

ENVIRONMENTAL STATEMENT 2013-14

ROHINI OPENCAST PROJECT

N K AREA, DAKRA

August, 2014



CENTRAL COALFIELDS LIMITED
ENVIRONMENT DIVISION
Ranchi

EXECUTIVE - SUMMARY**1.0 BACKGROUND**

The proposed Rohini Expansion Opencast mining project (0.8MTY to 2.0MTY) has been prepared by RI-III, CMPDI, Ranchi. The proposed Rohini Exp. project is located in south central part of North Karanpur Coalfields and lies in the Ranchi District of Jharkhand. It is situated in west of Damodar River and north & north-west of the Karkatta OCP & K.D. Hesalong OCP of N. K. Area in CCL. The proposal was approved in the 351st meeting of Board of Directors of CCL held on 29/09/2008.

The project produced 0.731 MT of coal during the year 2013-14. A comprehensive Environmental Management Plan (EMP) for this project (0.8 MTPA to 2.00 MTPA), formulated by RI-III of CMPDI, was approved by the MOEF vide letter no. J-11015/227/2007-IA.II(M) dated 05.10.2009. 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 SO₂, NO_x 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.
- v) The plantation over 4 Ha O.B. dump is completed by forest department.
- vi) At present, the entire volume of OB generated is being reutilized for back – filling.
- vii) The volume of waste water generated from the colony is 102 m³/day.
- viii) No hazardous waste material is being produced either from any process or any pollution control facilities.

SUMMARISED DATA

1. Production capacity : 2.00 MTY
2. Mineable Reserve : 15.979 MT
3. Total Volume of O.B. : 34.74 M m³
4. Average Stripping Ratio : 2.13 m³/Te
5. Total land requirement : 250.57 Ha
6. Forest land requirement : 146.24 Ha
7. Life of the Project : 10 Years
8. Average quality of coal : Grade G-10
9. Average Rainfall / annum : 1450 mm
10. Temperature :
 - i. Maximum : 42 °C
 - ii. Minimum : 04 °C
11. Predominant Wind Direction and Av. Wind Velocity :
 - i. Summer : SW, 9.5 Km/hr
 - ii. Rainy : SE, 8.5 Km/hr
 - iii. Winter : NW, 6.5 Km/hr
12. Magnitude of waste generated
 - i. Waste water discharge from
 - a. Colony : 102 m³/day
 - b. Workshop : 45 m³/day
 - c. Mine : Nil
 - ii. Solid Waste.
 - a. Top Soil : NIL
 - b. O.B. : 0.89 M cuM

ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING 31ST MARCH- 2014

PART-A

I. Name and Address of the mine

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

II. INDUSTRY CATEGORY : PRIMARY

III. Date of last Environmental Statement Report submitted : Sept-2013

IV. PRODUCTION CAPACITY : 2.00 MTY

V. YEAR OF STARTING : 1992-93

PART - B

WATER AND RAW MATERIAL CONSUMPTION

1. WATER CONSUMPTION (cu.m/day)

a. Mining

- i. Haul road dust suppression : 46 M³/Day
- ii. Workshop : 25 M³/Day
- iii. Fire Fighting : 12 M³/Day
- iv. Others (Service building etc.) : 6 M³/Day

b. Domestic

- i. Colony : 136.14 M³/Day

Name of Product	Water Consumption per Unit of Product					
	Financial Year - 2013-14			Financial Year - 2012-13		
	Production (MT)	Industrial (M ³ /Te)	Domestic (M ³ /Te)	Production (MT)	Industrial (M ³ /Te)	Domestic (M ³ /Te)
ROM Coal	0.731	0.04	0.06	0.74	0.04	0.07

Note: Industrial water consumption is mainly due to fire fighting and miscellaneous operations and not directly linked with production.

