CENTRAL COALFIELDS LIMITED
HAZARIBAG AREA
OFFICE OF THE PROJECT OFFICER
Jharkhand OCP

Ref.No. PO/JOCP/2019/ 630 **Dated:** 28/10/19

To
The Member Secretary
Jharkhand State Pollution Control Board
T.A. Division, HEC, Dhurva

Subject: Submission of yearly statement for the year of 2018-19 in respect of Jharkhand OCP.

Dear Sir,

With reference to the above, this is to inform you that yearly statement report is being submitted to you incorporating all the details sought for in the above mentioned letter.

Encl: 1) Soft copy of above report.

Yours Faithfully

Project Officer
Jharkhand OCP

Copy to:
1. **RO, JSPCB, Hazaribagh**
2. **GM(H),Charhi**
3. **Area Environment Engineer (H), Charhi**
4. **PE(Civil), Jharkhand OCP**

Rcd Bodi 18/11/19

JHARKHAND STATE POLLUTION CONTROL BOARD * RANCHI *

CENTRAL COALFIELDS LIMITED
HAZARIBAG AREA
OFFICE OF THE PROJECT OFFICER
Jharkhand OCP

Ref.No. PO/JOCP/2019/ 630 **Dated:** 01/11/19

To
The Member Secretary
Jharkhand State Pollution Control Board
T.A. Division, HEC, Dhurva

Subject: Submission of yearly statement for the year of 2018-19 in respect of Jharkhand OCP.

Dear Sir,

With reference to the above, this is to inform you that yearly statement report is being submitted to you incorporating all the details sought for in the above mentioned letter.

Encl: 1) Soft copy of above report.

Yours Faithfully,

Project Officer
Jharkhand OCP

Copy to:
1. **RO, JSPCB, Hazaribagh**
2. **GM(H),Charhi**
3. **Area Environment Engineer (H), Charhi**
4. **PE(Civil), Jharkhand OCP**

Chairman

Regional office
JSPCB. Hazaribagh

CENTRAL

ENVIRONMENTAL STATEMENT

IN

FORM V

(Under Rule-14, Environmental Protection Rules, 1986)

of

JHARKHAND PROJECT
(Open Cast Mine)

for

2018-19

CENTRAL COALFIELDS LIMITED
OFFICE OF THE GENERAL MANAGER
HAZARIBAGH AREA, CHARHI
JHARKHAND-825336

September, 2019

EXECUTIVE SUMMARY

E-1 This Annual Environmental Statement has been prepared as per gazette notification no. G.S.R. 329 (E) dated 13th March 1992 laid down by Ministry of Environment, Forest & Climate Change. The Environmental Audit has been subsequently renamed to "Environmental Statement " vide MoEF&CC gazette notification no. G.S.R. 386 (E) dated 22nd April 1993.

E-2 Jharkhand Opencast Project of Central Coalfields Limited is located in the West Bokaro Coalfields of Ramgarh District of **Jharkhand** State.

E-3 Jharkhand Colliery is a working opencast mine of producing medium Coking coal from a number of quarries.

E-4 The Environmental Monitoring was carried out quarterly as per the guidelines of Ministry of Environment, Forest and Climate Change (MoEF&CC). The Environmental Monitoring results for four quarter of 2018-19 are appended as Annexure.

E-5 Ambient air quality is monitored to study the level of air pollution. The main air pollutant is Suspended Particulate Matter (SPM). It is difficult to quantify the amount of air pollutants generated due to opencast mining. However, the results show that SPM, SO_x, NO_x values are generally below permissible limits prescribed by Ministry of Environment Forest and Climate Change (MoEF&CC).

E-6 Water is not directly used during mining for coal production. It percolates into the working area during mining operation. However, water is consumed for other purposes, mainly for haul road dust suppression and domestic purposes.

E-7 The noise levels recorded are generally below the permissible limits prescribed by Ministry of Environment and Forest. There is no continuous high level sound.

E-8 Hazardous Waste is not produced either from mining operation or from any pollution control facility. Solid waste produced from mining activities is overburden material.

E-9 Regular measures are being taken to control air, water & noise pollutions discussed in detail in part G, H & I of the Statement Form.

Chapter - 1

PROJECT DESCRIPTION

1.1 Introduction:

The mine was started in 1975-76 with initial coal production of 0.10 MT. The Project Report of Jharkhand OCP for a rated capacity of 1.0 MTPA of Washery Grade-IV coal was prepared in May, 1987 and approved on 20.10.1998. Mine Closure Plan approval was accorded on 01.10.2012. Prefeasibility Report of Jharkhand OCP (2.0 / 2.7 MTPA) within the same mining area was prepared by CMPDI in Dec. 2014 and was approved by CCL Board 09.02.2015.

1.2 Location & Communication:

Jharkhand Block is located between latitude 23°46'53" to 23°48'29" N and longitude 85°36'26" to 85°37'23" E. The Laiyo Block is on the eastern side, Kedla Block on western side, Hurdag Block on Northern side and Kedla south & Goes Block on Southern side.

Jharkhand Project is connected by 22 km long Charhi to Laiyo road joining NH-33 at Charhi. Another approach is through 12 km long all-weather road connecting Gidi Washery to Kedla and crosses NH-33 near Kuju. The nearest railway station Danea on Gomoh- Barkakana loop line of Eastern Railway, is 6 km by weather Kutcha road.

1.3 SALIENT FEATURES:

Jharkhand block is located in the north eastern part of West-Bokaro coalfields and lies on the Southern limb of the Northern syncline. The total area of the block is 3.5 Sq. km. under different leasehold.

As per PR, the mineable reserves were estimated as 21.5 MT with an OBR of 47.0 Mcum at an average stripping ratio of 2.19 cum/t. The P.R. envisages the exploitation of seam-III to VA by opencast method and the life of the mine was estimated as 25 years. Balance Mineable reserves upto 31st March, 2016 are 7.83 MT. As per new calendar program, with 2.0 MTPA production capacity, life of the mine will be 6 years.

The approved project area of Jharkhand OCP is 323.88 Ha. This includes a part of 78.59 Ha of forest land, for which stage-I FC has been obtained through Laiyo UGP for underground mining. A part of this forest land (amounting to 26.06 Ha) out of the above & adjoining 18.94 Ha nonforest land has been deducted and the revised project area for which ToR was granted is 278.88 Ha

1.4 TOPOGRAPHY & DRAINAGE:

Chutua nalla flowing from west to east divides the Jharkhand block in two parts. South of chutua nallah, where the proposed quarry has been identified is gently undulating with occasional sandstone ridges and mounds. The maximum and minimum elevations are +374m and +318 m above m.s.l. respectively, in

south chutua nalla. The area north of Chutuah nalla is more or less flat with thick alluvium deposits.

Bokaro River flows from West to East at distance of 2 km. from southern boundary of the block. Eastern flowing Chutuah nallah, a prominent tributary, joins the Bokaro River at 1.6 km, east of Laiyo. Several small nallah traversing the area joins the Bokaro River & Chutuah nallah.

Chutuah nallah is more or less perennial for the greater part of the year excepting in the hot summer days.

CHAPTER-2

ENVIRONMENTAL STATEMENT FORM-V

Environmental Statement for the financial year ending 31st March 2017

PART-A

i.	**Name and address of the owner/occupier of the industry/operation or process** **Place** **Post** **Distt**	**:**	Jharkhand Open Cast Project Project Officer Jharkhand Rahawan Ramgarh (Jharkhand)
ii.	**Industry Category**	**:**	Red
iii.	**Production Capacity**	**:**	2.7 MTY
iv.	**Date of last Environmental Statement Report Submitted**	**:**	Sept. 2018

PART–B

WATER AND RAW MATERIAL CONSUMPTION

1. WATER CONSUMPTION (m^3/ day)

i.	**Mining** **a. Haul road dust suppression** **b. Workshop** **c. Fire Fighting** **d. Other (Service building etc)**	3365 1200 50 2100 15
ii.	**Cooling**	Nil
iii.	**Domestic**	480

Name of product	**Water consumption per unit of product**	
	During financial year (2018-19)	During financial year (2017-18)
1. ROM coal	0.88 cum./te	1.02 cum./te

2. RAW MATERIAL CONSUMPTION

Name of raw material	Name of products	Consumption of raw materials (per unit of output)	
		During financial year (2018-19)	During financial year (2017-18)
Explosive	Coal	2.05 kg per te of coal	1.84 kg per te of coal
POL	Coal	0.044 ltr/te of coal	0.04 ltr/te of coal
HSD	Coal	1.26 litr/ te of coal	1.25 lit/te of coal

PART–C

POLLUTION DISCHARGED TO ENVRONMENT/UNIT OF OUTPUT

(PARAMETERS SPECIFIED IN THE CONSENT ISSUED**)**

Pollutions	Quantity of pollution generated (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage variation from prescribed standards with reasons
Water	i.About 169 lts/day mine effluent is stored in sump for Ground water recharge. ii.Workshop 0 lts/day iii.Colony 0 lts./day.	NA	NA.
Air	It is difficult to quantify the amount of air pollutants. The main air pollutant is suspended particulate matter (SPM). The air quality results are appended as Annexure.	Analysis results are given in Annexure	Ambient air quality results show that SO_2, NO_X values were within prescribed limits.
Noise	The high noise in mining area owes its origin in and around excavation & material handling sites. There is no continuous sound frequency of impulsive nature. Ambient noise quality report is appended as Annexure.	Analysis results are given in Annexure	Noise Quality Report shows the results are within permissible limits.

PART–D

HAZARDOUS WASTES

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

Hazardous Waste	**Total Quantity (kg)**	
	During financial year (2015-16)	During financial year (2017-18)
(a) From process	Nil	Nil
(b) From pollution control facilities	Nil	Nil
c) Material Handling Process	Return of Battery 12Vol 25Plate= 21 nos Burnt Oil=23103 Ltr	

PART–E

SOLID WASTES

Solid Waste	**Total Quantity in million cubic metre.**	
	During financial year (2018-19)	During financial year (2016-17)
(a) From Process (Mining) Overburden	3.16 M m^3	3.49 M. m^3
(b) From pollution control facilities	Nil	Nil
(c)Quantity recycled or reutilized	During both financial years, the entire volume of OB has been used for refilling the decoaled area of the quarry.	

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

1. **<u>HAZARDOUS WASTES</u>:**

   Hazardous wastes are not being produced either from mining operation or from any pollution control facilities.

2. **<u>SOLID WASTES</u>:**

During opencast mining, overburden produced as solid wastes temporarily as these materials are used for land reclamation. During the year 2018-19, 3.16 Million cubic meter of overburden was generated. The overburden materials are more or less homogeneous comprising mainly shale, sand, silt and clay, & gravel.

3. DISPOSAL PRACTICE:

Presently, the O.B. material is being filled in de-coaled area of quarry and as external dump.

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. AIR POLLUTION CONTROL MEASURES:

The following measures have been taken to control air pollution:

i. Regular sprinkling of water on haul roads and other roads.
ii. Water sprinkling on coal stock.
iii. Plantation along the haul road and in other vacant space.
iv. All necessary precautions will be taken during drilling, blasting, loading & transporting operations.

2. WATER POLLUTION CONTROL MEASURES:

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

i. The mine water is allowed to settle in sump before pumping to natural drains. Some of mine water is also used for haul road dust suppression, in workshop & in fire fighting in the mine.
ii. The catch drains has been constructed around the foot of the O.B. dumps in order to collect surface run-off water from the dumps and convey them to the settling ponds.
iii. An Oil & Grease trap and settling ponds are in working order in the workshop to prevent water pollution.
iv. Colony & other service building are provided with septic tank & soak pit.
v. A garland drain is provided around the quarry to collect the surface run-off. This also prevents storm water to enter in to the quarry area.

