

Central Coalfields Limited  
Office of the General Manager  
P.O.- Dhori Distt – Bokaro.

Ref. No.-GM (D)/ PS/ Env. Statements/2018-19/ **102**

Dated:- 30.09.2019

To,  
Member Secretary, JSPCB,  
HEC, Dhurwa, Ranchi.

Sub : Submission of Environment Statement / Audit Reports - 2018-19.

Dear Sir,

We are enclosing herewith the Environment Statement / Audit Reports for the financial year 2018-19 in respect of following projects of Dhori Area duly signed by respective Project Officers for your kind perusal.

During 2018-19, Dhori OCP production was suspended due to non availability of Land.

1. Amlo OCP
2. Tarmi OCP
3. Selected Dhori OCP ( SDOCM)
4. Dhori (Khas) UGP
5. Dhori OCP

Encl : As above.

Yours faithfully,

  
General Manager  
Dhori Area  
**General Manager**  
CCL. Dhori Area

Copy to:

1. Regional officer, JSPCB, HIG-1, Housing colony, Dhanbad.
2. Staff Officer (Env), Dhori Area
3. Project Officers- Amlo / Dhori (E) / Tarmi / Selected Dhori OCP (SDOCM) / Dhori (K) UG

ENVIRONMENT STATEMENT/AUDIT  
REPORT

SELECTED DHORI OPEN CAST  
PROJECT (SDOCM)  
CENTRAL COAFIELDS LIMITED  
DHORI AREA

FOR  
2018-19

SUBMITTED TO  
JHARKHAND POLLUTION CONTROL  
BOARD

FORM – V  
(See rule 14)

Environmental Statement for the financial year ending the 31<sup>st</sup> March 2018.

**PART- A.**

I	Name and address of the project.	Selected Dhori Opencast Project. ( SDOCM) PO: Turiyo Dist: Bokaro State ; