ENVIRONMENTAL STATEMENT 2022-23

KDH OPENCAST PROJECT
N K AREA, DAKRA

September, 2023

CENTRAL COALFIELDS LIMITED

ENVIRONMENT DIVISION

Ranchi

EXECUTIVE - SUMMARY

1.0 BACKGROUND

K. D. Hesalong Opencast project of Central Coalfield Ltd is situated in North Karanpura Coalfield. The lease hold area is being expanded. The mine capacity is 4.5 MTY. The project produced 0.4322 MT of coal during the year 2022-23. The expansion of present quarry requires an additional 186.61 Ha of land. Diversion of 130.36 ha of forest land was cleared by the Forest Department. A comprehensive Environmental Management Plan (EMP) for this project (4.5 MTY), has been formulated by RI-III of CMPDI. EC for normative capacity of 4.5 MTPA and peak capacity 5.00 MTPA has been accorded by MOEF vide reference J-11015/311.2010-IA-II(M) dt. 30.01.2015 and J-11015/311.2010-IA-II(M) dt. 14.07.2020.

This report is prepared with a view to fulfill the statutory obligations laid down by the Ministry of Environment & Forest.

2.0. FINDINGS:

Environmental Statement report reveals the following facts regarding environmental aspect of this project

i) The concentration of SO_2, NOx and CO in ambient air in core zone is well within the permissible limits.

ii) The concentration of SPM in core zone is within permissible limits at all sampling stations.

iii) The quality of sump water at the disposal point is meeting the prescribed standards with respect to all parameters.

iv) The noise level in the core and buffer zone is not crossing the threshold value of 75 dB (A)

v) The plantation over 24 Ha O.B. dump in the FY 2014-15was completed by forest department. 2.5 km of Roadside plantation completed in monsoon 2016. Plantation in 2 ha gap plantation has been completed in monsoon 2017, 4 ha of plantation has been completed in monsoon 2018.

vi) At present, the entire volume of OB generated is being reutilized for back – filling.

vii) The volume of waste water generated from the mine, workshop and colony is 4500 m^3/day, 10m^3/day and 379m^3/day from mine, workshop and colony respectively.

viii) No hazardous waste material is being produced either from any process or any pollution control facilities.

SUMMARISED DATA

1.	Production capacity	:	4.50 MTY
2.	Mineable Reserve	:	87 MT
3.	Total Volume of O.B.	:	164.99 M m^3
4.	Average Stripping Ratio	:	1.54 m^3/Te
5.	Total land requirement	:	710.70 Ha
6.	Forest land requirement	:	257.11 Ha
7.	Life of the Project	:	25 Years
8.	Average quality of coal	:	Grade G-9 and G-10
9.	Total Average Rainfall / annum	:	1160 mm
10.	Temperature	:	
	i. Maximum	:	45^0 C
	ii. Minimum	:	10^0 C

11. Predominant Wind Direction and Av. Wind Velocity : South to North, 5.2 Km/hr

12. Magnitude of waste generated

i. Waste water discharge from

a. Colony	:	4500 m^3/day
b. Workshop	:	10 m^3/day
c. Mine	:	379 m^3/day

ii. Solid Waste.

a. Top Soil	:	nil
b. O.B.	:	**0.888 million m^3**

ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2023

PART-A

I. Name and Address of the mine

NAME	: KDH OPENCAST PROJECT
POST	: DAKRA
DISTT.	: RANCHI, JHARKHAND

II.	INDUSTRY CATEGORY	: PRIMARY
III.	Date of last Environmental Statement Report submitted	: September-22
IV.	PRODUCTION CAPACITY	: 4.50 MTY
V.	YEAR OF STARTING	: 1972

PART - B

WATER AND RAW MATERIAL CONSUMPTION

1. WATER CONSUMPTION (cu.m/day)

a. Mining

i.	Haul road dust suppression	:	58 m^3/Day
ii.	Workshop	:	80 m^3/Day
iii.	Fire Fighting	:	11 m^3/Day
iv.	Others (Service building etc.)	:	6 m^3/Day

b. Domestic

i.	Colony	:	487 m^3/Day

Name of Product	Water Consumption per Unit of Product					
	Financial Year –2022-23			Financial Year –2021-22		
ROM Coal	Production (MT)	Industrial (m^3/Te)	Domestic (m^3/Te)	Production (MT)	Industrial (m^3/Te)	Domestic (m^3/Te)
	0.432	0.13	0.41	0.950	0.059	0.18

2. RAW MATERIAL CONSUMPTION:

Name of Products	Name of Raw Material	Consumption of Raw Material (per unit of output)	
		Financial Year –2022-23	Financial Year –2021-22
ROM Coal	POL	1.17 lt/cum	1.05 lt/cum
	Explosives	Coal :0.27 Kg/ Te	Coal :0.192 Kg/ Te

PART – C
POLLUTION DISCHRGED TO ENVIRONEMNT OF OUTPUT
(Parameters Specified in the consent issued)

Pollutants	Quantity of pollutants generated	Percentage variation from prescribed standards with reasons
Water		
a) Discharged from Mine	450 m3/day	
b) Workshop Effluent	10 m3/day	
c) Domestic Discharged	379 m3/day	Not applicable
Air		
The SPM, SO2 and NOx are main pollutants generated from coal mining project.	The quantity of air pollutants from mine is difficult to measure. However, concentrations of air pollutants are measurable and are given in Annexure.	The results of air pollutants are under prescribed limits.
Noise		
Operation of HEMMs generated noise	Recorded noise levels are placed as Annexure.	The noise level in and around the project is under the prescribed limits.

PART - D

HAZARDOUS WASTES

(As specified under Hazardous Waste Management and Handling Rules, 1989)

Hazardous Wastes	Total Quantity	
	Financial Year –2022-23	Financial Year –2021-22
a)From Mining Process	NIL	NIL
b)From Pollution control facilities	NIL	NIL

PART - E
SOLID WASTES

Description of Solid Waste	Total quantity of solid waste generated in (Million m^3)	
	Financial Year –2022-23	Financial Year –2021-22
a) From mining process – i. Top Soil ii. Overburden	Nil 0.888 Mm3	Nil 0.8154 Mm3
b) From pollution control facilities	NIL	NIL
c) Quantity recycled or reutilized	The entire volume of Overburden removed during the process of coal winning is reutilized for back filling	

PART - F

PLEASE SPECIFY THE CHARACTERISTICS (INTERMS OF CONCENTRATION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTES AND INDICATE THE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES

Hazardous waste is not being produced either from mining operation or from any pollution control facilities.

During opencast mining, overburden and top soil are produced as solid wastes temporarily as these materials are used for land reclamation. In the FY 2022-23, 0.888 million cubic meter of overburden was generated.

The overburden consists of the following constituents:

1. Soil
2. Shale, sandy shale (including carbonaceous shale)
3. Alternate bands of shale and sand stone
4. Sand stone

DISPOSAL PRACTICE

External dumping of overburden is not being done. The entire O.B generated is being used for back filling. In order to control soil erosion from external dumps, foot drains (4x2) m has been provided to collect water flowing down the dump and carry it to the sedimentation lagoon. On the river side, the dump surface has been pitched with stone and boulder. Plantation has been done on some part of the dump and remaining part is being planted.

PART - G

IMPACT OF POLLUTION CONTROL MEASURES ON CONSERVATION OF NATURAL RESOURCES AND CONSEQUENTLY ON COST OF PRODUCTION

In order to carry out mining in an eco-friendly manner, following pollution control measures have been implemented.

1.0 ANTI AIR POLLUTION MEASURES

The following measures have been taken to control air pollution:

i) 25 number of static fixed water sprinklers have been installed at the siding

ii) 2 no of high capacity mobile water sprinklers are deployed at the siding and project for dust control

iii) Feeder breakers are equipped with water sprinkling system

iv) 4 numbers of sumps (total capacity 320000 m3) to serve as sedimentation ponds with high hydraulic retention time have been developed in mine to settle all the suspended particles.

v) Plantation on the OB dumps to prevent soil erosion

vi) 3 settling ponds have already been constructed.

vii) In Total 2.510 Km of Garland Drain has been constructed at KDH OCP at various locations as details given below.

Description of Garland Drain	Length in Km.
Garland Drain along OB Dump & CT Road	1.290
Garland Drain along old dump of 'B' Block	0.360
Garland Drain along CT Road near old CHP	0.210
Garland Drain along Boundary of outer side of Dozer Section	0.300
Garland Drain along Railway Siding	0.350
Total	**2.510**

viii) An area of 185.4 Ha has been reclaimed out of 277.95 ha of mined out area (till March 2022)

ix) Regular sprinkling of water on haul roads and other roads by 3 Nos. of 28 KL Mobile water sprinklers for dust suppression is continuously working.

x) Wetting of ROM coal before crushing in Feeder Breaker.

xi) Dust extractors have been fitted in all the drill machines as well as wet drilling arrangement is made.

xii) Water sprinkling on coal stock.

xiii) Plantation on 2 different reclaimed areas of total area of about 24 Ha by Forest Department in FY 2014-15. Road side plantation of about 3 km completed in monsoon 2016. Plantation in 2 ha gap plantation has been completed in monsoon 2017 and 4 ha of plantation has been completed in monsoon 2018.

xiv) Blasting is done during congenial atmosphere and technology of controlled blasting is practiced.

xv) Permanent wind breaking screen has been constructed

xvi) PM10 analyser has been installed at KDH Siding

xvii) CAAQMS installed at NK Area, CCL

2.0 ANTI WATER POLLUTION MEASURES

The following measures have been taken to control water pollution from the mine:

i) The workshop discharge is passed through Oil & Grease trap and the clear water from Oil & Grease trap is circulated for washing of HEMM.

ii) The mine water is pumped the main sump to sedimentation ponds (3 nos ponds in a series of dimension – 50m x 20m x 2.5m – 2500cu.m). Capacity of 3 nos of ponds settling suspended solids etc. the water from the third pond is used for haul road, railway siding, dust suppression.

iii) The catch drains has been constructed around the foot of the O.B. dumps in order to collect surface runoff water from the dumps and convey them to the settling ponds.

3.0. ANTI NOISE POLLUTION MEASURES

i) Blasting operation is carried out between 12.30 PM to 3.00 PM.

ii) Result of noise monitoring; reveal that the noise level is well below well below the prescribed limit.

4.0. MEASURES FOR RECLAMATION OF LAND

Overburden generated during mining is being dumped into decoaled area. After the completion of the backfilling operation, it is proposed to start technical and biological reclamation of the internal dumps. At the end of mining operation, some decoaled area will remain empty, which would be used for storing rain water. The presence of such a water body will help in increasing

the moisture content of soil of adjacent area and ultimately it would promote the growth of vegetation.

PART - H

ADDITIONAL INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION

In future, investment will be made in following heads for further improvement of environment around the project:

i. The plantation will be done over vacant space within the mine leasehold boundary.

ii. Scheme will be prepared adjacent to mine boundary for Damodar River Action Plan.

PART - I

ANY OTHER PARTICULARS IN RESPECT OF ENVIRONMENTAL PROTECTION AND ABATEMENT OF POLLUTION

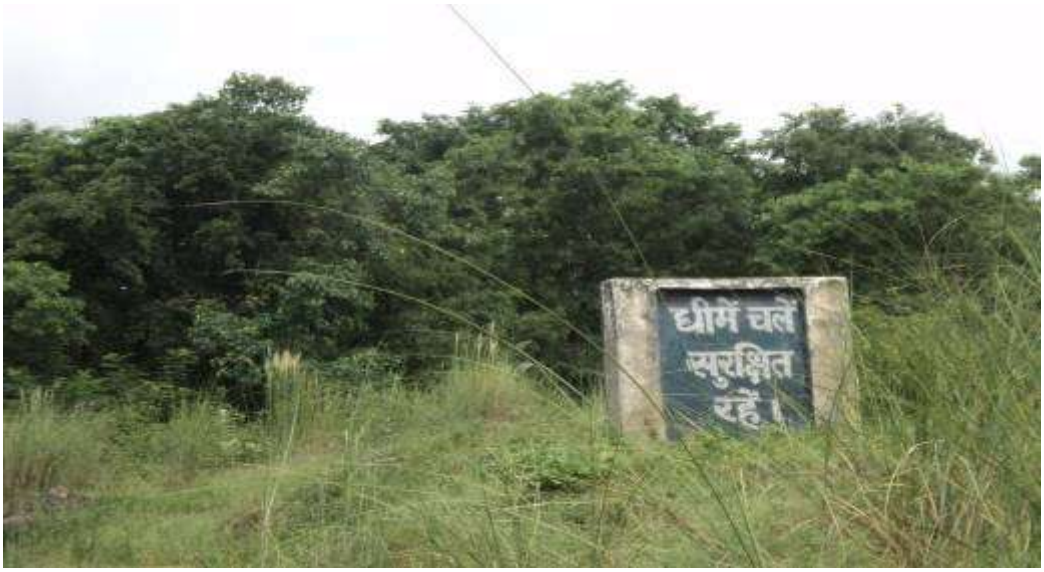
A comprehensive Environmental Management Plan (EMP) was prepared by Regional Institute - III of CMPDI. It was approved by MOEF vide letter No. J-11015/311.2010-IA-II(M) dt. 30.01.2015. The implementation of the EMP is under progress and the same is also reviewed from time to time. The regular monitoring of the ambient air and water quality is being done in and around core zone and the quarterly monitoring report is submitted to the Jharkhand State Pollution Control Board, Ranchi and Ministry of Environment & Forest, New Delhi .