3. NOISE POLLUTION CONTROL MEASURES:

i. Blasting operation is carried out between 12.30 PM to 3.00 PM.
ii. Regular maintenance of HEMMs, and other equipments are being done.
iii. Use of HEMMs with sound proof cabin.
iv. Providing green belt around noise generating centers.

4. MEASURES FOR RECLAMATION OF LAND

At present overburden generated during mining is being used as re-filling material in de-coaled area of quarry. As soon as the dump reaches to its final stage, it is proposed to start technical and biological reclamation of the dumps.
At the end of mining operation, some de coaled 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.

IMPACT OF POLLUTION CONTROL MEASURES ON COST OF PRODUCTION COST OF ENVIRONMENTAL MANAGEMENT DURING 2016-17

The cost related to data for the environmental management of the project is not available with the project authorities. Therefore the impact of pollution control measures on cost of production can not be assessed.

PART–H

ADDITIONAL INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION

i. Necessary fee is paid to State Pollution Control Board for taking emission/effluent discharge consent order both for air & water. Plantation was done on the O.B dump slopes and in and around the mine area.
ii. The Environmental monitoring of the project will be continued quarterly as per the guidelines of Ministry of Environment, Forests and Climate Change (MoEF&CC).
iii. Environmental Statement will be prepared or each financial year ending 31st March.
iv. The Air & Water consent will be taken from Jharkhand State Pollution Control Board, Ranchi each year.
v. Saplings has been planted during 2016-17.

PART-I

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

The major problems of environmental control of Jharkhand Project are:

*Management of solid wastes in form of overburden dumps.

*Treatment and disposal of mine effluents including dump lechates.

*Control of mine fire.

* Creation of green cover of OB dumps, fire control area and around residential area.

*Treatment of workshop effluent.

TEST REPORT

06/18 Test Report No. 1508	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand OCP Stations: DAV School Jharkhand

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_2)	
Apr-18 1st FN	05/04/18-06/04/18	17/04/18	17/04/18-23/04/18	219	94	54	< 25	< 6	East Sunny
Apr-18 2nd FN	19/04/18-20/04/18	02/05/18	02/05/18-07/05/18	232	93	46	< 25	< 6	East Sunny
May-18 3rd FN	03/05/18-04/05/18	16/05/18	16/05/18-22/05/18	250	96	50	< 25	< 6	East Sunny
May-18 4th FN	18/05/18-19/05/18	01/06/18	01/06/18-06/06/18	249	101	53	< 25	< 6	East Sunny
Jun-18 5th FN	05/06/18-06/06/18	19/06/18	19/06/18-23/06/18	151	67	33	< 25	< 6	South Cloud
Jun-18 6th FN	19/06/18-20/06/18	02/07/18	02/07/18-07/07/18	371	104	55	< 25	< 6	East Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

06/18 Test Report No. 1509	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand 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_2)	
Apr-18 1st FN	05/04/18-06/04/18	17/04/18	17/04/18-23/04/18	242	144	84	< 25	< 6	East Sunny
Apr-18 2nd FN	19/04/18-20/04/18	02/05/18	02/05/18-07/05/18	344	196	67	< 25	< 6	East Sunny
May-18 3rd FN	03/05/18-04/05/18	16/05/18	16/05/18-22/05/18	296	106	58	< 25	< 6	East Sunny
May-18 4th FN	18/05/18-19/05/18	01/06/18	01/06/18-06/06/18	177	79	39	< 25	< 6	East Sunny
Jun-18 5th FN	05/06/18-06/06/18	19/06/18	19/06/18-23/06/18	222	79	41	< 25	< 6	South Cloud
Jun-18 6th FN	19/06/18-20/06/18	02/07/18	02/07/18-07/07/18	227	76	32	< 25	< 6	East Sunny

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

06/18 Test Report No. 1510	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand OCP Stations: Layio Chowk

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_2)	
Apr-18 1st FN	05/04/18-06/04/18	17/04/18	17/04/18-23/04/18	221	84	40	< 25	< 6	East Sunny
Apr-18 2nd FN	19/04/18-20/04/18	02/05/18	02/05/18-07/05/18	312	118	73	< 25	< 6	East Sunny
May-18 3rd FN	04/05/18-05/05/18	16/05/18	16/05/18-22/05/18	209	81	39	< 25	< 6	East Sunny
May-18 4th FN	19/05/18-20/05/18	01/06/18	01/06/18-06/06/18	168	86	66	< 25	< 6	East Sunny
Jun-18 5th FN	06/06/18-07/06/18	19/06/18	19/06/18-23/06/18	358	145	74	< 25	< 6	South Cloud
Jun-18 6th FN	20/06/18-21/06/18	02/07/18	02/07/18-07/07/18	202	84	41	< 25	< 6	East Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

06/18 Test Report No. 1511	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand OCP Stations: Pump House

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_2)	
Apr-18 1st FN	05/04/18-06/04/18	17/04/18	17/04/18-23/04/18	314	102	75	< 25	< 6	East Sunny
Apr-18 2nd FN	19/04/18-20/04/18	02/05/18	02/05/18-07/05/18	212	90	47	< 25	6	East Sunny
May-18 3rd FN	04/05/18-05/05/18	16/05/18	16/05/18-22/05/18	167	76	31	< 25	< 6	East Sunny
May-18 4th FN	19/05/18-20/05/18	01/06/18	01/06/18-06/06/18	221	73	37	< 25	< 6	East Sunny
Jun-18 5th FN	06/06/18-07/06/18	19/06/18	19/06/18-23/06/18	165	77	36	< 25	< 6	South Cloud
Jun-18 6th FN	20/06/18-21/06/18	02/07/18	02/07/18-07/07/18	216	76	31	< 25	< 6	East Sunny

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

06/18 Test Report No. 1512	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Jun-18
Customer	CCL		
Testing Protocol:	*'The noise pollution (Regulation and Control), Rules,2000*		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : **Hazaribagh** **Project:** **Jharkhand OCP**