2. RAW MATERIAL CONSUMPTION:

Name of Products	Name of Raw Material	Consumption of Raw Material (per unit of output)	
		Financial Year - 2013-14	Financial Year - 2012-13
ROM Coal	POL	1.76 Ltr/Te	2.09 Ltr/Te
	Explosives	0.75 Kg/Te	0.70 Kg/Te

PART - C

POLLUTION DISCHARGED TO ENVIRONMENT/UNIT 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	NIL	
b) Workshop Effluent	45 cu.m/day	
c) Domestic Discharged	102 cu.m/day	Not applicable
Air		
The SPM, SO ₂ and NO _x 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 - 2013-14	Financial Year - 2012-13
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 - 2013-14	Financial Year - 2012-13
a) From mining process -		
i. Top Soil	NIL	Nil
ii. Overburden	0.89	0.97
b) From pollution control facilities	NIL	NIL
c) Quantity recycled or reutilised	The entire volume of Overburden removed during the process of coal winning is reutilised for back filling	

PART - F

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

Hazardous wastes are 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.

During the year 2013-14, 0.89, 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

The entire overburden generated will be 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) Regular sprinkling of water on haul roads and other roads.
- ii) Wetting of ROM coal before crushing in Feeder Breaker.
- iii) Water sprinkling on coal stock.
- iv) Plantation on OB dumps on 4Ha by Forest Department in FY 2012-13 and in other vacant space.
- v) Blasting is done during congenial atmosphere.

2.0 ANTI WATER POLLUTION MEASURES

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

- i) The mine water is pumped into a sedimentation pond from where it is pumped for reuse. Some portions of mine water are also used for haul road dust suppression.
- ii) 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) for this project (0.8 MTPA to 2.00 MTPA), formulated by RI-III of CMPDI, was approved by the MOEF vide letter no. J-11015/227/2007-IA.II(M) dated 05.10.2009. This report is prepared with a view to fulfill the statutory obligations laid down by the Ministry of Environment & Forest. 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.

TEST REPORT

Job No. : 094313025 Date of Issue: 02/05/13
Name of the Customer : CCL
Customer Letter Ref. No. (if any): CCL/Env-Monitoring/13-14/ 2013/823-828 dt. 16/05/13
Sample Description : Air
Product Specification (BIS) : Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000
Test Required : As per Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000
Date of receipt of sample : 22/04/13 Date of performance of Test: 22/04/13 to 02/05/13

TEST RESULT

The sample has been tested with the following results:-

Area : *North Karanpura* Year
2013
Project : *Rohini OCP* Quarter Ending June
'2013

Name of the Sampling Station *P.O Office*

Date of Sampling	SPM	RPM	SO2	NOx	Remarks
17/04/2013 - 18/04/2013	200	157	11	38	

Name of the Sampling Station *Ashok Vihar Colony*

Date of Sampling	SPM	RPM	SO2	NOx	Remarks
17/04/2013 - 18/04/2013	341	153	10	41	

Name of the Sampling Station *Intake Well Pump*

Date of Sampling	SPM	RPM	SO2	NOx	Remarks
17/04/2013 - 18/04/2013	188	138	<10	36	

Analysed By

Checked By

N.K - 1

G.M (Chemist)
Env. Lab, CMPDI (HQ)
(Authorized Signatory)

TEST REPORT

Job No. : 094313025 Date of Issue: 22/04/13
Name of the Customer : CCL
Customer Letter Ref. No. (if any): CCL/Env-Monitoring/13-14/ 2013/823-828 dt. 16/05/13
Sample Description : Noise
Product Specification (BIS) : Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000
Test Required : As per Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000
Date of receipt of sample : 22/04/13 Date of performance of Test:
-

TEST RESULT

The sample has been tested with the following results:-

Area : **North Karanpura** **Year**
2013
Project : **Rohini OCP** **Quarter Ending June**
'2013

Sampling Stations 1 P.O. Office
2 Ashok Vihar Colony

Station Name	Date of Sampling	Noise Level
P.O.Office	17/04/2013	52.4
Ashok Vihar Colony	17/04/2013	50.5

Permissible Limit of Noise Level vide Gazette Notification G.S.R. 742(E) Dt. 25th Sep '2K

	6.00 AM to 10.00 PM	10.00 PM to 6.00 AM
Noise Level	Leq 75 dB(A)	Leq 70 dB(A)

Checked By

N.K - 2

G.M (Chemist)
Env. Lab, CMPDI(HQ)
(Authorized Signatory)

TEST REPORT

Job No. : 094313025 Date of Issue: 20/05/13
 Name of the Customer : CCL

Customer Letter Ref. No. (if any): CCL/Env-Monitoring/13-14/ 2013/823-828 dt. 16/05/13
 Sample Description : Surface Water
 Product Specification (BIS) : IS: 2296 Inland Surface Water Class 'C'
 Test Required : 18 items as per IS: 2296
 Date of receipt of sample : 22/04/13 Date of performance of Test: 22/04/13 to 20/05/13

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura **Year**
 2013
Project : Rohini OCP **Quarter Ending June**
 '2013

Sampling Stations

1	Damodar U/S of Kandua Conf.	15-Apr-13
2	Damodar D/S of Kandua Conf.	15-Apr-13
3	Kendua Nala before Damodar	15-Apr-13

All parameter are in mg/l unless specified

BDL - Below Detectable Limit

Sl.No.	Parameter	Sampling Stations			Below Detection Limit	IS : 2296 INLAND SURFACE WATER [1982] Class 'C'	Remarks
		1	2	3			
1	Colour, Hazen unit,Max	18	24	28	1.00	300	
2	Total Suspended Solids	48	64	68	5.00	\$	
3	Disolved Oxygen	5.20	5.10	4.90	0.10	4	
4	pH value	8.10	8.15	7.98	0.01	6.5-8.5	
5	Iron	BDL	0.05	BDL	0.05	5	
6	Chlorides	40	48	30	0.25	600	
7	BOD (3 days 27°C)	2.40	2.50	2.60	1.00	3	
8	Total Dissolved Solids	320	380	240	1.00	1500	
9	Copper	0.02	0.02	0.03	0.02	1.5	
10	Sulphate	74	78	48	1.00	400	
11	Nitrate	8.41	8.86	9.30	0.01	50	
12	Fluoride	0.35	0.38	0.40	0.05	1.5	
13	Selenium	BDL	BDL	BDL	0.01	0.05	
14	Arsenic	BDL	BDL	BDL	0.01	0.2	
15	Lead	BDL	BDL	BDL	0.05	0.1	
16	Zinc	0.02	0.02	0.03	0.02	15	
17	Hexavalent Chromium	BDL	BDL	BDL	0.01	0.05	
18	Phenolics	BDL	BDL	BDL	0.001	0.005	

*Class-C: Tolerance Limit for surface water used for drinking water source with conventional treatment followed by disinfection
 \$ represents limits not specified*

Analysed By

Checked By

G.M (Chemist)
 Env. Lab, CMPDI(HQ)
 (Authorized Signatory)

N.K - 3

TEST REPORT

Job No. : 094313025 Date of Issue: 29/07/13
 Name of the Customer : CCL

Customer Letter Ref. No. (if any): CCL/Env-Monitoring/13-14/ 2013/823-828 dt. 16/05/13
 Sample Description : Air
 Product Specification (BIS) : Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000
 Test Required : As per Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000
 Date of receipt of sample : 22/07/13 Date of performance of Test: 22/07/13 to 29/07/13

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura Year **2013**
 Project : Rohini OCP Quarter Ending Sept. **'2013**

Name of the Sampling Station *P.O Office*

Date of Sampling	SPM	RPM	SO2	NOx	Remarks
09/07/2013 - 10/07/2013	169	96	<25	24	

Name of the Sampling Station *Ashok Vihar Colony*

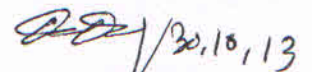
Date of Sampling	SPM	RPM	SO2	NOx	Remarks
09/07/2013 - 10/07/2013	187	124	<25	24	

Name of the Sampling Station *Intake Well Pump*

Date of Sampling	SPM	RPM	SO2	NOx	Remarks
09/07/2013 - 10/07/2013	273	138	<25	23	


 Analysed By


 Checked By


 G.M (Chemist)
 Env. Lab, CMPDI (HQ)
 (Authorized Signatory)

N.K - 1

- Note:
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 Project Officer
 Rohini Project

TEST REPORT

Job No. : 094313025
 Name of the Customer : CCL

Date of Issue: 22/07/13

Customer Letter Ref. No. (if any): CCL/Env-Monitoring/13-14/ 2013/823-828 dt. 16/05/13

Sample Description : Noise

Product Specification (BIS) : Gazette Notification no. G.S.R 742(E) dt.25th Sept. 2000

Test Required : As per Gazette Notification no. G.S.R 742(E) dt.25th Sept. 2000

Date of receipt of sample : 22/07/13

Date of performance of Test: -

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura
 Project : Rohini OCP

Year : 2013
 Quarter Ending Sept. : '2013

Sampling Stations
 1 P.O. Office
 2 Ashok Vihar Colony

Station Name	Date of Sampling	Noise Level
P.O.Office	09/07/2013	52.6
Ashok Vihar Colony	09/07/2013	50.7

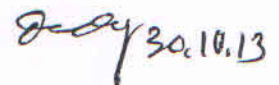
Permissible Limit of Noise Level vide Gazette Notification G.S.R. 742(E) Dt. 25th Sep '2K

	6.00 AM to 10.00 PM	10.00 PM to 6.00 AM
Noise Level	Leq 75 dB(A)	Leq 70 dB(A)



Checked By

N.K - 2



G.M (Chemist)
 Env. Lab, CMPDI(HQ)
 (Authorized Signatory)

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Project Official
Project Official
Rohini Project

TEST REPORT

Job No. : 094313025
 Name of the Customer : CCL

Date of Issue: 03/08/13

Customer Letter Ref. No. (if any): CCL/Env-Monitoring/13-14/ 2013/823-828 dt. 16/05/13

Sample Description : Surface Water
 Product Specification (BIS) : IS: 2296 Inland Surface Water Class 'C'
 Test Required : 19 items as per IS: 2296
 Date of receipt of sample : 22/07/13

Date of performance of Test: 22/07/13 to 03/08/13

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura
 Project : Rohini OCP

Year : 2013
 Quarter Ending Sept. : '2013

Sampling Stations 1 Damodar U/S of Kandua Conf.
 2 Damodar D/S of Kandua Conf.
 3 Kendua Nala before Damodar

17-Jul-13
 17-Jul-13
 17-Jul-13

All parameter are in mg/l unless specified

BDL - Below Detectable Limit

Sl.No.	Parameter	Sampling Stations			Below Detection Limit	IS : 2296 INLAND SURFACE WATER [1982] Class 'C'	Remarks
		1	2	3			
1	Colour, Hazen unit,Max	14	16	22	5.0	300	
2	Total Suspended Solids	52	68	72	25.00	\$	
3	Disolved Oxygen	4.80	4.90	4.70	0.10	4	
4	pH value	7.90	8.05	7.98	0.01	6.5-8.5	
5	Iron	BDL	BDL	BDL	0.06	5	
6	Chlorides	42	44	34	2.00	600	
7	BOD (3 days 27°C)	2.40	2.80	2.40	2.00	3	
8	Total Dissolved Solids	290	324	276	25.00	1500	
9	Copper	BDL	BDL	BDL	0.03	1.5	
10	Sulphate	30	38	54	2.00	400	
11	Nitrate	7.97	8.41	7.53	0.50	50	
12	Fluoride	0.42	0.45	0.42	0.02	1.5	
13	Cadmium	BDL	BDL	BDL	0.0005	0.01	
14	Selenium	BDL	BDL	BDL	0.005	0.05	
15	Arsenic	BDL	BDL	BDL	0.005	0.2	
16	Lead	BDL	BDL	BDL	5.00	0.1	
17	Zinc	BDL	BDL	BDL	0.01	15	
18	Hexavalent Chromium	BDL	BDL	BDL	0.01	0.05	
19	Phenolics	BDL	BDL	BDL	0.002	0.005	

Class-C: Tolerance Limit for surface water used for drinking water source with conventional treatment followed by disinfection
 \$ represents limits not specified

Madhab
 Analysed By

Vinit
 Checked By

2009/30.10.13
 G.M (Chemist)
 Env. Lab, CMPDI(HQ)
 (Authorized Signatory)

N.K - 3

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Project Officer
Project Officer
Rohini Project

TEST REPORT

Job No. : 094313025
 Name of the Customer : CCL

Date of Issue: 07/11/13

Customer Letter Ref. No. (if any): CCL/DGM-HOD(E&F)/2013/1570 Dt. 22/11/13

Sample Description : Air

Product Specification (BIS) : Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000

