locals and shopkeepers at pipe laying area of Davangere, Harihar and Byadgi is not always provided. Time period for construction work for particular area and contact details of PIU, consultant in project display board for any grievances or suggestion should be included
- Need to improve use of PPE by contractor's workers. Use of PPE should be at all times as per site condition and work type. Particularly use of shoes, use of ear plugs by the equipment operator during operation of concrete road breaker is not done
- Disposal of excess earth/ spoil not done on regular basis from working sites and drains particularly for Harihar UGD, Davangere UGD and Byadgi UGD package. Disposal of scrap and construction materials needed from Davangere STP package, since work almost completed.
- Dust suppression not done on regular basis for Harihar STP package
- Temporary placement is noted for all the packages. Improvement/ complete use of caution tape at working areas required
- Noise impact prevention - control use of noise producing equipment, maintenance of equipments and finally use of PPE by worker. If background noise is high, (this is more or less common at project sites nearby the road) complete use of PPE like ear plugs by workers can be recommended. .

44. **Table 16** provides the recommended corrective action plan to address the non-compliances and partially compliances..

Table 16: Corrective Action Plan

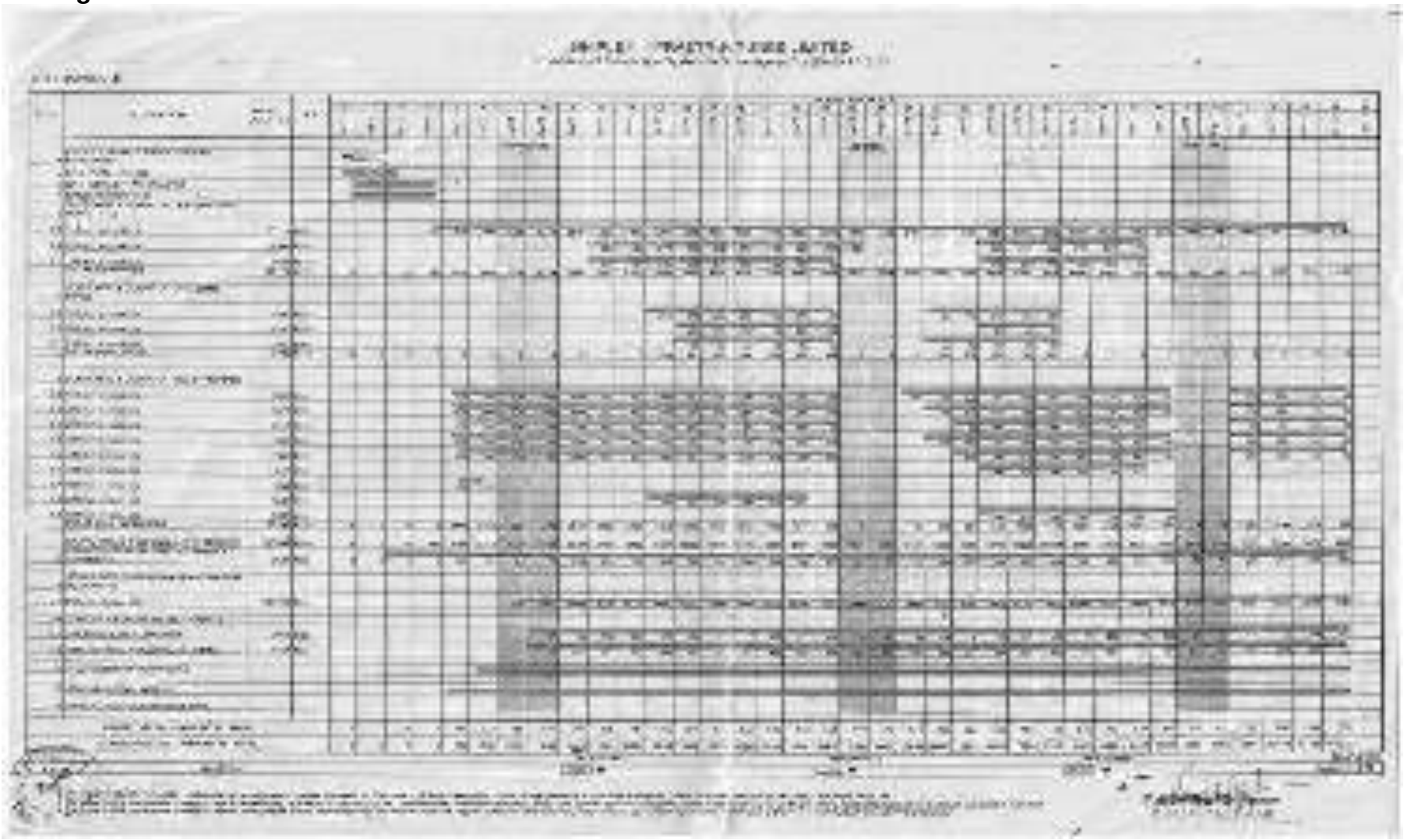
	Non-compliance Issues	Action Required	Responsible	Target Date	Indicator of Compliance
1	Advance information to the locals and shop keepers at pipe laying area of Davangere, Harihar and Byadgi is not always provided. Time period for construction work for	Arrangement of display board with all information. Advance information for locals including shopkeepers before	Contractor	15th August 2017	Information disclosure Public consultation

	Non-compliance Issues	Action Required	Responsible	Target Date	Indicator of Compliance
	particular area and contact details of PIU, consultant in project display board for any grievances or suggestion should be included	starting of the work			
2	Need to improve use of PPE by contractor's workers. Use of PPE should be at all times as per site condition and work type. Particularly use of shoes, use of ear plugs (high noise producing areas) by the equipment operator during operation of concrete road breaker is not done	Use of PPE should be at all times as per site condition and work type.	Contractor	Immediate and on regular basis with record	Availability and use of PPE
3	Disposal of excess earth/ spoil not done on regular basis from working sites and drains particularly for Harihar UGD, Davangere UGD and Byadgi UGD package. Disposal of scrap and construction materials needed from Davangere STP package, since work almost completed.	Disposal or utilization of excess earth/ spoil on regular basis	Contractor	Immediate and nn regular basis with record	Improvement of site aesthetic condition
4	Dust suppression not done on regular basis for Harihar STP package	Suppression of dust by sprinkling of water particular during dry period	Contractor	On regular basis with record	Site observation and record
5	Temporary placement of caution tape is noted at few locations for all the packages. Improvement/ complete use of caution tape at working areas required	Complete use of caution tape and barricade at construction site	Contractor	15th August 2017	Site observation

45. **Appendix 21** provides the status of implementation of corrective action plan from contractor's end.

Appendix 1
Implementation Schedule

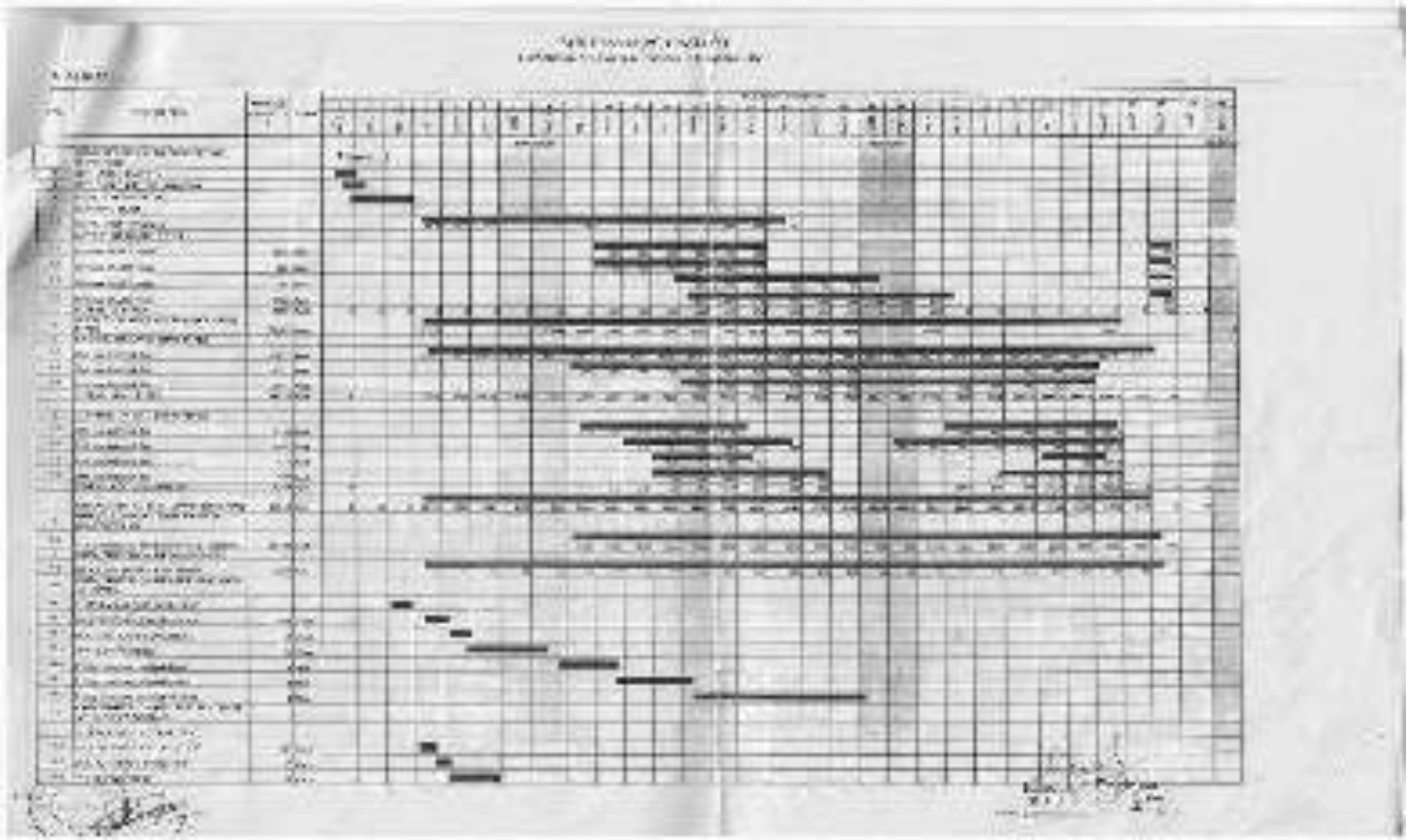
Davangere UGD

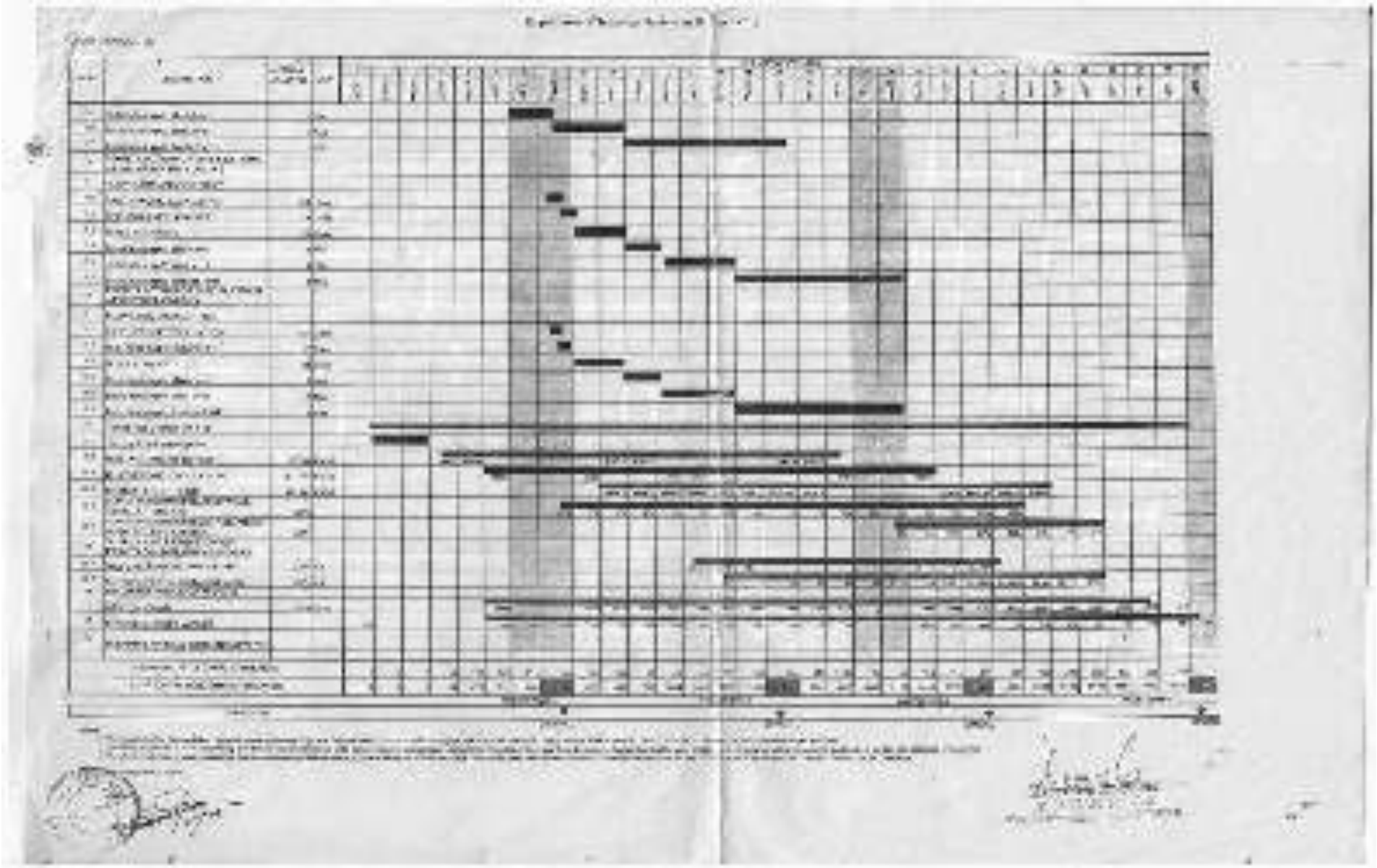


5 MLD STP Davangere

20 MLD STP Davangere

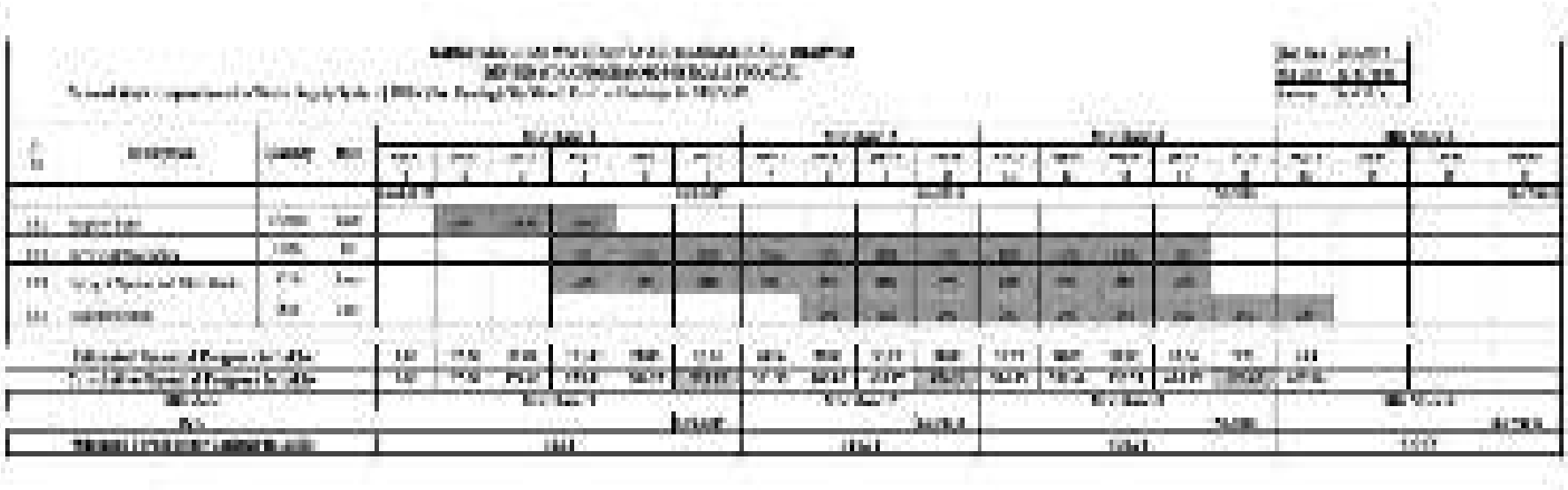
Sewerage & STP work - Harihar



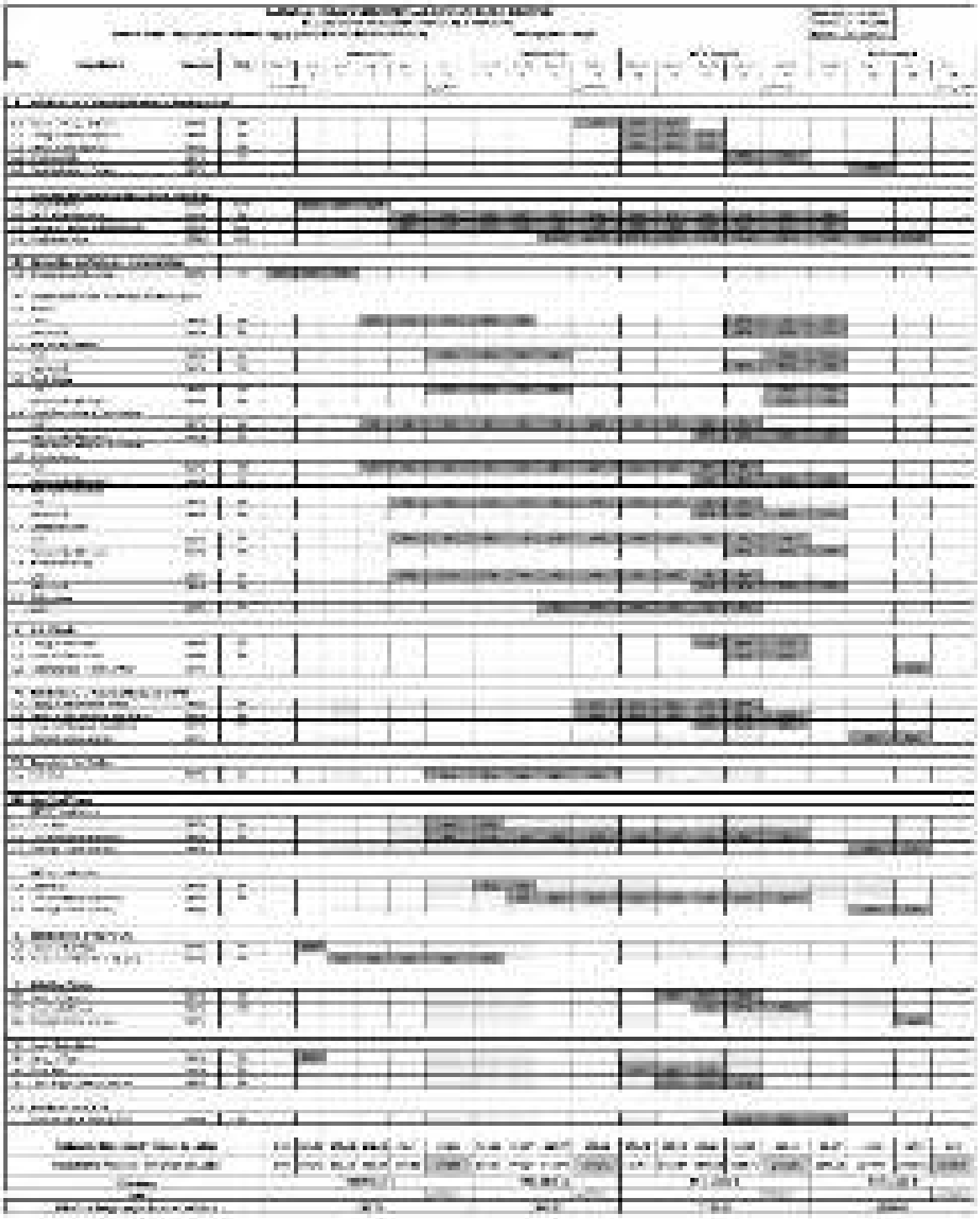


Byadgi UGD

Byadgi Water supply



Harihar Water Supply



Appendix 2: Photo Illustration

Road restoration done after pipe laying. Excess earth needs to be dispose at Davangere

Temporary use of caution tape at working area of Ward 36,Davanagere

First aid box noted at working site- Ward no 36

Excess earth needs to be remove completely from St. John school gate at Davangere

Toilet facility within labour camp cum casting yard of Davangere UGD package

Partial use of PPE by worker. No shoes provided to worker. Supervisor not using PPE

Partial use of PPE at pipe laying area

Use of Caution tape, caution board and use of PPE by workers – noted

Barricading done at ward no. 23 for pipe laying works at Davangere

Barricading done at ward no. 36 for Construction of Receiving chamber

Use of PPE by workers – noted

Proper storage of pipes at camp yard site - noted

Availability of First aid box at Bhumikanagar- Davangere

Availability of First aid box at Budyal village- Davangere

Availability of First aid box at Durga Ambika school

Availability of drinking water at work site

Use of excess earth for road construction

Labour camp within construction yard at

at Davangere

Davangere

Construction of 20 MLD STP at Davangere

Construction of Blower Room/ Admin building

Approach road construction at 20 MLD STP

Proper display board is noted at 20 MLD STP at Davangere

SBR Decanter at 5 MLD STP

Partial use of caution tape is noted in and around excavated area within STP. Improvement is required
Use of PPE by workers - noted

Labour camp with proper bed is noted for Davangere STP

Disposal of construction waste is required at Davangere STP

Blower room motor fixing at 20 MLD STP Site - Davangere

Painting works at Staff Quarters-Davangere STP site

Use of Excess excavated earth for

Utilization of earth for construction of

development of land within Davangere STP

Presence of caution tape and caution board at working sites of Harihar UGD

Partial use of PPE by workers at STP site at Harihar

Toilet facility at Harihar STP site. Improvement noted

road for Davangere STP

Presence of caution tape and caution Traffic diversion board at working sites at Harihar

Restoration of road done after pipe laying At Harihar

Scrap material need to be disposed from Harihar STP site

Use of gas for cooking at Harihar STP is noted

Dust problem at Harihar STP. Immediate dust suppression is needed through water sprinkling

Temporary caution tape at Harlapura area during pipe laying at Harihar. Improvement required

First aid box available at pipe laying area

Reinforcement for Baffle walls at STP site at Byadgi.

Construction of STP going on at Byadgi. Use of PPE noted

Concreting done at 5 MLD STP – use of PPE noted at Byadgi

Tool box training - conducted at working site of Byadgi

Caution tape noted at manhole construction site of R G Road Byadgi. Temporary arrangement noted

Use of PPE by workers – noted at R G Road construction site, Byadgi

First aid box available at construction site

Temporary arrangement of caution tape. Caution tape should be placed in a pole/ stick at Byadgi

Caution and traffic diverion board and tape noted at adjacent site near Holy Cross Nursery pipe laying area of Byadgi

Excess earth after pipe laying need to be disposed at Byadgi

Use of hand gloves noted during concreting work at Byadgi

Caution tape near excavated area of STP of Byadgi

Road restoration and cleaning of drain done after pipe laying at Byadgi

Caution and traffic diversion board and tape noted at Shabri layout pipe laying area of Byadgi

Road closure and placement of closure board noted at Nisarga layout area

PPE Usage at working site of Byadgi UGD package

Use of excess earth at Byadgi STP site

Rented house for labouers at Byadgi

Appendix 3

Monitoring Budget

Davangere- Sewerage (Package: 01DVG01)

SIMPLEX INFRASTRUCTURES LIMITED
EXPANSION OF SEWERAGE SYSTEM IN DAVANGERE CITY (DISTRICT 1&3)

ANNUAL BUDGET OF IMPLEMENTATION MITIGATION & MONITORING PROGRAME

- **COST OF SAFETY OFFICER(ANNUAL CTC)- 6 LAKH**
- **ENVIRONMENTAL MOINTORING CHARGES-2.5 LAKH**
(noise, air, water, pollution)
- **PPES,DISPLAY BOARDS,RESCUE KIT- 7 LAKH**

(HELMET, GUMBOOT,SAFETY JACKET ,NOSE MASK,SAFETY Belt etc)

TOTAL – 15.5 LAKH approx.

HNB ENGINEERS .PVT.LTD

5MLD & 20MLD STP –DAVANAGERE

Name of Employer:- The commissioner, City corporation Davanagere

Name of Clients :- The Executive Engineer ,project Implement Unit, KUDIFC-KIUWIP,Davangere ,

City corporation no.1976/9, Shamunur Road Mcc A Block, Asharya Hospital,

Davanagere, Karnataka.577004.

Name of work :-Design Supply , Installation & Commissining of Sewage Treatment Plants Sequential Batch Reactors (SBR/CASP)Of 20MLD Capacity in District 1&5 MLD Capacity in District 3 of Davanagere City corporation Davanagere including Operation and maintenance for three years, Phase:II

BUDGET OF IMPLEMENTATION MITIGATION AND MONITORING PROGRAMME (ANNUAL BUDGET)-2017-18

1. **COST OF SAFTEY OFFICER (ANNUAL CTC) -**
   5.00 LAKH

2. **MONITORING CHARGES (NOISE,AIR,HYDROCARBON,WATER,POLLUTION)-**
   4.00 LAKH

3. **SAFTEY AND PPP EQUIPMENTS FOR SITE AND OFFICE-**
   7.00 LAKH

   (Helmet, Gumboot, Saftey Jacket,Mask,Saftey Belt,Saftey Board,
   Volunteer, Oxygen, Hand Gloves, Sunglass, Saftey Divider/Barrier,
   First Aid Box With Medicine,Red Danger Tape,Saftey Signs,Saftey Net,Saftey Lights,Saftey Mirror,Barricadding Board,Extinguisher,Rubbish Bin,Fire
   Alarm, Fire Hose Roll, Bio Toilet, Insects Killer Liquids, Circular Cutter With Noise Barrier For Tmt Cutting, Silent Dg Set.)