Station Name	Noise Level					
	Apr-18 1st FN	Apr-18 2nd FN	May-18 3rd FN	May-18 4th FN	Jun-18 5th FN	Jun-18 6th FN
Date of recording	05/04/18	19/04/18	03/05/18	18/05/18	05/06/18	19/06/18
DAV School	47.1	49.2	52.3	50.1	46.8	52.3
Date of recording	05/04/18	19/04/18	03/05/18	18/05/18	05/06/18	19/06/18
P.O.Office	52.7	51.4	53.7	49.2	50.1	53.7
Date of recording	05/04/18	19/04/18	04/05/18	19/05/18	06/06/18	20/06/18
Layio Chowk	49.3	50.2	54.7	50.2	51.1	54.7
Date of recording	05/04/18	19/04/18	04/05/18	19/05/18	06/06/18	20/06/18
Pump House	46.5	50.2	51.3	51.1	51.3	53.7

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*

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

06/18 Test Report No. 1513	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample:	**Effluent Water**	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	**MOEF -SCH-VI STANDARDS, Class 'a'**		
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 : **Hazaribagh** **Project:** **Jharkhand OCP** **Stations:** Lagoon Discharge

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-18 1st FN	11/04/18	18/04/18	18/04/18-02/05/18	32	<2.00	7.65	22
Apr-18 2nd FN	25/04/18	02/05/18	02/05/18-26/05/18	48	<2.00	8.16	24
May-18 3rd FN	12/05/18	16/05/18	16/05/18-09/06/18	52	<2.00	8.2	62
May-18 4th FN	26/05/18	01/06/18	01/06/18-22/06/18	64	<2.00	7.93	28
Jun-18 5th FN	13/06/18	18/06/18	18/06/18-30/06/18	20	<2.00	8.43	30
Jun-18 6th FN	26/06/18	02/07/18	02/07/18-10/07/18	20	<2.00	7.95	26
BIS Standard & Method				APHA, 22nd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

06/18 Test Report No. 1514	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample:	**Surface Water**	Quarter Ending	Jun-18
Customer	CCL	Date of Receipt:	17/04/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	17.04.18-13.07.18
Testing Protocol:	-	Date of Reporting:	13/07/18
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 : **Hazaribagh** **Project:** **Jharkhand OCP**

Stations: **Date of Sampling:**

1. Chutua Nala after conf. With Kedla Nala 11/04/18
2. Chutua Nala D/S after LU Mine Discharge Point 11/04/18

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	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2	2			2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005	<0.0005			0.0005	APHA, 22nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	24	22			2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	0.04			0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Disolved Oxygen, min.	6.3	6.3			0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.77	0.64			0.02	APHA, 22nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 22nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.02	<0.02			0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005	<0.005			0.005	APHA, 22nd Edition AAS-GTA
11	Nitrate (as NO_3), mg/l, Max	3.28	3.77			0.50	APHA, 22nd Edition, UV-Spectrophotometric
12	pH value	8.06	7.85			0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 22nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	APHA, 22nd Edition AAS-GTA
15	Sulphate (as SO_4) mg/l, Max	24	19			2.00	APHA, 22nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	292	272			25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	20	28			10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.01	0.01			0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

09/18 Test Report No. 1508	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand OCP Stations: DAV School Jharkhand

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_2)	
Jul-18 1st FN	04/07/18-05/07/18	16/07/18	16/07/18-20/07/18	275	96	53	< 25	< 6	South Rain
Jul-18 2nd FN	18/07/18-19/07/18	01/08/18	01/08/18-07/08/18	137	65	29	< 25	< 6	East Sunny
Aug-18 3rd FN	08/08/18-09/08/18	16/08/18	16/08/18-21/08/18	182	80	37	< 25	< 6	West Cloud
Aug-18 4th FN	18/08/18-19/08/18	04/09/18	04/09/18-10/09/18	154	68	30	< 25	< 6	East Rain
Sep-18 5th FN	04/09/18-05/09/18	17/09/18	17/09/18-25/09/18	122	63	33	< 25	< 6	East Rain
Sep-18 6th FN	19/09/18-20/09/18	01/10/18	01/10/18-06/10/18	130	69	33	< 25	< 6	East Sunny

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

09/18 Test Report No. 1509	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand 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_2)	
Jul-18 1st FN	04/07/18-05/07/18	16/07/18	16/07/18-20/07/18	236	104	57	< 25	< 6	South Rain
Jul-18 2nd FN	18/07/18-19/07/18	01/08/18	01/08/18-07/08/18	164	84	41	< 25	< 6	East Sunny
Aug-18 3rd FN	09/08/18-10/08/18	16/08/18	16/08/18-21/08/18	222	122	61	< 25	< 6	West Cloud
Aug-18 4th FN	18/08/18-19/08/18	04/09/18	04/09/18-10/09/18	270	145	72	< 25	< 6	East Rain
Sep-18 5th FN	04/09/18-05/09/18	17/09/18	17/09/18-25/09/18	188	92	43	< 25	< 6	East Rain
Sep-18 6th FN	19/09/18-20/09/18	01/10/18	01/10/18-06/10/18	180	94	53	< 25	< 6	East Sunny

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

09/18 Test Report No. 1510	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand OCP Stations: Layio Chowk

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_2)	
Jul-18 1st FN	04/07/18-05/07/18	16/07/18	16/07/18-20/07/18	167	79	42	< 25	< 6	South Rain
Jul-18 2nd FN	19/07/18-20/07/18	01/08/18	01/08/18-07/08/18	259	128	68	< 25	< 6	East Sunny
Aug-18 3rd FN	09/08/18-10/08/18	16/08/18	16/08/18-21/08/18	147	63	26	< 25	< 6	West Cloud
Aug-18 4th FN	19/08/18-20/08/18	04/09/18	04/09/18-10/09/18	140	72	39	< 25	< 6	East Rain
Sep-18 5th FN	05/09/18-06/09/18	17/09/18	17/09/18-25/09/18	134	70	35	< 25	< 6	East Rain
Sep-18 6th FN	20/09/18-21/09/18	01/10/18	01/10/18-06/10/18	161	76	31	< 25	< 6	East Sunny