Test Required : As per Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000

Date of receipt of sample : 28/10/13 Date of performance of Test: 28/10/13 to 07/11/13

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura
 Project : Rohini OCP

Year : 2013
 Quarter Ending Dec. : 2013

All parameters are in µg/m³

Name of the Sampling Station *P.O Office*

Date of Sampling	SPM	RPM	SO2	NOx	Remarks
17/10/2013 - 18/10/2013	122	48	<25	24	

Name of the Sampling Station *Ashok Vihar Colony*

Date of Sampling	SPM	RPM	SO2	NOx	Remarks
17/10/2013 - 18/10/2013	165	138	<25	23	

Name of the Sampling Station *Intake Well Pump*

Date of Sampling	SPM	RPM	SO2	NOx	Remarks
17/10/2013 - 18/10/2013	98	56	<25	22	

Renu
 Analysed By

N.K.
 Checked By

2013.11.14
 G.M (Chemist)
 Env. Lab, CMPDI (HQ)
 (Authorized Signatory)

N.K - 1

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[Signature]
Project Officer
Rohini Project

TEST REPORT

Date of Issue: 28/10/13

Job No. : 094313025
 Name of the Customer : CCL
 Customer Letter Ref. No. (if any): CCL/DGM-HOD(E&F)/2013/1570 Dt. 22/11/13
 Sample Description : Noise
 Product Specification (BIS) : Gazette Notification no. G.S.R 742(E) dt.25th Sept. 2000
 Test Required : As per Gazette Notification no. G.S.R 742(E) dt.25th Sept. 2000
 Date of receipt of sample : 28/10/13

Date of performance of Test: -

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura
 Project : Rohini OCP

Year : 2013
 Quarter Ending Dec. : '2013

Sampling Stations
 1 P.O. Office
 2 Ashok Vihar Colony

Station Name	Date of Sampling	Noise Level
P.O. Office	17/10/2013	49.2
Ashok Vihar Colony	17/10/2013	48.5

Permissible Limit of Noise Level vide Gazette Notification G.S.R. 742(E) Dt. 25th Sep '2K

Noise Level	6.00 AM to 10.00 PM	10.00 PM to 6.00 AM
	Leq 75 dB(A)	Leq 70 dB(A)



Checked By

N.K - 2

 17.1.14

G.M (Chemist)
 Env. Lab, CMPDI(HQ)
 (Authorized Signatory)

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Project Officer
Rohini Project

TEST REPORT

Job No. : 094313025
 Name of the Customer : CCL

Date of Issue: 07/11/13

Customer Letter Ref. No. (if any): CCL/DGM-HOD(E&F)/2013/1570 Dt. 22/11/13
 Sample Description : Surface Water
 Product Specification (BIS) : IS: 2296 Inland Surface Water Class 'C'
 Test Required : 19 items as per IS: 2296
 Date of receipt of sample : 28/10/13 Date of performance of Test: 28/10/13 to 07/11/13

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura
 Project : Rohini OCP

Year : 2013
 Quarter Ending Dec. : '2013

Sampling Stations 1 Damodar U/S of Kandua Conf.
 2 Damodar D/S of Kandua Conf.
 3 Kendua Nala before Damodar