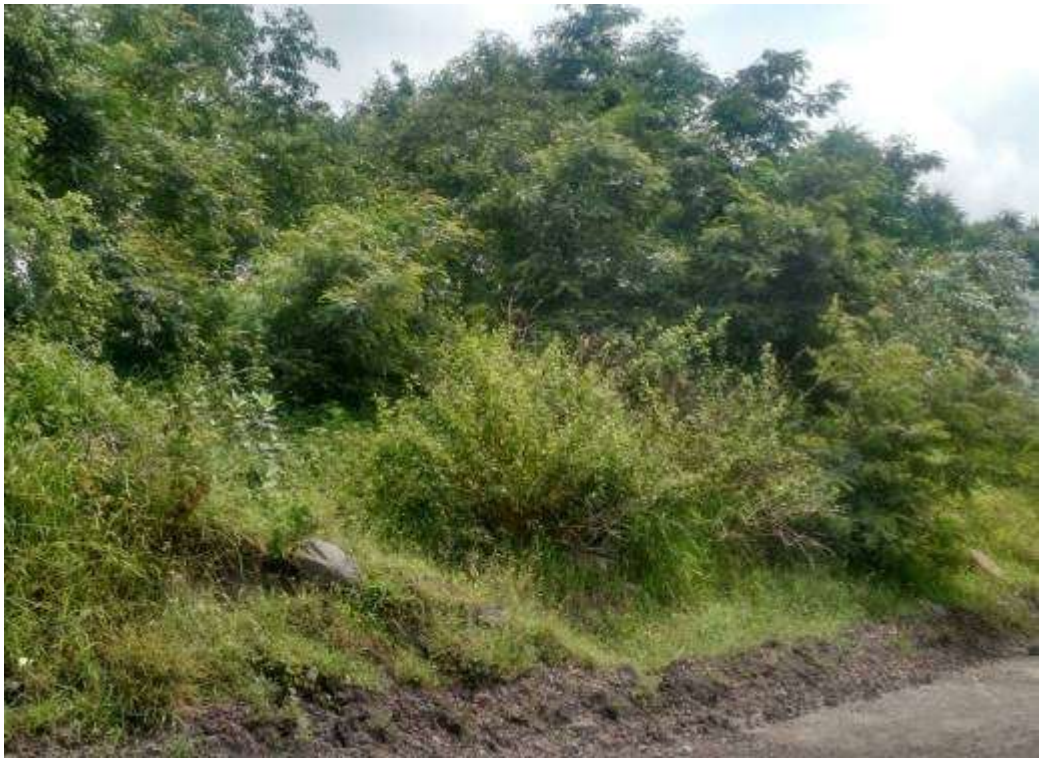
Dy Manager (Envt) NK Area	Environment Officer/IC KDH OCP NK Area	Project Officer KDH OCP NK Area

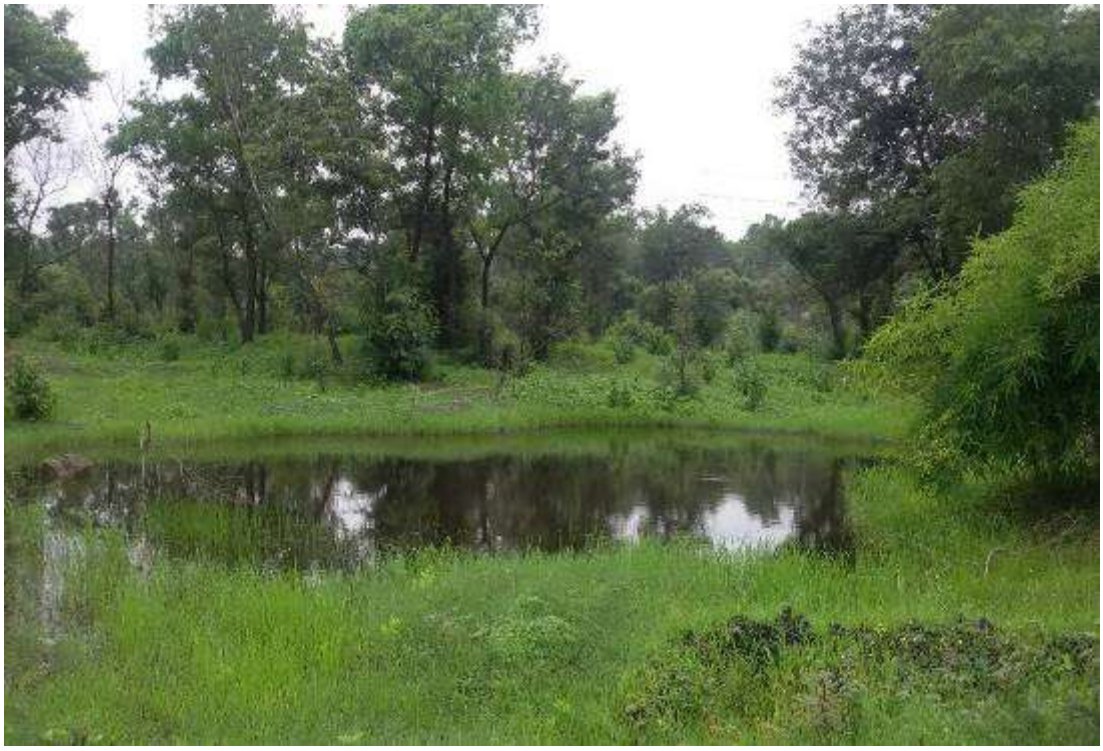
Annexure B
Plantation in KDH OCP

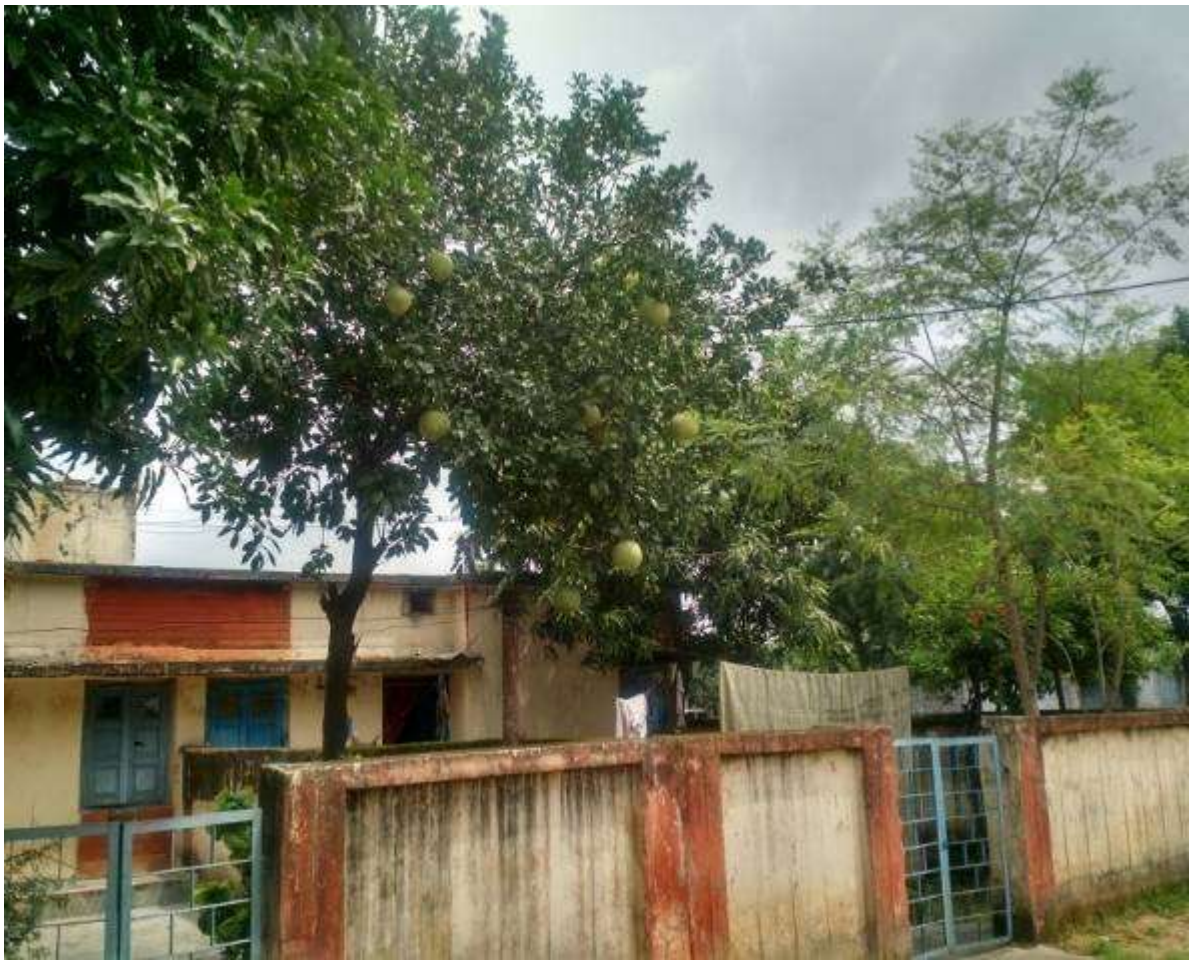
Name of Project	Year of plantation	Area	Category of land	Nos. of plants planted	Main species
KDH OCP	1992-'93	31.00 Ha.	O.B.Dump	72,975	Acacia, Gamhar, Sisham, Subabul, Karanj, Kathsagwan, Chakundi, Eucalyptus, Ber, Amla, Emli, Khair, Babul, Bamboo, Menzium, etc.
	1994-'95	1.00 Km.	Avenue (along railway track)	2,000	
	1998-'99	20.05 Ha. 2.00 Km.	O.B .Dump Avenue (along haul road)	51,125 6'510	
	2000-'01	18.00 Ha. 9.30 Ha. 0.60 Km.	O.B.Dump Plain land Avenue (colony)	45,000 23,250 2'400	
	2001-'02	4.00 Ha.	O.B.Dump	10'000	
	2002-'03	4.00 Ha.	O.B.Dump	10'000	
	2005-'06	20.00 Ha.	O.B.Dump	50,000	
	2006-'07	5.00 Ha.	O.B.Dump	12,500	
	2007-'08	4.00 Ha.	O.B.Dump	10,000	
	2008-'09	6.00 Ha.	O.B.Dump	15,000	
	2012-'13	33.00 Ha	O.B.Dump	82,500	
	2014-15	23.00 Ha	O.B Dump	57,500	
	2016-17	2.00 Ha 3.0 km	Colony + blanks Road side	5000 1200	
	2017-18	Nil		Nil	
	2018-19	4.00 ha	OB Dump	10,0000	
Total		**172.05 Ha. + 11.30 Ha. + 6.60 Km.**	**O.B. Dump / Plain land / Avenue**	**4,66,960**	

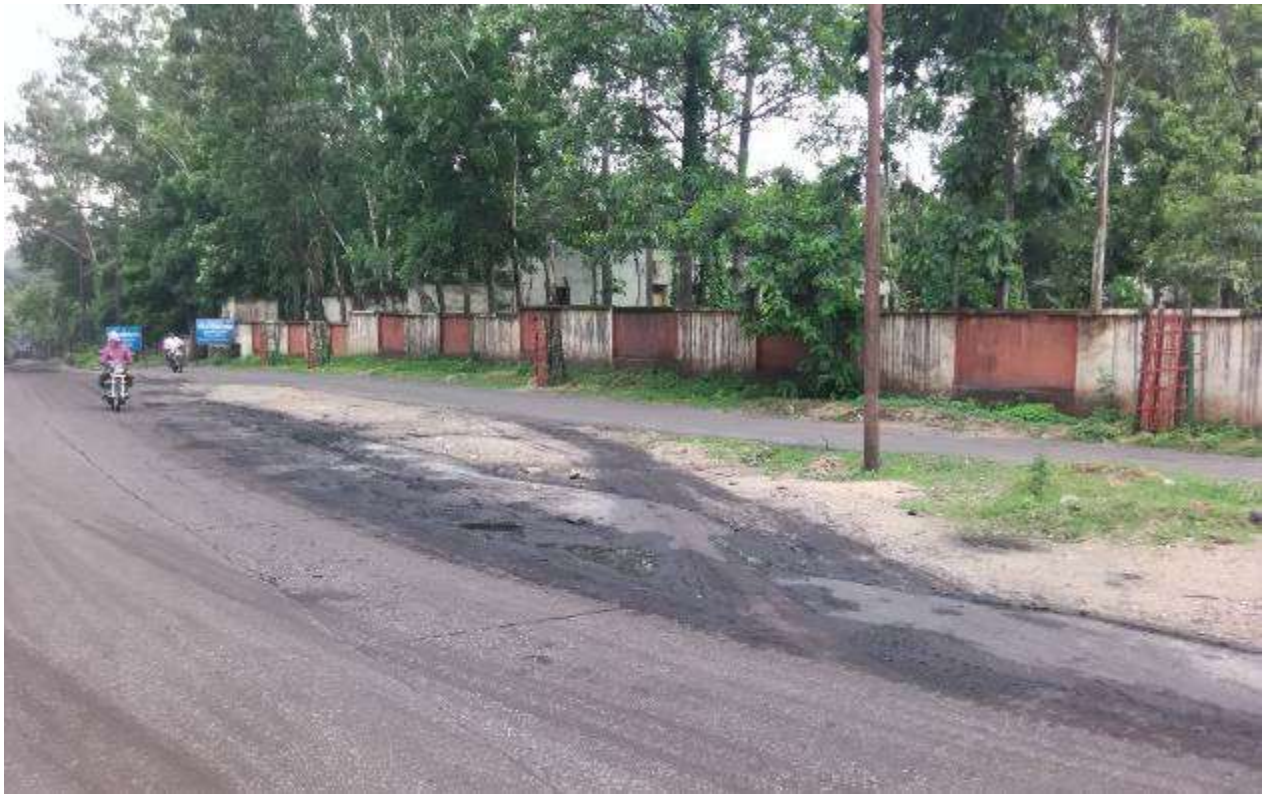
Photographs of Plantation in KDH OCP

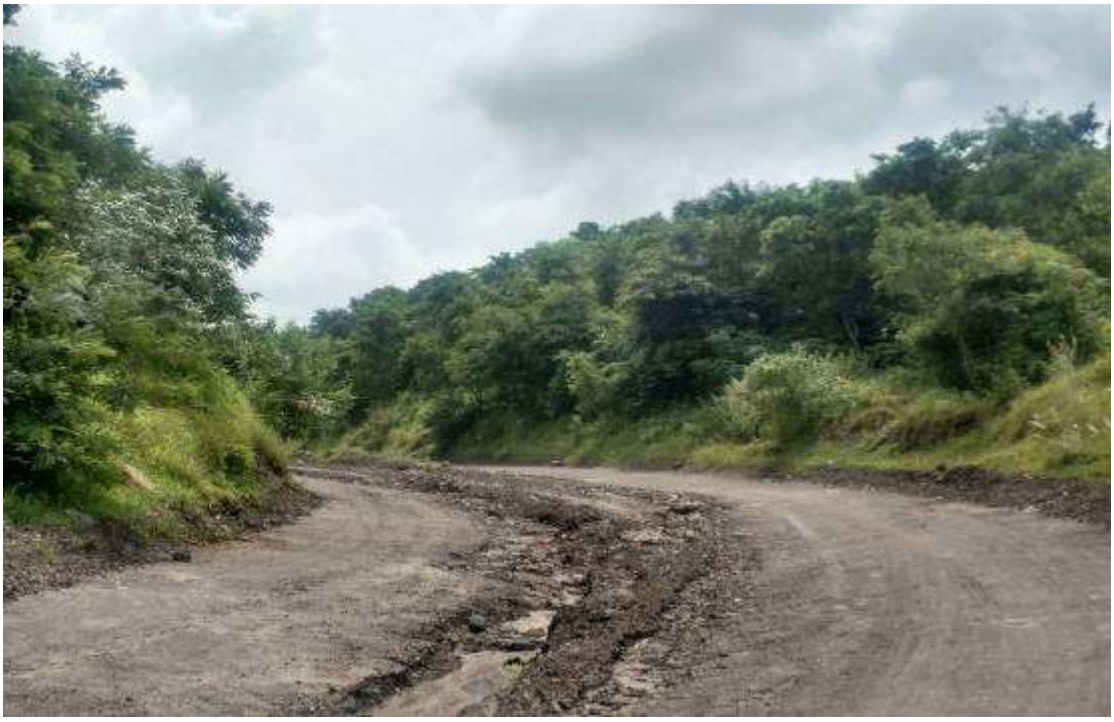


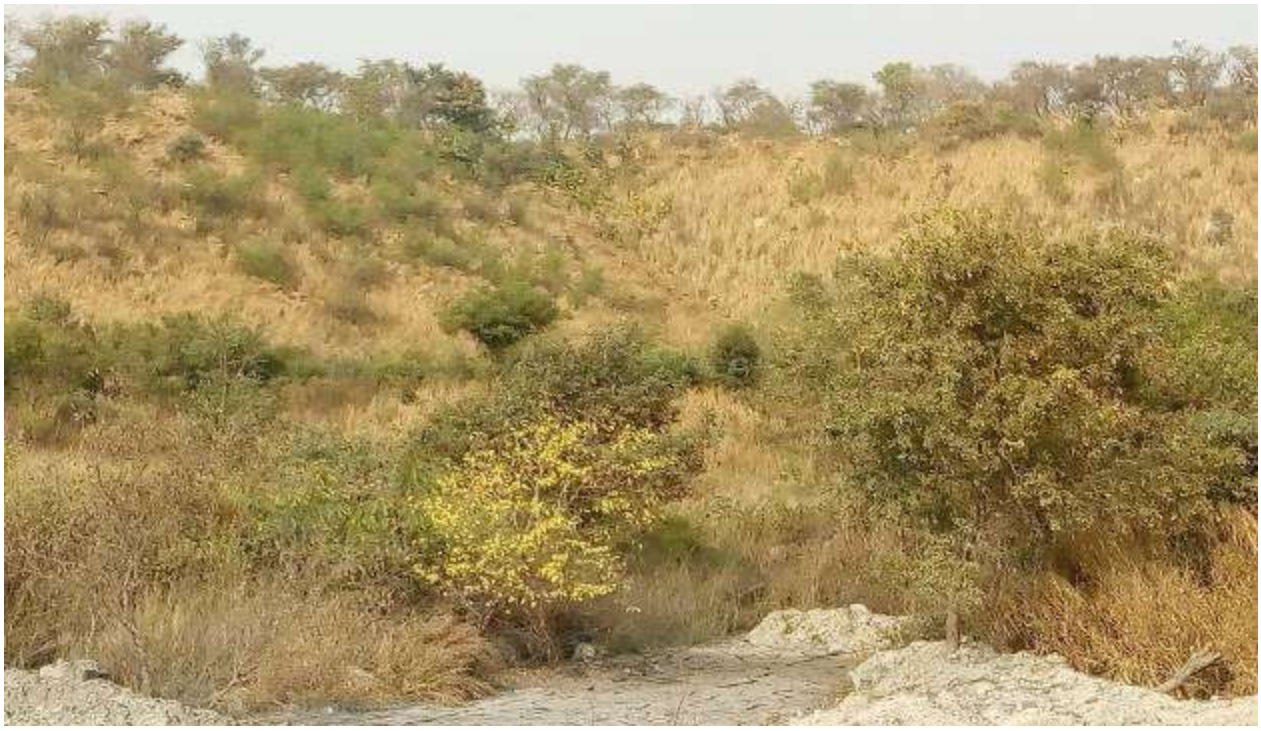




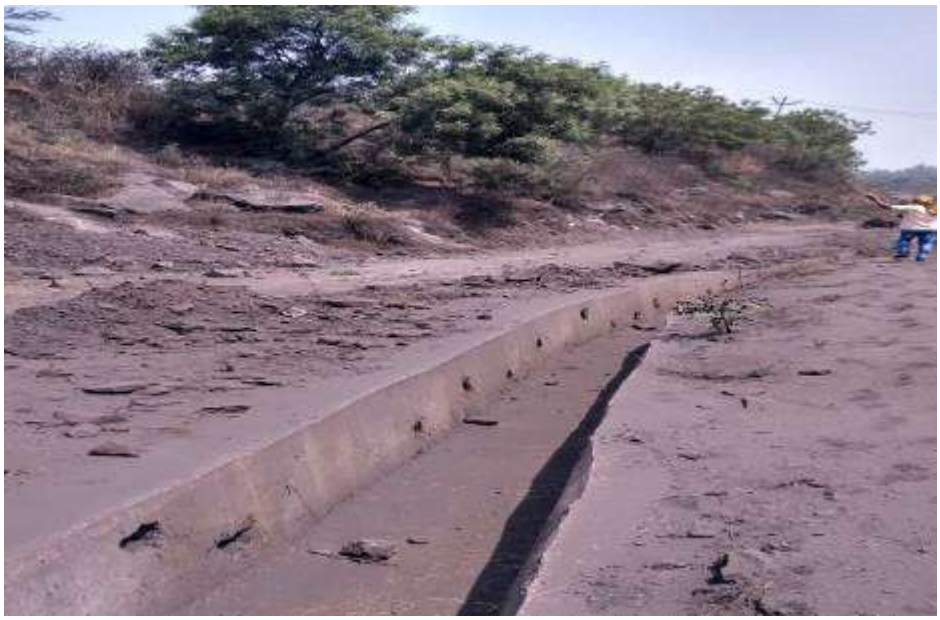


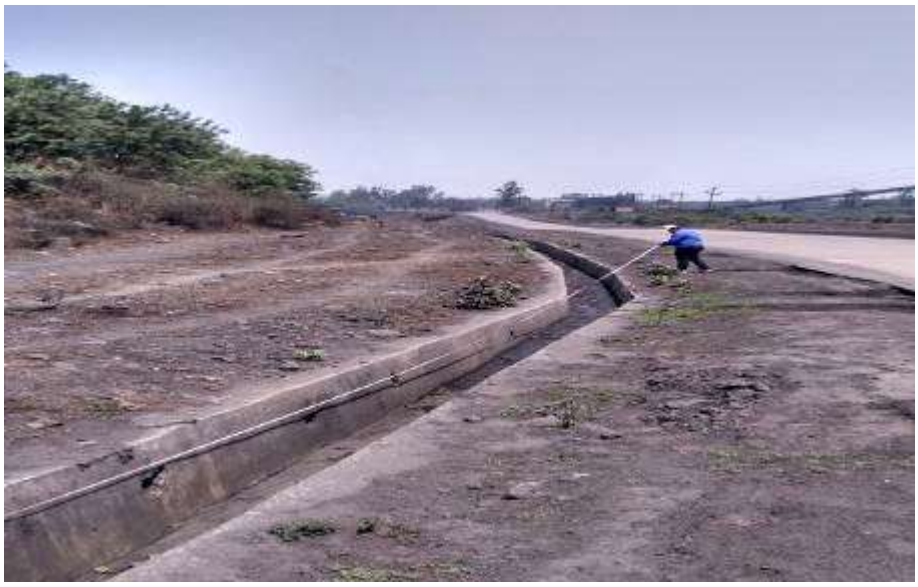






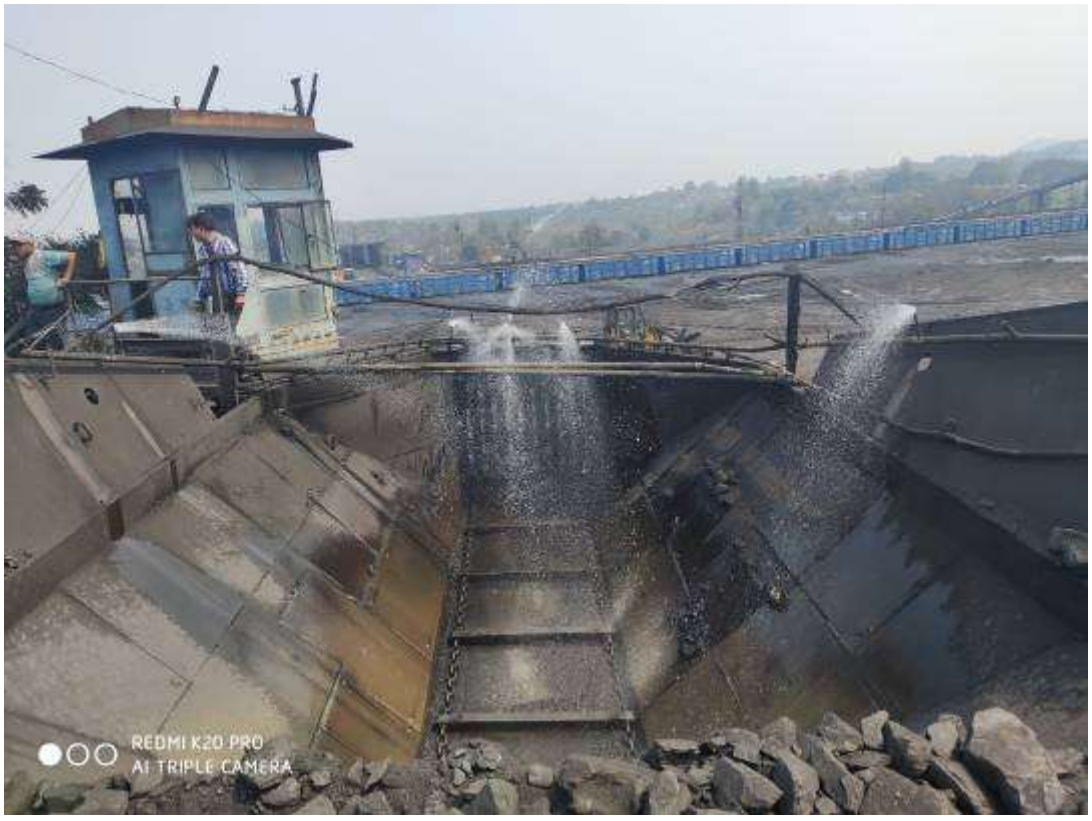
Annexure C
Catch drains in KDH OCP

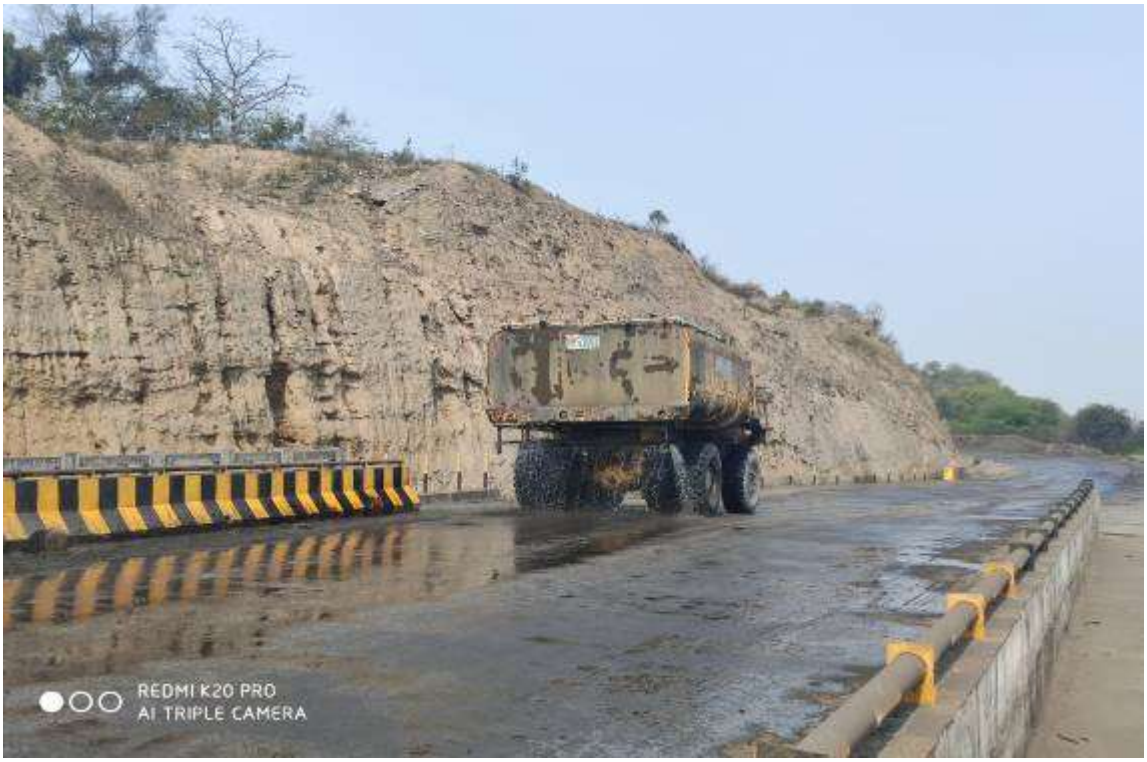


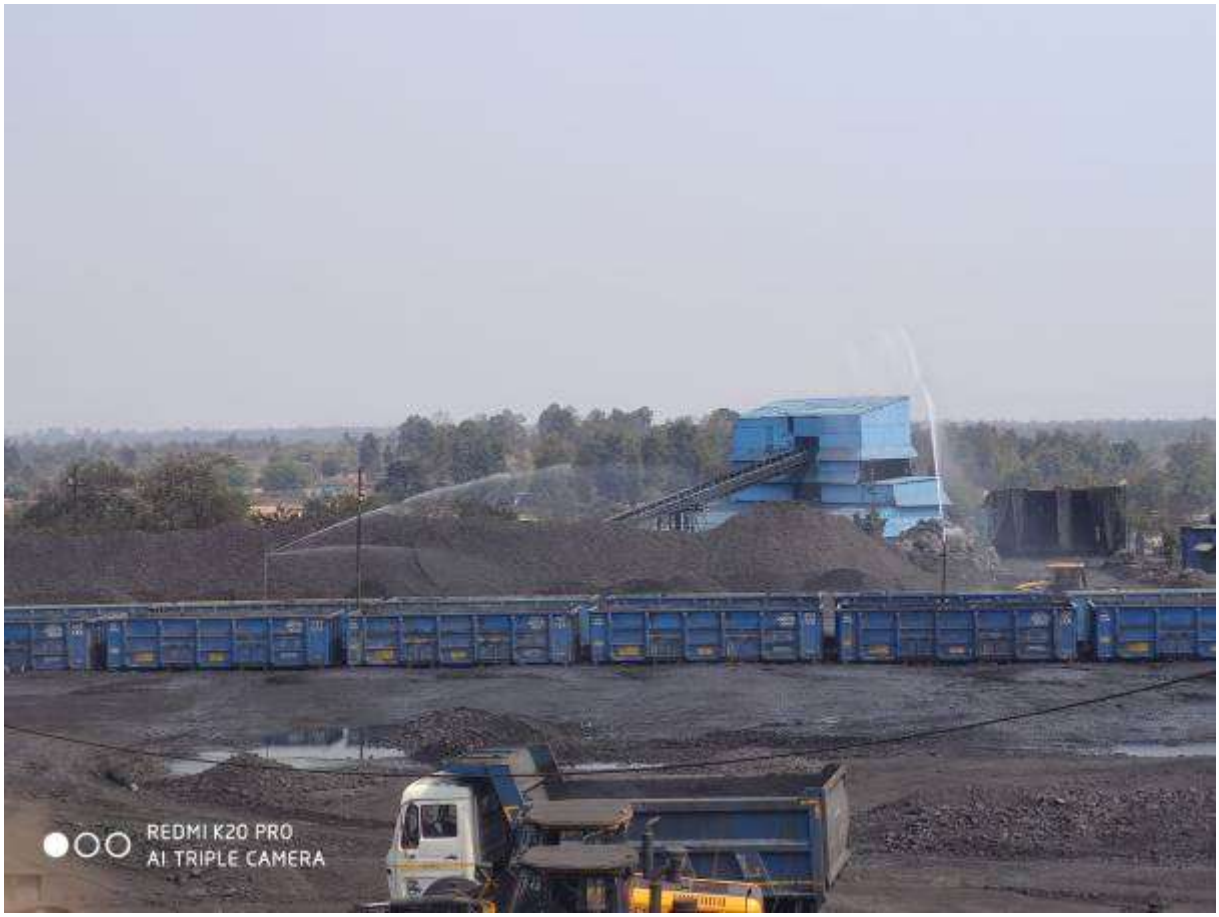


Annexure D

Water Sprinkling System at KDH OCP






REDMI K20 PRO
AI TRIPLE CAMERA

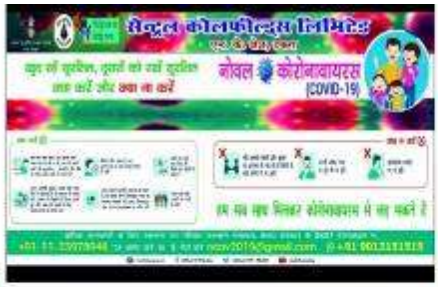

Water Sprinkler System in operation at KDH Siding, NK Area

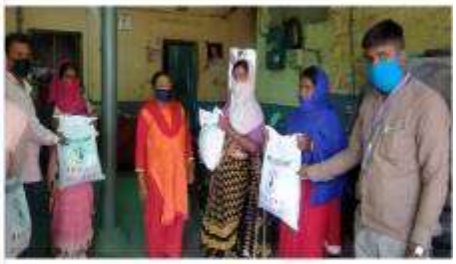
CSR activities in NK Area

NK Area carries out CSR activities in 14 different panchayats of Khalari and Tandwa circle. Some of CSR activities are as follows:

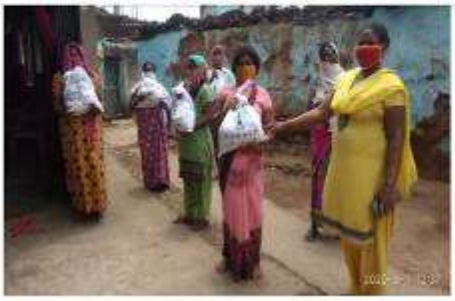
Drinking Water

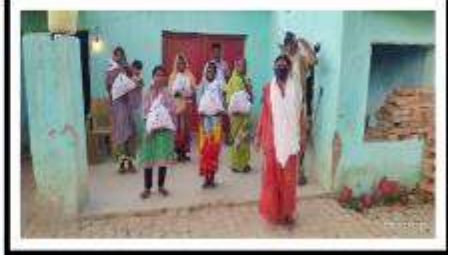
3 Deep borings, 9 wells, 6 handpumps, 3 water purifiers at Khalari & Mcluskieganj railway station and khalari block


सेन्ट्रल कोलफील्ड्स लिमिटेड
नोवल कोरोनावायरस
(COVID-19)

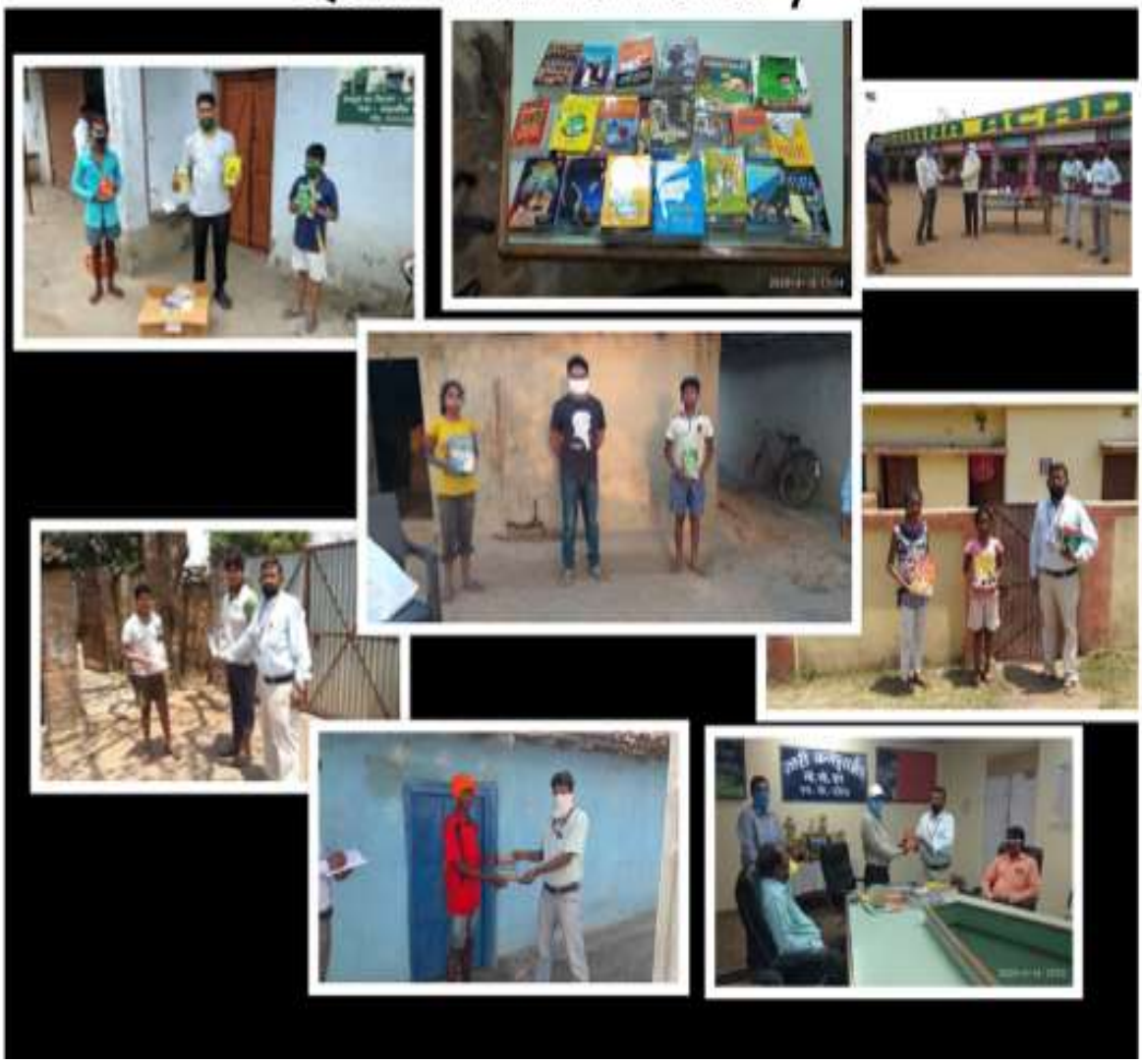



खाद्य सामग्री
का
वितरण

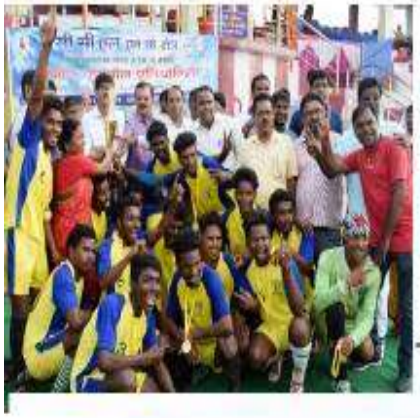


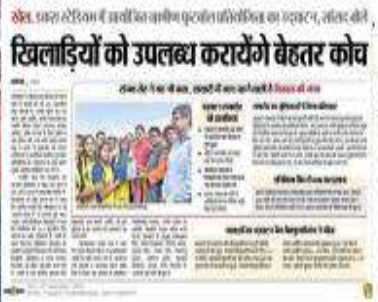


Quarantine library



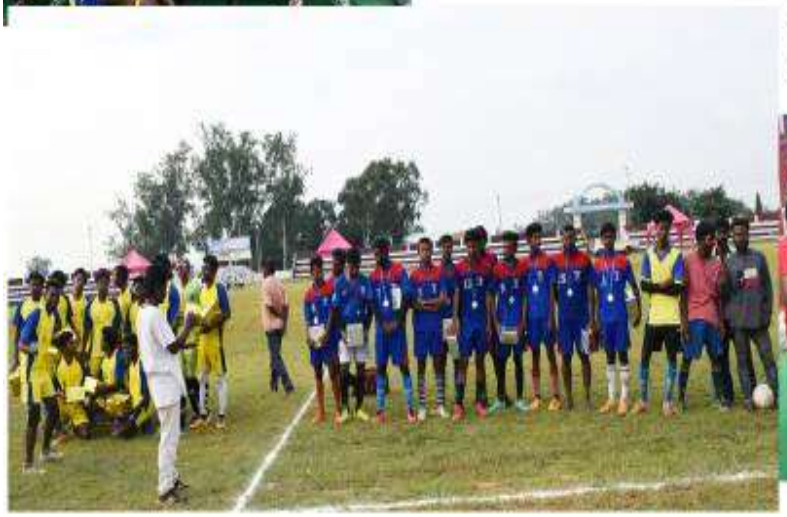
Graameen Football

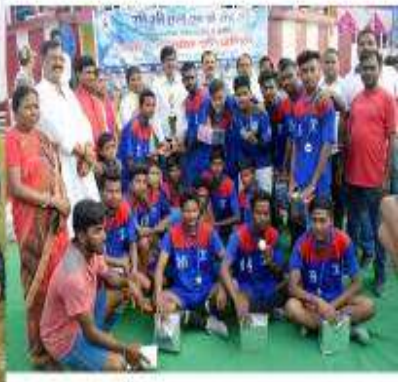




खिलाड़ियों को उपलब्ध करायेंगे बेहतर कोच

बालिका वर्ग में गणेश स्पोर्टिंग क्लब राय व बालक वर्ग में विश्रामपुर की टीम विजयी





Distribution of sports items

Swachhta Hi Sewa 2019

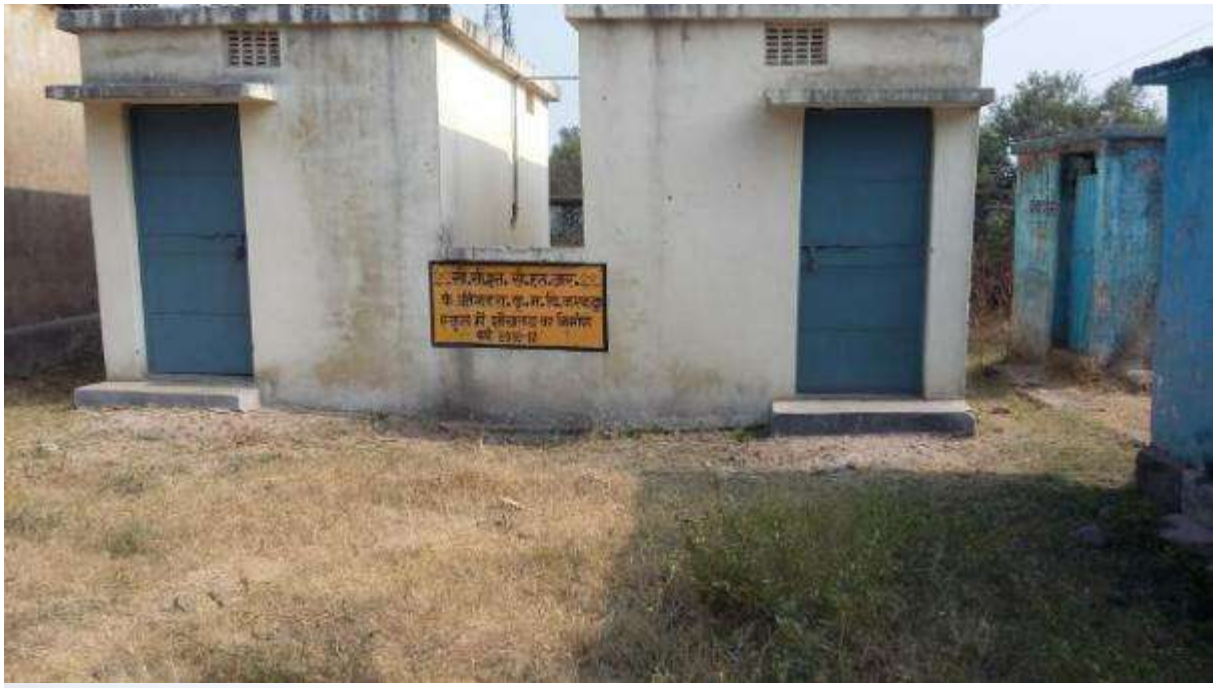
1000 cloth bag distribution, social message and branding with help of 3000 pamphlets depicting restriction on use of single use plastic at houses, shops and public places in NK Area