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

09/18 Test Report No. 1511	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand OCP Stations: Pump House

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_2)	
Jul-18 1st FN	04/07/18-05/07/18	16/07/18	16/07/18-20/07/18	472	162	85	< 25	< 6	South Rain
Jul-18 2nd FN	19/07/18-20/07/18	01/08/18	01/08/18-07/08/18	219	134	51	< 25	< 6	East Sunny
Aug-18 3rd FN	09/08/18-10/08/18	16/08/18	16/08/18-21/08/18	159	79	37	< 25	< 6	West Cloud
Aug-18 4th FN	19/08/18-20/08/18	04/09/18	04/09/18-10/09/18	168	87	43	< 25	< 6	East Rain
Sep-18 5th FN	05/09/18-06/09/18	17/09/18	17/09/18-25/09/18	157	87	41	< 25	< 6	East Rain
Sep-18 6th FN	20/09/18-21/09/18	01/10/18	01/10/18-06/10/18	131	65	29	< 25	< 6	East Sunny

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

09/18 Test Report No. 1512	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample:	Noise	Quarter Ending	Sep-18
Customer	CCL		
Testing Protocol:	*'The noise pollution (Regulation and Control), Rules,2000*		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : **Hazaribagh** **Project:** **Jharkhand OCP**

Station Name	Noise Level					
	Jul-18 1st FN	Jul-18 2nd FN	Aug-18 3rd FN	Aug-18 4th FN	Sep-18 5th FN	Sep-18 6th FN
Date of recording	04/07/18	18/07/18	08/08/18	18/08/18	04/09/18	19/09/18
DAV School	48.9	52.3	49.6	52.7	50.6	49.4
Date of recording	04/07/18	18/07/18	09/08/18	18/08/18	04/09/18	19/09/18
P.O.Office	52.1	53.5	50.6	53.6	49.6	48.8
Date of recording	04/07/18	19/07/18	09/08/18	19/08/18	05/09/18	20/09/18
Layio Chowk	51.2	52.2	50.5	52.2	52.1	46.8
Date of recording	04/07/18	19/07/18	09/08/18	19/08/18	05/09/18	20/09/18
Pump House	51.9	53.7	52.6	53.2	52.6	51.2

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*

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

09/18 Test Report No. 1513	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample:	**Effluent Water**	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	**MOEF -SCH-VI STANDARDS, Class 'a'**		
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 : Hazaribagh **Project: Jharkhand OCP** **Stations:** Lagoon Discharge

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-18 1st FN	11/07/18	16/07/18	16/07/18-03/08/18	24	<2.00	8.01	22
Jul-18 2nd FN	26/07/18	01/08/18	01/08/18-20/08/18	20	<2.00	8.5	20
Aug-18 3rd FN	09/08/18	16/08/18	16/08/18-03/08/18	144	<2.00	7.85	278
Aug-18 4th FN	28/08/18	03/09/18	03/09/18-18/03/18	24	<2.00	8	26
Sep-18 5th FN	11/09/18	17/09/18	17/09/18-08/10/18	16	<2.00	7.42	24
Sep-18 6th FN	25/09/18	01/10/18	01/10/18-15/10/18	28	<2.00	7.8	28
BIS Standard & Method				APHA, 22nd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

09/18 Test Report No. 1514	Job No. 094318021	Year	FY2018-19
Type of Sample:	**Surface Water**	Quarter Ending	Sep-18
Customer	CCL	Date of Receipt:	16/07/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	16.07.18-14.09.18
Testing Protocol:	-		
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 : **Hazaribagh** **Project:** **Jharkhand OCP**

Stations: **Date of Sampling:**

1. Chutua Nala after conf. With Kedla Nala 11/07/18
2. Chutua Nala D/S after LU Mine Discharge Point 11/07/18

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	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2	2			2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005	<0.0005			0.0005	APHA, 22nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	78	72			2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03			0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Disolved Oxygen, min.	6.3	6.3			0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	1.13	0.43			0.02	APHA, 22nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 22nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.06	<0.06			0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005	<0.005			0.005	APHA, 22nd Edition AAS-GTA
11	Nitrate (as NO_3), mg/l, Max	10.76	26.89			0.50	APHA, 22nd Edition, UV-Spectrophotometric
12	pH value	8.57	7.2			0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 22nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	APHA, 22nd Edition AAS-GTA
15	Sulphate (as SO_4) mg/l, Max	324	76			2.00	APHA, 22nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	752	728			25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	26	20			10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.01	<0.01			0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

12/18 Test Report No. 1509	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand OCP Stations: DAV School Jharkhand

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_2)	
Oct-18 1st FN	04/10/18-05/10/18	15/10/18	15/10/18-23/10/18	167	86	41	< 25	< 6	East Sunny
Oct-18 2nd FN	17/10/18-18/10/18	01/11/18	01/11/18-09/11/18	194	76	39	< 25	< 6	East Sunny
Nov-18 3rd FN	02/11/18-03/11/18	16/11/18	16/11/18-24/11/18	203	85	40	< 25	< 6	East Sunny
Nov-18 4th FN	17/11/18-18/11/18	03/12/18	03/12/18-11/12/18	285	93	55	< 25	< 6	East Sunny
Dec-18 5th FN	04/12/18-05/12/18	17/12/18	17/12/18-25/12/18	174	62	30	< 25	< 6	East Sunny
Dec-18 6th FN	18/12/18-19/12/18	01/01/19	01/01/19-09/01/19	167	66	33	< 25	< 6	East Rain