TOTAL-	**16.00 LAKH**

Harihar – Sewerage and Sewage Treatment Plant (Package: 01HRA01)

Certified monitoring budget for the year 2017-18

Package: Expansion Of Sewerage System In Harihar City, KIUWMIP

SHRIRAM EPC LTD

BUDGET OF IMPLEMENTATION MITIGATION AND MONITORING PROGRAMME (ANNUAL BUDGET)

1. **COST OF SAFTEY OFFICER (ANNUAL CTC) - 1.8 LAKH**
2. **MONITORING CHARGES (NOISE,AIR,HYDROCARBON,WATER,POLLUTION)- 2.0 LAKH**
3. **SAFTEY AND PPE'S EQUIPMENTS FOR SITE AND OFFICE- 6.0 LAKH**

(Helmet, Gumboot, Saftey Jacket,Mask,Saftey Belt,Saftey Board,
Volunteer, Oxygen, Hand Gloves, Sunglass, Saftey Divider/Barrier,
First Aid Box With Medicine,Red Danger Tape,Saftey Signs,Saftey Net,Saftey Lights,Saftey Mirror,Barricadding Board,Extinguisher,Rubbish Bin,Fire
Alarm, Fire Hose Roll, Bio Toilet, Insects Killer Liquids, Circular Cutter With Noise Barrier For Tmt Cutting, Silent Dg Set.)

TOTAL 9.8 LAKH

Byadgi- Sewerage and Sewage Treatment Plant (Package: 01BDG01)

CERTIFIED MONITORING BUDGET FOR THE YEAR 2017-18

Certified monitoring budget for the year 2017-18

Package No: 01BDG01 Design, Build and operate Comprehensive Sewerage System (Sewerage Network), 5 MLD Sequential Batch Reactors STP, Byadgi.

SHRIRAM EPC LTD

[illegible]	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

TOTAL : [illegible]

Appendix 4

Compliance against CFE condition

Davangere- Sewage Treatment Plant – 20 MLD STP (Package: 01DVG01A)

Sl. No	CFE Conditions	Compliance
1	This Consent for Establishment is valid for five years from date of issue.	As per plan establishment work will be completed within 5 years (issue date- 25th February 2015, Date of expiry – 25th February 2020)
2	This consent is related only to the pollution aspects of said project with respect to said location and this consent is in no way construed to give any right in any nature to the applicant what so ever in this regard, and shall obtain all statutory clearances before commencement of the project.	All statutory clearances will be obtained before commissioning of the treatment plant- Green belt plantation commitment from concerned city corporation Land allotment letter -Land Possession Certificate Industry certificate
3	The CC shall not undertake expansion/ diversification/ modernization/ change of sites etc., without prior clearance from this Board.	In case of expansion/ diversification/ modernization/ change of sites etc. prior clearance will be obtained from pollution control board
4	The CC shall obtain necessary license/ clearance from other relevant statutory agencies before taking up construction.	Necessary license/ clearance like land possession certification, design approval, public works dept. from other relevant statutory agencies will be obtained before starting up construction
5	There shall not be any complaints against the establishment of STP from surrounding public in respect of any kind of pollution	Before establishment of STP consultation has been done with surrounding public and assured local people on application of mitigation measures for non pollution of environment from treatment plant
6	The applicant shall submit the land documents of the proposed site to the Board, before commissioning the establishment work of the proposed STP.	Project authority (City Corporation Davangere) submitted land documents of the proposed site to the Board before getting consent for establishment
7	The applicant shall not discharge treated sewage into nala/river.	Treated water will be utilized for irrigation purpose Local crops like cotton, wheat, paddy, chilli will be irrigated Waste water utilization will be followed the proved technology (ref. http://www.igep.in/live/hrdpmp/hrdpmaster/igep/content/e48745/e57806/e61054/e61055/AgricultureWastewaterReuseBackgroundReview.pdf
I.	**Specific Conditions**	
1	The CC shall up-grade the STP system including advanced technologies after 5 years from the date of commissioning of the present STP system.	City Corporation Davangere would up-grade the STP system including advanced technologies after 5 years from the date of commissioning of the present STP system
2	The CC shall provide UGD facility for the entire City Corporation and report to the Board	Under the separate project CC already taken up UGD facility for the entire City Corporation (work ongoing) and informed to Board during consent application UGD project under progress and will be completed by 2018 end
3	The CC shall maintain 100 mts buffer zone around the Sewage Treatment	CC already keep 100m buffer zone around the Sewage Treatment Plant area

Sl. No	CFE Conditions	Compliance
	Plant area.	Google map attached end of the Table
4	The CC shall take adequate measures to avoid any entry to treated /untreated sewage into nearby nalla	The CC took adequate measures in design to avoid any entry to treated /untreated sewage into nearby nalla
5	The responsibility to execute, commission, operation and maintenance of the STP will be taken *by* CC authorities only.	City Corporation Davangere have already taken responsibility to execute, commission, operation and maintenance of the STP
6	The CC shall ensure that there shall not be any odour nuisance in the surrounding area due to the operation of the STP. Sufficient green belt shall be developed around the STP site	The CC ensured that there shall not be any odour nuisance in the surrounding area due to the operation of the STP. Sufficient green belt (3700 m^2) will be developed around the STP site Green belt will be developed by concerned City corporation within STP boundary. Final map preparation will be done before commissioning of the project
7	The consent is issued without prejudice to the Court Cases pending in any Hon'ble Court	Noted
8	The CC shall pay balance cess under The Water (Prevention and Control of Pollution) Cess Act 1977 within three months.	CC would pay balance cess under The Water (Prevention and Control of Pollution) Cess Act 1977
II.	**Water Pollution Control**	
1	The treatment plant shall be used for the treatment of sewage only, at any point of time.	The treatment plant will be used for the treatment of city sewage
2	The treatment plant shall be used for the treatment of sewage not exceed 20 MLD	The treatment plant will be used for the treatment of sewage upto 20 MLD
3	The CC shall treat the sewage in the STP as per the proposals submitted to the Board.	The CC will treat the sewage in the STP as per the proposals submitted to the Board
4	The CC shall utilize the treated sewage for irrigation purpose after treating the same to the stipulated standards	As per design the CC will utilize the treated sewage for irrigation purpose after treating the same upto the stipulated standards (standard provided in CFE, shown below the Table)
5	All the treatment units shall be made totally impervious	Considered in the design
6	The CC is liable to reinstate/ restore, damaged or destroyed elements of environment at its cost, failing which the applicant/ occupier as the case may be/shall he liable in pay the entire cost of remediation or restoration and pay in advance an amount equal to the cost estimated by competent agency or committee.	Agreed.
7	The separate flow meter shall be installed to record hourly inflow & outflow of domestic effluent into the STP and maintain logbooks for hourly recording for verification of inspecting officers.	The separate flow meter will be installed to record hourly inflow & outflow of domestic effluent into the STP and logbooks will be maintained for hourly recording for verification
III.	**Solid Waste (other than Hazardous waste) disposal**	
	The solid wastes collected in the	Dried sludge from STP will be used as soil

Sl. No	CFE Conditions	Compliance
	treatment plant premises in the form of general garbage shall be disposed off sufficiently to the satisfaction of the Board so as not to cause fugitive emissions, dust problems or water pollution through leaching etc. of any kind	conditioner as manure and mixing with compost at compost yard. Periodic testing of dried sludge will be conducted to ensure that it does not contain heavy metals that make it unsuitable for food crops. No fugitive emissions, dust problems expected.
IV.	**General**	
1	The authority shall immediately report to the board of any accident or unforeseen act or event resulting in release of discharge of effluents or emissions or solid wastes etc., in excess of standards stipulated and the authorities shall immediately take appropriate corrective and preventive actions under intimation	CC Davangere will immediately report to the board of any accident or unforeseen act or event resulting in release of discharge of effluents or emissions or solid wastes etc., in excess of standards stipulated and the authorities will immediately taken up appropriate corrective and preventive actions under intimation
2	Exact date of commissioning of the Sewage Treatment Plant shall be informed to this Board 45 days in advance so as to make necessary inspection of the plant and the pollution control measures provided by the authorities	Date of commissioning of the Sewage Treatment Plant will be informed to the Board 45 days in advance
3	The applicant shall comply with all the rules and guidelines issued from time to time	CC Davangere will comply with all the rules and guidelines issued from time to time
4	The Board reserves right to review and impose additional condition or conditions revoke, change or alter the terms and conditions	Agreed
5	The CFE does not give any right to the Party/ Project Authority/ Industry to forego any requirement that is necessary for starting operation of the plant	Noted

Under CFE Condition

ON LAND FOR IRRIGATION

Sl. No.	Characteristics	Tolerance limits
1	Colour and Odour	See Note
2	Suspended Solids, mg/Litre, max	[illegible]
3	pH value	[illegible]
4	Oil and Grease, mg/L, Max	10
5	Biochemical Oxygen Demand (mg/l) (3 days at 27°C max)	[illegible]

Google Earth

Davangere- Sewage Treatment Plant – 5 MLD STP (Package: 01DVG01A)

Sl. No	CFE Conditions	Compliance
1	This Consent for Establishment is valid for five years from date of issue.	As per plan establishment work will be completed within 5 years (issue date- 25th February 2015, Date of expiry – 25th February 2020)
2	This consent is related only to the pollution aspects of said project with respect to said location and this consent is in no way construed to give any right in any nature to the applicant what so ever in this regard, and shall obtain all statutory clearances before commencement of the project.	All statutory clearances will be obtained before commissioning of the treatment plant- Green belt plantation commitment from concerned city corporation Land allotment letter -Land Possession Certificate Industry certificate
3	The CC shall not undertake expansion/ diversification/ modernization/ change of sites etc., without prior clearance from this Board.	In case of expansion/ diversification/ modernization/ change of sites etc. prior clearance will be obtained from pollution control board
4	The CC shall obtain necessary license/ clearance from other relevant statutory agencies before taking up construction.	Necessary license/ clearance like land possession certification, design approval, public works dept. from other relevant statutory agencies will be obtained before starting up construction
5	There shall not be any complaints against the establishment of STP from surrounding public in respect of any kind of pollution	Before establishment of STP consultation has been done with surrounding public and assured local people on application of mitigation measures for non pollution of environment from treatment plant
6	The applicant shall submit the land documents of the proposed site to the Board, before commissioning the establishment work of the proposed STP.	Project authority (City Corporation Davangere) submitted land documents of the proposed site to the Board before getting consent for establishment
7	The applicant shall not discharge treated sewage into nala/river.	Treated water will be utilized for irrigation purpose Local crops like cotton, wheat, paddy, chilli will be irrigated Waste water utilization will be followed the proved technology (ref. http://www.igep.in/live/hrdpmp/hrdpmaster/igep /content/e48745/e57806/e61054/e61055/AgricultureWastewaterReuseBackgroundReview.pdf
I.	**Specific Conditions**	
1	The CC shall up-grade the STP system including advanced technologies after 5 years from the date of commissioning of the present STP system.	City Corporation Davangere would up-grade the STP system including advanced technologies after 5 years from the date of commissioning of the present STP system
2	The CC shall provide UGD facility for the entire City Corporation and report to the Board	Under the separate project CC already taken up UGD facility for the entire City Corporation (work ongoing) and informed to Board during consent application UGD project under progress and will be completed by 2018 end
3	The CC shall maintain 100 mts buffer zone around the Sewage Treatment Plant area.	CC already keep 100m buffer zone around the Sewage Treatment Plant area Google map attached end of the Table
4	The CC shall take adequate measures to avoid any entry to treated /untreated sewage into nearby nalla	The CC took adequate measures in design to avoid any entry to treated /untreated sewage into nearby nalla
5	The responsibility to execute, commission, operation and maintenance of the STP will	City Corporation Davangere have already taken responsibility to execute, commission, operation

Sl. No	CFE Conditions	Compliance
	be taken *by* CC authorities only.	and maintenance of the STP
6	The CC shall ensure that there shall not be any odour nuisance in the surrounding area due to the operation of the STP. Sufficient green belt shall be developed around the STP site	The CC ensured that there shall not be any odour nuisance in the surrounding area due to the operation of the STP. Sufficient green belt (2300 m^2) will be developed around the STP site Green belt will be developed by concerned City corporation within STP boundary. Final map preparation will be done before commissioning of the project
7	The consent is issued without prejudice to the Court Cases pending in any Hon'ble Court	Noted
8	The CC shall pay balance cess under The Water (Prevention and Control of Pollution) Cess Act 1977 within three months.	CC would pay balance cess under The Water (Prevention and Control of Pollution) Cess Act 1977
II.	**Water Pollution Control**	
1	The treatment plant shall be used for the treatment of sewage only, at any point of time.	The treatment plant will be used for the treatment of city sewage
2	The treatment plant shall be used for the treatment of sewage not exceed 5 MLD	The treatment plant will he used for the treatment of sewage upto 5 MLD
3	The CC shall treat the sewage in the STP as per the proposals submitted to the Board.	The CC will treat the sewage in the STP as per the proposals submitted to the Board
4	The CC shall utilize the treated sewage for irrigation purpose after treating the same to the stipulated standards	As per design the CC will utilize the treated sewage for irrigation purpose after treating the same upto the stipulated standards (standard provided in CFE, shown in Table above)
5	All the treatment units shall be made totally impervious	Considered in the design
6	The CC is liable to reinstate/ restore, damaged or destroyed elements of environment at its cost, failing which the applicant/ occupier as the case may be/shall he liable in pay the entire cost of remediation or restoration and pay in advance an amount equal to the cost estimated by competent agency or committee.	Agreed
7	The separate flow meter shall be installed to record hourly inflow & outflow of domestic effluent into the STP and maintain logbooks for hourly recording for verification of inspecting officers.	The separate flow meter will be installed to record hourly inflow & outflow of domestic effluent into the STP and logbooks will be maintained for hourly recording for verification
III.	**Solid Waste (other than Hazardous waste) disposal**	
	The solid wastes collected in the treatment plant premises in the form of general garbage shall be disposed off sufficiently to the satisfaction of the Board so as not to cause fugitive emissions, dust problems or water pollution through leaching etc. of any kind	Dried sludge from STP will be used as soil conditioner as manure and mixing with compost at compost yard. Periodic testing of dried sludge will be conducted to ensure that it does not contain heavy metals that make it unsuitable for food crops
IV.	**General**	
1	The authority shall immediately report to the board of any accident or unforeseen act or	CC Davangere will immediately report to the board of any accident or unforeseen act or event resulting

Sl. No	CFE Conditions	Compliance
	event resulting in release of discharge of effluents or emissions or solid wastes etc., in excess of standards stipulated and the authorities shall immediately take appropriate corrective and preventive actions under intimation	in release of discharge of effluents or emissions or solid wastes etc., in excess of standards stipulated and the authorities will immediately taken up appropriate corrective and preventive actions under intimation
2	Exact date of commissioning of the Sewage Treatment Plant shall be informed to this Board 45 days in advance so as to make necessary inspection of the plant and the pollution control measures provided by the authorities	Date of commissioning of the Sewage Treatment Plant will be informed to the Board 45 days in advance
3	The applicant shall comply with all the rules and guidelines issued from time to time	CC Davangere will comply with all the rules and guidelines issued from time to time
4	The Board reserves right to review and impose additional condition or conditions revoke, change or alter the terms and conditions	Agreed
5	The CFE does not give any right to the Party/ Project Authority/ Industry to forego any requirement that is necessary for starting operation of the plant	Noted

Google earth

Harihara Sewage Treatment Plant – 18 MLD STP (Package: 01HRA01)

Sl. No	CFE Conditions	Compliance
1	This Consent for Establishment is valid for five years from date of issue.	As per plan establishment work will be completed within 5 years (issue date- 22nd January 2015, Date of expiry – 22nd January 2020)
2	This consent is related only to the pollution aspects of said project with respect to said location and this consent is in no way construed to give any right in any nature to the applicant what so ever in this regard, and shall obtain all statutory clearances before commencement of the project.	All statutory clearances will be obtained before commissioning of the treatment plant- Green belt plantation commitment from concerned city corporation Land allotment letter -Land Possession Certificate Industry certificate
3	The CMC shall not undertake expansion/ diversification/ modernization/ change of sites etc., without prior clearance from this Board.	In case of expansion/ diversification/ modernization/ change of sites etc. prior clearance will be obtained from pollution control board
4	The CMC shall obtain necessary license/ clearance from other relevant statutory agencies before taking up construction.	Necessary license/ clearance like land possession certification, design approval, public works dept. from other relevant statutory agencies will be obtained before starting up construction
5	There shall not be any complaints against the establishment of STP from surrounding public in respect of any kind of pollution	Before establishment of STP consultation has been done with surrounding public and assured local people on application of mitigation measures for non pollution of environment from treatment plant
6	The applicant shall submit the land documents of the proposed site to the Board, before commissioning the establishment work of the proposed STP.	Project authority (City Municipal Council Harihara) submitted land documents of the proposed site to the Board before getting consent for establishment
7	The applicant shall not discharge treated sewage into nala/river.	Treated water will be utilized for irrigation purpose Local crops like cotton, wheat, paddy, chilli will be irrigated Waste water utilization will be followed the proved technology (ref. http://www.igep.in/live/hrdpmp/hrdpmaster/igep /content/e48745/e57806/e61054/e61055/AgricultureWastewaterReuseBackgroundReview.pdf
I.	**Specific Conditions**	
1	The CMC shall up-grade the STP system including advanced technologies after 5 years from the date of commissioning of the present STP system.	City Municipal Council Harihara would up-grade the STP system including advanced technologies after 5 years from the date of commissioning of the present STP system
2	The CMC shall provide UGD facility for the entire City Council area and report to the Board	Under the separate project CMC already taken up UGD facility for the entire City Municipal Corporation (work ongoing) and informed to Board during consent application UGD project under progress and will be completed by 2018 end
3	The CMC shall maintain 100 mts buffer zone around the Sewage Treatment Plant area.	CMC already keep 100m buffer zone around the Sewage Treatment Plant area Google map attached end of the Table
4	The CMC shall take adequate measures to avoid any entry to treated /untreated sewage into nearby nalla	The CMC took adequate measures in design to avoid any entry to treated /untreated sewage into nearby nalla
5	The responsibility to execute, commission, operation and maintenance of the STP will be taken *by* CMC authorities only.	City Municipal Council Harihara have already taken responsibility to execute, commission, operation and maintenance of the STP

Sl. No	CFE Conditions	Compliance
6	The CMC shall ensure that there shall not be any odour nuisance in the surrounding area due to the operation of the STP. Sufficient green belt shall be developed around the STP site	The CMC ensured that there shall not be any odour nuisance in the surrounding area due to the operation of the STP. Sufficient green belt (5538 m^2) will be developed around the STP site Green belt will be developed by concerned City Municipal corporation within STP boundary. Final map preparation will be done before commissioning of the project
7	The consent is issued without prejudice to the Court Cases pending in any Hon'ble Court	Noted
8	The CMC shall pay balance cess under The Water (Prevention and Control of Pollution) Cess Act 1977 within three months.	CMC would pay balance cess under The Water (Prevention and Control of Pollution) Cess Act 1977
II.	**Water Pollution Control**	
1	The treatment plant shall be used for the treatment of sewage only, at any point of time.	The treatment plant will be used for the treatment of city sewage
2	The treatment plant shall be used for the treatment of sewage not exceed 18 MLD	The treatment plant will he used for the treatment of sewage upto 18 MLD
3	The CMC shall treat the sewage in the STP as per the proposals submitted to the Board.	The CMC will treat the sewage in the STP as per the proposals submitted to the Board
4	The CMC shall utilize the treated sewage for irrigation purpose after treating the same to the stipulated standards	As per design the CMC will utilize the treated sewage for irrigation purpose after treating the same upto the stipulated standards (standard provided in CFE, shown in Table below)
5	All the treatment units shall be made totally impervious	Considered in the design
6	The CMC is liable to reinstate/ restore, damaged or destroyed elements of environment at its cost, failing which the applicant/ occupier as the case may be/shall he liable in pay the entire cost of remediation or restoration and pay in advance an amount equal to the cost estimated by competent agency or committee.	Agreed
7	The separate flow meter shall be installed to record hourly inflow & outflow of domestic effluent into the STP and maintain logbooks for hourly recording for verification of inspecting officers.	The separate flow meter will be installed to record hourly inflow & outflow of domestic effluent into the STP and logbooks will be maintained for hourly recording for verification
III.	**Solid Waste (other than Hazardous waste) disposal**	
	The solid wastes collected in the treatment plant premises in the form of general garbage shall be disposed off sufficiently to the satisfaction of the Board so as not to cause fugitive emissions, dust problems or water pollution through leaching etc. of any kind	As per the recommendations of CPHEEO Manual, November 2013 (Central Public Health and Environmental Engineering Organization), section 5, page 81, the sludge from Facultative aerated lagoon will be used as good agriculture soil filler. No emission and dust expected. Periodic testing of dried sludge will be conducted to ensure that it does not contain heavy metals that make it unsuitable for food crops
IV.	**General**	
1	The authority shall immediately report to the board of any accident or unforeseen act or event resulting in release of discharge of effluents or emissions or solid wastes etc., in excess of standards stipulated and the	City Municipal Council Harihara will immediately report to the board of any accident or unforeseen act or event resulting in release of discharge of effluents or emissions or solid wastes etc., in excess of standards stipulated and the authorities

Sl. No	CFE Conditions	Compliance
	authorities shall immediately take appropriate corrective and preventive actions under intimation	will immediately taken up appropriate corrective and preventive actions under intimation
2	Exact date of commissioning of the Sewage Treatment Plant shall be informed to this Board 45 days in advance so as to make necessary inspection of the plant and the pollution control measures provided by the authorities	Date of commissioning of the Sewage Treatment Plant will be informed to the Board 45 days in advance
3	The applicant shall comply with all the rules and guidelines issued from time to time	City Municipal Council Harihara will comply with all the rules and guidelines issued from time to time
4	The Board reserves right to review and impose additional condition or conditions revoke, change or alter the terms and conditions	Agreed
5	The CFE does not give any right to the Party/ Project Authority/ Industry to forego any requirement that is necessary for starting operation of the plant	Noted

Under CFE Condition

Sl. No.	Characteristics	Tolerance limits
1	Colour and Odour	See Note
2	Suspended Solids, mg/Litre	4
3	pH value	5.5 to 9.0
4	Oil and Grease, mg/l, Max	10
5	Biochemical Oxygen Demand (mg/l) (3 days at 27°C max)	8

Byadgi- Sewage Treatment Plant –5 MLD STP (Package: 01BDG02)

Sl. No	CFE Conditions	Compliance
1	This Consent for Establishment is valid for five years from date of issue.	As per plan establishment work will be completed within 5 years (issue date- 12th July 2016, Date of expiry – 12th July 2021)
2	The applicant shall not undertake expansion/ diversification/ without the prior consent from this Board.	In case of expansion/ diversification/. prior consent will be obtained from pollution control board
3	The applicant shall obtain necessary license/ clearance from other relevant statutory agencies before taking up construction.	Necessary license/ clearance like land possession certification, design approval, public works dept. from other relevant statutory agencies will be obtained before starting up construction
I	**Specific Conditions**	
1	The TMC shall provide UGD facility for the entire Town municipal Corporation and report to the Board	Under the separate project TMC already taken up UGD facility for the entire City Municipal Corporation (work ongoing) and informed to Board during consent application UGD project under progress and will be completed by 2019 mid
2	The TMC shall maintain 100 m buffer zone around the Sewage Treatment Plant area.	CMC already keep 100m buffer zone around the Sewage Treatment Plant area Google map attached end of the Table
3	The responsibility of execute, commission, operation and maintenance of STP will be taken by TMC authorities only	Town Municipal Corporation Byadgi have already taken responsibility to execute, commission, operation and maintenance of the STP
4	The consent is issued without prejudice to the Court Cases pending in any Hon'ble Court	Noted
5	The TMC shall pay balance cess under The Water (Prevention and Control of Pollution) Cess Act 1977 within three months.	TMC would pay balance cess under The Water (Prevention and Control of Pollution) Cess Act 1977
II	**Water Pollution Control System**	
1	The treatment plant shall be used for the treatment of sewage only, at any point of time.	Noted
2	The TMC shall treat the sewage in the STP as per the proposals submitted to the Board.	The TMC will treat the sewage in the STP as per the proposals submitted to the Board
3	TMC shall treat the sewage to the standards stipulated in Annexure I and after treatment utilize the treated sewage for irrigation purpose	As per design the CMC will utilize the treated sewage for irrigation purpose after treating the same upto the stipulated standards (standard provided in CFE, shown in Table below)
4	All the treatment units shall be made totally impervious	Considered in the design
5	The TMC is liable to reinstate/ restore, damaged or destroyed elements of environment at its cost, failing which the applicant/ occupier as the case may be/shall he liable in pay the entire cost of remediation or restoration and pay in advance an amount equal to the cost estimated by competent agency or committee.	Agreed
6	The TMC shall take adequate measures to avoid any entry to treated /untreated sewage into nearby nalla	The TMC took adequate measures in design to avoid any entry to treated /untreated sewage into nearby nalla
7	The separate flow meter shall be installed to record hourly inflow & outflow of domestic	The separate flow meter will be installed to record hourly inflow & outflow of domestic