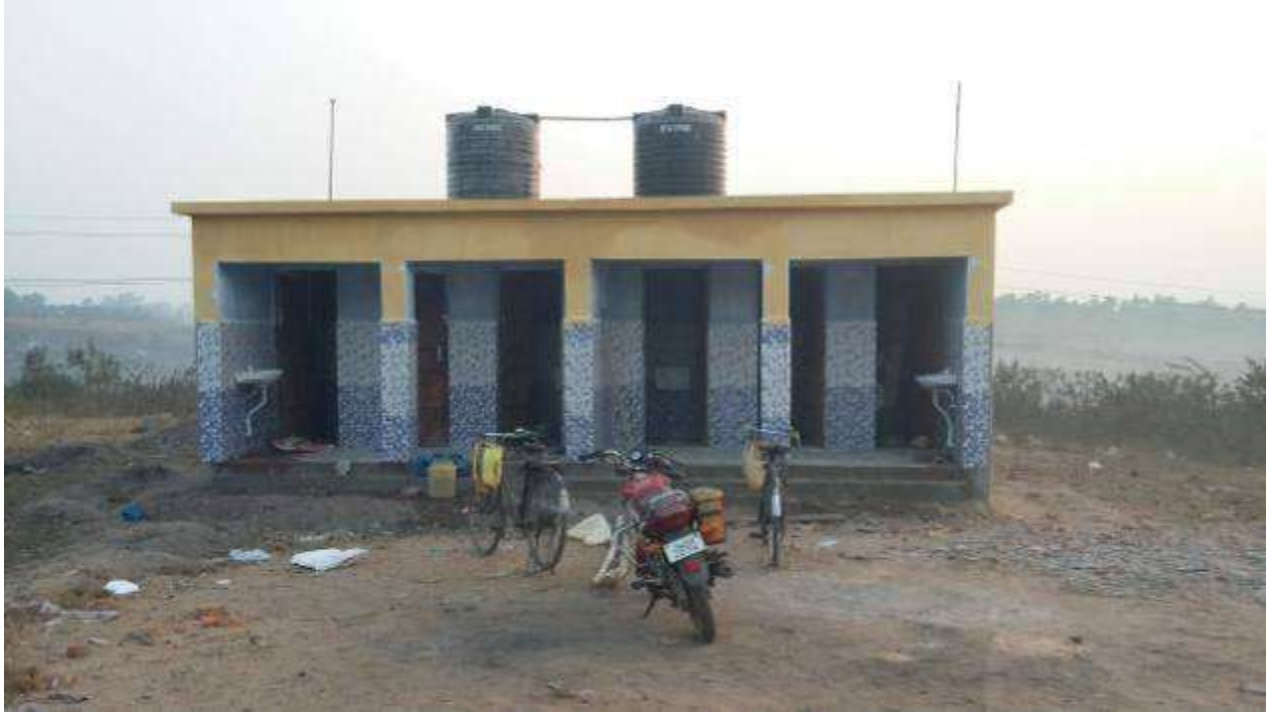
Tricycles for physically challenged

39 tricycles for physically challenged

Village/School health Camps

Total -175 Camps

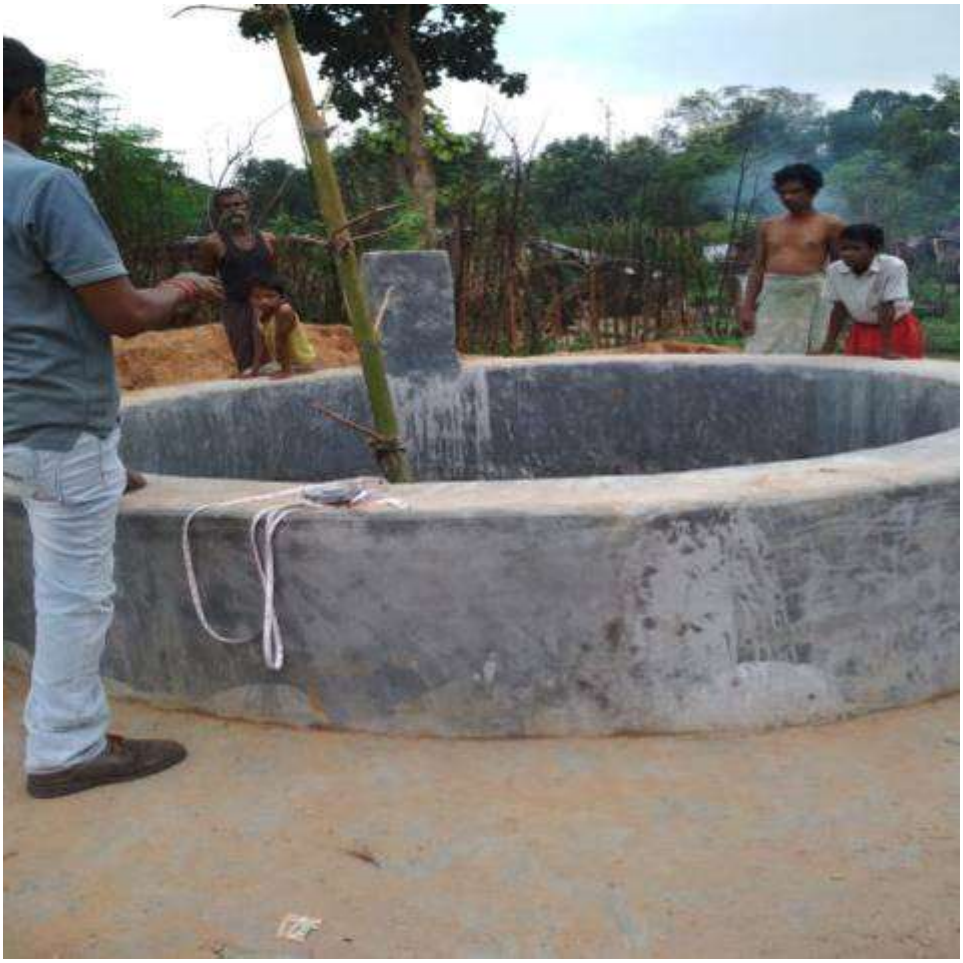




Construction of toilets

Community hall constructed under CSR scheme of NK Area

Installation of Hand pipes



Construction of well at Mcluskiganj

Construction of road and bridge near Purnadih village

TEST REPORT

06/22 Test Report No. 2218	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	03/04/22-04/04/22	16-04-2022	16/04/22-19/04/22	216	137	60	< 25	< 6	East Sunny
Apr-22 2nd FN	20/04/22-21/04/22	02-05-2022	02/05/22-06/05/22	206	90	51	< 25	< 6	East Sunny
May-22 3rd FN	04/05/22-05/05/22	16-05-2022	16/05/22-20/05/22	215	99	44	< 25	< 6	East Sunny
May-22 4th FN	18/05/22-19/05/22	01-06-2022	01/06/22-07/06/22	251	144	70	< 25	< 6	East Sunny
Jun-22 5th FN	03/06/22-04/06/22	16-06-2022	16/06/22-18/06/22	240	101	61	< 25	< 6	East Sunny
Jun-22 6th FN	18/06/22-19/06/22	01-07-2022	01/07/22-06/07/22	264	106	66	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

Analysed By Authorized Signatory

Note: 1) This Report refers to the values obtained at the time of testing and results related to the items tested
2) This Report cannot be reproduced in part or full without written permission of the management.
3) This is computer generated report and requires no signature.

TEST REPORT

06/22 Test Report No. 2219	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Bhoot Nagar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	03/04/22-04/04/22	16-04-2022	16/04/22-19/04/22	170	86	42	< 25	< 6	East Sunny
Apr-22 2nd FN	20/04/22-21/04/22	02-05-2022	02/05/22-06/05/22	110	54	24	< 25	< 6	East Sunny
May-22 3rd FN	04/05/22-05/05/22	16-05-2022	16/05/22-20/05/22	168	79	43	< 25	< 6	East Sunny
May-22 4th FN	18/05/22-19/05/22	01-06-2022	01/06/22-07/06/22	162	83	47	< 25	< 6	East Sunny
Jun-22 5th FN	03/06/22-04/06/22	16-06-2022	16/06/22-18/06/22	155	69	24	< 25	< 6	East Sunny
Jun-22 6th FN	18/06/22-19/06/22	01-07-2022	01/07/22-06/07/22	172	68	42	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

06/22 Test Report No. 2220	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Water Tanker Filling Station

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	03/04/22-04/04/22	16-04-2022	16/04/22-19/04/22	217	96	48	< 25	< 6	East Sunny
Apr-22 2nd FN	20/04/22-21/04/22	02-05-2022	02/05/22-06/05/22	134	67	38	< 25	< 6	East Sunny
May-22 3rd FN	04/05/22-05/05/22	16-05-2022	16/05/22-20/05/22	134	69	31	< 25	< 6	East Sunny
May-22 4th FN	18/05/22-19/05/22	01-06-2022	01/06/22-07/06/22	325	120	65	< 25	< 6	East Sunny
Jun-22 5th FN	03/06/22-04/06/22	16-06-2022	16/06/22-18/06/22	173	74	36	< 25	< 6	East Sunny
Jun-22 6th FN	18/06/22-19/06/22	01-07-2022	01/07/22-06/07/22	274	128	68	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

06/22 Test Report No. 2221	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Karkatta Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	04/04/22-05/04/22	16-04-2022	16/04/22-19/04/22	305	148	74	< 25	< 6	East Sunny
Apr-22 2nd FN	21/04/22-22/04/22	02-05-2022	02/05/22-06/05/22	146	76	32	< 25	< 6	East Sunny
May-22 3rd FN	05/05/22-06/05/22	16-05-2022	16/05/22-20/05/22	146	78	42	< 25	< 6	East Sunny
May-22 4th FN	19/05/22-20/05/22	01-06-2022	01/06/22-07/06/22	135	62	23	< 25	< 6	East Sunny
Jun-22 5th FN	04/06/22-05/06/22	16-06-2022	16/06/22-18/06/22	224	97	55	< 25	< 6	East Sunny
Jun-22 6th FN	19/06/22-20/06/22	01-07-2022	01/07/22-06/07/22	435	243	115	< 25	6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

06/22 Test Report No. 2222	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** BishrampurVillage

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	04/04/22-05/04/22	16-04-2022	16/04/22-19/04/22	142	73	40	< 25	< 6	East Sunny
Apr-22 2nd FN	21/04/22-22/04/22	02-05-2022	02/05/22-06/05/22	240	91	50	< 25	< 6	East Sunny
May-22 3rd FN	05/05/22-06/05/22	16-05-2022	16/05/22-20/05/22	157	68	35	< 25	< 6	East Sunny
May-22 4th FN	19/05/22-20/05/22	01-06-2022	01/06/22-07/06/22	211	91	47	< 25	< 6	East Sunny
Jun-22 5th FN	04/06/22-05/06/22	16-06-2022	16/06/22-18/06/22	107	57	26	< 25	< 6	East Sunny
Jun-22 6th FN	19/06/22-20/06/22	01-07-2022	01/07/22-06/07/22	255	92	54	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

06/22 Test Report No. 2223	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Jun-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** KDH Siding Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Apr-22 1st FN	04/04/22-05/04/22	16-04-2022	16/04/22-19/04/22	238	124	75	< 25	< 6	East Sunny
Apr-22 2nd FN	21/04/22-22/04/22	02-05-2022	02/05/22-06/05/22	162	85	42	< 25	< 6	East Sunny
May-22 3rd FN	05/05/22-06/05/22	16-05-2022	16/05/22-20/05/22	203	106	72	< 25	< 6	East Sunny
May-22 4th FN	19/05/22-20/05/22	01-06-2022	01/06/22-07/06/22	214	132	56	< 25	< 6	East Sunny
Jun-22 5th FN	04/06/22-05/06/22	16-06-2022	16/06/22-18/06/22	215	118	53	< 25	< 6	East Sunny
Jun-22 6th FN	19/06/22-20/06/22	01-07-2022	01/07/22-06/07/22	238	139	73	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

06/22 Test Report No. 2224	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample:	Noise	Quarter Ending	Jun-22
Customer	CCL		
Testing/ Sampling Protocol:	*'The noise pollution (Regulation and Control), Rules,2000*, LQR 34		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP**

Station Name	Noise Level dB(A) Leq					
	Apr-22 1st FN	Apr-22 2nd FN	May-22 3rd FN	May-22 4th FN	Jun-22 5th FN	Jun-22 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	03-04-2022	20-04-2022	04-05-2022	18-05-2022	03-06-2022	18-06-2022
1. P.O.Office	71.2/65.3	72.3/67.2	72.5/67.3	71.8/65.7	71.1/66.2	72.3/66.4
Date of recording	03-04-2022	20-04-2022	04-05-2022	18-05-2022	03-06-2022	18-06-2022
2. Booth nagar	67.3/60.5	68.6/62.3	69.9/63.6	68.4/62.3	68.9/62.7	68.7/62.5
Date of recording	03-04-2022	20-04-2022	04-05-2022	18-05-2022	03-06-2022	18-06-2022
3. Water Tanker Filling Station	70.8/64.7	73.5/68.4	70.5/64.4	73.2/67.4	71.6/65.7	73.2/67.3
Date of recording	04-04-2022	21-04-2022	05-05-2022	19-05-2022	04-06-2022	19-06-2022
5. Karkatta Village	68.2/63.3	69.7/63.2	68.7/62.3	67.9/61.8	68.6/62.3	69.1/63.2
Date of recording	04-04-2022	21-04-2022	05-05-2022	19-05-2022	04-06-2022	19-06-2022
6. Bisrampur Village	67.8/61.9	67.9/61.8	69.6/64.5	68.5/62.6	67.9/61.9	68.5/62.7
Date of recording	04-04-2022	21-04-2022	05-05-2022	19-05-2022	04-06-2022	19-06-2022
7. KDH Siding Office	72.8/66.6	72.3/66.4	72.7/66.2	72.6/66.7	72.5/67.4	74.3/68.2

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	*Limits in dB(A) Leq*	
	Day Time 6.00 AM to 10.00 PM	*Night Time 10.00 PM to 6.00 AM*
Industrial Area	*75*	*70*
Commercial Area	*65*	*55*
Residential area	*55*	*45*
Silence Zone	*50*	*40*

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TEST REPORT

06/22 Test Report No. 2225	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Jun-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: **North Karanpura** **Project:** **KDH OCP** **Stations:** Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Apr-22 1st FN	06/04/22	18/04/22	18/04/22-29/04/22	20	<2.00	7.67	31.7
Apr-22 2nd FN	23/04/22	02/04/22	02/04/22-13/05/22	20	<2.00	7.4	32.1
May-22 3rd FN	06/05/22	16/05/22	16/05/22-31/05/22	20	<2.00	8.52	28.1
May-22 4th FN	21/05/22	01/06/22	01/06/22-17/06/22	28	<2.00	7.7	43.7
Jun-22 5th FN	06/06/22	16/06/22	16/06/22-30/06/22	12	<2.00	8.1	28.1
Jun-22 6th FN	21/06/22	01/07/22	01/07/22-15/07/22	20	<2.00	7.7	28.4
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

06/22 Test Report No. 2226	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Jun-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpur** **Project:** **KDH OCP** **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Apr-22 1st FN	06/04/22	18/04/22	18/04/22-29/04/22	200	3.08	7.41	215.1
Apr-22 2nd FN	23/04/22	02/04/22	02/04/22-13/05/22	116	4.18	7.3	134.2
May-22 3rd FN	06/05/22	16/05/22	16/05/22-31/05/22	196	8.06	8.36	232.4
May-22 4th FN	21/05/22	01/06/22	01/06/22-17/06/22	80	3.4	5	94.4
Jun-22 5th FN	06/06/22	16/06/22	16/06/22-30/06/22	200	8.12	7.9	154
Jun-22 6th FN	21/06/22	01/07/22	01/07/22-15/07/22	84	4.6	8.1	196.4
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

06/22 Test Report No. 2227	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Jun-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpur** **Project:** **KDH OCP** **Stations:** OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Apr-22 1st FN	06/04/22	18/04/22	18/04/22-29/04/22	24	<2.00	7.55	34.7
Apr-22 2nd FN	23/04/22	02/04/22	02/04/22-13/05/22	16	<2.00	7.41	29.8
May-22 3rd FN	06/05/22	16/05/22	16/05/22-31/05/22	24	<2.00	8.42	45.7
May-22 4th FN	21/05/22	01/06/22	01/06/22-17/06/22	24	<2.00	7.3	29.5
Jun-22 5th FN	06/06/22	16/06/22	16/06/22-30/06/22	20	<2.00	8	41.2
Jun-22 6th FN	21/06/22	01/07/22	01/07/22-15/07/22	20	<2.00	8.2	34.1
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

06/22 Test Report No. 2228	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample:	**Surface Water**	Quarter Ending	Jun-22
Customer	CCL	Date of Receipt:	18-04-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	18.04.22-30.06.22
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP**