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

12/18 Test Report No. 1510	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand 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_2)	
Oct-18 1st FN	04/10/18-05/10/18	15/10/18	15/10/18-23/10/18	216	150	70	< 25	< 6	East Sunny
Oct-18 2nd FN	17/10/18-18/10/18	01/11/18	01/11/18-09/11/18	366	150	72	< 25	< 6	East Sunny
Nov-18 3rd FN	02/11/18-03/11/18	16/11/18	16/11/18-24/11/18	329	125	66	< 25	< 6	East Sunny
Nov-18 4th FN	17/11/18-18/11/18	03/12/18	03/12/18-11/12/18	187	85	51	< 25	< 6	East Sunny
Dec-18 5th FN	04/12/18-05/12/18	17/12/18	17/12/18-25/12/18	540	285	87	< 25	< 6	East Sunny
Dec-18 6th FN	18/12/18-19/12/18	01/01/19	01/01/19-09/01/19	234	106	48	< 25	< 6	East Rain

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

12/18 Test Report No. 1511	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh **Project: Jharkhand OCP** **Stations:** Layio Chowk

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_2)	
Oct-18 1st FN	05/10/18-06/10/18	15/10/18	15/10/18-23/10/18	193	99	52	< 25	< 6	East Sunny
Oct-18 2nd FN	22/10/18-23/10/18	01/11/18	01/11/18-09/11/18	188	89	51	< 25	< 6	East Sunny
Nov-18 3rd FN	03/11/18-04/11/18	16/11/18	16/11/18-24/11/18	339	120	63	< 25	< 6	East Sunny
Nov-18 4th FN	19/11/18-20/11/18	03/12/18	03/12/18-11/12/18	328	133	76	< 25	< 6	East Sunny
Dec-18 5th FN	05/12/18-06/12/18	17/12/18	17/12/18-25/12/18	161	67	32	< 25	< 6	East Sunny
Dec-18 6th FN	19/12/18-20/12/18	01/01/19	01/01/19-09/01/19	190	73	37	< 25	< 6	East Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

12/18 Test Report No. 1512	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh **Project: Jharkhand OCP** **Stations:** Pump House

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_2)	
Oct-18 1st FN	05/10/18-06/10/18	15/10/18	15/10/18-23/10/18	176	71	44	< 25	< 6	East Sunny
Oct-18 2nd FN	22/10/18-23/10/18	01/11/18	01/11/18-09/11/18	124	68	25	< 25	< 6	East Sunny
Nov-18 3rd FN	03/11/18-04/11/18	16/11/18	16/11/18-24/11/18	157	85	38	< 25	< 6	East Sunny
Nov-18 4th FN	19/11/18-20/11/18	03/12/18	03/12/18-11/12/18	249	88	40	< 25	< 6	East Sunny
Dec-18 5th FN	05/12/18-06/12/18	17/12/18	17/12/18-25/12/18	187	73	38	< 25	< 6	East Sunny
Dec-18 6th FN	19/12/18-20/12/18	01/01/19	01/01/19-09/01/19	165	61	29	< 25	< 6	East Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

12/18 Test Report No. 1513	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Dec-18
Customer	CCL		
Testing Protocol:	*'The noise pollution (Regulation and Control), Rules,2000*		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : **Hazaribagh** **Project:** **Jharkhand OCP**

Station Name	Noise Level					
	Oct-18 1st FN	Oct-18 2nd FN	Nov-18 3rd FN	Nov-18 4th FN	Dec-18 5th FN	Dec-18 6th FN
Date of recording	04/10/18	17/10/18	02/11/18	17/11/18	04/12/18	18/12/18
DAV School	50.4	49.2	50.2	50.6	50.5	50.5
Date of recording	04/10/18	17/10/18	02/11/18	17/11/18	04/12/18	18/12/18
P.O.Office	49.6	48.6	54.1	49.6	54.3	49.7
Date of recording	05/10/18	22/10/18	03/11/18	19/11/18	05/12/18	19/12/18
Layio Chowk	52.2	52.1	49.4	52.1	49.6	52.8
Date of recording	05/10/18	22/10/18	03/11/18	19/11/18	05/12/18	19/12/18
Pump House	52.5	50.6	52.3	52.6	52.3	51.9

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*

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

12/18 Test Report No. 1514	Job No. 094318021	Year	FY2018-19
Type of Sample:	**Effluent Water**	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	**MOEF -SCH-VI STANDARDS, Class 'a'**		
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 : **Hazaribagh** **Project:** **Jharkhand OCP** **Stations:** Lagoon Discharge

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-18 1st FN	08/10/18	15/10/18	15/10/18-08/11/18	32	<2.00	8.1	26
Oct-18 2nd FN	27/10/18	31/10/18	31/10/18-24/11/18	32	<2.00	8.01	36
Nov-18 3rd FN	12/11/18	16/11/18	16/11/18-30/11/18	28	<2.00	7.92	32
Nov-18 4th FN	26/11/18	03/12/18	03/12/18-17/12/18	20	<2.00	7.67	26
Dec-18 5th FN	11/12/18	17/12/18	17/12/18-04/01/19	28	<2.00	7.75	32
Dec-18 6th FN	00/01/00	00/01/00	00/01/00-00/01/00	0	0	0	0
BIS Standard & Method				APHA, 22nd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

12/18 Test Report No. 1515	Job No. 094318021	Year	2018-19
Type of Sample:	**Effluent Water**	Quarter Ending	**Dec.'18**
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01.01.19
Mode of Receipt of Sample:	Picked up sample by laboratory	Date of Analysis:	01.01.19-04.02.19
Testing Protocol:	**MOEF -SCH-VI STANDARDS, Class 'a'**	Date of Reporting:	04.02.19
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 : **Hazaribagh** **Project:** **Jharkhand OCP**