Sl. No	CFE Conditions	Compliance
	effluent into the STP and maintain logbooks for hourly recording for verification of inspecting officers.	effluent into the STP and logbooks will be maintained for hourly recording for verification
8	The TMC shall ensure that there shall not be any odour nuisance in the surrounding area due to the operation of the STP. Sufficient green belt shall be developed around the STP site	The TMC ensured that there shall not be any odour nuisance in the surrounding area due to the operation of the STP. Sufficient green belt (1800 m^2) will be developed around the STP site Green belt will be developed by concerned Town Municipal corporation within STP boundary. Final map preparation will be done before commissioning of the project
9	The applicant shall install DG set with prior permission of the board for continuous operation of STP during power failure	Will be done as per requirement
III	**Air Pollution Control System**	
	There shall be DG set of 250 KVA as an alternative power supply for STP, for pollution control measures are stipulated in Annexure II	Will be done as per requirement
IV	**Solid Waste (other than Hazardous waste) disposal**	
	The solid wastes collected in the treatment plant premises in the form of general garbage shall be disposed off sufficiently to the satisfaction of the Board so as not to cause fugitive emissions, dust problems or water pollution through leaching etc. of any kind	The sludge in the form of a wet cake from the centrifuge will be collected in tractor trolley directly placed below the centrifuge room, and transported to the municipal solid waste compost plant in Byadgi. This sludge will be further dried and blended with the other compost and will be sold in the market for use as soil conditioner in agriculture. No fugitive emission and dust problems expected
V.	**General**	
1	The authority shall immediately report to the board of any accident or unforeseen act or event resulting in release of discharge of effluents or emissions or solid wastes etc., in excess of standards stipulated and the authorities shall immediately take appropriate corrective and preventive actions under intimation	TMC Byadgi will immediately report to the board of any accident or unforeseen act or event resulting in release of discharge of effluents or emissions or solid wastes etc., in excess of standards stipulated and the authorities will immediately taken up appropriate corrective and preventive actions under intimation
2	Exact date of commissioning of the Sewage Treatment Plant shall be informed to this Board 45 days in advance so as to make necessary inspection of the plant and the pollution control measures provided by the authorities	Date of commissioning of the Sewage Treatment Plant will be informed to the Board 45 days in advance
3	The applicant shall comply with all the rules and guidelines issued from time to time	TMC Byadgi will comply with all the rules and guidelines issued from time to time
4	The Board reserves right to review and impose additional condition or conditions revoke, change or alter the terms and conditions	Agreed
5	The CFE does not give any right to the Party/ Project Authority/ Industry to forego any requirement that is necessary for starting operation of the plant	Noted

OY LAND FOR IRRIGATION

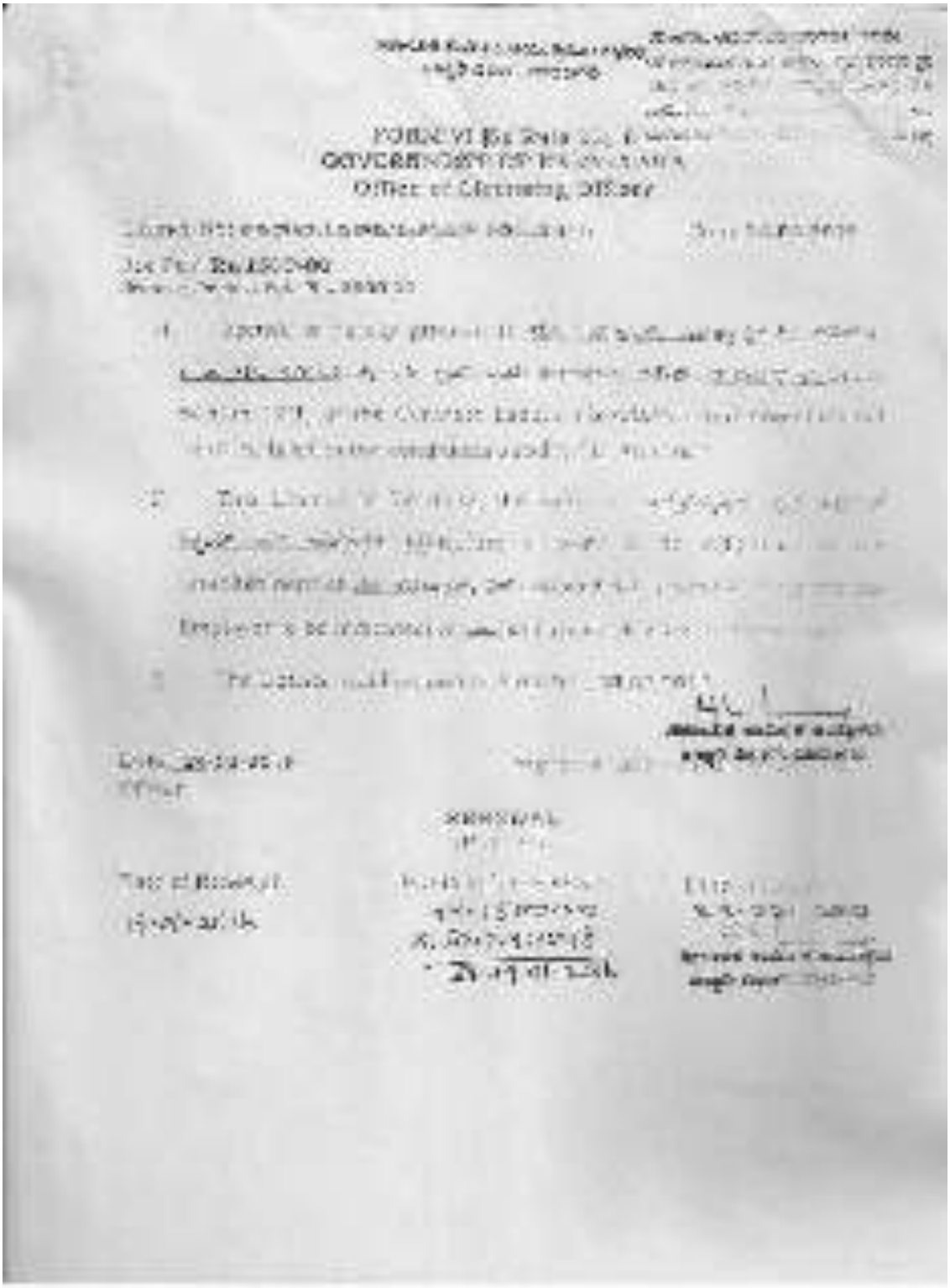
Sl No	Parameter	Parameter Limit standards for use STPs Effluent notification date
[illegible]	pH	[illegible]
2	Biochemical Oxygen Demand, mg/l (3 days at 27°C max)	Not more than 10
3	Chemical Oxygen Demand (COD)	Not more than 30
4	Total suspended solid (mg/l)	Not more than 20
5	NH4-N (mg/l)	Not more than 5
6	N-Nitrate (mg/l)	Not more than 10
7	Total Coliform (MPN/100 ml)	Less than 10

Note: All effluent [illegible]

Appendix 5

Labour license

Davangere- Sewerage (Package: 01DVG01)



Davangere- Sewage Treatment Plant : Labour License (Package: 01DVG01A)

GOVERNMENT OF KARNATAKA

DEPARTMENT OF LABOUR

FORM-VI

Harihar – Sewerage and Sewage Treatment Plant Labour license (Package: 01HRA01)

GOVERNMENT OF KARNATAKA

DEPARTMENT OF LABOUR

FORM-VI

Renewal

1	[illegible]	[illegible]	[illegible]	[illegible]

Byadgi– Sewerage and Sewage Treatment Plant Labour license (Package: 01BDG01)

GOVERNMENT OF KARNATAKA

DEPARTMENT OF LABOUR

[illegible]

[illegible]

[illegible]

FORM-XI

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

S. No.	Date of Licence Renewal	Date of Validity	Registration Licence Renewal	Number and Date of order
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Appendix 6

Labour compensation Insurance

Davangere UGD (Package: 01DVG01)

RELIANCE

Proof of Insurance

Davangere- Sewage Treatment Plant : Labour Compensation Insurance (Package: 01DVG01A)

Royal Sundaram

Intermediary Code	[illegible]
Intermediary Name	Dhanlaxmi Insurance Broking Co Pvt Ltd
Contact No.	

Policy No.	[illegible]
Insured Name & Address	[illegible]
Business	[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Royal Sundaram

Memorandum

The Policy is subject to following clauses, conditions & warranties

- Proper register of workmen and the attendance and wage disbursement must be maintained at all times and to be produced on and when required by the Company.
- The Insurance granted shall be subject to:
  - Any penal consideration penalty imposed on the Insurer or any part of the loss / failure to comply with the requirements set forth under WC Act 1923.
  - Occupational Diseases
  - Contractual Liability specified in Part A of the Schedule I of the Act unless specifically covered by an endorsement to the policy.
- Insurance as per Annexure I
- Medical expenses as per the attached wording
- Loss or Liability due to Terrorism Exclusion as per the attached wording
- Endorsement No.114 as per the attached wording
- Company's liability in respect of any one event shall be restricted to maximum of INR 5 Crores
- Onus of Proof as per the attached wording
- Applicable Policy cover as per the attached wording
- Designation Basis Cover as per the attached wording
- Warranted that work at heights is restricted to 30 metres and all recommended safety precautions for work at heights are implemented at all times during the policy.

General stated Stamp Duty paid by Government of Tamil Nadu
Issued at Chennai

As per the consent letter of the Royal Sundaram Alliance Insurance Co. Limited, at Chennai
on 8 April on 20.2016
Policy No. [illegible] Endorsement No. [illegible]
Principal No. [illegible]

For Royal Sundaram Alliance Insurance Co. Limited

Authorised Signatory

Royal Sundaram

Annexure I (Exclusions):

This policy excludes Work involving

I. [illegible]

a) [illegible]

b) [illegible]

c) [illegible]

d) [illegible]

II. [illegible]

III. [illegible]

IV. [illegible]

V. [illegible]

VI. [illegible]

VII. [illegible]

VIII. [illegible]

For Royal Sundaram General Insurance Co. Limited

Authorised Signatory

Royal Sundaram

Estimated Number of Employees (A)	Occupation of Employees (B)	Estimated Total Annual Wages (Rs. in lacs) (excluding overtime) (C)	Estimated Total Premium (D=A*C)	Share of Premium of Employees (E)
[illegible]	[illegible]	Rs. [illegible]	Rs. [illegible]	[illegible]
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Page [illegible]

Royal Sundaram

General Insurance

Policy No. [illegible]

[illegible]

Warranties

a) [illegible]

b) [illegible]

Interpretation

a) [illegible]

b) [illegible]

[illegible]

[illegible]

Jurisdiction Clause

[illegible]

Royal Sundaram

[illegible]

ROYAL SUNDARAM GENERAL INSURANCE COMPANY LIMITED

[illegible]

GUARANTEE CORPORATION POLICY

[illegible]

EXCEPTIONS

The Company shall [illegible]

(a) any injury by accident or disease during the policy period [illegible]

(b) the Insured's liability in respect of [illegible] to the Insured.

(c) any liability of the Insured [illegible] by virtue of any agreement but which would not [illegible] in the absence of such agreement.

(d) any case where the Claimant would have been entitled to recover from any party to the agreement between the Insured and the party.

CONDITIONS

1. This policy and the Schedule shall be read together as one contract and any word or expression to which a meaning has been assigned in any part of this policy or of the Schedule shall bear the same meaning wherever it occurs in this policy.

2. Every notice to be given under this policy shall be in writing and be sent to the Company.

RECEIPT

Labour compensation Insurance- Harihar (Package: 01HRA01))

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Labour compensation Insurance- Byadgi (Package: 01BDG01))

EAR SUM INSURED LESS THAN 100 CRORES - ENDORSEMENT SCHEDULE

RAHEJA QBE

RAHEJA QBE GENERAL INSURANCE CO. LTD.

GROUP PERSONAL ACCIDENT INSURANCE POLICY

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

[illegible]

HEJA GIC

TAHEJA GIC GENERAL INSURANCE COMPANY LIMITED

Workmen's Compensation Insurance Policy

Schedule attached to and forming part of Policy No. 18- WC[illegible] WCA

Intermediary's Name:	Excellent Insurance Brokers Services Ltd.
Intermediary's Code :	[illegible]
Intermediary's Contact No:	[illegible]

RAHEJA QBE

RAHEJA QBE GENERAL INSURANCE COMPANY LIMITED

Workmen's Compensation Insurance Policy

Schedule of Attached to and forming part of Policy No. [illegible]

[illegible]

Date of proposal & declaration: 30th January 2017 Policy No. [illegible]

Name of the Insured: [illegible]

Address: [illegible]

Nature of Business: [illegible]

Trade Description Occupation: [illegible]

Limit(s): (1) [illegible] (2) [illegible] (3) [illegible]

Period of Insurance: From 00.00 hrs on 30th January 2017 To Midnight of 29th January 2018

Net Premium	[illegible]
Service Tax on above premium	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
Total Premium	[illegible]

Estimated number of employees	Occupation of Employees	Estimated Total Wages Earnings (Rs.)	Place of Employment
[illegible]	[illegible]	[illegible]	Bangalore, Tumkur, Mandya, City, Karnataka

Intermediary's Name:	Excellent Insurance Broking Services Ltd.
Intermediary's Code:	[illegible]
Intermediary's Contact No:	[illegible]

[illegible]

RAHEJA QBE

RAHEJA QBE GENERAL INSURANCE COMPANY LIMITED

Attached Terms & Conditions Clauses Endorsements

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

[illegible]

[illegible]

Signed for and on behalf of the Company

[illegible]

Authorised Signatory
RAHEJA QBE GENERAL INSURANCE CO. LTD.

[illegible]

[illegible]

[illegible]

[illegible]

RAHEJA QBE

RAHEJA QBE GENERAL INSURANCE COMPANY LIMITED

Annexure II - Occupational Employees

Sr. No.	Category	No. of Employees	Estimated Total Wages (USD)
1	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]
	Total	[illegible]	[illegible]

[illegible]

RAHEJA QBE

RAHEJA QBE GENERAL INSURANCE COMPANY LIMITED

Policy Endorsement

Insured:	[illegible]
Period of Insurance:	30th January, 2016 to 29th January, 2018
Effective Date:	1st November 2017
Policy No.:	[illegible]
Date of Issue:	30th January, 2017

1. Coverage For Employees Of Contractors

[illegible] Policy [illegible] Section 2 of the policy [illegible] Liability [illegible] employees of Contractors [illegible] Insured [illegible] Contractors [illegible] Workmen's Compensation Act, 1923 [illegible] Act prior to the date of this Endorsement [illegible] Policy.

[illegible] Policy.

[illegible]

LAW	LIMITS OF LIABILITY	COVERAGE
[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

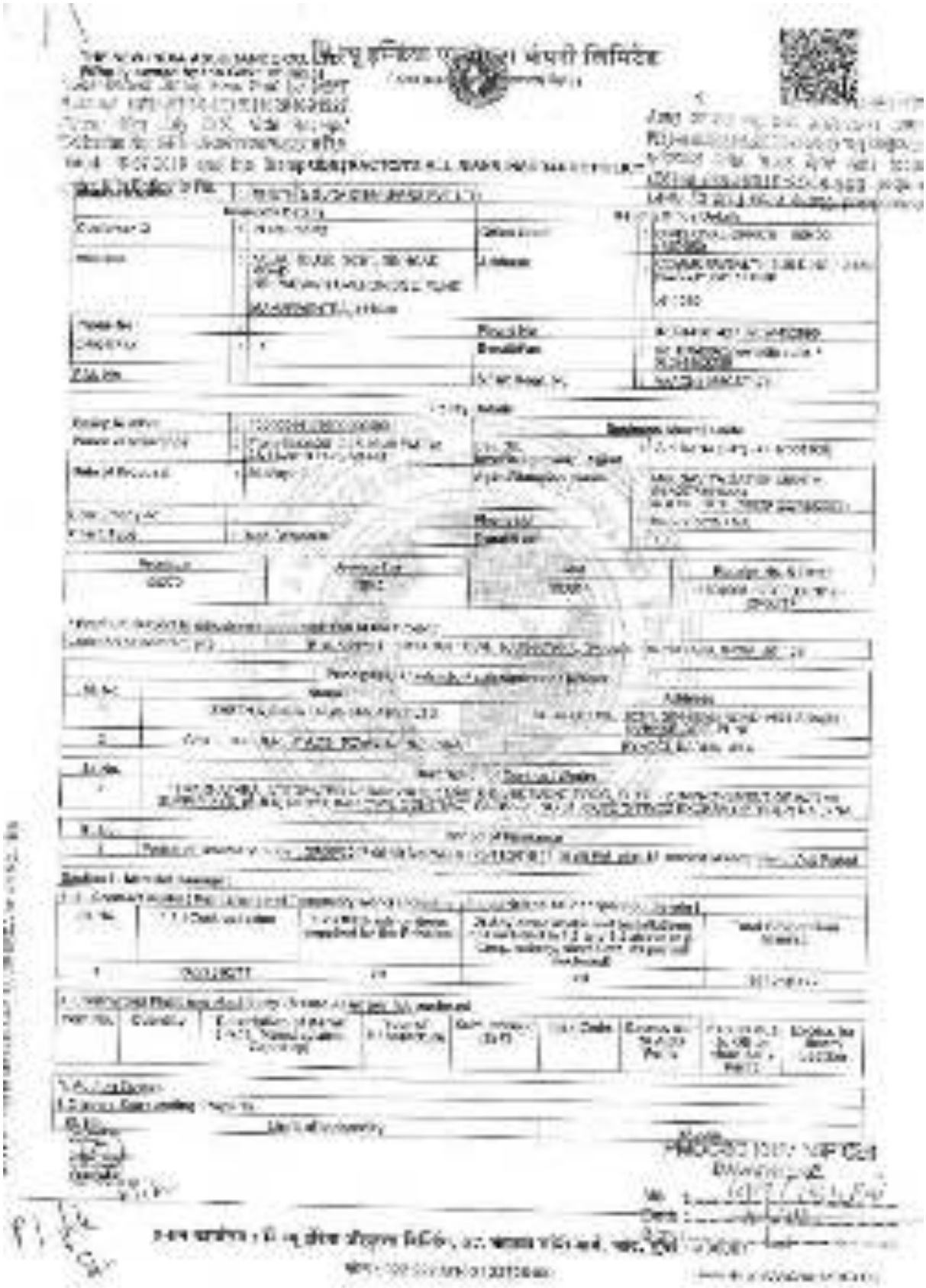
[illegible]

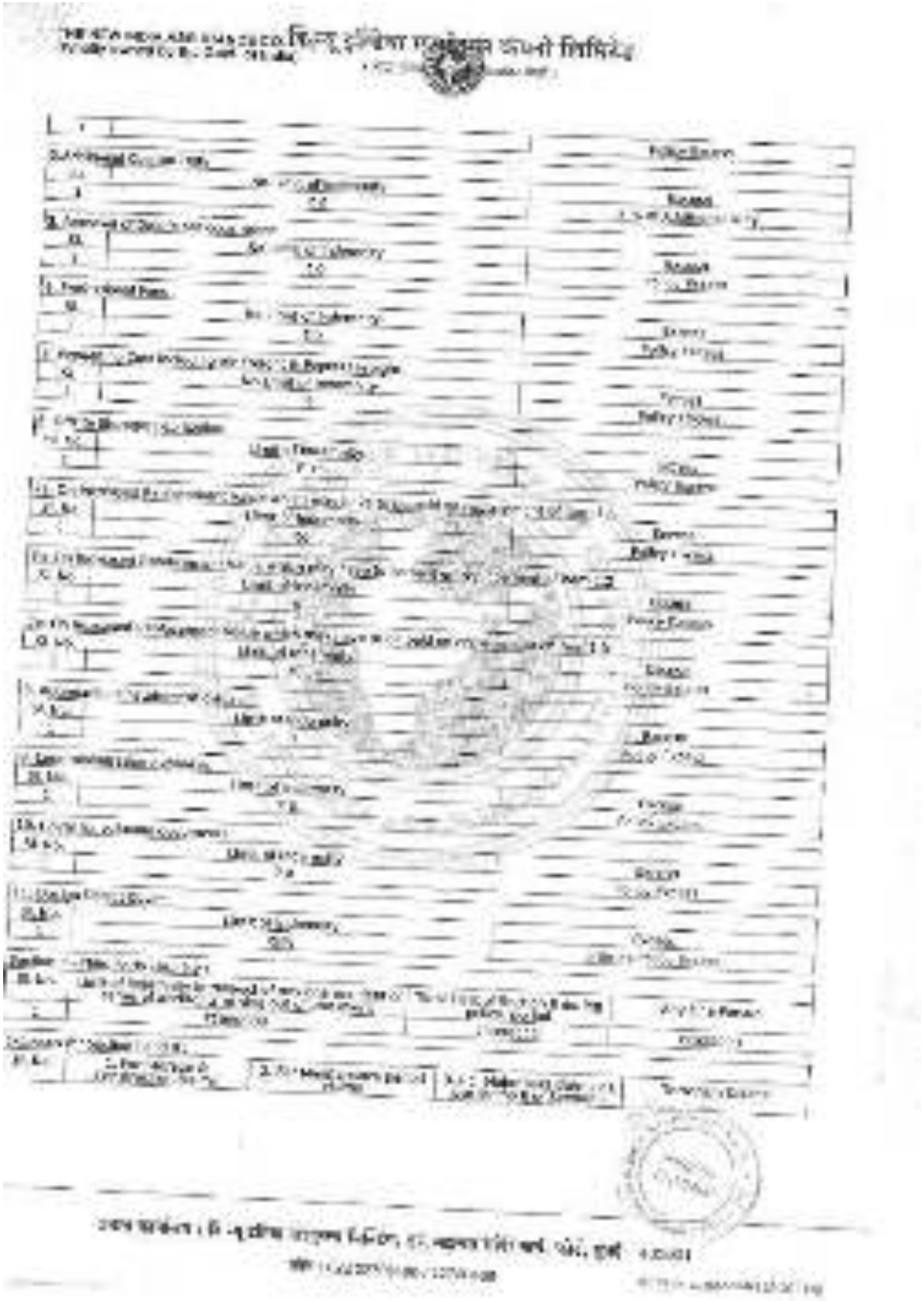
[illegible]

[illegible]

[illegible]

<u>All Risk Insurance Policy-</u> Byadgi Water Supply package (BULK) (01BDG02)

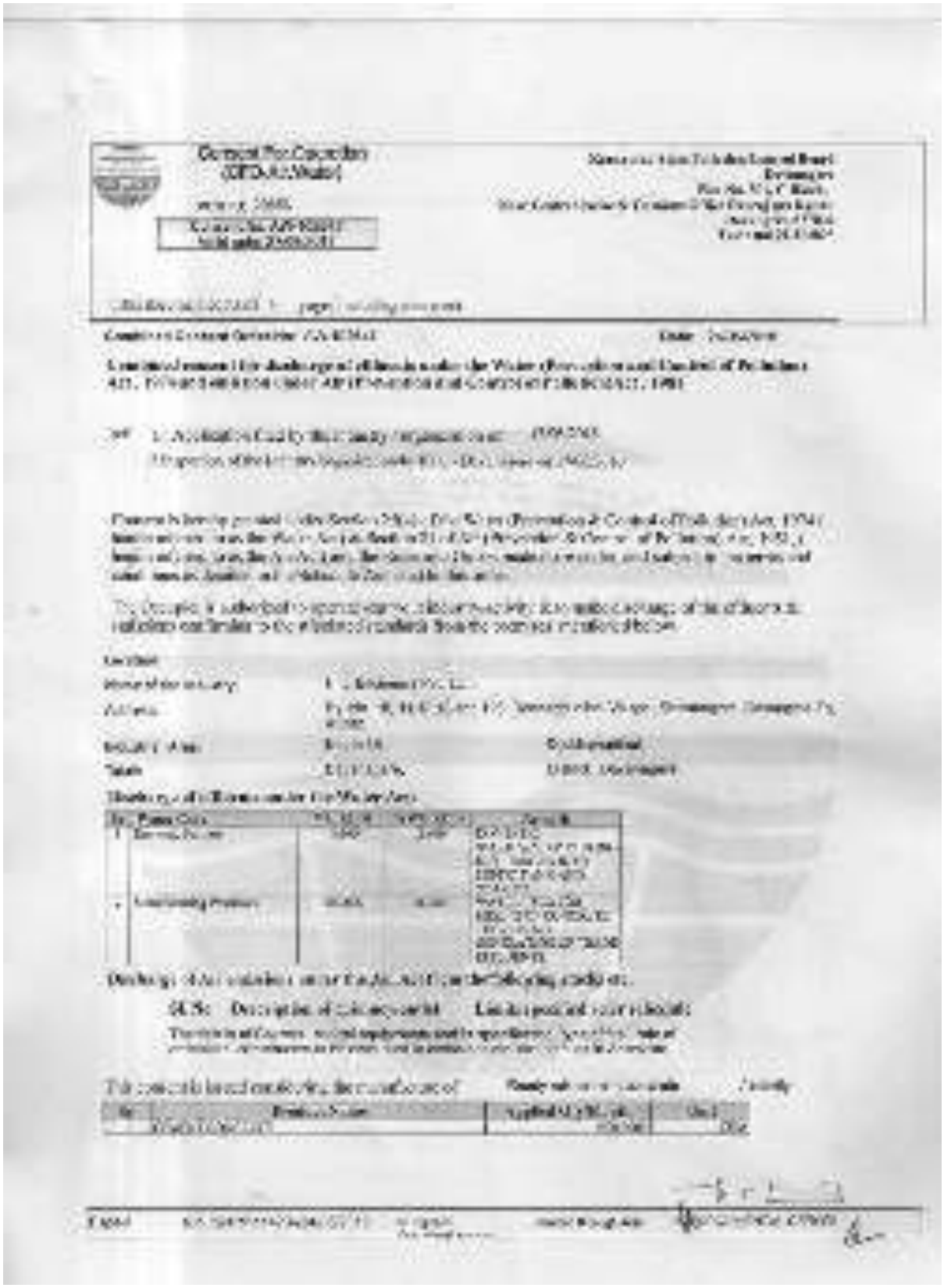




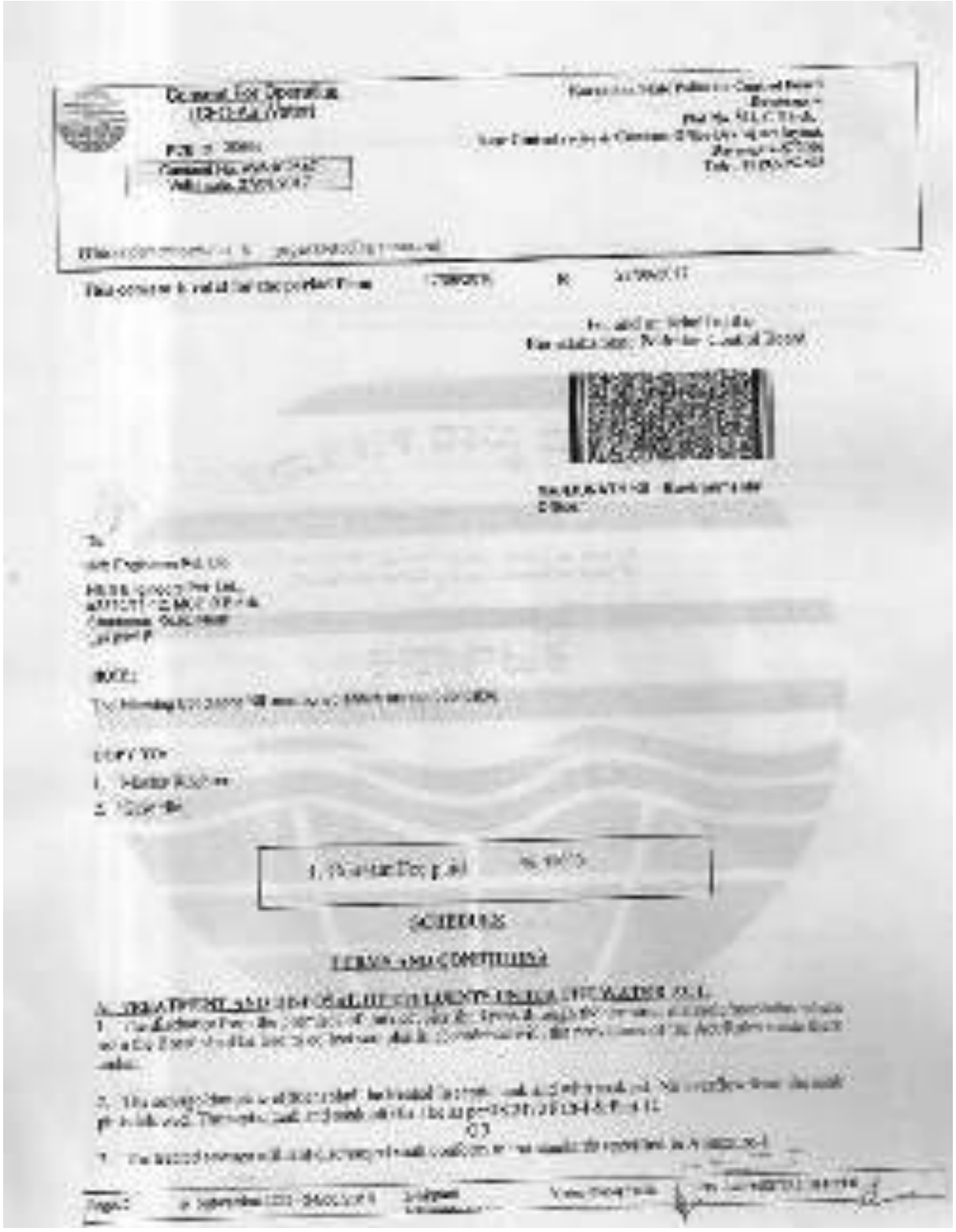
<u>All Risk Insurance Policy-</u> Harihar Water Supply package (BULK)(01HRA02)