Stations: **Date of Sampling:**

1. U/S of Sonadoba Nala 06-04-2022
2. D/S of Sonadoba Nala 06-04-2022
3. U/S of Damodar River 06-04-2022
4. D/S of Damodar River 06-04-2022

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.6	3	<2	2	2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	30	22	10	22	2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	5.8	5.4	6.4	6.2	0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	1.67	2.32	0.79	2.32	0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO_3), mg/l, Max	18.03	11.27	5.89	6.78	0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.5	7.52	7.37	7.47	1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO_4) mg/l, Max	60	41	19	40	2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	288	276	312	329	25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	42.4	41.3	14.9	17.6	10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.013	0.013	0.015	0.014	0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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ENVIRONMENT LABORATORY, CMPDI(HQ), RANCHI

TEST REPORT

06/22 Test Report No. 2229	**Job No. 094321044**	**Year**	FY2022-23
Type of Sample:	**Drinking Water**	Quarter Ending	Jun-22
Customer	CCL	Date of Receipt:	18-04-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	18.04.22-30.06.22
Testing/ Sampling Protocol:	**IS:10500 Drinking Water Standards,** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** KDH OCP

Stations: **Date of Sampling:**

1. Well Water at Bishrampur Village 06-04-2022
2. Well Water at Bhootnagar Village 06-04-2022
3. Well Water at Karkatta Village 06-04-2022
4. Well Water at Bukbuka Village 06-04-2022

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.20	<0.20	<0.20	<0.20	0.20	0.5	APHA, 23rd Edition Carmine Method; 2017
2	Cadmium (as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	0.003	APHA, 23rd Edition AAS-GTA Method, 2017
3	Calcium (as Ca), mg/l, Max	73.6	73.6	81.6	76.8	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	32	52	52	50	2.00	250	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	0.05	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F) mg/l, Max	0.24	0.19	0.31	0.29	0.02	1.0	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l, Min	0.02	0.03	0.03	<0.02	0.02	0.2	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	1.0	IS 3025 /53: 2003, R : 2009 AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.01	APHA, 23rd Edition AAS-GTA Method, 2017
10	Manganese (as Mn), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.1	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l, *Max*	0.0038	<0.003	<0.003	<0.003	0.003	0.02	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO_3), mg/l, Max	2.40	2.90	2.70	3.10	0.5	45	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	7.68	7.53	7.58	7.54	1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 23rd Edition,4-Amino Autipyrine, 2017
16	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.01	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO_4) mg/l, Max	176	178	179	182	2.00	200	APHA, 23rd Edition. Turbidity Method, 2017
18	Total Alkalinity (c_aco_3), mg/l, Max	104	156	184	176	4.00	200	IS-3025/23:1986,R: 2009, Titration Method
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.05	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l, Max	480	437	465	456	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (c_aco_3), mg/l, Max	296	276	312	308	4.00	200	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU, Max	1	2	1	2	1.0	1	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l, Max	0.010	0.009	0.010	<0.005	0.005	5.0	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

09/22 Test Report No. 2218	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	03/07/22-04/07/22	18-07-2022	18/07/22-20/07/22	252	95	45	< 25	< 6	East Sunny
Jul-22 2nd FN	20/07/22-21/07/22	01-08-2022	01/08/22-04/08/22	261	133	74	< 25	< 6	East Sunny
Aug-22 3rd FN	03/08/22-04/08/22	16-08-2022	16/08/22-23/08/22	223	103	51	< 25	< 6	East Sunny
Aug-22 4th FN	18/08/22-19/08/22	01-09-2022	01/09/22-10/09/22	219	108	52	< 25	< 6	East Sunny
Sep-22 5th FN	03/09/22-04/09/22	16-09-2022	16/09/22-20/09/22	233	84	46	< 25	< 6	East Sunny
Sep-22 6th FN	18/09/22-19/09/22	01-10-2022	01/10/22-08/10/22	220	103	46	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

09/22 Test Report No. 2219	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Bhoot Nagar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	03/07/22-04/07/22	18-07-2022	18/07/22-20/07/22	146	71	34	< 25	< 6	East Sunny
Jul-22 2nd FN	20/07/22-21/07/22	01-08-2022	01/08/22-04/08/22	137	60	21	< 25	< 6	East Sunny
Aug-22 3rd FN	03/08/22-04/08/22	16-08-2022	16/08/22-23/08/22	152	81	37	< 25	< 6	East Sunny
Aug-22 4th FN	18/08/22-19/08/22	01-09-2022	01/09/22-10/09/22	201	94	52	< 25	< 6	East Sunny
Sep-22 5th FN	03/09/22-04/09/22	16-09-2022	16/09/22-20/09/22	201	94	55	< 25	< 6	East Sunny
Sep-22 6th FN	18/09/22-19/09/22	01-10-2022	01/10/22-08/10/22	309	109	60	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

09/22 Test Report No. 2220	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Water Tanker Filling Station

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	03/07/22-04/07/22	18-07-2022	18/07/22-20/07/22	117	62	27	< 25	< 6	East Sunny
Jul-22 2nd FN	20/07/22-21/07/22	01-08-2022	01/08/22-04/08/22	168	83	48	< 25	< 6	East Sunny
Aug-22 3rd FN	03/08/22-04/08/22	16-08-2022	16/08/22-23/08/22	102	56	27	< 25	< 6	East Sunny
Aug-22 4th FN	18/08/22-19/08/22	01-09-2022	01/09/22-10/09/22	121	65	34	< 25	< 6	East Sunny
Sep-22 5th FN	03/09/22-04/09/22	16-09-2022	16/09/22-20/09/22	144	65	30	< 25	< 6	East Sunny
Sep-22 6th FN	18/09/22-19/09/22	01-10-2022	01/10/22-08/10/22	168	82	43	< 25	6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

09/22 Test Report No. 2221	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Karkatta Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	04/07/22-05/07/22	18-07-2022	18/07/22-20/07/22	110	57	32	< 25	< 6	East Sunny
Jul-22 2nd FN	21/07/22-22/07/22	01-08-2022	01/08/22-04/08/22	111	64	25	< 25	< 6	East Sunny
Aug-22 3rd FN	04/08/22-05/08/22	16-08-2022	16/08/22-23/08/22	208	91	56	< 25	< 6	East Sunny
Aug-22 4th FN	19/08/22-20/08/22	01-09-2022	01/09/22-10/09/22	116	57	27	< 25	< 6	East Sunny
Sep-22 5th FN	04/09/22-05/09/22	16-09-2022	16/09/22-20/09/22	210	90	48	< 25	< 6	East Sunny
Sep-22 6th FN	19/09/22-20/09/22	01-10-2022	01/10/22-08/10/22	142	73	33	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

09/22 Test Report No. 2222	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** BishrampurVillage

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	04/07/22-05/07/22	18-07-2022	18/07/22-20/07/22	187	81	48	< 25	< 6	East Sunny
Jul-22 2nd FN	21/07/22-22/07/22	01-08-2022	01/08/22-04/08/22	182	79	33	< 25	< 6	East Sunny
Aug-22 3rd FN	04/08/22-05/08/22	16-08-2022	16/08/22-23/08/22	141	65	36	< 25	< 6	East Sunny
Aug-22 4th FN	18/08/22-19/08/22	01-09-2022	01/09/22-10/09/22	223	86	40	< 25	< 6	East Sunny
Sep-22 5th FN	04/09/22-05/09/22	16-09-2022	16/09/22-20/09/22	158	73	39	< 25	< 6	East Sunny
Sep-22 6th FN	19/09/22-20/09/22	01-10-2022	01/10/22-08/10/22	106	57	26	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

09/22 Test Report No. 2223	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Sep-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** KDH Siding Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jul-22 1st FN	04/07/22-05/07/22	18-07-2022	18/07/22-20/07/22	172	76	34	< 25	< 6	East Sunny
Jul-22 2nd FN	21/07/22-22/07/22	01-08-2022	01/08/22-04/08/22	205	109	53	< 25	< 6	East Sunny
Aug-22 3rd FN	04/08/22-05/08/22	16-08-2022	16/08/22-23/08/22	243	118	63	< 25	< 6	East Sunny
Aug-22 4th FN	19/08/22-20/08/22	01-09-2022	01/09/22-10/09/22	192	84	43	< 25	< 6	East Sunny
Sep-22 5th FN	04/09/22-05/09/22	16-09-2022	16/09/22-20/09/22	228	107	57	< 25	< 6	East Sunny
Sep-22 6th FN	19/09/22-20/09/22	01-10-2022	01/10/22-08/10/22	153	75	35	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

09/22 Test Report No. 2224	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	Noise	Quarter Ending	Sep-22
Customer	CCL		
Testing/ Sampling Protocol:	*'The noise pollution (Regulation and Control), Rules,2000*, LQR 34		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP**

Station Name	Noise Level dB(A) Leq					
	Jul-22 1st FN	Jul-22 2nd FN	Aug-22 3rd FN	Aug-22 4th FN	Sep-22 5th FN	Sep-22 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	03-07-2022	20-07-2022	03-08-2022	23-08-2022	03-09-2022	18-09-2022
1. P.O.Office	71.9/65.8	71.3/67.4	71.7/65.6	72.8/66.7	73.2/67.1	71.7/65.6
Date of recording	03-07-2022	20-07-2022	03-08-2022	23-08-2022	03-09-2022	18-09-2022
2. Booth nagar	69.5/63.4	69.5/64.6	69.7/63.4	73.5/67.4	68.3/62.4	68.9/62.6
Date of recording	03-07-2022	20-07-2022	03-08-2022	23-08-2022	03-09-2022	18-09-2022
3. Water Tanker Filling Station	71.7/65.6	70.8/66.9	73.2/67.3	72.8/66.9	72.7/66.6	72.5/66.3
Date of recording	04-07-2022	21-07-2022	04-08-2022	23-08-2022	04-09-2022	19-09-2022
5. Karkatta Village	68.8/62.6	68.8/62.9	68.9/62.7	70.7/64.6	69.2/63.1	69.5/63.2
Date of recording	04-07-2022	21-07-2022	04-08-2022	23-08-2022	04-09-2022	19-09-2022
6. Bisrampur Village	70.3/64.5	69.2/65.3	69.2/63.6	73.6/67.5	68.5/62.4	67.9/61.8
Date of recording	04-07-2022	21-07-2022	04-08-2022	23-08-2022	04-09-2022	19-09-2022
7. KDH Siding Office	73.2/67.4	72.6/68.3	74.6/68.5	70.3/64.5	73.7/67.6	73.2/67.1

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	*Limits in dB(A) Leq*	
	Day Time 6.00 AM to 10.00 PM	*Night Time 10.00 PM to 6.00 AM*
Industrial Area	*75*	*70*
Commercial Area	*65*	*55*
Residential area	*55*	*45*
Silence Zone	*50*	*40*

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TEST REPORT

09/22 Test Report No. 2225	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Sep-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: **North Karanpura** **Project:** **KDH OCP** **Stations:** Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Jul-22 1st FN	06/07/22	18/07/22	18/07/22-30/07/22	20	<2.00	7.8	31.7
Jul-22 2nd FN	23/07/22	01/08/22	01/08/22-13/08/22	16	<2.00	7.9	56.7
Aug-22 3rd FN	06/08/22	16/08/22	16/08/22-30/08/22	16	<2.00	8.2	28.3
Aug-22 4th FN	21/08/22	01/09/22	01/09/22-15/09/22	16	<2.00	7.7	35.6
Sep-22 5th FN	06/09/22	16/09/22	16/09/22-30/09/22	16	<2.00	7.8	34
Sep-22 6th FN	21/09/22	01/10/22	01/10/22-14/10/22	16	<2.00	7.41	25
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

09/22 Test Report No. 2226	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Sep-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpur** **Project:** **KDH OCP** **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Jul-22 1st FN	06/07/22	18/07/22	18/07/22-30/07/22	640	9.14	5.7	748.1
Jul-22 2nd FN	23/07/22	01/08/22	01/08/22-13/08/22	248	6.12	8.2	372.3
Aug-22 3rd FN	06/08/22	16/08/22	16/08/22-30/08/22	370	8.92	8.1	635.9
Aug-22 4th FN	21/08/22	01/09/22	01/09/22-15/09/22	124	4.46	7.4	173.9
Sep-22 5th FN	06/09/22	16/09/22	16/09/22-30/09/22	92	5.46	7.8	181
Sep-22 6th FN	21/09/22	01/10/22	01/10/22-14/10/22	56	6.48	7.47	183
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

09/22 Test Report No. 2227	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Sep-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpur** **Project:** **KDH OCP** **Stations:** OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Jul-22 1st FN	06/07/22	18/07/22	18/07/22-30/07/22	24	<2.00	7.2	44
Jul-22 2nd FN	23/07/22	01/08/22	01/08/22-13/08/22	20	<2.00	7.9	32.7
Aug-22 3rd FN	06/08/22	16/08/22	16/08/22-30/08/22	16	<2.00	8.2	26.4
Aug-22 4th FN	21/08/22	01/09/22	01/09/22-15/09/22	12	<2.00	7.9	43.8
Sep-22 5th FN	06/09/22	16/09/22	16/09/22-30/09/22	16	<2.00	7.7	35
Sep-22 6th FN	21/09/22	01/10/22	01/10/22-14/10/22	20	<2.00	7.6	24
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

09/22 Test Report No. 2228	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Surface Water**	Quarter Ending	Sep-22
Customer	CCL	Date of Receipt:	18-07-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	18.07.22-07.09.22
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP**

Stations: **Date of Sampling:**

1. U/S of Sonadoba Nala 06-07-2022
2. D/S of Sonadoba Nala 06-07-2022
3. U/S of Damodar River 06-07-2022
4. D/S of Damodar River 06-07-2022

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.2	2.4	<2.0	<2.0	2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	8	10	6	6	2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	6.6	6.4	7.4	7	0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.52	0.52	0.55	0.57	0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO_3), mg/l, Max	1.90	1.50	0.70	0.80	0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.17	8.08	8.03	8.26	1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO_4) mg/l, Max	22	26	14	14	2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	179	187	147	154	25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	29	32	17	19	10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.009	0.009	0.008	0.007	0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

09/22 Test Report No. 2229	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Drinking Water**	Quarter Ending	Sep-22
Customer	CCL	Date of Receipt:	18-07-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	18.07.22-07.09.22
Testing/ Sampling Protocol:	**IS:10500 Drinking Water Standards,** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** KDH OCP

Stations: **Date of Sampling:**

1. Well Water at Bishrampur Village 06-07-2022
2. Well Water at Bhootnagar Village 06-07-2022
3. Well Water at Karkatta Village 06-07-2022
4. Well Water at Bukbuka Village 06-07-2022