Stations: **Date of Sampling:**

1. Lagoon Discharge 31/12/2018
2.

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	0.08			0.02	50.0	IS 3025/34:1988, R : 2009, Nessler's
2	Arsenic (as As), mg/l, *Max*	<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			2.00	30.0	IS 3025 /44:1993,R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l, Max	<0.0005			0.0005	2.0	APHA, 22nd Edition, AAS-GTA
5	COD, mg/l, Max	44			4.00	250.0	APHA, 22nd Edition, Closed Reflux, Titrimetric
6	Copper (as Cu), mg/l, *Max*	<0.03			0.03	3.0	IS 3025/42: 1992 R : 2009, AAS-Flame
7	Dissolved Phosphate, mg/l, Max	0.30			0.30	5.0	APHA, 22nd Edition Molybdovanadate
8	Fluoride (as F) mg/l, *Max*	1.44			0.02	2.0	APHA, 22nd Edition, SPADNS
9	Free Ammonia, mg/l, Max	<0.02			0.02	5.0	IS:3025/34:1988, Nesseler's
10	Hexavalent Chromium, mg/l, Max	<0.01			0.01	0.1	APHA, 22nd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l, *Max*	<0.06			0.06	3.0	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
12	Lead (as Pb), mg/l, *Max*	<0.005			0.005	0.1	APHA, 22nd Edition, AAS-GTA
13	Manganese(as Mn), mg/l, Max	<0.02			0.02	2.0	IS-3025/59:2006, AAS-Flame
14	Nickel (as Ni), mg/l, *Max*	0.01			0.01	3.0	IS-3025/54:2003, AAS-Flame
15	Nitrate Nitrogen, mg/l, *Max*	4.25			0.50	10.0	APHA, 22nd Edition, UV-Spectrphotometric
16	Oil & Grease, mg/l, Max	<2.00			2.00	10.0	IS 3025/39:1991, R : 2003, Partition Gravimetric
17	pH value	8.24			0.2	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric
18	Phenolic compounds (as C_6H_5OH),mg/l, *Max*	<0.001			0.001	1.0	APHA, 22nd Edition 4-Amino Antipyrine
19	Selenium (as Se), mg/l, *Max*	<0.002			0.002	0.05	APHA, 22nd Edition, AAS-GTA
20	Sulphide (as SO_3), mg/l, Max	<0.005			0.005	2.0	APHA, 22nd Edition Methylene Blue
21	Temperature (°C)	24.3			Shall not exceed 5^0 C above the receiving temp.		IS-3025/09:1984, Thermometeric
22	Total Chromium (as Cr), mg/l, *Max*	<0.04			0.04	2.0	IS-3025/52:2003, AAS-Flame
23	Total Kjeldahl Nitrogen, mg/l, Max	2.80			1.00	100.0	IS:3025/34:1988, Nesseler's
24	Total Residual Chlorine, mg/l, Max	<0.02			0.02	1.0	APHA, 22nd Edition, DPD
25	Total Suspended Solids, mg/l, Max	40			10.00	100.0	IS 3025/17:1984, R :1996, Gravimetric
26	Zinc (as Zn), mg/l, *Max*	0.1			0.01	5.0	IS 3025 /49 : 1994, R : 2009, AAS-Flame

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

12/18 Test Report No. 1516	Job No. 094318021	Year	FY2018-19
Type of Sample:	**Surface Water**	Quarter Ending	Dec-18
Customer	CCL	Date of Receipt:	15/10/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	15.10.18-22.01.19
Testing Protocol:	-		
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 : **Hazaribagh** **Project:** **Jharkhand OCP**

Stations: **Date of Sampling:**

1. Chutua Nala after conf. With Kedla Nala 08/10/18
2. Chutua Nala D/S after LU Mine Discharge Point 08/10/18

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	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2	2			2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005	<0.0005			0.0005	APHA, 22nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	38	36			2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03			0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Disolved Oxygen, min.	6.3	6.3			0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	1.06	1.05			0.02	APHA, 22nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 22nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.06	<0.06			0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005	<0.005			0.005	APHA, 22nd Edition AAS-GTA
11	Nitrate (as NO_3), mg/l, Max	90.64	88.87			0.50	APHA, 22nd Edition, UV-Spectrophotometric
12	pH value	7.86	8.12			0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 22nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	APHA, 22nd Edition AAS-GTA
15	Sulphate (as SO_4) mg/l, Max	210.19	214.36			2.00	APHA, 22nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	648	642			25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	28	24			10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.01	<0.01			0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

03/19 Test Report No. 1508	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand OCP Stations: DAV School Jharkhand

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_2)	
Jan-19 1st FN	05/01/19-06/01/19	16-01-2019	16/01/19-22/01/19	146	61	31	< 25	< 6	North Sunny
Jan-19 2nd FN	21/01/19-22/01/19	01-02-2019	01/02/19-09/02/19	177	75	35	< 25	< 6	East Sunny
Feb-19 3rd FN	02/02/19-03/02/19	15-02-2019	15/02/19-25/02/19	164	70	32	< 25	< 6	East Sunny
Feb-19 4th FN	17/02/19-18/02/19	28-02-2019	28/02/19-08/03/19	223	94	41	< 25	< 6	East Sunny
Mar-19 5th FN	02/03/19-03/03/19	18-03-2019	18/03/19-26/03/19	169	76	34	< 25	< 6	East Sunny
Mar-19 6th FN	17/03/19-18/03/19	01-04-2019	01/04/19-09/04/19	173	58	27	< 25	< 6	East Sunny

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

03/19 Test Report No. 1509	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh Project: Jharkhand 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_2)	
Jan-19 1st FN	05/01/19-06/01/19	16-01-2019	16/01/19-22/01/19	295	154	64	< 25	< 6	North Sunny
Jan-19 2nd FN	22/01/19-23/01/19	01-02-2019	01/02/19-09/02/19	330	139	64	< 25	< 6	East Sunny
Feb-19 3rd FN	02/02/19-03/02/19	15-02-2019	15/02/19-25/02/19	290	115	53	< 25	< 6	East Sunny
Feb-19 4th FN	17/02/19-18/02/19	28-02-2019	28/02/19-08/03/19	339	164	66	< 25	< 6	East Sunny
Mar-19 5th FN	02/03/19-03/03/19	18-03-2019	18/03/19-26/03/19	278	132	51	< 25	< 6	East Sunny
Mar-19 6th FN	17/03/19-18/03/19	01-04-2019	01/04/19-09/04/19	277	116	52	< 25	< 6	East Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