Appendix 7

Consent to Operate for Concrete Batching Plant – Davangere 20 MLD STP site at Shivanagar,Davanagere taluk



Consent For Operation
(CFO-Air/Water)



SCHEDULE

TERMS AND CONDITIONS

[illegible]

[illegible]

[illegible]

B. EMISSIONS:

[illegible]

C. WATER CESS:

[illegible]

D. [illegible] & MONITORING:

[illegible]

E. SOLID WASTE, OTHER NON HAZARDOUS WASTE DISPOSAL:

[illegible]

F. NOISE POLLUTION CONTROL:

[illegible]

C. GENERAL CONDITIONS

Annexure-I

Sl. No.	Characteristics	Technical Limits
1	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]

Consent For Operation (CFO) Air Act

Karnataka State Pollution Control Board

[illegible]

Annexure-II

[illegible]	[illegible]	[illegible] Capacity	Minimum chimney height [illegible]	[illegible]	[illegible]	Air pollution control [illegible]	[illegible]
	[illegible]	[illegible]		[illegible]		[illegible]	—

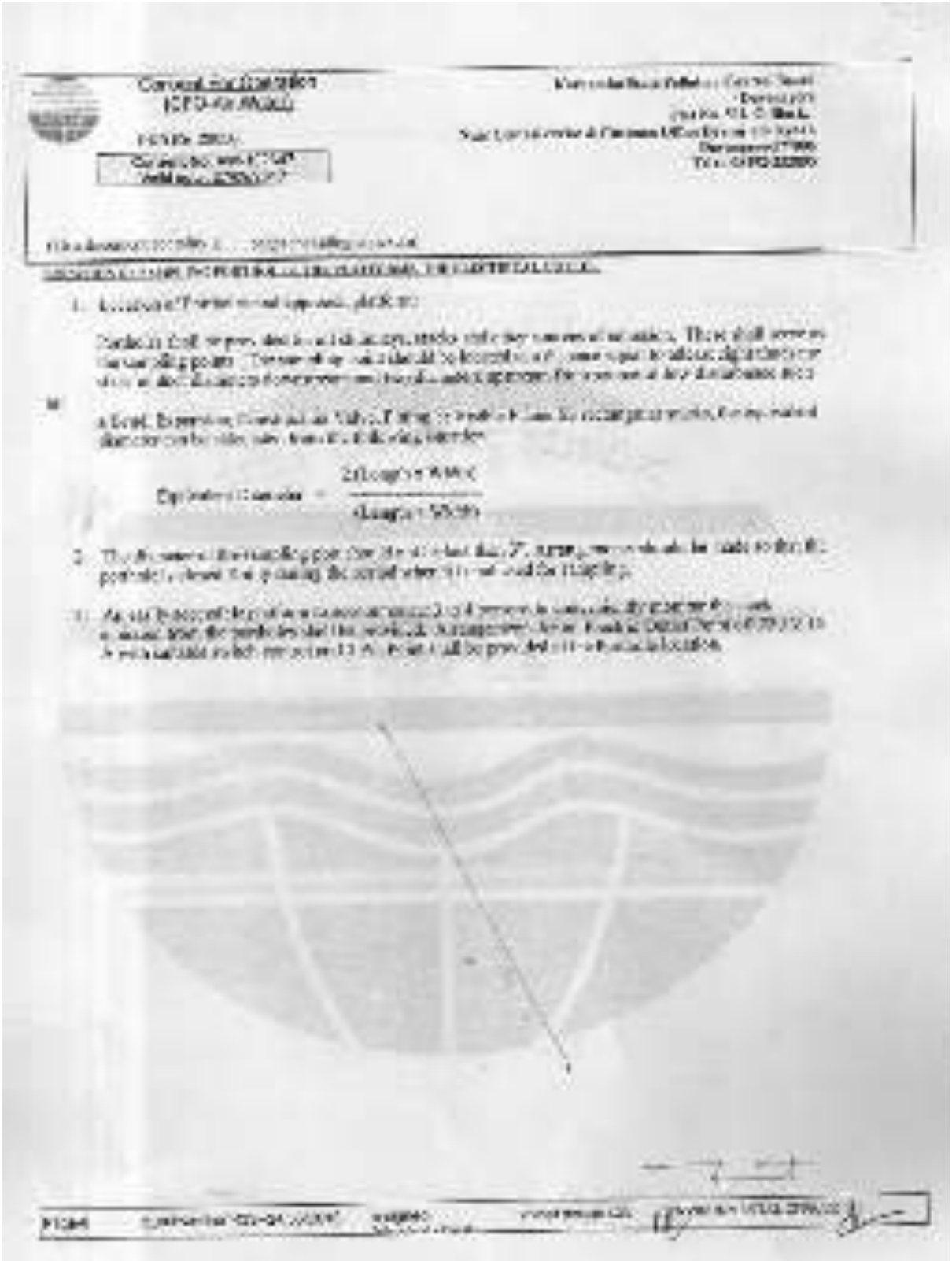
Note:

[illegible]

Note:

1. [illegible]
2. [illegible]
3. [illegible]

[illegible] ENVIRONMENTAL OFFICER



Consent to Operate for Concrete Batching Plant – Davangere 5 MLD STP site at Avaragere,Davanagere taluk

Consent for Operation
(CFO-Air/Water)

Consent For Operation

To

Fees Paid

[illegible]

[illegible]

[illegible]

[illegible]

SCHEDULE

TERMS AND CONDITIONS

A. THE DISCHARGE AND DISPOSAL OF EFFLUENTS UNDER THE WATER ACT

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

6. [illegible]

7. [illegible]

B. EMISSIONS

1. [illegible]

2. [illegible]

3. [illegible]

C. NOISE LEVELS

1. [illegible]

D. MONITORING & REPORTING

1. [illegible]

[illegible]

[illegible]

E. SOLID WASTE OTHER THAN HAZARDOUS WASTE DISPOSAL

[illegible]

F. [illegible]

[illegible]

G. GENERAL CONDITIONS

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Consent For Operation
(CTO-Air Water)

Annexure-I

S.No.	Consent details	Information Details
1	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]

Note: [illegible]

Annexure-II

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Note:

ABC : [illegible]

Notes:

1. [illegible]
2. [illegible]
3. [illegible]

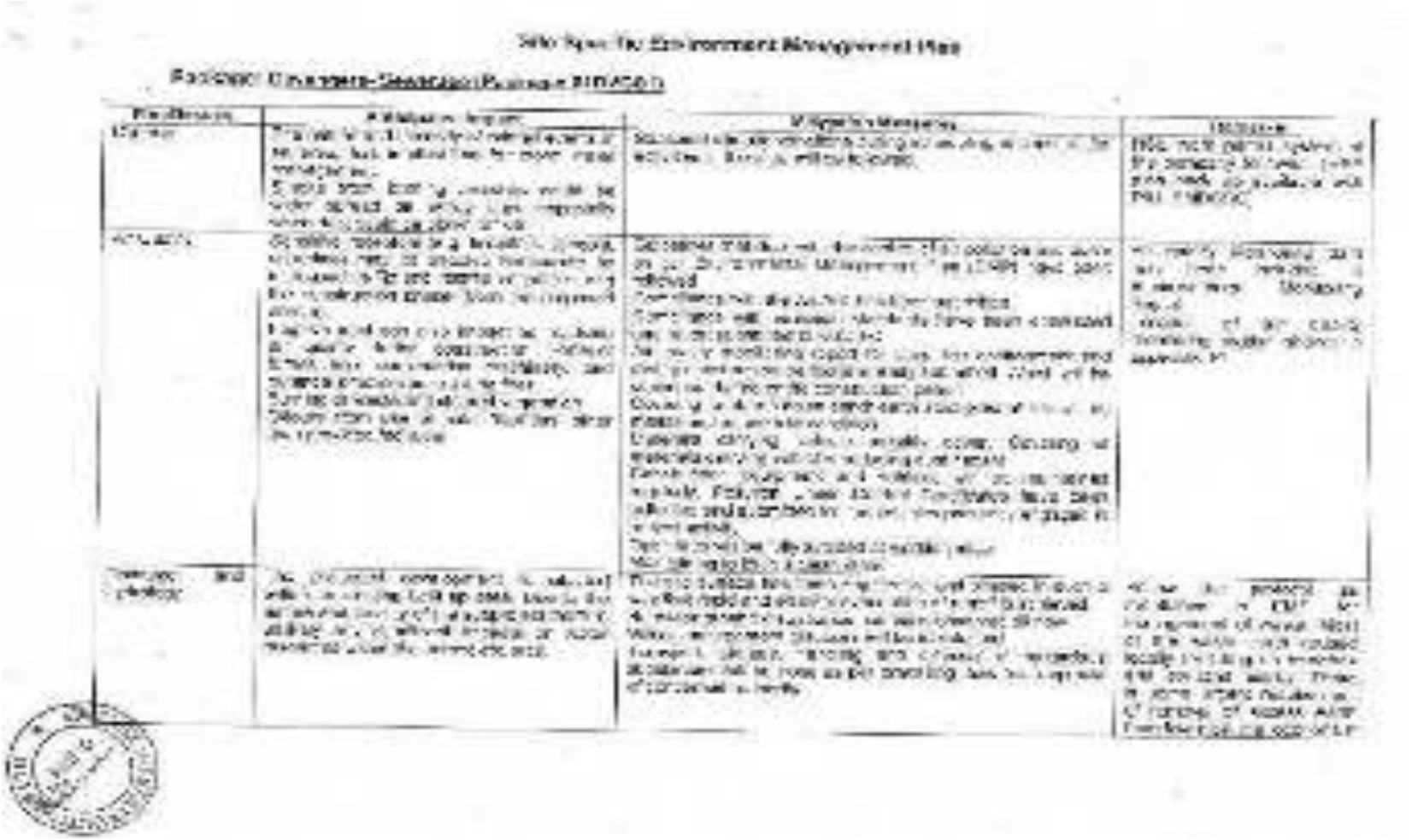
CFO condition compliance from HNB

Conditions	Remarks
Schedule	
TERMS AND CONDITIONS	
A. TREATMENT AND DISPOSAL OF EFFLUENTS UNDER THE WATER ACT.	
1. The discharge from the premises of the occupier shall pass through the terminal manhole/manholes where from the Boards shall be free to collect samples in accordance with the provisions of the Act/Rules made there under.	There is no effluent from Batching plant
2. The sewage/Domestic effluent shall be treated in septic tank and with soak pit. No overflow from the soak pit is allowed. The septic tank and soak pit shall be as per IS 2470 Part-I & Part-II	No domestic effluent is generated
3. The treated sewage effluent discharged shall conform to the standards specified in Annexure-I.	No effluent from Batching plant
4. The occupier shall install flow measuring/recording devices to record the discharge quantity and maintain the record.	Not applicable
5. The occupier shall not change or alter either the quality or the quantity or the place of discharge of temperature or the pint of discharge without the previous consent/permission of the Board.	Not applicable
6. The occupier shall not allow the discharge from the other premises to mix with the discharge from his premises. Storm water shall not be allowed to mix with the effluents on the upstream of the terminal manhole where the flow measuring devices are installed.	Not arise
7. Domestic Sewage shall be discharged to Underground drainage System/Sewers owned by Local body.	No domestic effluent is generated
B. EMISSIONS:	
1. The discharge of emissions from the premises of the applicant shall pass through the air pollution control equipment and discharged through stacks/chimneys mentioned in Annexure-I where from the Board shall be free to collect the samples at any time in accordance with the provisions of the Act and Rules made there under.	No air emission from batching plant. Only dust is generated. Dust suppression measures done
2. The occupier shall provide port holes for sampling of emission, access platforms for carrying out stack sampling, electrical points and all other necessary arrangements including ladder as indicated in Annexure-II	Not required – no emission from Batching plant
3. The Occupier shall upgrade/modify/replace the control equipment with prior permission of the Board.	No upgradation is required
C. WATER CESS:	
1. The Occupier shall provide water meter at all the intake points as specified under Section(5) of the Water Cess Act, 1977 and shall file the Water Cess returns regularly and also pay the Cess assessed with the time stipulated.	No intake of water. Only bore well water within premises of Batching plant is utilized
D. MONITORING & REPORTING:	
1. The occupier shall get the samples of effluents & emissions collected and get them analyzed once a month/once in 15 Days for the parameters.	No effluent and emission from Batching plant
E. SOLOD WASTE(OTHER THAN HAZARDOUS WASTE)	

DISPOSAL:	
1. The occupier shall segregate solid waste from Hazardous Waste, Municipal Solid Waste and store it properly till treatment/disposal without causing pollution to the surrounding Environment.	No solid waste is generated
2. The solid waste generated shall be handled & disposed by scientific method without causing eye sore to the general public and to the surrounding environment.	Not applicable
F. NOISE POLLUTION CONTROL:	
1. The industry shall ensure that the ambient noise levels within its premises will not exceed the limits i.e 75dB(A) Leq during day time and 70 dB(A) Leq during nigh time as specified in the Environment (Protection) Rules.	
G. GENERAL CONDITIONS:	
1. The Board reserves the right to review, impose additional conditions, revoke, change or alter terms and conditions of this	Noted
2. The occupier shall forthwith keep the Board informed of any accidental discharge of emissions/effluents into the atmosphere in excess of the standards laid down by the Board. The applicant shall also take corrective steps to mitigate the impact.	Not applicable as per nature of plant
3. The Occupier shall provide alternative power supply sufficient to operate all Pollution control equipments.	Operator provided alternate power supply through Generator set.
4. The entire premises shall always be kept clean. The effluent holding area, inspection chambers, outlets, flow measuring points should made easily approachable.	Plant area keep cleaned.
5. The occupier shall display the consent granted in a prominent place for perusal of the inspecting officers of the Board.	Available at Plant area cum site office
6. The occupier his heirs, legal representatives or assigns shall have no claims what so ever to the continuation or renewal of this consent after expiry of the validity of consent.	Now requirement of Batching plant is over. STP will be commissioned shortly
7. The occupier shall make an application for consent at least 45 days before expiry of this consent.	Not required
8. The occupier shall maintain register recording the ambient air quality and stack monitoring. The register shall be open for inspection by the Board Officers at all time.	No emission from Batching plant

Sample Site Specific Environment Management Plan

Package: <u>Davangere- Sewerage (Package: 01DVG01)</u>



Site Specific Environment Management Plan

Package: Davangere-Sewerage (Package: 01DVG01)

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Problem	Anticipated Impact	Mitigation Measures	Remarks
			[illegible]
Biodiversity, Flora and Fauna	[illegible]	[illegible]	
Land Acq	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Activities	Adverse Impact	Mitigation Measures	Remarks
		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Health Safety [illegible]	[illegible]	[illegible]	[illegible]

Field Issues	Anticipated Impact	Mitigation Measures	Responsibility
	[illegible]	[illegible] Drinking water available - provided. [illegible]	[illegible]
Noise and Vibration	[illegible]	[illegible] Equipment [illegible]	[illegible]
Pollution, Landfills, Chemicals and Solid Waste	[illegible]	[illegible] Solid waste will be managed according to the [illegible] Removal of [illegible]	Contractor [illegible] Public complaint Probe provided in appendix [illegible]
Occupational Hazards	[illegible]	[illegible]	[illegible] Probe provided in Appendix [illegible]
Vulnerable Groups	[illegible]	[illegible]	[illegible]

Field Issues	Anticipated Impact	Mitigation Measures	Remarks
	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
Social Issues	[illegible]	[illegible]	

Package- Davangere STP (Package No. 01DVG01A)

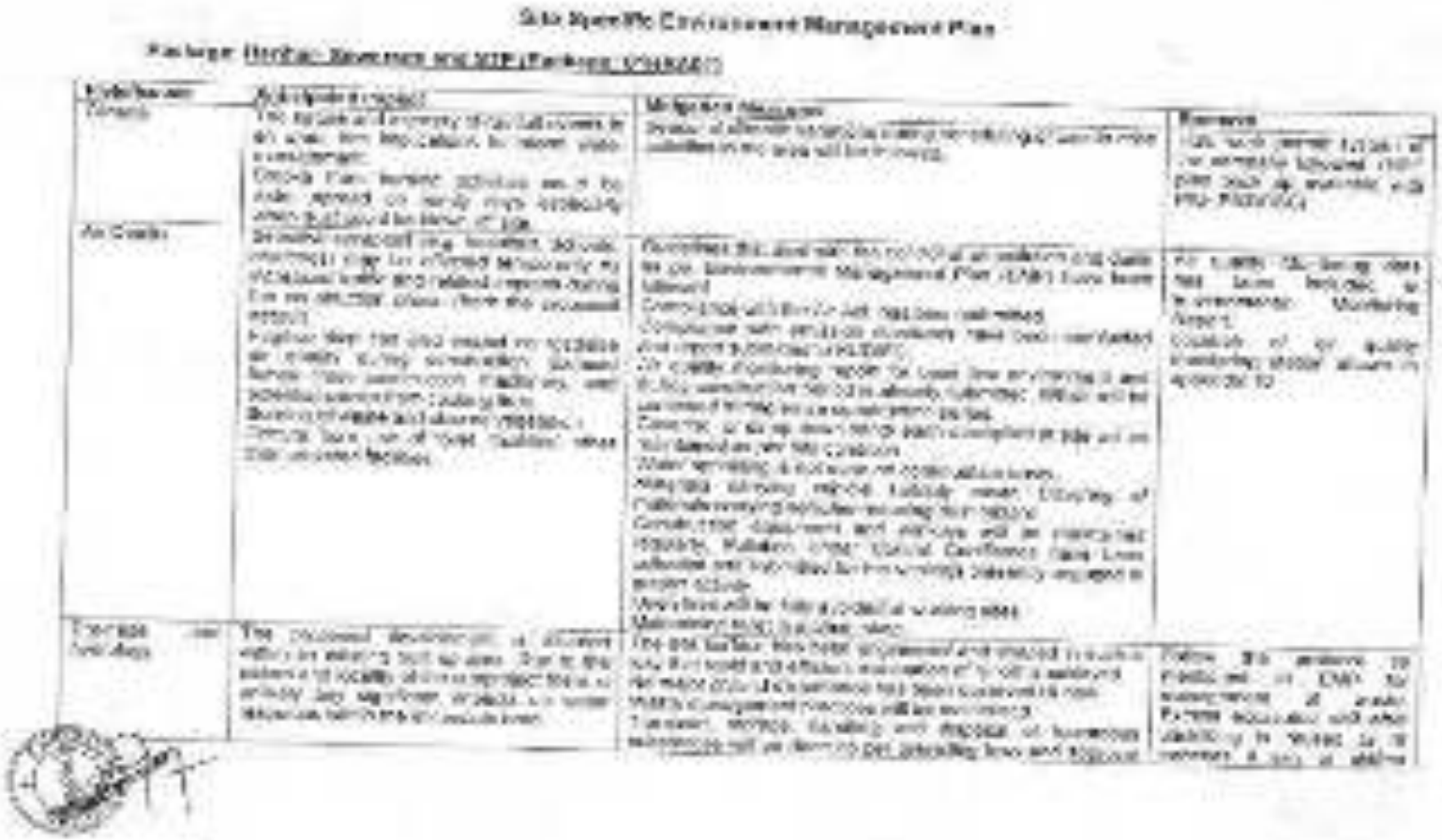
Site-Specific Environment Management Plan

Package: Davangere Sewerage Treatment Plant (Package: 01DVG01A)

Activities/ Criteria	Anticipated Impact	Mitigation Measures	Responsibility
	[illegible]	[illegible]	[illegible]
Air Quality	[illegible]	[illegible]	[illegible]
Drainage and Hydrology	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Package- Harihar UGD and Stp (Package no. 01HRA01)



Site Specific Environment Management Plan

Package: Harihar- Sewerage and STP (Package no. 01HRA01)

[illegible]	[illegible]	[illegible]	[illegible]
Air Quality	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

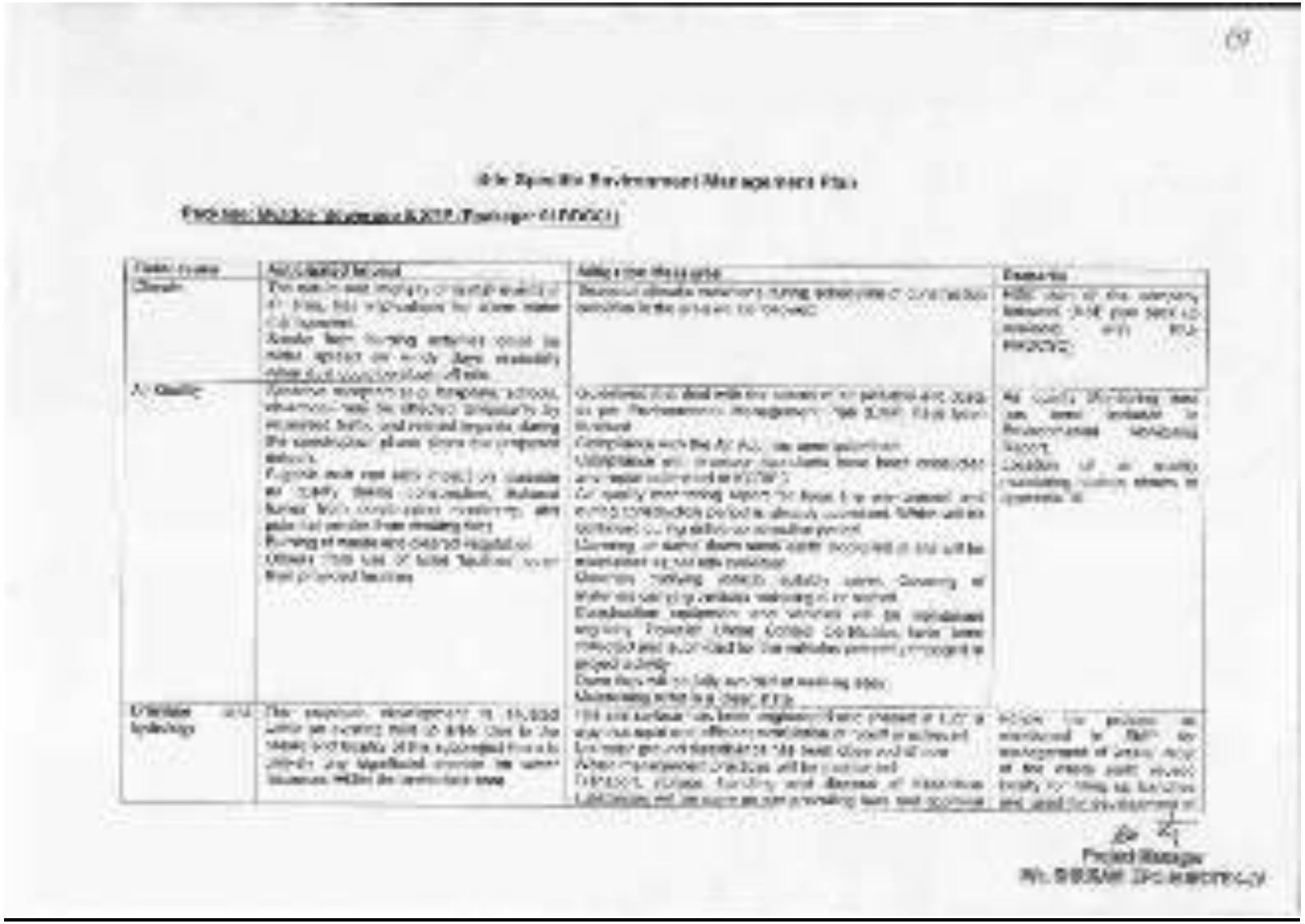
Potential Impacts	Anticipated Impact	Mitigation Measures	Remarks
		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]		

[illegible]

Package- Byadgi UGD and STP (Package no. 01BDG01)



Climate	[illegible]	[illegible]	[illegible]
Air Quality	[illegible]	[illegible]	[illegible]
Drainage and hydrology	[illegible]	[illegible]	[illegible]

Project Manager

[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Project Manager
[illegible]

Field/Issues	Adverse potential impact	Mitigation Measures	Remarks
	[illegible]	[illegible]	[illegible]
Traffic	[illegible]	[illegible]	[illegible]
Health and Safety	[illegible]	[illegible]	[illegible]

Project Manager
Ms. [illegible] JV

[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Project Manager

(3)

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	

Project Manager
Mr. [illegible] EPC-FUNDTEK-JV

Appendix 9

Ambient Air Quality, Noise Level and Water Quality- test result certificates

Air and Noise Quality-Davangere Sewerage

MTLR

TEST REPORT

RESULTS

END OF REPORT

Notes

MICROWAVE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

NTLR

TEST REPORT

Name of Customer and Address:

Sample number:

Type of Sample:

Sampling Location:

RESULTS

S. NO	PARAMETER	TEST METHOD	UNIT	DURATION OF MEASUREMENT	RESULT	LIMIT AS PER MPCB
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]

[illegible]

[illegible]

HIGHRISE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

Sampling Location:

Sampling Date:

Date of Receipt:

Date of Completion:

Date of Report:

Test Duration:

RESULTS

Sl. No	PARAMETERS	TEST METHOD	UNIT	OBSERVED VALUE(S)	STD LIMIT	NAAQ STANDARDS
1	PM 2.5	[illegible]	µg/m³	[illegible]	[illegible]	[illegible]
2	PM10	[illegible]	µg/m³	[illegible]	[illegible]	[illegible]
3	Sulphur dioxide	[illegible]	µg/m³	[illegible]	[illegible]	[illegible]
4	Nitrogen dioxide	[illegible]	µg/m³	[illegible]	[illegible]	[illegible]

Minimum reportable value (LOD): 4.0 µg/m³ (PM10), 5.0 µg/m³

[illegible]	[illegible]

[illegible]

[illegible]

Note:

MECHRONIX TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

NTLR

TEST REPORT

Name of Customer and Address

Sample number: MAY/2017-18/041

Type of Sample: MORE

RESULTS

Sl. No.	Test Method	Parameter	Parameters		
			[illegible] (%)	[illegible] (%)	[illegible] (%)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]

[illegible]

V.R. [illegible]

NTLR

HIGHTONE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number: [illegible]/2017-18/842

Type of Sample: [illegible]

Sampling Location: [illegible]

Customer Reference: [illegible]

RESULTS

Sl. No.	Test Method	Test Parameter	Results		
			[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

MICROWAVE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

NTLR

TEST REPORT

Name of Customer and Address:

Sample Number: RNW/2017-18/840

Type of Sample: NORM

RESULTS

Sl. No.	Test Methods	Test Results	Parameters		
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

(END OF REPORT)

Note:

Air, Noise and Water Quality-Davangere Sewage Treatment Plant

NTLR

HIGHRISE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

RESULTS

Sl. No	Parameter	Test Method	Unit	Quantity of Measurement	Result	Max. Standards
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NTLR

NATIONAL TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample: AIR - AMBIENT

Sampling Location:

RESULTS

Sl. No	Parameters	Test Methods	Unit	Duration of Monitoring	Result	Prescribed Standards
1	PM_{10}	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	$PM_{2.5}$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	Sulphur Dioxide	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	Nitrogen Dioxide	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Remarks as per NAAQ Standards: [illegible]

[illegible]
Authorised Signatory
[illegible] (Technical Manager)

NTLR

[illegible]

HIGHRISE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

NTLR

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

Sampling Location:

RESULTS

Sl. No.	Test Method	Test Result	Permissible Limit		

Authorised Signatory

NTLR

NTLR

MEHROOF TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

RESULTS

SL. NO.	TEST PARAMETER	TIMER FREQUENCY	PARAMETERS		
3					

Authorised Signatory

Essen & Co.

ANALYTICAL CHEMISTS & ASSAYERS

(An ISO 9001 : 2015 Certified Company)

TEST REPORT

	AR/9367
	9038

Sam. Rep. :

For ESSEN & CO.

P.H. BABU RAJENDRA
Quality Manager

Authorised Signatory

Essen & Co.

ANALYTICAL CHEMISTS & ASSAYERS

(An ISO 9001 - 2015 Certified Company)

TEST REPORT

[illegible]	CERTIFICATE NO.: AR/9167
	9010

PARAMETER	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

For ESSEN & CO.

Quality Manager

Authorised Signatory

Essen & Co.

ANALYTICAL CHEMISTS & ASSAYERS

(An ISO 9001 - 2015 Certified Company)

TEST REPORT

[illegible]	[illegible] AR/9168
	[illegible] 9011

DESCRIPTION OF SAMPLE: [illegible]

SAMPLE DRAWN BY PARTY

SAMPLE NO/NAME: [illegible]

TESTED ON [illegible]

PARAMETER	[illegible]	RESULTS
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]

For ESSEN & CO.

[illegible]
Quality Manager

Authorised Signatory

NOTE: [illegible]

Essen & Co.

ANALYTICAL CHEMISTS & ASSAYERS
(An ISO 9001 - 2015 Certified Company)

TEST REPORT

[illegible]	[illegible] AB/9168
	[illegible] 9011

SAMPLE SUBMITTED BY PARTY

DESCRIPTION OF SAMPLE: [illegible] WATER

[illegible]

PARAMETER	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]

[illegible]
Quality Manager

For ESSEN & CO.

Authorised Signatory

Air and Noise Quality-Harihar- Sewerage

TEST REPORT

RESULTS

NTLR

TEST REPORT

S.No.	Parameter	Test Method	Unit	Concentration of Pesticide	Result	Max. Tolerance Limit
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

HIGHRISE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

NTLR

TEST REPORT

Name of Customer and Address :

Sampling location

Sample / Location :

Type of Sample :

RESULTS

NTLR

TEST REPORT

Type of sample :

S.NO	TEST METHOD	TEST REQUIRED	PARAMETERS		
1					

NTLR

TEST REPORT

RESULTS

HIGHBEAM TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

NTLR

TEST REPORT

Name of Customer and Address : [illegible]

Sample number: [illegible]

Type of sample: NOISE

Sampling Location [illegible]

RESULTS

S.NO	[illegible]	[illegible]	PARAMETERS		
			[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CPCB [illegible]

[illegible]	[illegible]

NTLR

TEST REPORT

RESULTS

NTLR

TEST REPORT

Air and Noise Quality-Byadgi- Sewerage

NTLR

TEST REPORT

NTLR

TEST REPORT

[illegible]	[illegible]	[illegible]

RESULTS

Sl. No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

NTLR

[illegible]

NTLR

TEST REPORT

Name of Customer and Address:	Sample Number:
	Type of Sample:
	Sampling Date:
	Sampling Method:
	Sampling Location:
	Environmental Condition:
	Date of Collection:
	Date of Sample Receipt:
	Date of Analysis Commence:
	Date of Analysis Completed:
	Total Flow:
	Summary Statement:
	Remarks:

RESULTS

Sl. No.	Parameters	Test Method	Unit	Duration of Monitoring	Result	Prescribed Standards
1	PM_{10}	[illegible]	µg/m³	[illegible]	[illegible]	[illegible]
2	$PM_{2.5}$	Lab SOP No. [illegible]	µg/m³	[illegible]	[illegible]	[illegible]
3	Sulphur Dioxide	IS 5182 (Part 2): 2001 (Re 2006)	µg/m³	[illegible]	[illegible]	[illegible]
4	Nitrogen Dioxide	IS 5182 (Part 6): 2006 (RA 2012)	µg/m³	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]

Authorised Signatory

NTLR

NTLR

MEANSHINE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

Sample Collected By:

Sampling Method:

Condition of Sample Collected:

Sampling Location:

Sampling Date:

Sample Received Date:

Analysis Commencement Date:

Analysis Completion Date:

Sample Received Condition:

Sample Condition:

Sample Retain Upto:

RESULTS

Sl. No.	Parameter	Test Method	Unit	Observed Or Measured	Result	Max. Specified
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Authorised Signatory

V. K. Singh (Technical Manager)

NTLR

NICHROME TEST RUN LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number: JUNE/2017-18/204

Type of Sample:

Sampling Method:

Sampling Method:

Test Method / Sample Collected:

Environmental Conditions:

Date of Receipt:

Date of Sample received:

Date of Analysis Started:

Date of Completion:

Date of Report:

Customer Reference:

Place of Analysis:

Sampling Location:

Sampling Method Used:

RESULTS

Sl. No.	Parameter	Test Methods	Unit	Detection Limit	Result	Permissible Standards
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	Sulphur dioxide	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	Nitrogen dioxide	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]

Authorised Signatory

[illegible]

NTLR

[illegible]

Note:

NTLR

HIGHRISE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

Sampling Method:

Sampling Location:

Date of Receipt:

Date of Sample Sample:

Date of Analysis due date:

Date of Completion:

Date of Report:

Reference Reference:

Sample Description:

Shallow Bar Square

HCRC

Received

RESULTS

SL NO.	TEST METHOD	TEST FREQUENCY	PARAMETERS		
			[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]

Authorised Signatory

N. R. Nagar (Technical Manager)

NTLR

NTLR

MECHANICAL TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

RESULTS

SL.NO.	TEST METHOD	TIME FREQUENCY	PARAMETER		

Authorised Signatory

V. R. Pagar (Technical Manager)

NTLR

- END OF REPORT -

NTLR

MICRONS TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address

Sample Number

Date of Sample:

RESULTS

Sl. No.	Test Method	Time Consumed	Parameters		
			[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Signed

Certified Signatory

[illegible] Technical Manager

NTLR

NTLR

NATIONAL TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Date of Sample:

Sampling Method:

Sampling Location:

Date of Receipt:

Date of Analysis (Start):

Date of Completion:

Date of Issue:

Customer Information:

RESULTS

SL NO.	TEST METHOD	TEST FREQUENCY	PARAMETERS		
			[illegible] (dB)	[illegible] (dB)	[illegible] (dB)
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

NTLR

NATIONWIDE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address	Sample Number:	[illegible]
[illegible]	Type of Sample:	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

RESULTS

Sl. No.	Test Methods	Specification	Results		
			[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

Air Quality and Noise Level- Byadgi Water supply – Base line Monitoring

NTLR

TEST REPORT

Name of Customer and Address:

Sample Number:
Type of Sample:

RESULTS

Sl. No.	Parameters	Test Method	Unit	Limit of Detection	Result	NAAQ Standards
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Authorised Signatory

NTLR

END OF REPORT

NTLR

MICHRONE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:
Type of Sample:

RESULTS

Sl. No.	PARAMETER	TEST METHOD	UNIT	DURATION OF MEASUREMENT	RESULT	MAXIMUM PERMISSIBLE
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Authorised Signatory

NTLR

NTLR

RICHMOND TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

RESULTS

Sl. No.	PARAMETER	TEST METHOD	UNIT	DURATION OF MONITORING	RESULT	NAAQ STANDARDS
1	[illegible]	[illegible]	µg/m³	24 Hrs	[illegible]	[illegible]
2	[illegible]	[illegible]	µg/m³	24 Hrs	[illegible]	[illegible]
3	[illegible]	[illegible]	µg/m³	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	µg/m³	[illegible]	[illegible]	[illegible]

[illegible]

Authorised Signatory

NTLR

NTLR

HIGHRISE TESTING LABORATORY
AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Description:
Type of Sample:

Sample Number:

Date:

RESULTS

Sl. No.	Test Method	Unit/Frequency	Parameter		
			Limits	Limits	
1					

Authorised Signatory

NTLR

MECHANICAL TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

Date of Receipt:

Sampling Location:

RESULTS

Sl. No.	Test Method	Test Requirements	Parameters		
			[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

NTLR

NTLR

NICHROME TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:
Type of Sample:

Date
Media

Sampling Location:

RESULTS

Sl. No	Test Method	Test Frequency	Parameters		
			[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Authorised Signatory
[illegible]

Air Quality and Noise Level- Harihar Water supply – Base line Monitoring

NTLR

HIGHRISE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

RESULTS

Sl. No	Parameter	Test Method	Unit	Observation/ Monitoring	Result	Permissible Limits
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

NTLR

NICHROME TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

RESULTS

Sl. No.	Parameters	Test Method	Unit	Duration of Analysis	Result	Max. Standard
1						
2						
3						
4						

Authorised Signatory

NTLR

NICHROME TESTING LABORATORIES AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

RESULTS

Sl. No.	PARAMETER	TEST METHOD	UNIT	EVALUATION OF RESULTS	RESULT	LIMIT STANDARDS
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

NTLR

NTLR

NEHRONE TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

TEST REPORT

Name of Customer and Address:

Sample Number:

Type of Sample:

NOISE

RESULTS

NICHROME TESTING LABORATORY AND RESEARCH PRIVATE LIMITED

NTLR

TEST REPORT

Name of Customer and Address:

Sample number:

Type of Sample:

Sampling Method:

Date of Collection:

Date of Receipt:

Date of Analysis:

Date of Completion:

Date of Report:

Sampling Location:

RESULTS

Sl. No.	TEST VERIFIED	TIME FREQUENCY	RESULTS		
			[illegible]	[illegible]	[illegible]

[illegible]	[illegible]

Authorised Signatory

N. H. Nagar (Technical Manager)

NTLR

Appendix 10

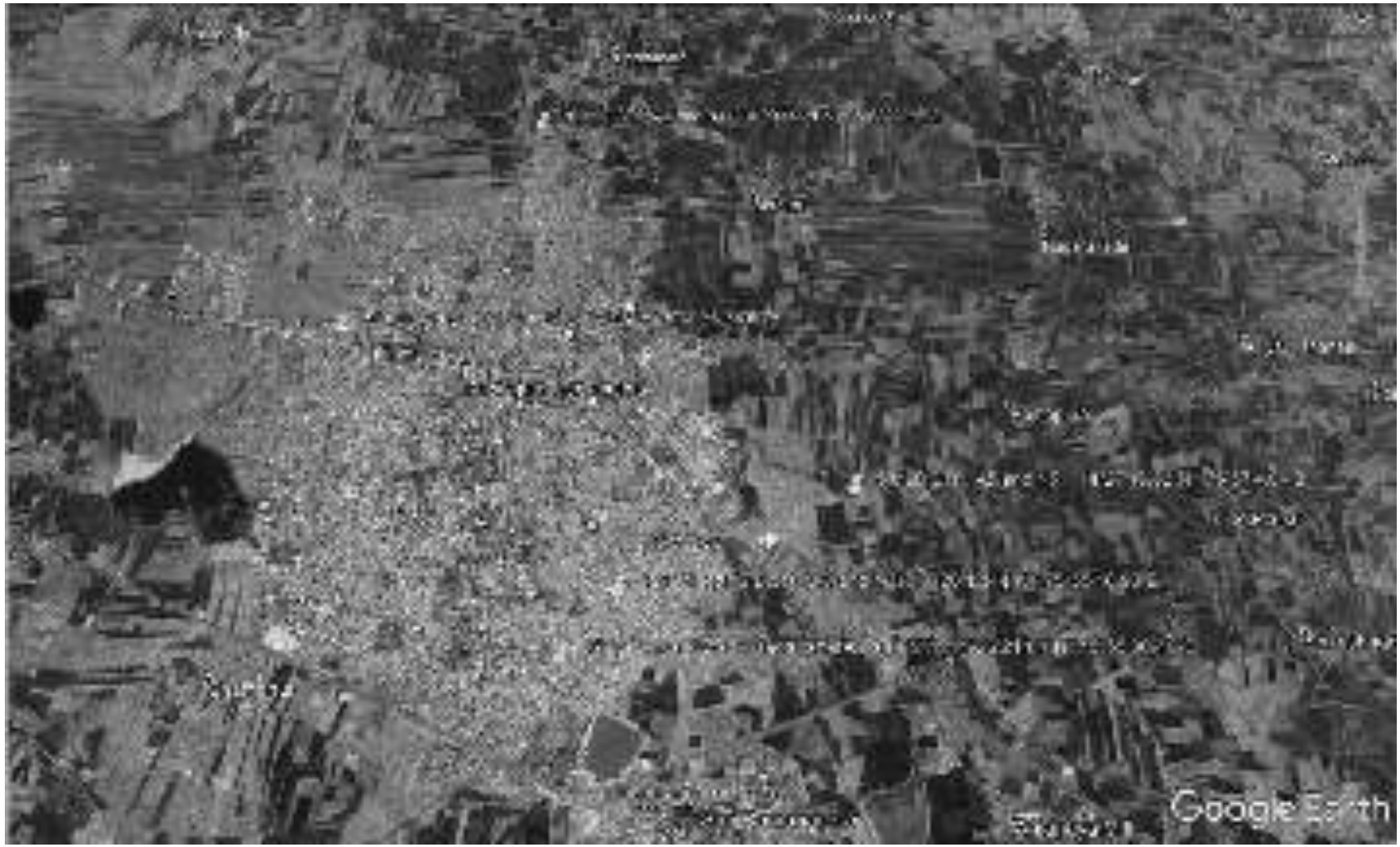
Ambient Air Quality Monitoring at Sites of construction

Package	Locations	GPS Coordinate
Davangere (Package no. 01DVG01)	Shiv Kumar Swami Badavane(A1)	14°26'21.64"N 75°55'30.40"E
	Shankar Layout (A2)	14°28'15.75"N 75°54'6.75"E
	Jaya Nagar B Block (A3)	14°26'42.44"N 75°55'46.93"E
Davangere (Package No. 01DVG01A)	20 MLD STP (A4)	14°29'44.21"N 75°55'11.87"E
	5 MLD STP (A5)	14°27'17.83"N 75°57'4.04"E
Harihar (Package no. 01HRA01)	Benki Nagar (A6)	14°30'16.64"N 75°48'48.75"E
	Keshava Nagar (A7)	14°31'0.36"N 14°31'0.36"N
	STP site (A8)	14°31'44.71"N 75°48'20.55"E
Byadgi UGD (Package no. 01BDG01)	Near Shivapur Badavane (A9)	14°40'0.06"N 75°29'40.64"E
	Vinayak Nagar (A10)	14°40'36.00"N 75°29'7.29"E
	Agasanalli Plot (Melagiri Plot) (A 11)	14°39'54.21"N 75°28'59.91"E
	Someshawar Nagar (A12)	14°40'48.82"N 75°29'51.80"E
	Sangameshwar Nagar (A13)	14°40'7.86"N 75°28'44.44"E
Byadgi WS (01BDG02)	Near Kadaramandalgi Japping point and existing MS pipeline (A14)	14°37'27.60"N 75°36'2.06"E
	Near Asundi (A15)	14°38'2.18"N 75°32'40.87"E
	Near Jinning mill, Ranebenur bypass (A16)	14°37'43.41"N 75°35'34.48"E
Harihar WS (01HRA02)	Near Indian Oil Petrol pump, Kumar Pattan (A17)	14°31'40.91"N 75°46'38.19"E
	WTP site, Harihar (A18)	14°31'7.11"N 75°48'5.26"E
	OHT site near Gajanan Temple, Amaravathi colony (A19)	14°30'37.53"N 75°49'42.98"E

Noise Level Monitoring at Sites of construction

Package	Locations	GPS Coordinate
Davangere (Package no. 01DVG01)	ShivKumarSwami Badavane(N1)	14°26'21.64"N 75°55'30.40"E
	Shankar Layout (N2)	14°28'15.75"N 75°54'6.75"E
	Jaya Nagar B Block (N3)	14°26'42.44"N

		75°55'46.93"E
Davangere (Package No. 01DVG01A)	20 MLD STP (N4)	14°29'44.21"N 75°55'11.87"E
	5 MLD STP (N5)	14°27'17.83"N 75°57'4.04"E
Harihar (Package no. 01HRA01)	Benki Nagar (N6)	14°30'16.64"N 75°48'48.75"E
	Keshava Nagar (N7)	14°31'0.36"N 14°31'0.36"N
	STP site (N8)	14°31'44.71"N 75°48'20.55"E
Byadgi UGD (Package no. 01BDG01)	Near Shivapur Badavane (N9)	14°40'0.06"N 75°29'40.64"E
	Vinayak Nagar (N10)	14°40'36.00"N 75°29'7.29"E
	Agasanalli Plot(Melagiri Plot) (N 11)	14°39'54.21"N 75°28'59.91"E
	Someshawar Nagar (N12)	14°40'48.82"N 75°29'51.80"E
	Sangameshwar Nagar (N13)	14°40'7.86"N 75°28'44.44"E
Byadgi WS (01BDG02)	Near Kadaramandalgi Japping point and existing MS pipeline (N14)	14°37'27.60"N 75°36'2.06"E
	Near Asundi (N15)	14°38'2.18"N 75°32'40.87"E
	Near Jinning mill, Ranebenur bypass (N16)	14°37'43.41"N 75°35'34.48"E
Harihar WS (01HRA02)	Near Indian Oil Petrol pump, Kumar Pattan (N17)	14°31'40.91"N 75°46'38.19"E
	WTP site, Harihar (N18)	14°31'7.11"N 75°48'5.26"E
	OHT site near Gajanan Temple, Amaravathi colony (N19)	14°30'37.53"N 75°49'42.98"E



Air and Noise stations- Davangere UGD project (Package 01DVG01) and Davangere STP project (Package 01DVG01A)

Air and Noise stations- Harihar UGD & STP project (Package 01HRA01)

Air and Noise stations- Byadgi UGD & STP project (Package 01BDG01)

Air and Noise stations- Byadgi Water supply project (Package 01BDG02)

Air and Noise stations- Harihar Water Supply project (Package 01HRA02)

Appendix 11

Spoil Management Plan

SPOIL MANAGEMENT PLAN
M/S – SIMPLEX INFRASTRUCTURES LIMITED
Package: Davangere- Sewerage (Package: 01DVG01)

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

•**LEGAL AND OTHER REQUIRMENTS**
In this project, there is no legal litigation at site for land and working area or site. Disposal of spoil will confirming the Environmental Protection Rules and Regulations of Govt. of India and The state Govt.

•**ROLES AND RESPONSIBILITY**
In this project, there are major roles and responsibilities are followings
•Extra excavated earth should be removed from site
•Traffic movement should not be obstructed by dumping soil during the work
•No low land, pond, ditch etc will be filled up by extra soil
•No accident occurs during rainy season by excavated earth during or finished the work
•All the drains, outlet should be free from our excavated earth

•**SPOIL VOLUMES,CHARACTERISTICS AND MINIMIZATION**
In this project, generation of excavated excess earth will be no plan to reuse in the project. As per report from soil expert excavated earth is clayey in nature. Generation of excavated earth would be minimize as per design

•**SPOIL REUSES OPPORTUNITIES,IDENTIFICATION AND ASSESMENT**
In this project, there is no opportunity to reuse of excavated earth; total excavated earth would be dispose as per plan. As required level and dressing to be done at the both work site and balance excess to be dispose as planned.

•**ON SITE SPOIL MANAGEMENT APPROACH**
In this project, the approach is ready where soils to be dispose

•**SPOIL TRANSPORTATION METHODOLOGY**
Extra excavated earth will be shifted by truck & Tractor Trolley from working site to disposal area if required after level and dressing.

•**MONITORING,REPORTING,REVIEW,AND IMPROVEMENTS**
Monitoring, Reporting and all necessary improvements will be done as per requirement.

SPOIL MANAGEMENT PLAN
M/S –Shriram EPC.Ltd

Package: Harihar Sewerage (01HRA01)

1. **INTRODUCTION OF SMP**
   SMP is to describe how the project will manage the spoil generated and reuse related to design and construction works. This is an integral part of EMP. The objective of SMP is to reuse of spoil from works.
2. **LEGAL AND OTHER REQUIRMENTS**
   In this project, there is no legal litigation at site for land and working area or site. Disposal of spoil will confirming the Environmental Protection Rules and Regulations of Govt. of India and The state Govt.
3. **ROLES AND RESPONSIBILITY**
   In this project, there are major roles and responsibilities are followings
   1) Extra excavated earth should be removed from site
   2) Traffic movement should not be obstructed by dumping soil during the work
   3) No low land, pond, ditch etc will be filled up by extra soil
   4) No accident occurs during rainy season by excavated earth during or finished the work
   5) All the drains, outlet should be free from our excavated earth

4. **SPOIL VOLUMES,CHARACTERISTICS AND MINIMIZATION**
   In this project, generation of excavated excess earth will be no plan to reuse in the project. As per report from soil expert excavated earth is clayey in nature. Generation of excavated earth would be minimize as per design
5. **SPOIL REUSES OPPORTUNITIES,IDENTIFICATION AND ASSESMENT**
   In this project, there is no opportunity to reuse of excavated earth; total excavated earth would be dispose as per plan. As required level and dressing to be done at the both work site and balance excess to be dispose as planned.
6. **ON SITE SPOIL MANAGEMENT APPROACH**
   In this project, the approach is ready where soils to be dispose

7. **SPOIL TRANSPORTATION METHODOLOGY**
   Extra **47.72 cum** excavated earth will be shifted by truck from working site to disposal area at STP if required after leveling and dressing.