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.20	<0.20	<0.20	<0.20	0.20	0.5	APHA, 23rd Edition Carmine Method; 2017
2	Cadmium (as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	0.003	APHA, 23rd Edition AAS-GTA Method, 2017
3	Calcium (as Ca), mg/l, Max	48	57.6	60.8	52.8	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	54	56	52	52	2.00	250	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	0.05	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F) mg/l, Max	0.17	0.17	0.18	0.18	0.02	1.0	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l, Min	<0.02	<0.02	0.03	<0.02	0.02	0.2	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	1.0	IS 3025 /53: 2003, R : 2009 AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.01	APHA, 23rd Edition AAS-GTA Method, 2017
10	Manganese (as Mn), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.1	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l, *Max*	<0.003	<0.003	<0.003	<0.003	0.003	0.02	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO_3), mg/l, Max	5.94	6.06	6.16	5.74	0.5	45	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	7.58	7.51	7.71	7.49	1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 23rd Edition,4-Amino Autipyrine, 2017
16	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.01	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO_4) mg/l, Max	150	157	142	145	2.00	200	APHA, 23rd Edition. Turbidity Method, 2017
18	Total Alkalinity (c_aco_3), mg/l, Max	208	228	216	252	4.00	200	IS-3025/23:1986,R: 2009, Titration Method
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.05	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l, Max	513	571	519	565	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (c_aco_3), mg/l, Max	304	380	320	364	4.00	200	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU, Max	1	1	2	2	1.0	1	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l, Max	0.007	<0.005	0.007	0.008	0.005	5.0	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/22 Test Report No. 2220	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	05/10/22-06/10/22	17-10-2022	17/10/22-26/10/22	294	119	58	< 25	< 6	East Sunny
Oct-22 2nd FN	19/10/22-20/10/22	01-11-2022	01/11/22-07/11/22	196	88	38	< 25	< 6	East Sunny
Nov-22 3rd FN	03/11/22-04/11/22	16-11-2022	16/11/22-23/11/22	185	86	36	< 25	< 6	East Sunny
Nov-22 4th FN	18/11/22-19/11/22	01-12-2022	01/12/22-09/12/22	235	113	49	< 25	< 6	East Sunny
Dec-22 5th FN	03/12/22-04/12/22	16-12-2022	16/12/22-21/12/22	223	82	47	< 25	< 6	East Sunny
Dec-22 6th FN	18/12/22-19/12/22	02-01-2023	02/01/23-10/01/23	163	81	45	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

12/22 Test Report No. 2221	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Bhoot Nagar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	05/10/22-06/10/22	17-10-2022	17/10/22-26/10/22	252	97	55	< 25	< 6	East Sunny
Oct-22 2nd FN	19/10/22-20/10/22	01-11-2022	01/11/22-07/11/22	161	80	45	< 25	< 6	East Sunny
Nov-22 3rd FN	03/11/22-04/11/22	16-11-2022	16/11/22-23/11/22	137	72	35	< 25	< 6	East Sunny
Nov-22 4th FN	18/11/22-19/11/22	01-12-2022	01/12/22-09/12/22	171	76	38	< 25	< 6	East Sunny
Dec-22 5th FN	03/12/22-04/12/22	16-12-2022	16/12/22-21/12/22	249	96	52	< 25	< 6	East Sunny
Dec-22 6th FN	18/12/22-19/12/22	02-01-2023	02/01/23-10/01/23	205	94	49	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

12/22 Test Report No. 2222	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Water Tanker Filling Station

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	05/10/22-06/10/22	17-10-2022	17/10/22-26/10/22	140	76	43	< 25	< 6	East Sunny
Oct-22 2nd FN	19/10/22-20/10/22	01-11-2022	01/11/22-07/11/22	205	92	53	< 25	< 6	East Sunny
Nov-22 3rd FN	03/11/22-04/11/22	16-11-2022	16/11/22-23/11/22	145	85	47	< 25	< 6	East Sunny
Nov-22 4th FN	18/11/22-19/11/22	01-12-2022	01/12/22-09/12/22	135	58	26	< 25	< 6	East Sunny
Dec-22 5th FN	03/12/22-04/12/22	16-12-2022	16/12/22-21/12/22	174	72	35	< 25	< 6	East Sunny
Dec-22 6th FN	18/12/22-19/12/22	02-01-2023	02/01/23-10/01/23	128	63	32	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

12/22 Test Report No. 2223	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Karkatta Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	06/10/22-07/10/22	17-10-2022	17/10/22-26/10/22	122	53	22	< 25	< 6	East Sunny
Oct-22 2nd FN	20/10/22-21/10/22	01-11-2022	01/11/22-07/11/22	131	64	26	< 25	< 6	East Sunny
Nov-22 3rd FN	04/11/22-05/11/22	16-11-2022	16/11/22-23/11/22	164	69	33	< 25	< 6	East Sunny
Nov-22 4th FN	19/11/22-20/11/22	01-12-2022	01/12/22-09/12/22	115	66	30	< 25	< 6	East Sunny
Dec-22 5th FN	04/12/22-05/12/22	16-12-2022	16/12/22-21/12/22	157	84	44	< 25	< 6	East Sunny
Dec-22 6th FN	19/12/22-20/12/22	02-01-2023	02/01/23-10/01/23	219	75	35	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

12/22 Test Report No. 2224	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** BishrampurVillage

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m³)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	06/10/22-07/10/22	17-10-2022	17/10/22-26/10/22	230	92	57	< 25	< 6	East Sunny
Oct-22 2nd FN	20/10/22-21/10/22	01-11-2022	01/11/22-07/11/22	191	87	51	< 25	< 6	East Sunny
Nov-22 3rd FN	04/11/22-05/11/22	16-11-2022	16/11/22-23/11/22	140	77	43	< 25	< 6	East Sunny
Nov-22 4th FN	19/11/22-20/11/22	01-12-2022	01/12/22-09/12/22	178	82	49	< 25	< 6	East Sunny
Dec-22 5th FN	04/12/22-05/12/22	16-12-2022	16/12/22-21/12/22	175	74	39	< 25	< 6	East Sunny
Dec-22 6th FN	19/12/22-20/12/22	02-01-2023	02/01/23-10/01/23	114	66	31	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

12/22 Test Report No. 2225	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** KDH Siding Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	06/10/22-07/10/22	17-10-2022	17/10/22-26/10/22	192	83	44	< 25	< 6	East Sunny
Oct-22 2nd FN	20/10/22-21/10/22	01-11-2022	01/11/22-07/11/22	218	110	65	< 25	< 6	East Sunny
Nov-22 3rd FN	04/11/22-05/11/22	16-11-2022	16/11/22-23/11/22	252	102	57	< 25	< 6	East Sunny
Nov-22 4th FN	19/11/22-20/11/22	01-12-2022	01/12/22-09/12/22	249	101	54	< 25	< 6	East Sunny
Dec-22 5th FN	04/12/22-05/12/22	16-12-2022	16/12/22-21/12/22	215	107	63	< 25	< 6	East Sunny
Dec-22 6th FN	19/12/22-20/12/22	02-01-2023	02/01/23-10/01/23	281	153	72	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

12/22 Test Report No. 2226	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	Noise	Quarter Ending	Dec-22
Customer	CCL		
Testing/ Sampling Protocol:	*'The noise pollution (Regulation and Control), Rules,2000,* LQR 34		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP**

Station Name	Noise Level dB(A) Leq					
	Oct-22 1st FN	Oct-22 2nd FN	Nov-22 3rd FN	Nov-22 4th FN	Dec-22 5th FN	Dec-22 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	05-10-2022	19-10-2022	03-11-2022	18-11-2022	03-12-2022	18-12-2022
1. P.O.Office	70.8/64.7	71.2/65.3	71.6/65.1	70.9/64.5	70.8/64.5	71.5/65.4
Date of recording	05-10-2022	19-10-2022	03-11-2022	18-11-2022	03-12-2022	18-12-2022
2. Booth nagar	68.8/62.7	68.8/62.7	69.3/63.4	68.5/62.3	68.7/62.6	68.6/62.7
Date of recording	05-10-2022	19-10-2022	03-11-2022	18-11-2022	03-12-2022	18-12-2022
3. Water Tanker Filling Station	71.7/65.3	70.9/64.8	70.5/64.7	70.6/64.4	70.7/64.4	72.3/66.2
Date of recording	06-10-2022	20-10-2022	04-11-2022	19-11-2022	04-12-2022	19-12-2022
5. Karkatta Village	69.5/63.2	67.9/61.8	68.4/62.3	67.9/61.8	67.9/61.8	67.8/61.4
Date of recording	06-10-2022	20-10-2022	04-11-2022	19-11-2022	04-12-2022	19-12-2022
6. Bisrampur Village	68.6/62.3	68.5/62.3	67.8/61.7	68.2/62.4	68.2/62.5	66.9/60.7
Date of recording	06-10-2022	20-10-2022	04-11-2022	19-11-2022	04-12-2022	19-12-2022
7. KDH Siding Office	72.5/66.3	72.6/66.4	71.8/65.6	72.2/66.3	71.7/65.8	71.8/65.3

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	*Limits in dB(A) Leq*	
	Day Time 6.00 AM to 10.00 PM	*Night Time 10.00 PM to 6.00 AM*
Industrial Area	*75*	*70*
Commercial Area	*65*	*55*
Residential area	*55*	*45*
Silence Zone	*50*	*40*

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TEST REPORT

12/22 Test Report No. 2227	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: **North Karanpura** **Project:** **KDH OCP** **Stations:** Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Oct-22 1st FN	08/10/22	17/10/22	17/10/22-31/10/22	12	<2.00	7.8	21
Oct-22 2nd FN	22/10/22	01/11/22	01/11/22-15/11/22	12	<2.00	7.91	28
Nov-22 3rd FN	05/11/22	16/11/22	16/11/22-30/11/22	12	<2.00	7.8	31
Dec-22 5th FN	06/12/22	16/12/22	16/12/22-30/12/22	12	<2.00	7.2	30
Dec-22 6th FN	21/12/22	02/01/23	02/01/23-13/01/23	16	<2.00	7.9	33
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/22 Test Report No. 2228	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpur** **Project:** **KDH OCP** **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Oct-22 1st FN	08/10/22	17/10/22	17/10/22-31/10/22	84	6.4	6.74	152
Oct-22 2nd FN	22/10/22	01/11/22	01/11/22-15/11/22	76	5.42	7.78	104
Nov-22 3rd FN	05/11/22	16/11/22	16/11/22-30/11/22	420	7.46	7.3	711
Dec-22 5th FN	06/12/22	16/12/22	16/12/22-30/12/22	552	8.62	7.5	1148
Dec-22 6th FN	21/12/22	02/01/23	02/01/23-13/01/23	416	7.66	8	713
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/22 Test Report No. 2229	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpur** **Project:** **KDH OCP** **Stations:** OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Oct-22 1st FN	08/10/22	17/10/22	17/10/22-31/10/22	16	<2.00	7.77	30
Oct-22 2nd FN	22/10/22	01/11/22	01/11/22-15/11/22	12	<2.00	7.91	26
Nov-22 3rd FN	05/11/22	16/11/22	16/11/22-30/11/22	36	<2.00	7.4	96
Dec-22 5th FN	06/12/22	16/12/22	16/12/22-30/12/22	16	<2.00	7.6	28
Dec-22 6th FN	21/12/22	02/01/23	02/01/23-13/01/23	12	<2.00	7.9	27
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/22 Test Report No. 2230	Job No. 094322160	Year	2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	**Dec.'22**
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/22
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/22-06/01/23
Testing /Sampling Protocol	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP**

Stations: **Date of Sampling:**

1. Mine Quarry Water (Nov 2nd FN) 21/11/2022
2. Workshop Effluent (Nov 2nd FN) 21/11/2022
3. OB Dump Effluent (Nov 2nd FN) 21/11/2022

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l, Max	0.69	0.34	0.56	0.02	50.0	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l, *Max*	<0.002	<0.002	<0.002	0.002	0.2	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l, Max	<2.00	10.0	<2.00	2.00	30.0	IS 3025 /44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	0.0004	2.0	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l, Max	12	348	16	4.00	250.0	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l, *Max*	<0.02	<0.02	<0.02	0.02	3.0	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate, mg/l, Max	<0.30	<0.30	<0.30	0.30	5.0	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F) mg/l, *Max*	0.95	0.99	0.92	0.02	2.0	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l, Max	<0.02	<0.02	<0.02	0.02	5.0	IS:3025/34:1988, Nesseler's
10	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	0.01	0.1	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l, *Max*	<0.04	<0.04	<0.04	0.04	3.0	IS 3025 /53: 2003, R : 2009 , AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l, *Max*	<0.001	<0.001	<0.001	0.001	0.1	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l, Max	<0.01	<0.01	<0.01	0.01	2.0	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l, *Max*	<0.003	<0.003	<0.003	0.003	3.0	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen, mg/l, *Max*	1.41	0.68	1.42	0.50	10.0	APHA, 23rd Edition, UV-Spectrphotometric Method, 2017
16	Oil & Grease, mg/l, Max	<2.00	8.7	<2.00	2.00	10.0	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.6	7.5	7.6	1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C_6H_5OH),mg/l, *Max*	<0.001	<0.001	<0.001	0.001	1.0	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l, *Max*	<0.0005	<0.0005	<0.0005	0.0005	0.05	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S^{-2}), mg/l, Max	0.006	<0.005	<0.005	0.005	2.0	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (° C)	20.3	20.4	20.2	Shall not exceed 5^0 C above the receiving temp.		IS-3025/09:1984, R;2002, Thermometeric
22	Total Chromium (as Cr), mg/l, *Max*	<0.002	<0.002	<0.002	<0.002	2.0	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l, Max	2.8	1.4	1.4	1.00	100.0	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l, Max	<0.02	<0.02	<0.02	0.02	1.0	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l, Max	20	768	30	10.00	100.0	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l, *Max*	<0.005	<0.005	<0.005	0.005	5.0	IS 3025 /49: 1994, R: 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/22 Test Report No. 2231	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Surface Water**	Quarter Ending	Dec-22
Customer	CCL	Date of Receipt:	17-10-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	17.10.22-15.12.22
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP**

Stations: **Date of Sampling:**

1. U/S of Sonadoba Nala 08-10-2022
2. D/S of Sonadoba Nala 08-10-2022
3. U/S of Damodar River 08-10-2022
4. D/S of Damodar River 08-10-2022

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.4	2.1	<2.0	<2.0	2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	10	12	8	8	2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	7.2	7.3	7.8	7.9	0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.44	0.45	0.51	0.52	0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO_3), mg/l, Max	2.52	2.47	1.68	1.79	0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.18	7.99	8.07	8.19	1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO_4) mg/l, Max	18	20	12	14	2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	275	293	225	247	25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	38	34	16	17	10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.006	0.007	0.008	0.006	0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/22 Test Report No. 2232	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Drinking Water**	Quarter Ending	Dec-22
Customer	CCL	Date of Receipt:	17-10-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	17.10.22-15.12.22
Testing/ Sampling Protocol:	**IS:10500 Drinking Water Standards,** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** KDH OCP

Stations: **Date of Sampling:**

1. Well Water at Bishrampur Village 08-10-2022
2. Well Water at Bhootnagar Village 08-10-2022
3. Well Water at Karkatta Village 08-10-2022
4. Well Water at Bukbuka Village 08-10-2022