03/19 Test Report No. 1510	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh **Project: Jharkhand OCP** **Stations:** Layio Chowk

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_2)	
Jan-19 1st FN	06/01/19-07/01/19	16-01-2019	16/01/19-22/01/19	134	59	27	< 25	< 6	East Sunny
Jan-19 2nd FN	22/01/19-23/01/19	01-02-2019	01/02/19-09/02/19	127	59	26	< 25	< 6	East Sunny
Feb-19 3rd FN	03/02/19-04/02/19	15-02-2019	15/02/19-25/02/19	201	83	48	< 25	< 6	East Sunny
Feb-19 4th FN	18/02/19-19/02/19	28-02-2019	28/02/19-08/03/19	111	49	24	< 25	< 6	East Sunny
Mar-19 5th FN	03/03/19-04/03/19	18-03-2019	18/03/19-26/03/19	220	87	41	< 25	< 6	North Sunny
Mar-19 6th FN	18/03/19-19/03/19	01-04-2019	01/04/19-09/04/19	250	96	42	< 25	< 6	East Sunny

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

03/19 Test Report No. 1511	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Hazaribagh **Project: Jharkhand OCP** **Stations:** Pump House

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_2)	
Jan-19 1st FN	06/01/19-07/01/19	16-01-2019	16/01/19-22/01/19	340	146	68	< 25	< 6	East Sunny
Jan-19 2nd FN	22/01/19-23/01/19	01-02-2019	01/02/19-09/02/19	211	86	45	< 25	< 6	East Sunny
Feb-19 3rd FN	03/02/19-04/02/19	15-02-2019	15/02/19-25/02/19	178	74	38	< 25	< 6	East Sunny
Feb-19 4th FN	18/02/19-19/02/19	28-02-2019	28/02/19-08/03/19	203	80	39	< 25	< 6	East Sunny
Mar-19 5th FN	03/03/19-04/03/19	18-03-2019	18/03/19-26/03/19	253	98	54	< 25	< 6	North Sunny
Mar-19 6th FN	18/03/19-19/03/19	01-04-2019	01/04/19-09/04/19	319	149	61	< 25	< 6	East Sunny

Note:
1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
*Out of NABL scope.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

03/19 Test Report No. 1512	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample:	Noise	Quarter Ending	Mar-19
Customer	CCL		
Testing Protocol:	*'The noise pollution (Regulation and Control), Rules,2000*		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : **Hazaribagh** **Project:** **Jharkhand OCP**

Station Name	Noise Level					
	Jan-19 1st FN	**Jan-19 2nd FN**	**Feb-19 3rd FN**	**Feb-19 4th FN**	**Mar-19 5th FN**	**Mar-19 6th FN**
Date of recording	05-01-2019	21-01-2019	02-02-2019	17-02-2019	02-03-2019	17-03-2019
DAV School	50.4	49.3	54.9	52.6	46.7	53.2
Date of recording	05-01-2019	22-01-2019	02-02-2019	17-02-2019	02-03-2019	17-03-2019
P.O.Office	54.7	49.9	53.7	52.9	51.2	54.7
Date of recording	06-01-2019	22-01-2019	03-02-2019	18-02-2019	03-03-2019	18-03-2019
Layio Chowk	49.6	52.4	48.7	52.4	51.4	54.9
Date of recording	06-01-2019	22-01-2019	03-02-2019	18-02-2019	03-03-2019	18-03-2019
Pump House	52.3	50.9	51.6	52.7	51.6	54.3

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*

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

03/19 Test Report No. 1513	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample:	**Effluent Water**	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	**MOEF -SCH-VI STANDARDS, Class 'a'**		
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 : Hazaribagh **Project: Jharkhand OCP** **Stations:** Lagoon Discharge

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-19 1st FN	09/01/19	16/01/19	16/01/19-05/02/19	40	<2.00	8.36	48
Jan-19 2nd FN	31/01/19	01/02/19	01/02/19-28/02/19	32	<2.00	7.58	34
Feb-19 3rd FN	12/02/19	15/02/19	15/02/19-16/03/19	28	<2.00	8.04	32
Feb-19 4th FN	26/02/19	01/03/19	01/03/19-23/03/19	32	<2.00	8.21	36
Mar-19 5th FN	12/03/19	18/03/19	18/03/19-03/04/19	84	<2.00	8.05	126
Mar-19 6th FN	27/03/19	01/04/19	01/04/19-15/04/19	28	<2.00	7.76	32
BIS Standard & Method				APHA, 22nd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)

TEST REPORT

03/19 Test Report No. 1514	**Job No. 094318021**	**Year**	FY2018-19
Type of Sample:	**Surface Water**	Quarter Ending	Mar-19
Customer	CCL	Date of Receipt:	16-01-2019
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	16.01.19-16.03.19
Testing Protocol:	-		
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 : **Hazaribagh** **Project:** **Jharkhand OCP**

Stations: **Date of Sampling:**

1. Chutua Nala after conf. With Kedla Nala 09-01-2019
2. Chutua Nala D/S after LU Mine Discharge Point 09-01-2019

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	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2.2	2.6			2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005	<0.0005			0.0005	APHA, 22nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	22	20			2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03	<0.03			0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Disolved Oxygen, min.	6.3	6.3			0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.84	0.78			0.02	APHA, 22nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 22nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.06	<0.06			0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005	<0.005			0.005	APHA, 22nd Edition AAS-GTA
11	Nitrate (as NO_3), mg/l, Max	12.94	9.61			0.50	APHA, 22nd Edition, UV-Spectrophotometric
12	pH value	7.89	8.1			0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C_6H_5OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 22nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	APHA, 22nd Edition AAS-GTA
15	Sulphate (as SO_4) mg/l, Max	62	68			2.00	APHA, 22nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	294	292			25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	24	32			10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.01	0.01			0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

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) Liability for return of samples ceases as samples cannot be retained for retests.
4) This is computer generated report and requires no signature.

Dy. Technical Manager
Env. Lab., CMPDI(HQ)