8. **MONITORING,REPORTING,REVIEW,AND IMPROVEMENTS**
   Monitoring, Reporting and all necessary improvements will be done as per requirement.

SPOIL MANAGEMENT PLAN
HNB Engineers

Name of Project: **DESIGN, SUPPLY, INSTALLATION & COMMISSIONING OF SEWAGE TREATMENT PLANTS –SEQUENTIAL BATCH REACTORS (SBR/CASP) OF 20 MLD CAPACITY IN DISTRICT 1 & 5 MLD CAPACITY IN DISTRICT 3 OF DAVANAGERE CITY CORPORATION INCLUDING OPERATION AND MAINTENANCE FOR THREE YEARS.**

1.0	**Purpose**
	To describe how the project will manage the spoil generated and reuse related to design and construction works.
2.0	**Scope**
	The procedure is applicable to HNB Engineers Pvt. Ltd., Davangere.
3.1	**Responsibility**
	Project In charge is responsible for its implementation. Corporate Head EHS is responsible for its review and modification.
3.2	**RESPONSIBILITY AND AUTHORITY FOR EHS MANAGEMENT**
	RESPONSIBILITY Project In charge (PI) • Ascertain that all plants and machinery utilized at the project site meets the safety standard and are safe for use. • Ensure that all personnel are aware of commitment to environmental protection and worker safety; 1. Ensure that safe system of work are implemented and maintained by the project Engineers / Supervisors / Foreman and employees at the work site. 2. Ensure that sufficient induction training for all employees and workers is given before commencement of work at site and subsequently for new inductees; 3. Undertake program of regular EHS Inspection at site. 4. Arrange Site EHS Management Review Meeting. **Site Engineers/Supervisors** • Maintain safe working conditions and good housekeeping in all areas under his supervision. • Enforce use of PPE as requested by Project Specific Rules and regulations. • Immediately Inform & report to the EHS-Officer while any accident, near misses, dangerous occurrence, occupational poisoning or diseases shall be noticed within the project sites. • Plan safety in accordance with the approved work methodology for daily work activities. • Establish and maintain proper communication with all workers with regard to EHS; and
4	Procedure- Spoil Management Plan
	☞ 1) Spoil volume calculations: Estimate the volumes of spoils produced from each of the construction sites. ☞ 2) Characterization of spoil: Based on the type of spoil; characterization is done (sand stone, mud mix materials, reusable materials) ☞ 3) Adopt Spoil Reduce, Reuse Opportunities ☞ 4) Identification of possible safe disposal sites for spoil: Those spoils which can't be reuse shall be properly disposed in designated areas, such disposal areas should be identified in project locations. Such disposal areas should be safe from environmental aspects and there should be any legal and resettlement related issues. Such areas need to be identified and prior cliental approval should be obtained to use it as spoil disposal area. The local administration must be consulted and if required permission should be obtained from them.
5	**Spoil Volumes, Characteristics and Minimization**

	• Volumes 10,000Cu.M approx. • Characteristics Normal earth basically clay types • Minimization Excavation of earth to be done as per requirements only. No extra earth shall be excavated.
6	**Spoil Reuses Opportunities, Identification and Assessment**
	• All quantity of spoils will be re used for new road. • Balance spoils will be removed.
7	**Monitoring, Reporting, Review and Improvements**
	• Monitoring, Reporting and all necessary improvements will be as required.
8	**Related other Procedures** The key aspects of potential impacts are listed in table below

Aspects	Potential Impacts
Air Quality	Potential for high winds generating airborne dust from the stock piles
Sedimentation	Potential for sediment laden site runoff from spoil stockpiles and potential for spillage of spoil from truck on roads
Surface and Groundwater	Contamination of water (surface and ground water)
Noise	Associated with spoil handling and haulage and storage
Traffic	Impacts associated with spoil haulage
Land Use	Potential for spoil to be transported to a receivable site that doesn't have permission for storage/disposal
Design specifications	Limitations on opportunities to minimize spoil generation
Sustainability	Limited sites for storage, reuse opportunities

SPOIL MANAGEMENT PLAN
M/S –SHRIRAM EPC LTD,

[illegible] Package

1. **INTRODUCTION OF SMP**

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

2. **LEGAL AND OTHER REQUIREMENTS**

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

3. **ROLES AND RESPONSIBILITY**

   In this project, there are major roles and responsibilities are following.

   1) Extra excavated earth should be removed from site
   2) Traffic movement should not be obstructed by dumping soil during the work
   3) Not on land, parcel, [illegible] will be left up any extra soil
   4) No accident occurs during transportation by excavator with dumper or finished the work
   5) After finishing, land should be [illegible]

4. **SPOIL VOLUMES, CHARACTERISTICS AND MINIMIZATION**

   In this project, generation of excavated [illegible] will be regular [illegible] in the project. As per report from soil expert excavated earth is clayey in nature. Generation of excavated earth possible [illegible] design

SPOIL MANAGEMENT PLAN
M/S –SHRIRAM EPC LTD.

5. **SPOIL REUSES OPPORTUNITIES, IDENTIFICATION AND ASSESMENT**

   In this project, there is no opportunity to reuse of excavated earth, total excavated earth would be disposed as per site. As required level and density to be achieved the earthwork site and [illegible] to be disposed explored.

6. **ON SITE SPOIL MANAGEMENT APPROACH**

   The end of day we have disposed surplus earth after completion of backfilling work as per site condition, to adjacent conservation area, we have strategy to dispose surplus earth.

7. **SPOIL TRANSPORTATION METHODOLOGY**

   Manual and mechanical means of trucks excavated earth at pipe laying site and dump from STP. The end of day we have disposed surplus earth after completion of backfilling work as per site condition, to adjacent conservation area, we have strategy to dispose surplus earth.

8. **MONITORING, REPORTING, REVIEW, AND IMPROVEMENTS**

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

Appendix 12

Traffic Management Plan

JUNE-2017

PROJECT: **Expansion of Sewerage System in Davangere City (District 1& 3)**

Contract No: **01 DVG 01**

PROGRAM: **Karnataka Urban Infrastructures Development & Finance Corpn. Ltd..**

EMPLOYER: **Commissioner of City Corporation Davangere**

CONTRACTOR: SIMPLEX INFRASTRUCTURES LTD

EXPANSION OF SEWERAGE SYSTEM IN DAVANGERE CITY (DISTRICT 1& 3)

Location (As on June 2017)
Traffic Diversion – HADADI ROAD (WARD-36) DISTRICT-1 for pipe laying & pre-cast manhole fixing.

1.0	**Purpose**
	To provide a clear and simply worded procedure to be understood by most employees on preventing injury to persons and damage to property arising from site traffic and site transport.
2.0	**Scope**
	The procedure is applicable to Expansion of sewerage system in Davangere City, (District 1& 3) sites and depots.
3.0	**Responsibility**
	It is the responsibility of the Project In charge and Depot Head & safety officer 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	**Legal Requirement**
	The Building and Other Construction Workers (Regulations of Employment and Conditions of Service) Act 1996 and Central Rule 1998 Rule 48, 88 and 95, Motor Vehicle Act 1988
6.0	**Requirements**
6.1	**General**
	• All road works create inconvenience and are a potential hazard to the safety of all road users and those employed in carrying out the work. • All the effects should be 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 authorized personnel.
6.2	**Planning stage**

	• The client Engineers 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;**
	  ○ **cones;**
	  ○ **barriers;**
	  ○ **road hazard warning lights;**
	  ○ **information boards; and**
	  ○ **site lighting**
	• Consider necessity of traffic control systems such as temporary Stop/Go boards.
	• Access should be planned to eliminate dangerous movements of site traffic (e.g. reversing of vehicles) and personnel (e.g. crossing dual carriageways).
	• Provision of adequate lighting.

6.3	**On site**
	• The working area in the live road/footway shall be defined. • The working space shall be defined – this includes the area of storage of tools and equipment and space to move around the job. • Provision of safety zone- it shall be kept clear of all work, material storage and people and shall be clear of working radius of all plant.
6.4	**Operators / Drivers**
	• Experienced operators and drivers with valid licensed has been appointed. • One copy of license has been collected by Safety Department.
6.5	**Equipment**

	• Drivers are made a daily inspection of their vehicles include steering, brakes, mirrors, lights, horn, tyres and windshield wipers. • Safety Department along with Plant department has been checking the vehicles monthly basis • All vehicles have reverse horns and it is in working properly. • All vehicles, periodical maintenance has conducted.
6.6	**Roads**
	For safe operation we are following the bellow safety measure: • Safe width has been provided. • Speed limit will be varied as per the site. • Safe walkway with proper guard has been provided. • Caution board has been placed in every location within the site. • During night alert light has been provided. • Conducting Toolbox training as regular basis. • Road will be closed with proper permission (if required). • Reflective type Diversion board has been placed in required places.
6.7	**Loading and unloading**
	• Only authorised persons were engage for loading / unloading. • Materials loaded within the permitted safe weigh limit for the truck, • Dimensions of loads carried on a vehicle in strict accordance with relevant provisions. • A red flag is being used at the rear extremity of an overhanging load. • During the hours of darkness or in poor visibility conditions, a white light showing ahead at each side of the front extremity and a red light showing to the rear extremity of the hanging load are has been provided. • During Toolbox talks Intimation has been delivered to all drivers/operators that when the driver leaves the driving seat, the engine of the truck shall be switched off, the gear engaged and parking brakes applied. On slopes, wheel blocks shall be applied. • Helper has been provided with all vehicles.

6.8	**Working Area**
	• The working area in the live road/footway has defined and barricaded.
	• The working area has been restricted from unauthorized entry.
	• The working space has been defined – this includes the area of storage of tools and equipment and space to move around the job.
	• Particular attention has been taken in working area :
	  ○ **traffic signs;**
	  ○ **cones;**
	  ○ **barriers;**
	  ○ **road hazard warning lights;**
	  ○ **information boards; and**
	  ○ **site lighting**
	• Adequate lighting has been provided.

SIMPLEX INFRASTRUCTURES LIMITED
DAVANGERE SEWERAGE PROJECT
TRAFFIC MANAGEMENT PLAN
MONTH-JUNE2017

SL.NO	LOCATION	DATE	HALF CLOSE/ FULL CLOSED	DURATION TIME
1	SOKKE ROAD WARD NO-18	02/06/17	FULL CLOSED	15 DAYS
2	VINOBHA NAGAR WARD-38	18/06/2017	HALF CLOSED	7 DAYS
3	HIRIGANERIA KARAVANE	19/06/2017	HALF CLOSED	7 DAYS
4	RAM NAGAR KEB SUBHASHITAL	23/06/2017	HALF CLOSED	7 DAYS

SIGNATURE OF SAFETY OFFICER

SIGNATURE OF PROJECT INCHARGE

Traffic Management Plan

JUNE 2017

PROJECT : KARNATAKA INTEGRATED URBAN WATER MANAGEMENT INVESTMENT PROGRAM

Contract No : CMC/HAR/KIUWMIP/03/2013-14

PROGRAM : EXPANSION OF SEWERAGE SYSTEM IN HARIHAR CITY DAVANGERE DISTRICT.

EMPLOYER : CITY MUNICIPAL COUNCIL (CMC), HARIHARA

CONTRACTOR : SHRIRAM EPC LTD.

Prepared by

SHRIRAM EPC LTD.

Location (As on 07th MAY 2017)
Traffic Diversion: Main road Guttur for Pipe Laying and Manhole construction

1.0	**Purpose**
	To preventing injury to persons and damage to property arising from site traffic and site transport.
2.0	**Scope**
	The procedure is applicable to Shriram EPC Ltd. Sites.
3.0	**Responsibility**
	It is the responsibility of the Project In charge and Depot Head & safety officer implement this procedure and ensure that delegated staff under their supervision carries it out. • Responsible for ensuring that material movement to and from the workface does not cause damage to the works, the workforce or the public. • There is a primary duty to provide a safe workplace environment that minimizes the risk of injury to workers within, or adjacent to, the work area.
4.0	**Definitions**
	Project In charge: Person responsible for the execution of the project.
5.0	**Legal Requirement**
	The Building and Other Construction Workers (Regulations of Employment and Conditions of Service) Act 1996and Central Rule 1998 Rule 48, 88 and 95, Motor Vehicle Act 1988
6.0	**Requirements**
6.1	General
	• All road works create inconvenience and are a potential hazard to the safety of all road users and those employed in carrying out the work. • All the effects should be 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 authorized personnel.
6.2	Planning stage

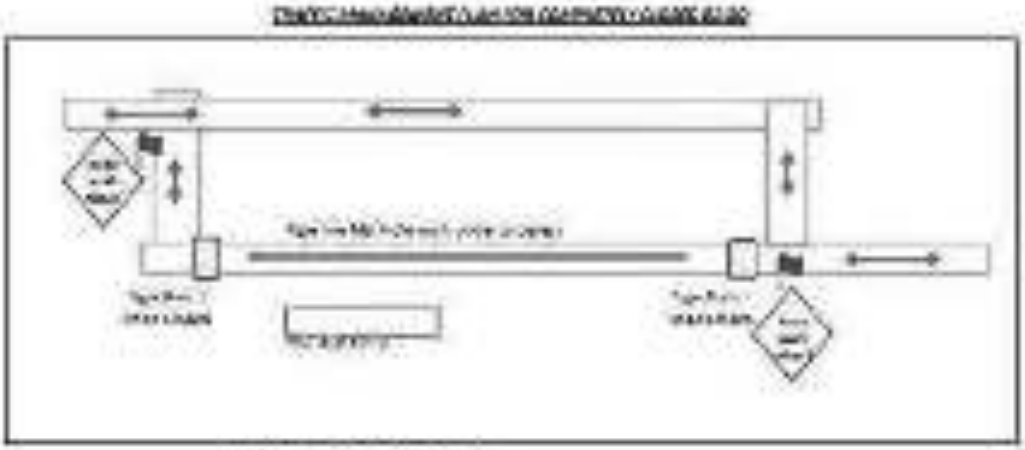
	• The client and GKW's consultant Engineer should be consulted as regards the execution of the works and the safety measures which would be put in place.
	• Particular attention should be given to :
	  o traffic signs;
	  o cones;
	  o barriers;
	  o road hazard warning lights;
	  o information boards; and
	  o site lighting
	• Consider necessity of traffic control systems such as temporary Stop/Go boards.
	• Access should be planned to eliminate dangerous movements of site traffic (e.g. reversing of vehicles) and personnel (e.g. crossing dual carriageways).
	• Provision of adequate lighting.

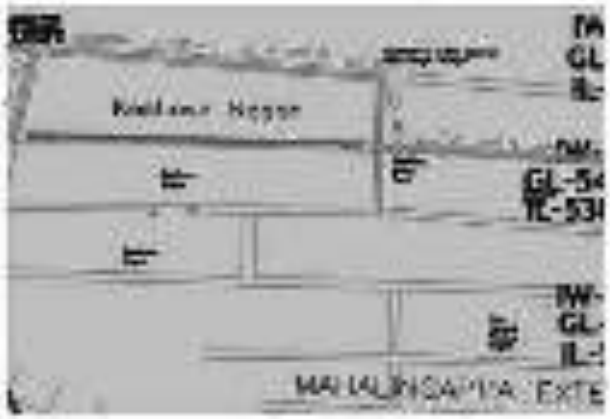
6.3	On site
	• The working area in the live road/footway shall be defined. • The working space shall be defined – this includes the area of storage of tools and equipment and space to move around the job. • Provision of safety zone- it shall be kept clear of all work, material storage and people and shall be clear of working radius of all plant.
6.4	**Operators / Drivers**
	• Experienced operators and drivers with valid licensed has been appointed. • One copy of license has been collected by Safety Department.
6.5	**Equipment**
	• Drivers are made a daily inspection of their vehicles include steering, brakes, mirrors, lights, horn, tyres and windshield wipers. • Safety Department along with Plant department has been checking the vehicles monthly basis

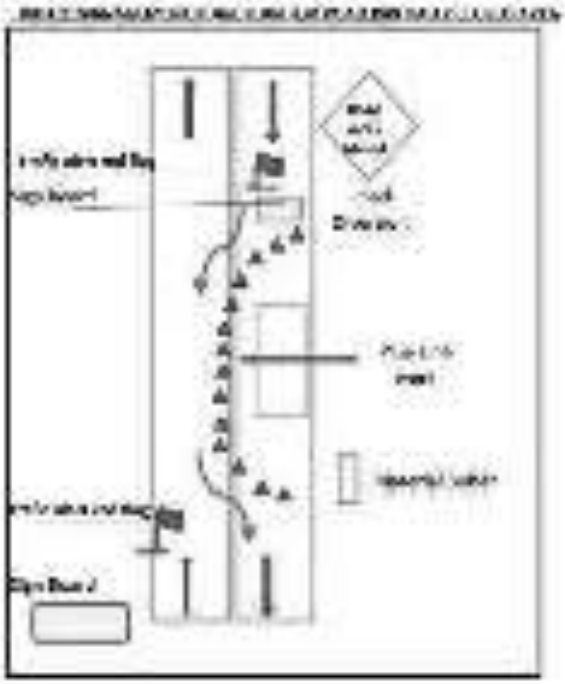
	• All vehicles have reverse horns and it is in working properly. • All vehicles, periodical maintenance has conducted.
6.6	**Roads**
	For safe operation we are following the bellow safety measure: • Safe width has been provided. • Speed limit will be varied as per the site. • Safe walkway with proper guard has been provided. • Caution board has been placed in every location within the site. • During night alert light has been provided. • Conducting Toolbox training as regular basis. • Road will be closed with proper permission (if required). • Reflective type Diversion board has been placed in required places.
6.7	**Loading and unloading**
	• Only authorised persons were engage for loading / unloading. • Materials loaded within the permitted safe weigh limit for the truck, • Dimensions of loads carried on a vehicle in strict accordance with relevant provisions. • A red flag is being used at the rear extremity of an overhanging load. • During the hours of darkness or in poor visibility conditions, a white light showing ahead at each side of the front extremity and a red light showing to the rear extremity of the hanging load are has been provided. • During Toolbox talks Intimation has been delivered to all drivers/operators that when the driver leaves the driving seat, the engine of the truck shall be switched off, the gear engaged and parking brakes applied. On slopes, wheel blocks shall be applied. • Helper has been provided with all vehicles.

6.8	**Working Area**
	• The working area in the live road/footway has defined and barricaded.
	• The working area has been restricted from unauthorized entry.
	• The working space has been defined – this includes the area of storage of tools and equipment and space to move around the job.
	• Particular attention has been taken in working area :
	  ○ traffic signs;
	  ○ cones;
	  ○ barriers;
	  ○ road hazard warning lights;
	  ○ information boards; and
	  ○ site lighting
	• Adequate lighting has been provided.

6.9	**Sinage:** • Ensure that signage and signage symbols used are internationally recognised. • Ensure additional languages are used in signage to ensure messages are understood.
7.0	**Safety:** • Ensuring the organisation's safety policies are followed • Creating of site-specific safety manual, ensure first aid cover and equipment is present • Responsible for ensuring that material movement to and from the workface does not cause damage to the works, the workforce or the public. • Manage and maintain visitor PPE stocks to an agreed number. • Produce method statements, risk assessments ensure lifting plans are produced. • Safeguard vulnerable road users from traffic and transport created by the site.







TRAFFIC MANAGEMENT PLAN

JAN -2017 TO JUN- 2017

PROJECT: KARNATAKA INTEGRATED URBAN WATER MANAGEMENT AND INVESTMENT PROGRAMME

Contract No: TMC/BDG/KUIDFC - KIUWMIP/01/2015-16

PROGRAM: PACKAGE NO: 20B0A01 - DESIGN, BUILD AND OPERATE CONTINUOUS SEWERAGE SYSTEM (SEWERAGE NETWORK), SMALL SEQUENTIAL BATCH REACTORS STP, BAVAGI

EMPLOYER: TOWN MUNICIPAL COUNCIL [TMC] BYADGI-581106,

CONTRACTOR: SHRIRAM EPC LTD.

Prepared by

SHRIRAM EPC LTD.

TRAFFIC MANAGEMENT PLAN

JAN -2017 TO JUN- 2017

Location(KS-01, 18 Nov 2017)

Traffic Diversion: Chemelibent road and Sunnerdale Road for Pipe Laying and Manhole construction.

2.0	**Purpose**
	To prevent injury to persons and damage to property arising from site traffic and its transport
3.0	**Scope**
	The procedure is applicable to Chinkwin EPC Ltd. Sites
4.0	**Responsibility**
	It is the responsibility of the Project in charge and Construction Site Safety Officer to implement this procedure and ensure that delegated staff under their supervision carries it out. • Responsible for ensuring that manual movement to and from the workface does not cause damage to the works, the workforce or the public. • There is sufficient space to work safely in the workplace or environment that minimizes the risk of injury to workers, others, or damage to the work in hand.
4.0	**Procedure**
	Project in charge: Person responsible for the execution of the project.
5.0	**LEGAL REQUIREMENT**
	The Building and Other Construction Workers (Regulation of employment and Conditions of Service) Act 1998 and Control Rules 1999 Rule 45, 46 and the Motor Vehicle Act 1988.

TRAFFIC MANAGEMENT PLAN

JAN -2017 TO JUN- 2017

6.0	**Requirements**
6.1	**General**
	• All road works cause inconvenience and are a potential hazard to the safety of all road users and those employed in carrying out the work. • All the effects should be mitigated or reduced to the minimum and to ensure that the work are correctly 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 authorized personnel.
6.2	**Performance**
	• The client and CRZV's consultant Engineer should be consulted as regards the execution of the works and the safety measures which should be put in place. • Particular attention should be given to: a) traffic signs b) cones, c) barriers d) road hazard warning lights e) information boards and f) shoulding. • Use or necessity of traffic control options such as temporary traffic boards. • Access should be planned to eliminate dangerous movements of site traffic.

TRAFFIC MANAGEMENT PLAN

JAN -2017 TO JUN- 2017

	(e.g. wearing of safety shoes and personnel (e.g. wearing dust carriage/vest). • Provision of adequate lighting.
[illegible]	[illegible]
	• [illegible] • [illegible] • Provision of safety zone [illegible] shall be kept clear of all waste, material storage and people and shall be clear of working zone of the plant.
[illegible]	Operation / Drivers
[illegible]	• [illegible] • One copy of licence has been collected by Safety Department. Equipment • Drivers are made a daily inspection of their vehicles include steering, brakes, mirrors, lights, horn, tires and [illegible] wipers. • Safety Department along with Fleet department has been checking the vehicles monthly basis. • All vehicles have reverse horns and it is in working condition. • All vehicles periodic inspection has conducted.
[illegible]	Roads
	For safe operation we are following the below safety measure. • Safe width has been provided. • [illegible] • Safe walkway with proper guard has been provided. • Caution board has been placed in every location within the site. • [illegible] traffic lights have been provided.

TRAFFIC MANAGEMENT PLAN

JAN -2017 TO JUN- 2017

- [illegible] signs
- [illegible]
- [illegible]
- [illegible] warning lights
- [illegible] cones, and
- site lighting

- Adequate lighting has been provided.

6.3 **Signage:**

- [illegible] signage and signage provided must be adequately recognized.
- Ensure additional languages are used in signage so ensure messages are understood.

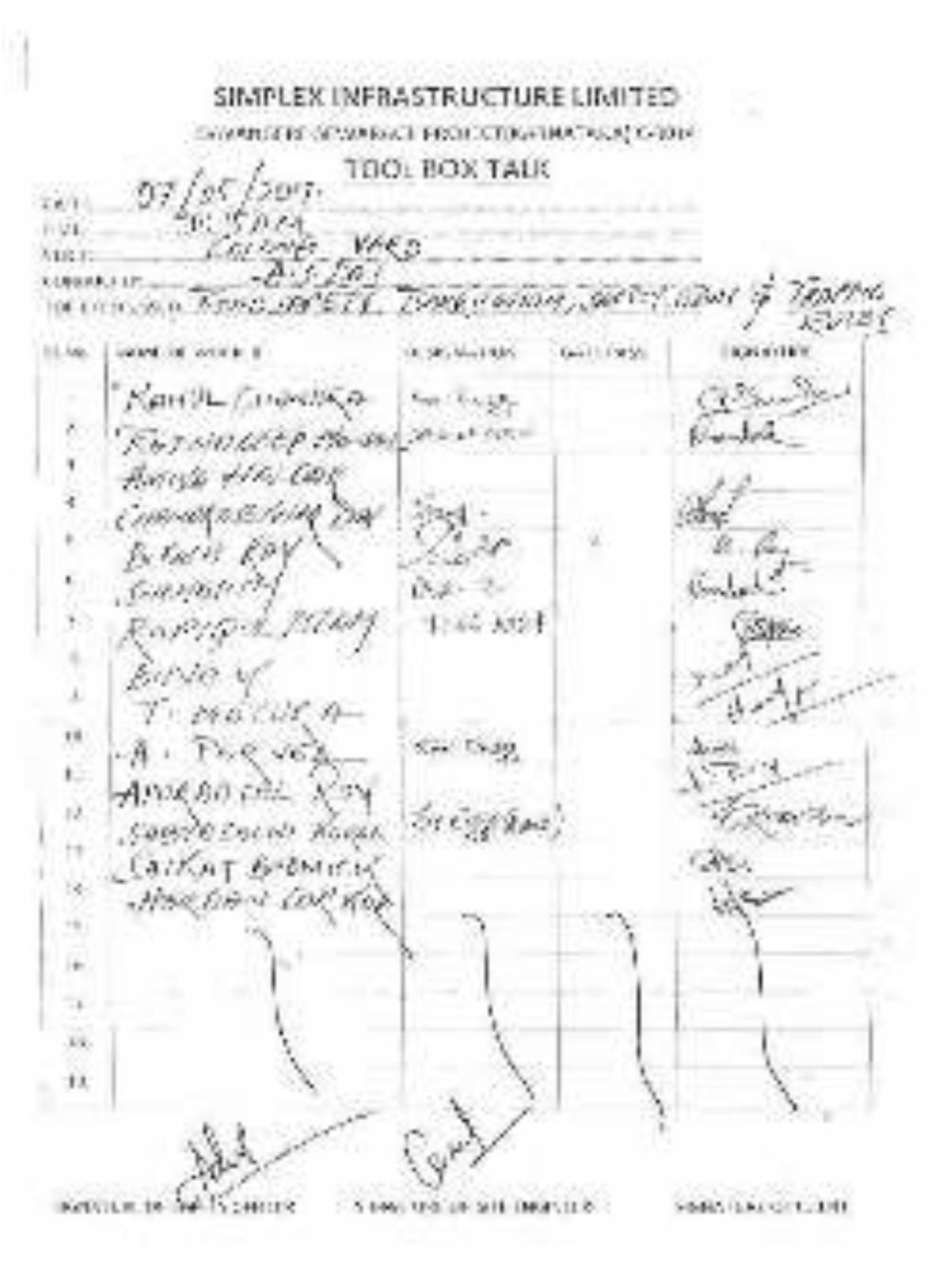
7.0 **Safety:**

- Ensuring the organisation's safety policies are to hand
- Development of site specific safety manual ensure that old [illegible] are [illegible] is present.
- Responsible for ensuring that material movements to and from the workface [illegible] damage to the works, the workforce or the public.
- Manage and maintain all our PPE stocks to an agreed number.
- Produce method statements, risk assessments ensure lifting plans are produced.
- Safeguard vulnerable road users from traffic and ensure [illegible] by the site.