25-Oct-13
 25-Oct-13
 25-Oct-13

All parameter are in mg/l unless specified

BDL - Below Detectable Limit

Sl.N o	Parameter	Sampling Stations			Below Detection Limit	IS : 2296 INLAND SURFACE WATER [1982] Class 'C'	BIS Standard	Method
		1	2	3				
1	Colour, Hazen unit,Max	14	16	12	5.0	300	APHA, 22 nd Edition	Platinum Cobalt
2	Total Suspended Solids	38	54	72	25.00	\$	IS-3025/17:1984	Gravimetric
3	Disolved Oxygen	5.40	5.20	4.80	0.10	4	IS-3025/38:1989	Winkler Azide
4	pH value	7.94	8.10	8.08	0.01	6.5-8.5	IS-3025/11:1983	Electrometric
5	Iron	BDL	BDL	BDL	0.06	5	IS-3025/53:2003	AAS-Flame
6	Chlorides	36	40	44	2.00	600	IS-3025/32:1988	Argentometric
7	BOD (3 days 27°C)	2.40	2.60	2.40	2.00	3	IS-3025/44:1993	3 day incubation at 27°C
8	Total Dissolved Solids	328	384	248	25.00	1500	IS-3025/16:1984	Gravimetric
9	Copper	BDL	BDL	BDL	0.03	1.5	IS-3025/42:1992	AAS-Flame
10	Sulphate	68	72	40	2.00	400	APHA, 22 nd Edition	Turbidity
11	Nitrate	7.97	8.41	8.86	0.50	50	IS-3025/34:1988	Nessler's
12	Fluoride	0.43	0.46	0.38	0.02	1.5	APHA, 22 nd Edition	SPADNS
13	Cadmium	BDL	BDL	BDL	0.0005	0.01	APHA, 22 nd Edition	AAS-GTA
14	Selenium	BDL	BDL	BDL	0.005	0.05	APHA, 22 nd Edition	AAS-GTA
15	Arsenic	BDL	BDL	BDL	0.005	0.2	APHA, 22 nd Edition	AAS-GTA
16	Lead	BDL	BDL	BDL	0.005	0.1	APHA, 22 nd Edition	AAS-GTA
17	Zinc-	BDL	0.02	BDL	0.01	15	IS-3025/49:1994	AAS-Flame
18	Hexavalent Chromium	0.01	0.01	0.01	0.01	0.05	APHA, 22 nd Edition	Diphenylcarbohydrazide
19	Phenolics	0.002	0.002	0.002	0.002	0.005	APHA, 22 nd Edition	4-Amino Antipyrine

Class-C: Tolerance Limit for surface water used for drinking water source with conventional treatment followed by disinfection
 \$ represents limits not specified

Analyser By

Checked By

07/11/13
 G.M (Chemist)
 Env. Lab, CMPDI(HQ)
 (Authorized Signatory)

N.K - 3

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Project Officer
 Rohini Project

TEST REPORT

Lab No. T-2187	Job No. 094313025	Year	2013-14
Type of Sample:	Ambient Air	Quarter Ending	March '14
Customer / W. O. no. & Date:	CCL/DGM-HOD (E&F)/2013/ 1570 Dt. 22/11/13	Date of Receipt of Sample:	20.01.14
Mode of Receipt of Sample:	Jointly sampling with customer	Date of Analysis:	20.01.14-29.01.14
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution	Date of Reporting:	29.01.14
Testing Protocol:	Gazette Notification no. G.S.R 742(E) dt.25 th Sept.'2000		
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: Rohini OCP

Stations: 1. P.O.Office Date of Sampling: 08-09/01/2014
 2. Ashok Vihar Colony 08-09/01/2014
 3. Intake Well Pump 08-09/01/2014
 4. Workshop 17-18/01/2014

S.No	Test Parameters	Units	Test Method	TEST RESULT			
				1	2	3	4
Stations:							
1.	Total Particulate Matter (PM ₁₀ + >PM ₁₀)	µg/m ³	Lab.SOP 4 based on – IS: 5182/23, 2006	566	759	203	347
2.	Particulate Matter (PM ₁₀)	µg/m ³	IS: 5182/23 2006	269	310	125	177
3.	Sulphur Dioxide (SO ₂)	µg/m ³	IS: 5182 /02 2001 R-2006	<25	<25	<25	<25
4.	Nitrogen Oxides (as NO _x)	µg/m ³	IS: 5182 /02 1975 R-1998	21	20	22	21

Note: Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference

Renu
Analysed By

N.K. - 1
Checked By

N.K - 1

G.M. (Chemist)
G.M (Chemist)
Env. Lab., CMPDI(HQ)
(Authorized Signatory)

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[Signature]
Project Officer
Rohini Project

TEST REPORT

Lab No. T-2187	Job No. 094313025	Year	2013-14
Type of Sample:	Noise	Quarter Ending	March '14
Customer / W. O. no. & Date:	CCL/DGM-HOD(E&F)/2013/ 1570 Dt. 22/11/13	Date of Receipt of Sample:	24.01.14
Mode of Receipt of Sample:	Jointly sampling with customer	Date of Analysis:	-
Testing Protocol:	Gazette Notification no. G.S.R 742(E) dt.25 th Sept.'2000	Date of Reporting:	-
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura Project: Rohini OCP
 Stations: 1. P.O.Office Date of Sampling:
 2. Ashok Vihar Colony
 3.
 4.