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.20	<0.20	<0.20	<0.20	0.20	0.5	APHA, 23rd Edition Carmine Method; 2017
2	Cadmium (as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	0.003	APHA, 23rd Edition AAS-GTA Method, 2017
3	Calcium (as Ca), mg/l, Max	51.2	59.2	70.4	68.8	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	46	48	42	40	2.00	250	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	0.05	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F) mg/l, Max	0.18	0.21	0.18	0.19	0.02	1.0	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l, Min	0.03	<0.02	<0.02	<0.02	0.02	0.2	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	1.0	IS 3025 /53: 2003, R : 2009 AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.01	APHA, 23rd Edition AAS-GTA Method, 2017
10	Manganese (as Mn), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.1	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l, *Max*	<0.003	<0.003	<0.003	<0.003	0.003	0.02	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO_3), mg/l, Max	17.90	17.30	16.40	17.80	0.5	45	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	7.67	7.74	7.62	7.59	1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 23rd Edition,4-Amino Autipyrine, 2017
16	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.01	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO_4) mg/l, Max	114	121	128	134	2.00	200	APHA, 23rd Edition. Turbidity Method, 2017
18	Total Alkalinity (c_aco_3), mg/l, Max	176	196	176	188	4.00	200	IS-3025/23:1986,R: 2009, Titration Method
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.05	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l, Max	447	473	402	440	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (c_aco_3), mg/l, Max	288	332	296	308	4.00	200	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU, Max	1	1	1	2	1.0	1	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l, Max	0.008	<0.005	0.007	0.006	0.005	5.0	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

03/23 Test Report No. 2218	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m³)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	04/01/23-05/01/23	16-01-2023	16/01/23-19/01/23	385	192	71	< 25	< 6	East Sunny
Jan-23 2nd FN	18/01/23-19/01/23	01-02-2023	01/02/23-08/02/23	241	135	65	< 25	< 6	East Sunny
Feb-23 3rd FN	03/02/23-04/02/23	16-02-2023	16/02/23-17/02/23	215	96	53	< 25	< 6	East Sunny
Feb-23 4th FN	18/02/23-19/02/23	01-03-2023	01/03/23-14/03/23	248	117	50	< 25	< 6	East Sunny
Mar-23 5th FN	03/03/23-04/03/23	16-03-2023	16/03/23-22/03/23	160	78	35	< 25	< 6	East Sunny
Mar-23 6th FN	18/03/23-19/03/23	01-04-2023	01/04/23-17/04/23	167	101	55	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

03/23 Test Report No. 2219	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Bhoot Nagar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	04/01/23-05/01/23	16-01-2023	16/01/23-19/01/23	209	85	47	< 25	< 6	East Sunny
Jan-23 2nd FN	18/01/23-19/01/23	01-02-2023	01/02/23-08/02/23	227	92	56	< 25	< 6	East Sunny
Feb-23 3rd FN	03/02/23-04/02/23	16-02-2023	16/02/23-17/02/23	137	63	35	< 25	< 6	East Sunny
Feb-23 4th FN	18/02/23-19/02/23	01-03-2023	01/03/23-14/03/23	120	68	38	< 25	< 6	East Sunny
Mar-23 5th FN	03/03/23-04/03/23	16-03-2023	16/03/23-22/03/23	127	68	37	< 25	< 6	East Sunny
Mar-23 6th FN	18/03/23-19/03/23	01-04-2023	01/04/23-17/04/23	120	65	32	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

03/23 Test Report No. 2220	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Water Tanker Filling Station

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	04/01/23-05/01/23	16-01-2023	16/01/23-19/01/23	267	97	54	< 25	< 6	East Sunny
Jan-23 2nd FN	18/01/23-19/01/23	01-02-2023	01/02/23-08/02/23	166	88	41	< 25	< 6	East Sunny
Feb-23 3rd FN	03/02/23-04/02/23	16-02-2023	16/02/23-17/02/23	277	92	56	< 25	< 6	East Sunny
Feb-23 4th FN	18/02/23-19/02/23	01-03-2023	01/03/23-14/03/23	210	88	53	< 25	< 6	East Sunny
Mar-23 5th FN	03/03/23-04/03/23	16-03-2023	16/03/23-22/03/23	138	78	31	< 25	< 6	East Sunny
Mar-23 6th FN	18/03/23-19/03/23	01-04-2023	01/04/23-17/04/23	153	76	46	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

03/23 Test Report No. 2221	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** Karkatta Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	05/01/23-06/01/23	16-01-2023	16/01/23-19/01/23	172	74	36	< 25	< 6	East Sunny
Jan-23 2nd FN	19/01/23-20/01/23	01-02-2023	01/02/23-08/02/23	173	70	36	< 25	< 6	East Sunny
Feb-23 3rd FN	04/02/23-05/02/23	16-02-2023	16/02/23-17/02/23	187	77	35	< 25	< 6	East Sunny
Feb-23 4th FN	19/02/23-20/02/23	01-03-2023	01/03/23-14/03/23	130	68	41	< 25	< 6	East Sunny
Mar-23 5th FN	04/03/23-05/03/23	16-03-2023	16/03/23-22/03/23	265	91	46	< 25	< 6	East Sunny
Mar-23 6th FN	19/03/23-20/03/23	01-04-2023	01/04/23-17/04/23	161	81	42	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

03/23 Test Report No. 2222	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** BishrampurVillage

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	05/01/23-06/01/23	16-01-2023	16/01/23-19/01/23	207	81	41	< 25	< 6	East Sunny
Jan-23 2nd FN	19/01/23-20/01/23	01-02-2023	01/02/23-08/02/23	134	64	24	< 25	< 6	East Sunny
Feb-23 3rd FN	04/02/23-05/02/23	16-02-2023	16/02/23-17/02/23	112	53	23	< 25	< 6	East Sunny
Feb-23 4th FN	19/02/23-20/02/23	01-03-2023	01/03/23-14/03/23	159	75	34	< 25	< 6	East Sunny
Mar-23 5th FN	04/03/23-05/03/23	16-03-2023	16/03/23-22/03/23	134	76	34	< 25	< 6	East Sunny
Mar-23 6th FN	19/03/23-20/03/23	01-04-2023	01/04/23-17/04/23	136	62	31	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

03/23 Test Report No. 2223	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP** **Stations:** KDH Siding Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in µg/m^3)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}+ >PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($PM_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	05/01/23-06/01/23	16-01-2023	16/01/23-19/01/23	544	280	76	< 25	< 6	East Sunny
Jan-23 2nd FN	19/01/23-20/01/23	01-02-2023	01/02/23-08/02/23	169	96	50	< 25	< 6	East Sunny
Feb-23 3rd FN	04/02/23-05/02/23	16-02-2023	16/02/23-17/02/23	313	146	72	< 25	< 6	East Sunny
Feb-23 4th FN	19/02/23-20/02/23	01-03-2023	01/03/23-14/03/23	259	139	70	< 25	< 6	East Sunny
Mar-23 5th FN	04/03/23-05/03/23	16-03-2023	16/03/23-22/03/23	256	126	68	< 25	< 6	East Sunny
Mar-23 6th FN	19/03/23-20/03/23	01-04-2023	01/04/23-17/04/23	151	73	43	< 25	< 6	East Sunny

Note:
1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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TEST REPORT

03/23 Test Report No. 2224	Job No. 094322160	Year	FY2022-23
Type of Sample:	Noise	Quarter Ending	Mar-23
Customer	CCL		
Testing/ Sampling Protocol:	*'The noise pollution (Regulation and Control), Rules,2000,* LQR 34		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP**

Station Name	Noise Level dB(A) Leq					
	Jan-23 1st FN	Jan-23 2nd FN	Feb-23 3rd FN	Feb-23 4th FN	Mar-23 5th FN	Mar-23 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	04-01-2023	18-01-2023	03-02-2023	18-02-2023	03-03-2023	18-03-2023
1. P.O.Office	69.9/63.7	70.3/64.5	71.3/65.2	70.5/64.3	71.4/65.2	70.6/64.8
Date of recording	04-01-2023	18-01-2023	03-02-2023	18-02-2023	03-03-2023	18-03-2023
2. Booth nagar	66.7/60.5	70.2/64.3	67.8/61.7	68.6/62.5	67.5/61.3	67.3/61.5
Date of recording	04-01-2023	18-01-2023	03-02-2023	18-02-2023	03-03-2023	18-03-2023
3. Water Tanker Filling Station	70.4/64.3	71.1/65.6	70.6/64.5	70.2/64.3	69.9/63.8	70.7/64.6
Date of recording	05-01-2023	19-01-2023	04-02-2023	19-02-2023	04-03-2023	19-03-2023
5. Karkatta Village	67.8/61.4	68.3/62.4	68.3/62.4	67.9/61.8	68.1/62.3	66.8/60.7
Date of recording	05-01-2023	19-01-2023	04-02-2023	19-02-2023	04-03-2023	19-03-2023
6. Bisrampur Village	66.3/60.4	67.5/61.2	66.9/60.8	68.4/62.3	67.7/63.5	65.9/59.6
Date of recording	05-01-2023	19-01-2023	04-02-2023	19-02-2023	04-03-2023	19-03-2023
7. KDH Siding Office	71.5/65.6	71.7/65.3	71.7/65.6	71.6/65.4	70.7/64.8	71.3/65.2

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	*Limits in dB(A) Leq*	
	Day Time 6.00 AM to 10.00 PM	*Night Time 10.00 PM to 6.00 AM*
Industrial Area	*75*	*70*
Commercial Area	*65*	*55*
Residential area	*55*	*45*
Silence Zone	*50*	*40*

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TEST REPORT

03/23 Test Report No. 2225	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: **North Karanpura** **Project:** **KDH OCP** **Stations:** Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Jan-23 1st FN	07/01/23	16/01/23	16/01/23-31/01/23	20	<2.00	7.4	44
Jan-23 2nd FN	21/01/23	01/02/23	01/02/23-15/02/23	20	<2.00	7.8	49.2
Feb-23 3rd FN	06/02/23	16/02/23	16/02/23-28/02/23	20	<2.00	8	39.2
Feb-23 4th FN	21/02/23	01/03/23	01/03/23-15/03/23	24	<2.00	8.2	68
Mar-23 5th FN	06/03/23	16/03/23	16/03/23-31/03/23	20	<2.00	7.6	47
Mar-23 6th FN	21/03/23	03/04/23	03/04/23-13/04/23	20	<2.00	8.3	53
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

03/23 Test Report No. 2226	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpur** **Project:** **KDH OCP** **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Jan-23 1st FN	07/01/23	16/01/23	16/01/23-31/01/23	210	5.41	7.6	329
Jan-23 2nd FN	21/01/23	01/02/23	01/02/23-15/02/23	124	5.21	8.1	276.1
Feb-23 3rd FN	06/02/23	16/02/23	16/02/23-28/02/23	216	7.21	7.7	428
Feb-23 4th FN	21/02/23	01/03/23	01/03/23-15/03/23	236	6.82	8.1	427
Mar-23 5th FN	06/03/23	16/03/23	16/03/23-31/03/23	180	6.2	7.8	376
Mar-23 6th FN	21/03/23	03/04/23	03/04/23-13/04/23	52	3	8.2	156
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

03/23 Test Report No. 2227	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Effluent Water**	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	**MOEF -SCH-VI STANDARDS, Class 'A',** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpur** **Project:** **KDH OCP** **Stations:** OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				**COD**	**O & G**	**pH value**	**TSS**
Detection Limit				**4**	**2**	**0.2**	**10**
MOEF -SCH-VI, STANDARDS, Class 'A'				**250**	**10**	**5.5 to 9.0**	**100**
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	**Value in mg/l, except pH**			
Jan-23 1st FN	07/01/23	16/01/23	16/01/23-31/01/23	24	<2.00	7.9	50
Jan-23 2nd FN	21/01/23	01/02/23	01/02/23-15/02/23	16	<2.00	8.1	37.4
Feb-23 3rd FN	06/02/23	16/02/23	16/02/23-28/02/23	24	<2.00	8.1	57.2
Feb-23 4th FN	21/02/23	01/03/23	01/03/23-15/03/23	24	<2.00	8.1	70
Mar-23 5th FN	06/03/23	16/03/23	16/03/23-31/03/23	16	<2.00	7.8	37
Mar-23 6th FN	21/03/23	03/04/23	03/04/23-13/04/23	16	<2.00	8.3	47
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

03/23 Test Report No. 2228	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Surface Water**	Quarter Ending	Mar-23
Customer	CCL	Date of Receipt:	16-01-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.01.23-16.03.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** **KDH OCP**

Stations: **Date of Sampling:**

1. U/S of Sonadoba Nala 07-01-2023
2. D/S of Sonadoba Nala 07-01-2023
3. U/S of Damodar River 07-01-2023
4. D/S of Damodar River 07-01-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.6	<2.0	<2.0	2.3	2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	22	22	8	10	2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	7.1	7.6	7.7	7.2	0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.15	0.24	0.89	0.97	0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO_3), mg/l, Max	11.76	21.09	3.82	4.00	0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.1	8.2	8.4	8.3	1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO_4) mg/l, Max	97	108	307	302	2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	620	611	179	189	25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	34	28	15	21	10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

03/23 Test Report No. 2229	**Job No. 094322160**	**Year**	FY2022-23
Type of Sample:	**Drinking Water**	Quarter Ending	Mar-23
Customer	CCL	Date of Receipt:	16-01-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.01.23-16.03.23
Testing/ Sampling Protocol:	**IS:10500 Drinking Water Standards,** LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : **North Karanpura** **Project:** KDH OCP

Stations: **Date of Sampling:**

1. Well Water at Bishrampur Village 07-01-2023
2. Well Water at Bhootnagar Village 07-01-2023
3. Well Water at Karkatta Village 07-01-2023
4. Well Water at Bukbuka Village 07-01-2023

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.2	<0.2	<0.2	<0.2	0.20	0.5	APHA, 23rd Edition Carmine Method; 2017
2	Cadmium (as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	0.003	APHA, 23rd Edition AAS-GTA Method, 2017
3	Calcium (as Ca), mg/l, Max	56	62.4	57.6	72	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	38	42	38	40	2.00	250	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	0.05	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F) mg/l, Max	0.14	0.16	0.49	0.46	0.02	1.0	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l, Min	0.04	0.04	0.07	0.04	0.02	0.2	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	1.0	IS 3025 /53: 2003, R : 2009 AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.01	APHA, 23rd Edition AAS-GTA Method, 2017
10	Manganese (as Mn), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.1	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l, *Max*	<0.003	<0.003	<0.003	<0.003	0.003	0.02	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO_3), mg/l, Max	15.46	20.51	1.16	17.80	0.5	45	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	8	7.7	8.1	7.8	1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 23rd Edition,4-Amino Autipyrine, 2017
16	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.01	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO_4) mg/l, Max	106	111	28	17	2.00	200	APHA, 23rd Edition. Turbidity Method, 2017
18	Total Alkalinity (c_aco_3), mg/l, Max	208	196	164	256	4.00	200	IS-3025/23:1986,R: 2009, Titration Method
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.05	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l, Max	466	460	405	512	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (c_aco_3), mg/l, Max	324	328	276	376	4.00	200	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU, Max	1	1	1	2	1.0	1	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	5.0	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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