Appendix 13

Sample Internal Training document- Contractor

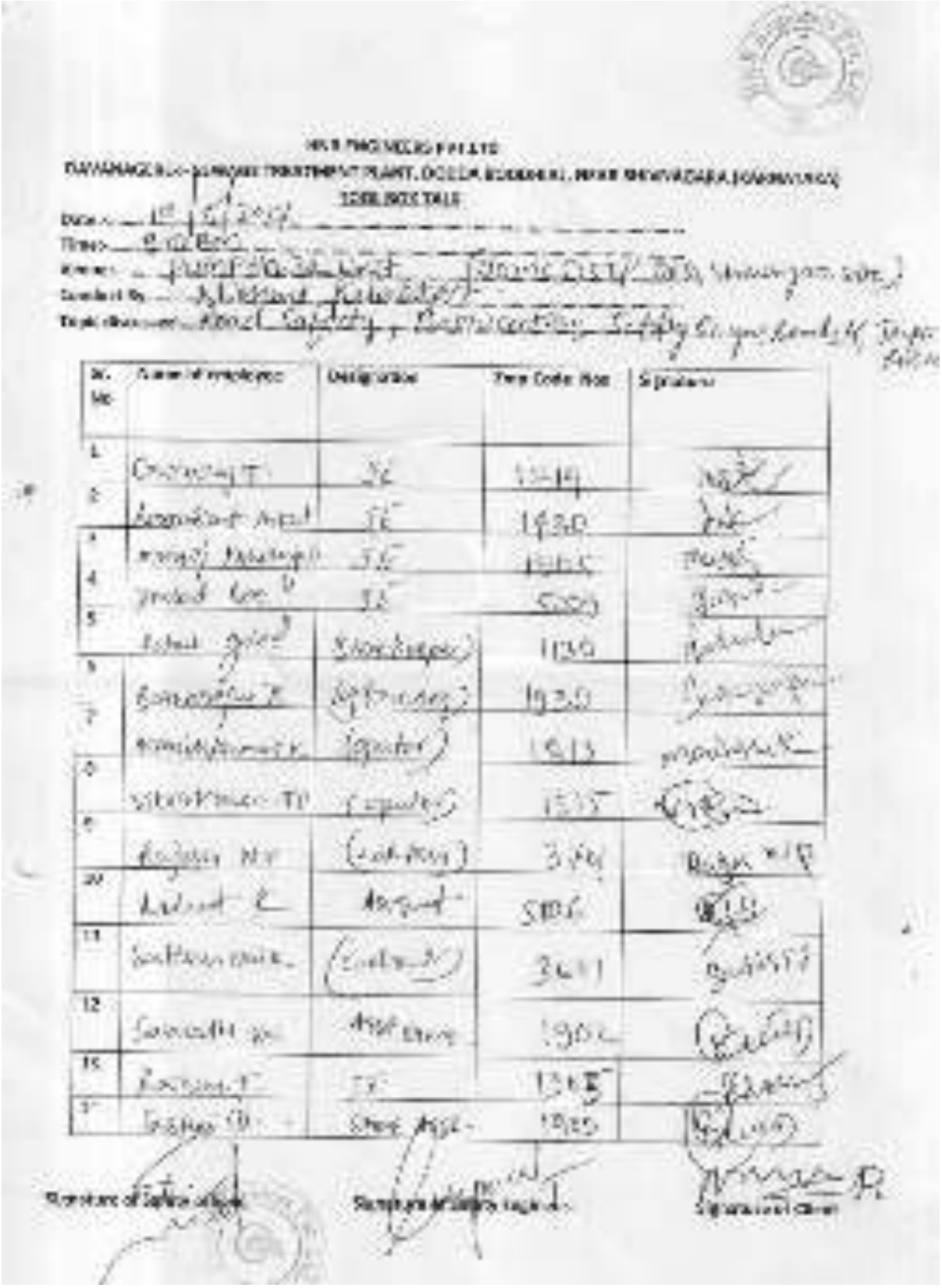
Davangere UGD



SIMPLEX INFRASTRUCTURE LIMITED

TOOL BOX TALK

Davangere STP



Sr. No.	Name of employee	Designation	Time Code/ Role	Signature
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3				
4				
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13				
14				

[illegible] PVT. LTD

[illegible]

[illegible]

Date: [illegible]

Venue: [illegible]

Subject: [illegible]

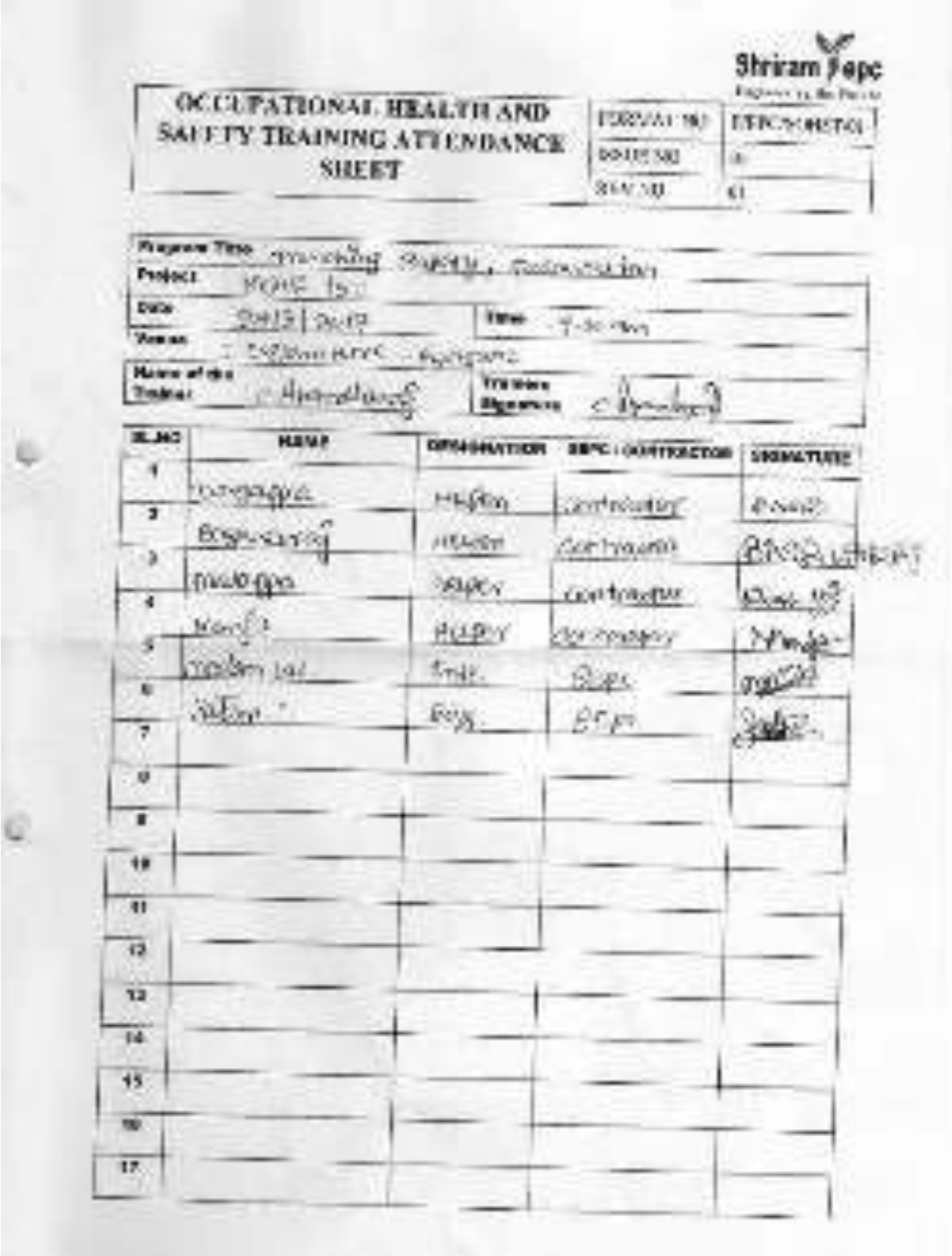
Name of Speaker: [illegible]

Sr. No.	Name of participant	Designation	Mobile No.	Signature
1	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]

Signature of Training Manager: Signature of Trainer: Signature of Trainee:

Harihar UGD

Byadgi UGD



Shriram Epc

OCCUPATIONAL HEALTH AND SAFETY TRAINING ATTENDANCE SHEET

Project	
Date	
Time	
Venue	
Name of the Trainer	
Trainer Signature	

SL.NO	NAME	DESIGNATION	SUB-CONTRACTOR	SIGNATURE
1				
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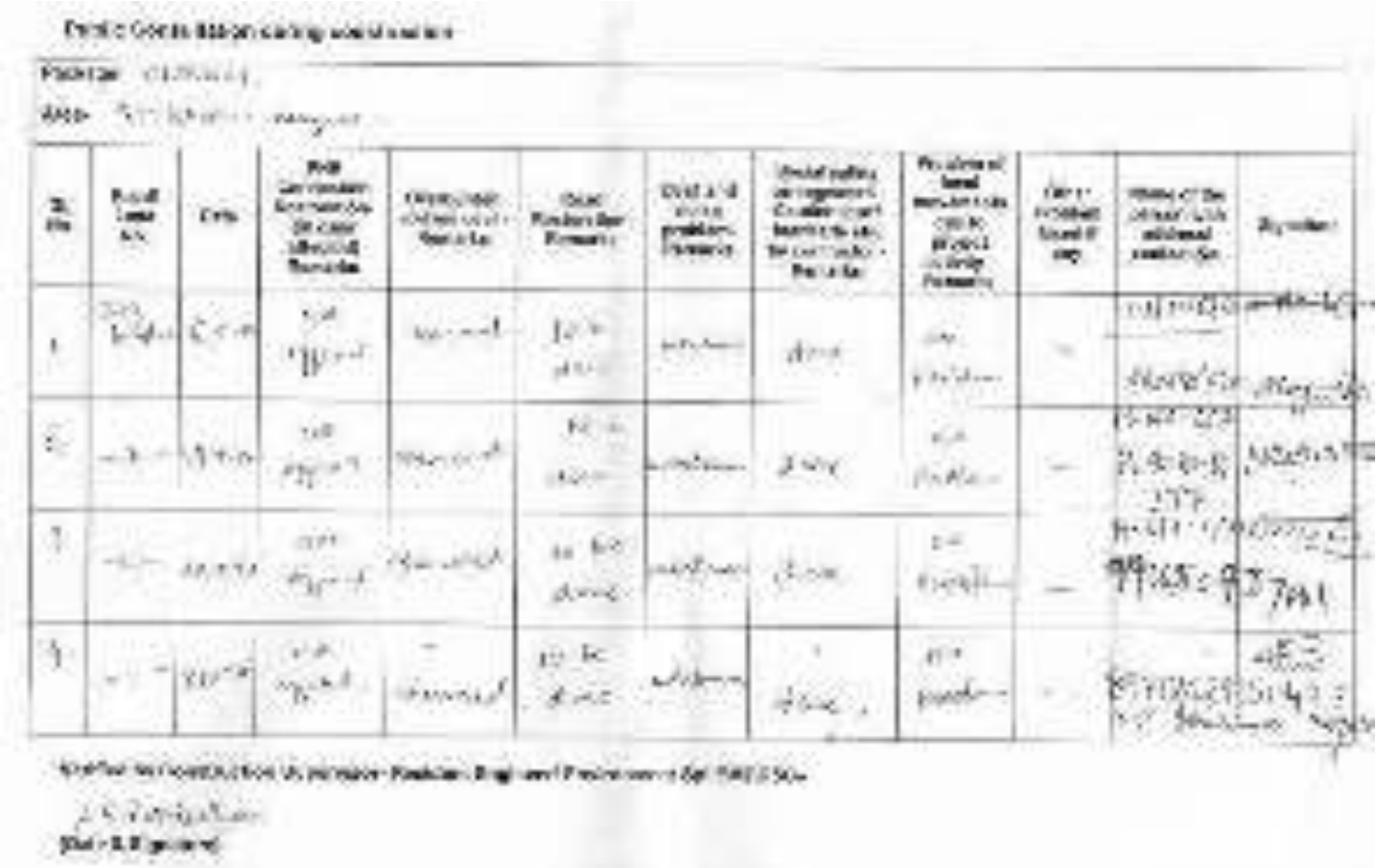
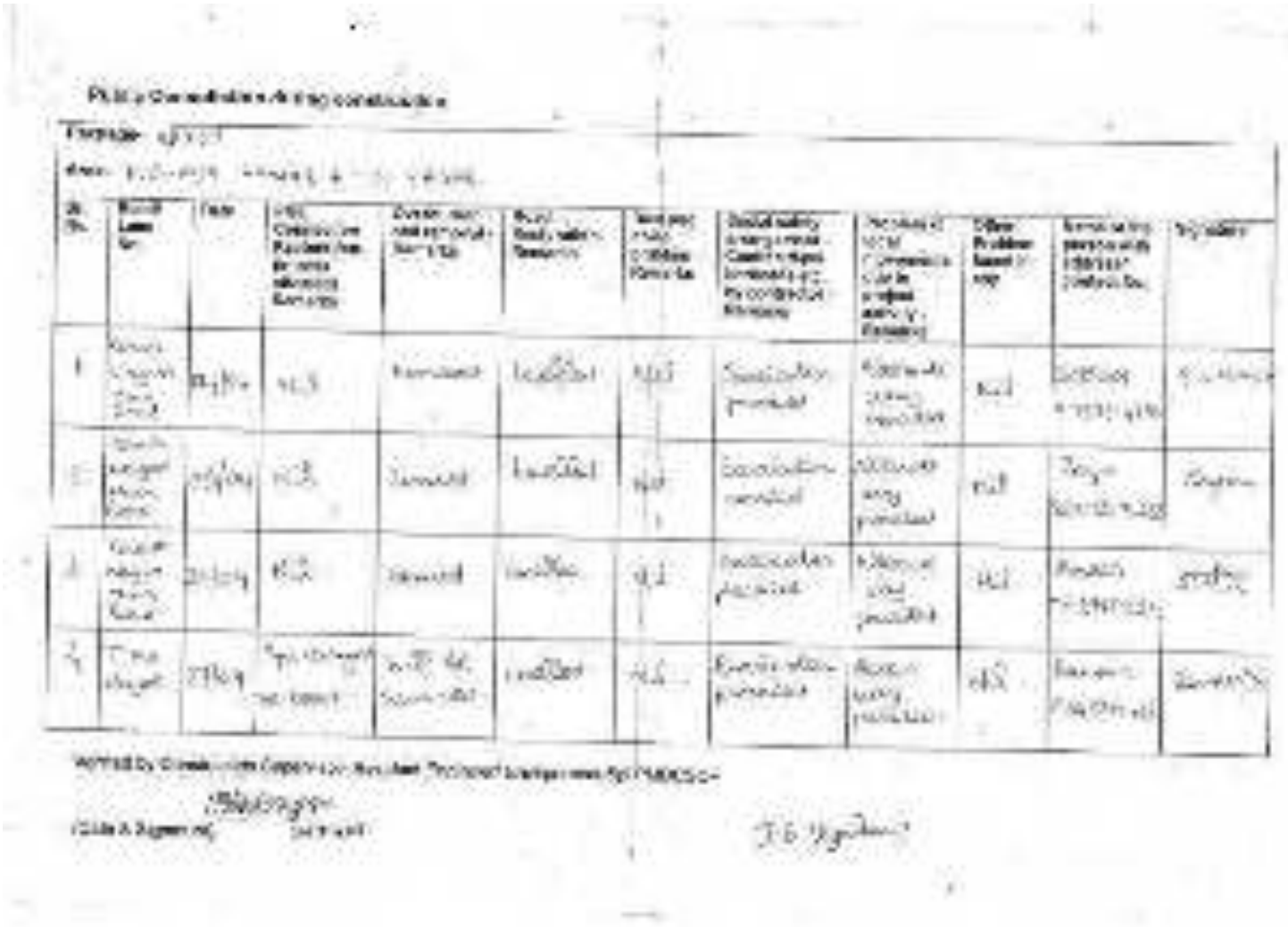
Appendix 14

Sample filled public consultation format

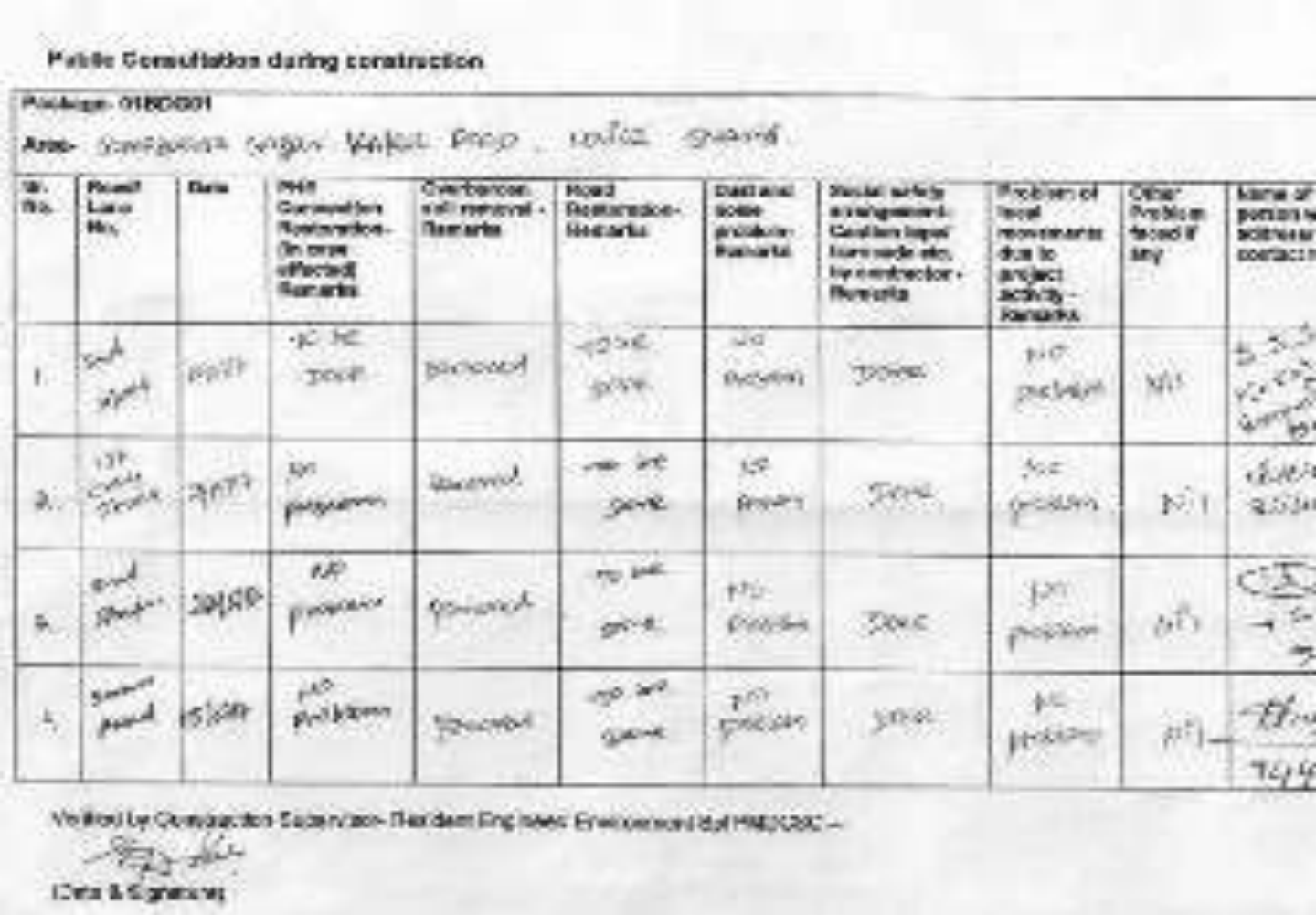
Package – Davangere UGD



Package UGD – Harihara



Package UGD= Byadgi



Public Consultation during construction

Package- 01BD001

Area- [illegible]

Sr. No.	Road Line No.	Date	PAH Compensation Resettlement- In case affected Remarks	Overburden soil removal - Remarks	Road Restoration- Remarks	Dust and noise problem- Remarks	Social safety arrangement- Caution tape/ barricade etc. by contractor - Remarks	Problem of local movements due to project activity - Remarks	Other Problem faced if any	Name of persons with address contact no
1.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Verified by Construction Supervision- Resident Engineer Environmental [illegible] –

(Date & Signature)

Consultation Photo

Consultation with residents at Davangere

Consultation with residents at Davangere

Consultation with residents at Davangere

Consultation with shop owners Davangere

Consultation with residents at Harihar

Consultation with residents at Harihar

Consultation with shop owners Harihar

Consultation with shop owners Harihar

Consultation with residents at Byadgi

Consultation with residents at Byadgi

Consultation with residents at Byadgi

Consultation with shop owners at Byadgi

Appendix 15

PUC certificate for Davangere STP package

UP16 AC 1909

Appendix 16

Letter from Superintending Engineer, Regional Project Management Unit for excess earth disposal instruction to contractors

Karnataka Urban Infrastructure Development & Finance Corpn. Ltd.,
Karnataka Integrated Urban Water Management and Investment Programme,
KUIDFC-KIUWMIP - DPMU,

Date: 24-10-2017

To,
The Project Manager,
M/s Simplex LTC Limited,
Hubli

Sir,

Sub: Engagement of Sewerage Drainer in Hubli City, Dharwad District,
Package No. [illegible] - Dumping of excess earth work.

With reference to the above, it is directed to dump the excess earth in the low lying areas or use the same for road restoration work of Hubli.

Please find this as most important and comply to the same.

Yours faithfully
-Sd/-
Superintending Engineer
KUIDFC-KIUWMIP - DPMU,
Dharwad

Copy to forward to:
1. The Task Manager, KUIDFC-KIUWMIP, Bangalore, for kind information.
2. The Deputy Project Director, KUIDFC-KIUWMIP, Dharwad, for kind information.

Copy to:
1. The Team Leader, KUIDFC-KIUWMIP, Bangalore, for kind information.
2. The Assistant Executive Engineer, KUIDFC-KIUWMIP, Hubli, for kind information.
3. The Town Engineer, HMC, Hubli, for kind information.

Superintending Engineer
KUIDFC-KIUWMIP - DPMU,
Dharwad

Karnataka Urban Infrastructure
Development & Finance Corpn. Ltd.,

Date: 24.10.2017

To

Sub:

With reference to the above, it is directed to dump the contaminated earth in the low lying open private income for rehabilitation work if feasible.

Please treat this as most important and comply to the same.

Yours faithfully,
-Sd/-
Superintending Engineer
KLIDFC-KUIDFC-KUWVIP-BPMC,
Bengaluru

Copy submitted to:
The Project Manager, KLIDFC-KUIDFC-KUWVIP, Bengaluru, for kind information.
The Deputy Project Director, KLIDFC-KUIDFC-KUWVIP, BPMC, Bengaluru, for kind information.

Copy to:
The Executive Engineer, KLIDFC-KUIDFC-KUWVIP, Bengaluru, for information.
The Assistant Engineer, KLIDFC-KUIDFC-KUWVIP, P.D., Bengaluru, for information.
The Deputy Town Planner, BBMP, Bengaluru, for information.

Superintending Engineer
KLIDFC-KUIDFC-KUWVIP-BPMC,
Bengaluru

Appendix 17

Environment Safeguards Training- Note

A. Refresher Orientation Program on Environmental Safeguards for Contractors and Engineers for KIUWMIP

Refresher orientation training program has been conducted by ADB Consultant and AEE, Environment specialist from PMU, KUIDFC, Bangalore on 19th January 2017 at Davangere for Executive Engineer Davangere , Team Leader of PMDCSC and other Engineers of PIU & contractors, safety officer of contractors. Following were attended in that training program.