Station Name	Date of Sampling	Noise Level
P.O.Office	08/01/2014	49.2
Ashok Vihar Colony	08/01/2014	48.5

Permissible Limit of Noise Level vide Gazette Notification G.S.R. 742(E) Dt. 25th Sep '2K

	6.00 AM to 10.00 PM	10.00 PM to 6.00 AM
Noise Level	Leq 75 dB(A)	Leq 70 dB(A)

N.K.

Checked By

N.K - 2

Raj 14.4.14

G.M (Chemist)
 Env. Lab., CMPDI(HQ)
 (Authorized Signatory)

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Raj
Project Officer
Rohini Project

TEST REPORT

Lab No. T-2187	Job No. 094313025	Year - 2013-14	2013-14
Type of Sample:	Surface Water	Quarter Ending	March '14
Customer / W. O. no. & Date:	CCL/DGM-HOD(E&F)/2013/ 1570 Dt. 22/11/13	Date of Receipt of Sample:	20.01.14
Mode of Receipt of Sample:	Picked up sample by laboratory	Date of Analysis:	20.01.14-01.02.14
Testing Protocol:		Date of Reporting:	01.02.14
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : North Karanpura

Project:

Rohini OCP

Stations:

1. Damodar U/S of Kandua Conf.
2. Damodar D/S of Kandua Conf.
3. Kendua Nala before Damodar

Date of Sampling:


17/01/2014

17/01/2014

17/01/2014


Sl.No	Parameter	Sampling Stations				Desirable Limits	BIS Standard & Method
		1	2	3	4		
1	Total Suspended Solids, mg/l, Max	44	28	62		25.00	IS 3025 /17:1984, R :1996, Gravimetric
2	Disolved Oxygen, min.	8.80	8.70	9.20		0.10	IS 3025/381989, R : 2003, Winkler Azide
3	pH value	8.10	8.25	7.83		0.01	IS-3025/11:1983, R-1996, Electrometric
4	Iron, mg/l, Max	<0.06	<0.06	<0.06		0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
5	Chlorides, mg/l, Max	18	16	22		2.00	IS-3025/32:1988, R-2007, Argentometric
6	BOD (3 days 27°C), mg/l, Max	2.00	2.40	2.80		2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
7	Dissolved Solids, mg/l, Max	158	164	168		25.00	IS 3025 /16:1984 R : 2006, Gravimetric
8	Copper, mg/l, Max	<0.03	<0.03	<0.03		0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
9	Sulphate, mg/l, Max	9	7	76		2.00	APHA, 22 nd Edition Turbidity
10	Nitrate, mg/l, Max	6.64	7.08	6.20		0.50	APHA, 22 nd Edition, UV-Spectrophotometric
11	Fluoride, mg/l, Max	0.24	0.46	0.39		0.02	APHA, 22 nd Edition SPADNS
12	Cadmium, mg/l, Max	<0.0005	<0.0005	<0.0005		0.0005	APHA, 22 nd Edition AAS-GTA
13	Selenium, mg/l, Max	<0.005	<0.005	<0.005		0.005	APHA, 22 nd Edition AAS-GTA
14	Arsenic, mg/l, Max	<0.005	<0.005	<0.005		0.005	IS 3025/37:1988 R : 2003, AAS-VGA
15	Lead, mg/l, Max	<0.005	<0.005	<0.005		0.005	APHA, 22 nd Edition AAS-GTA
16	Zinc, mg/l, Max	<0.01	<0.01	<0.01		0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame
17	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01		0.01	APHA, 22 nd Edition, 1,5 - Diphenylcarbohydrazide
18	Phenolics, mg/l, Max	<0.002	<0.002	<0.002		0.002	APHA, 22 nd Edition 4-Amino Antipyrine

Class-C: Tolerance Limit for surface water used for drinking water source with conventional treatment followed by disinfection
\$ represents limits not specified


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