Attendance sheet

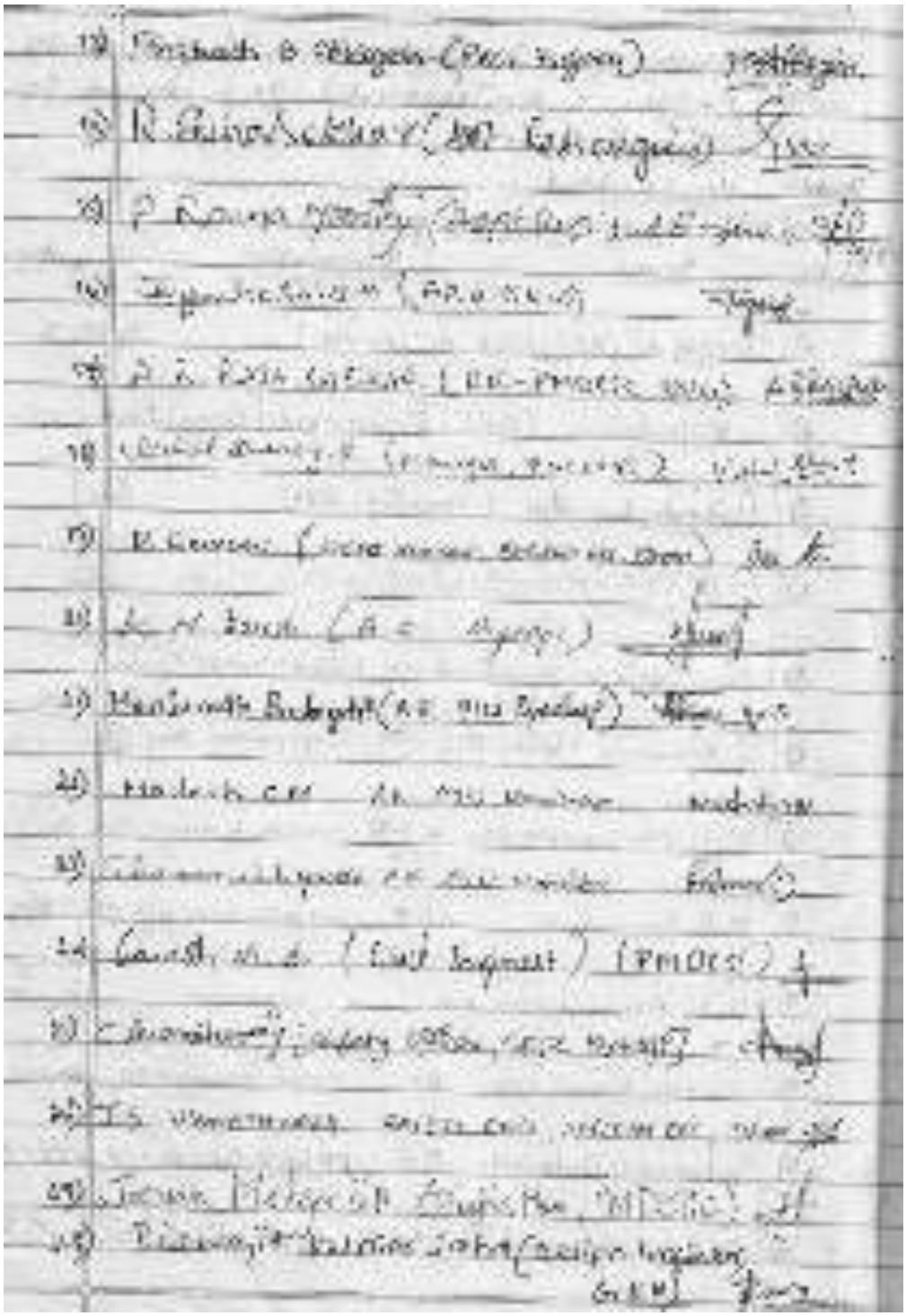


Photo: Safeguard Training

Photo: Safeguard Training

Photo: Safeguard Training

ENVIRONMENTAL SAFEGUARD – REVIEW MEETING AND ENVIRONMENT, HEALTH & SAFETY TRAINING PROGRAM FOR CONTRACTOR, CONSTRUCTION SUPERVISOR and ENGINEERS– Karnataka Integrated Urban Water Management Investment Program (KIUWMIP)

Safeguard review meeting cum training program has been conducted on safeguard compliance issues and application of Environmental Management Plan (EMP) at Karnataka Urban Infrastructures Development and Finance Corporation (KUIDFC) office at Davangere on 9th February 2017 afternoon.

Superintendant Engineer of KUIDFC Davangere started the meeting. Asst Executive Engineer, Asst Engineer of all PIUs; Team Leader, Resident Engineers and other Engineers of PMDCSC, Project Manager and Safety Officer of Contractor agency are participated in the review meeting cum training program.

The issues discussed like,

- Overall application of EMP and compliance of safety requirement
- Labour and Office Camp site management- requirement of proper sanitation and solid waste management
- Disposal / utilization of overburden earth , rocks, spoil materials after work
- Storage of construction materials
- Occupational and public safety during construction
- Community safety – complete use of caution tape and barricade
- Use of shoring in case of deep excavation more than 2.5 m
- Traffic management and spoil management during laying of pipes (as per requirement)
- Requirement of Pollution Under Control (PUC)/ No Objection Certificate (NOC) from concerned department and renewal of the same before expiry
- Requirement of monitoring data

Instruction is given to supervisor engineer and construction contractor to arrange weekly consultation/ training program particularly on safety and other safeguard issues for labourer.

Summary Instruction sheet for contractor, supervisor Engineers is attached as **Annex 1**

Attendance sheet attached as **Annex 2**

Photo: Safeguard Training

Photo: Safeguard Training

Photo: Safeguard Meeting

Dr. Ardhendu Mitra
Environment Specialist PMDCSC

Annex 1

Instructions for Contractor/ Supervisor- Environmental Safeguard- KIUWMIP

- Nomination of environment-safety officer in contractor team
- Setting up camp office with proper sanitation condition, solid waste management facility and sufficient drinking water supply. Non cutting of trees during setting up camp
- Removal / disposal of overburden/surplus earth/ stone, sludge materials at earliest without any accumulation at working sites - Use of overburden materials at site (preferred option)
- Proper disposal of other construction waste –Reuse in other projects
  - Site should be selected in consultation with PIU and concerned Supervisor Engineer of PMDCSC
- Proper storage of construction materials - wastage of materials to be checked. Slope should be avoided
- Felling of trees if done to be compensated by plantation (1:5 ratio)
- Scheduling of work without any social impact – movement of pedestrian (particularly during tourist/ festive seasons) or other disturbances etc.
- Regular water sprinkling (at least 2-3 times in a day during dry period) at construction site for arresting of dust – record should be maintain at site
- Covering of materials carrying vehicles in case of transportation of wind- blown material like sand
- Personnel safety of workforce – use of ear plugs (noise producing area), nose mask (dust producing area and sewer connection work), helmet, gloves, gumboots, safety belt etc at working sites (as per site condition). Use of gas detector instrument for sewerage pipe laying work
- Filling up trenches and restoration of road after pipe laying at earliest
- Arrangement of shoring, if required
- Instruction to material supplier/ contractor to arrange pollution under control (PUC) certificate for material carrying vehicles, equipments and machinery – Timely Renewal of PUC
- In case of purchase of stone aggregates consent to establish and operate of stone crusher should be collected from supplier
- No objection certificate from pollution control board for use of DG set(5 KVA and above capacity)
- Regular maintenance of noise producing machinery
- Arrangement of enclosure for noise producing equipment like generator, concrete mixture
- Implementation of traffic stop/diversion measures including use of safety tape/ barricade/ caution board at working sites with proper diversion sign
- Proper drainage of waste water/ rain water from working sites
- Arrangement of common medicine and First Aid box at camp site, site office and working area
- At all working sites there should be a display board which shows location and contact phone number of PIU/PMDCSC office and grievance redress cell and respective officers for registering public complain. Keep Grievance Redress register at PIU office for recording and addressing public complain.
- Display of all emergency contact number at STP and other construction site
- Awareness program on HIV/AIDS
- Maintain chance find protocol for archeological objects
- No use of child labour below 14 yrs age
- Carry out monitoring work base line & during construction (air, water, noise) as per schedule EMP
- Regular public consultation at all sensitive receptor within project influence area

Karnataka Integrated Urban Water Management Investment Program (KIUWMIP)

Environment, Health and Safety – Training Program and Review Meeting

Venue: Bangalore, PIU & PMDSC office

Date: 09.02.2017

Sr. No.	Name	Organization / Designation	Contact No. / E-mail	Signature
1.	[illegible]	[illegible]		
2.	[illegible]	[illegible]	[illegible]	
3.	[illegible]	[illegible]	[illegible]	
4.	[illegible]	[illegible]	[illegible]	
5.	[illegible]	[illegible]	[illegible]	
6.	[illegible]	[illegible]	[illegible]	
7.	[illegible]	[illegible]	[illegible]	
8.	[illegible]	[illegible]	[illegible]	
9.	[illegible]	[illegible]	[illegible]	
10.	[illegible]	[illegible]	[illegible]	
11.	[illegible]	[illegible]	[illegible]	
12.	[illegible]	[illegible]	[illegible]	
13.	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	

ENVIRONMENTAL SAFEGUARD TRAINING ON ENVIRONMENT HEALTH & SAFETY FOR CONTRACTOR, CONSTRUCTION SUPERVISOR and ENGINEERS OF HARIHARA AND BYADGI BULK WATER SUPPLY under ADB assisted Karnataka Integrated Urban Water Management Investment Program (KIUWMIP)

Safeguard training program/review has been conducted by PMDCS consultant Dr. Ardhendu Mitra and Sri. Gurupadaiah. K.M, AEE (Environment),PMU, Bangalore on safeguard compliance issues and application of Environmental Management Plan (EMP) for the Bulk Water Supply for Harihara and Byadgi towns at Karnataka Urban Infrastructures Development and Finance Corporation (KUIDFC) office, Davangere on 23rd June 2017 afternoon.

Asst Engineer of PIUs; Team Leader, of PMDCSC, Project Manager of new Harihar and Byadgi Water supply packages, Safety Officer of Contractor agency are participated in the review meeting cum training program.

The issues discussed like,

Health & Safety requirement

1. Currently valid Labour license certificate
2. Currently valid Workmen compensation insurance paper
3. Currently valid PUC Certificate for all vehicles and equipments engaged in the project
4. Grievance/complaint register at all work sites/camp office as per standard format. We know that grievance register available at site office but now supervisor engineer of concerned contractor to carry that register for recording of local complaint
5. Billboard showing name and address of officers of Borough grievance cells at all work sites
6. Accident register at camp office
7. Medical examination report of workmen every six month. This is pending for a long time
8. Document showing tie up with local doctor/nursing home/hospital
9. Display of Safety Officers' name and telephone number at work sites
10. First aid boxes with required medicines with valid dates at all work sites/camp site offices. Standardization of first aid box is required.
11. Toilet & Drinking water facilities at major work sites/camps
12. Fire fighting facilities at vulnerable work sites/camp office site/combustible material storage site
13. Rubber mat at high voltage electrical switch board area
14. Life jacket and rope at water front sites
15. Drawing showing locations of first aid boxes, fire fighting facilities, etc. updated every month- new requirement

Activity from Contractor- Environmental safeguard

Sr. No.	Activity / Documentation	Action plan	Remarks
1	Nomination/ engagement of Environment Health and Safety person from Contractor	Confirmation through letter from contractor to PIU, PMDCSC within 10 days	Qualified and trained in Environment, health and safety
2	Arrangement of tool box, safety training for workers and documentation	Within 10 days and to be continued on regular basis	Proper documentation is needed
3	Submission of method of statement	Before starting of the work and to be continued monthly basis	
4	Submission/ of Site specific EMP- as per present site condition	To be submitted within 20 days/ before starting of construction work	
5	Submission of traffic management plan with map and photo (in case of traffic	To be submitted within 20 days/ before starting of	

Sr. No.	Activity / Documentation	Action plan	Remarks
	diversion)	construction work	
6	Submission of spoil management plan (as per present estimation of spoil)	To be submitted within 20 days/ before starting of construction work	
7	Health and safety plan	Immediately for review and finalization	
8	Submission of PUC certificate for all vehicles (own) and equipment engaged in construction work	Before start of physical work	
9	Submission of valid labour license	Before start of physical work	
10	Submission of valid Workman compensation insurance policy	Before start of physical work	
11	Consent for DG set (5 kvA and above) if deployed	As per requirement. Before start of physical work	
12	Opening of accident register	Before start of physical work	
13	Opening of grievance redressal register	Before start of physical work	
14	Recoding of site work photographs	Continuous process	
15	Arrangement of display board with work detail and contact number for complaint suggestion /as per GRM)	At earliest. Before start of physical work	
16	Arrangement of First aid box at all working sites and camp/site office	Immediately	
17	Carry out air quality monitoring at 4 working locations	Immediately – before 28th June	In consultation with PMDCSC
18	Carry out noise level monitoring at 4 working locations	Immediately – before 28th June	In consultation with PMDCSC
19	Carry out water quality monitoring at 4 working locations (in case of available water source nearby)	Immediately – before 28th June	In consultation with PMDCSC
20	Filling up and submission of daily-weekly environment monitoring format	After start of construction activity. Within 5th day of next month	Keep the filled format with contractor and submission on monthly basis
21	Filling up and submission of monthly environment monitoring format	After start of construction activity. Within 5th day of next month	
22	Submission of filled public consultation format	After start of construction activity. Within 5th day of next month	

Photo: Safeguard Training

Photo: Safeguard Training

Photo: Safeguard Training

Attendance Sheet

Sl. No.	Name	Organisation / Designation	Contact No./Email	Signature
1				
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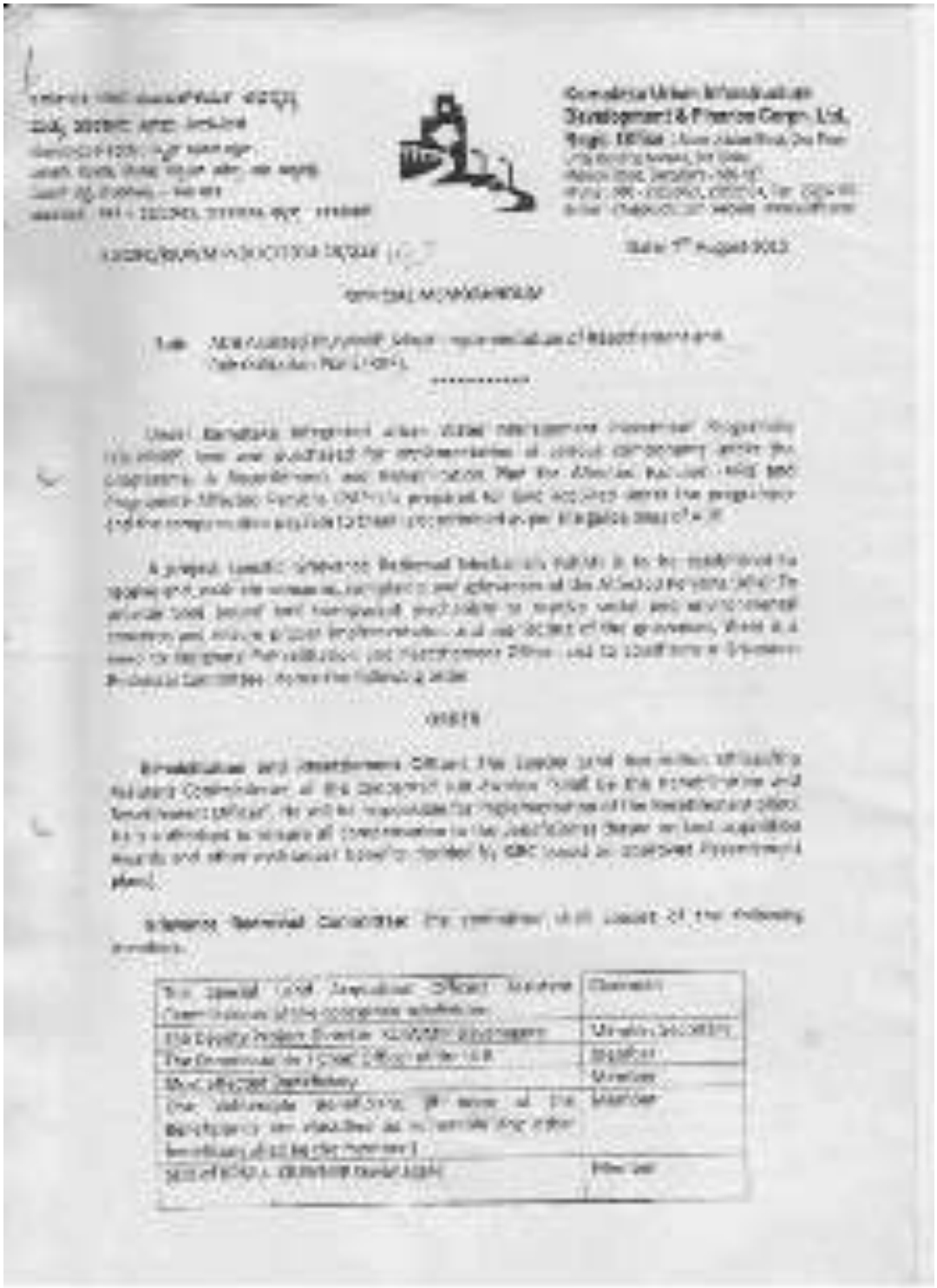
Sl. No.	Name	Organization Designation	Contact Number/Email	Signature
12	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]

Appendix 18

GRM – GRC Notification



Development & Finance Corp. Ltd.

Date: 1st August 2013

	Chairman
	Managing Director
	Member
	Member
	Member
	Member

[illegible]

[illegible]

[illegible]

KUIDFC

[illegible]

Appeals against the [illegible] DRC are to be [illegible] Deputy Commissioner [illegible] District.

Internal Monitoring: Implementing NGO or the assignee bank will be responsible for internal monitoring.

External Monitoring: The DRC KUIDFC Bangalore shall be the external monitoring agency.

Managing Director
KUIDFC, Bangalore

[illegible]

Cc:
1) [illegible] KUIDFC Bangalore
2) The Deputy Commissioner, Chamarajanagar District
3) The Special Land Acquisition Officer/Assistant Commissioner of the concerned sub-division under Chamarajanagar District
4) [illegible]
5) [illegible]

Sample filled Grievance Register

Davangere UGD

GRIEVANCE REDRESS RECORD

Name of the Project: Separation of Sewerage System in Davangere City Ward: 1 & 3 No: 8

Name of the Client: KUIDFC

Name of the Consultant: SIKA

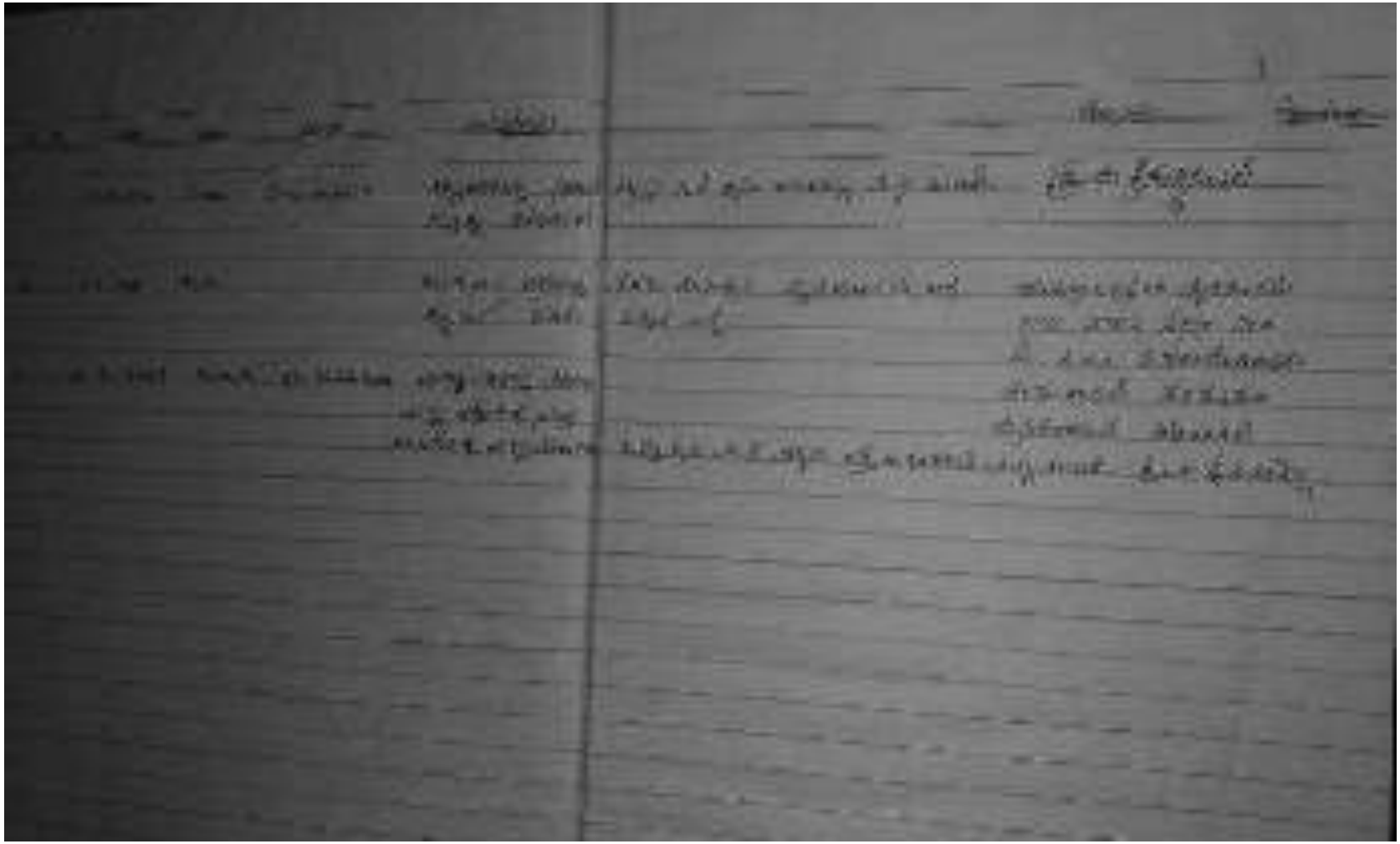
Name of the Contractor: Shanpiex Infrastructure Ltd.

Contract Period: 36 Months

Complaint No.	Date	Complaint through (Phone/Letter/Visit)	Name of complainer	Complaint Details & Location	Action taken by Contractor/PMU/PIU	Date Case Resolved (Date required for closure)	Remarks/other action if any
7	4-01-07	By phone 28.01.07	[illegible]	Street lights 14th Cross	Manhole cleaning & [illegible]	[illegible]	Complete
27		By phone & verbally	[illegible] Bi.Bi Ayesha	[illegible]	Motor [illegible]	[illegible]	Change [illegible] PTW Road Need

Harihar- UGD & STP

Byadgi – UGD & STP



Appendix 20

Accident Record

Harihar – UGD

Sharbatsons Pepsi

INCIDENT INVESTIGATION REPORT	

Comments:

Notes:

- [illegible]
- [illegible]
- [illegible]

Corrective Action Plan Implementation Status of Contractors

SIMPLEX INFRASTRUCTURES LIMITED

[illegible]

DATE- 24.10.2017

[illegible]

Project: [illegible]

[illegible]

Sr. No.	Corrective Action Plan	Status
1	[illegible]	[illegible]
2	[illegible]	Training provided to 21 labourers, [illegible]
3	[illegible]	[illegible]
4	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

HNB ENGINEERS PVT. LTD.
Engineers & Turnkey Contractors
[illegible]

Project: Improvements to sewerage system in Devangere (STPs)- DBO for 20 MLD SBR STP & DBO for 5 MLD SBR STP, Package No. 01DVG01A

Contractor agency: HNB Engineers Pvt. Ltd.

Sr. No.	Corrective Action Plan	Status
1	Use of PPE should be at all times as per site condition and work type.	Training provided to all labourers, staffs for complete use of PPE. Improvement noted
2	Removal of scrap and construction material is needed from Devangere STP premises.	Already done from working sites. Project almost completed
3	Complete use of caution tape and barricade at excavation sites as per requirement.	Caution tape used as per requirement

The Corrective Action Plan as suggested agreed and action already taken and ENP application ongoing.

Name: Mithilesh Kulkarni

Environmental & Safety Officer

Regd. Office : [illegible]
TEL : [illegible]
E-mail : [illegible]

Shriram epc
Engineering the future

Project: [illegible]

Client: [illegible]

Sr. No.	Corrective Action Plan	Status
[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]
3	[illegible]	[illegible]
4	[illegible]	[illegible]
5	[illegible]	[illegible]

The Corrective Action Plan as suggested [illegible]

Name: [illegible]

Environmental Manager Office

Project: Design, Build, Operate & Maintain [illegible] for Dindigul [illegible] from covering [illegible] STP in [illegible], network and [illegible] of one septic tank and provision of HSCs. Package No. [illegible]

Contractor Agency: Shriram EPC- Eurotek Environmental Private Limited – JV

Sr. No.	Contractor's Action Plan	Status
1	Arrangement of [illegible] all information [illegible] available information for [illegible] including [illegible] before [illegible]	Notice board display board provided [illegible] information related to work provided [illegible]
2	Use of [illegible] to all [illegible] on [illegible] condition and work [illegible]	Training provided to all [illegible] complaint use of PPE. [illegible] valid. Process ongoing
3	[illegible] of excess earth spoil from work site or [illegible]	Done from [illegible]
4	[illegible] use of caution tape and [illegible]	Safety [illegible] caution tape used

The Corrective Action Plan is [illegible] agreed and action [illegible] the EMP applicable [illegible]

[illegible]

Environmental Safety Officer

[illegible]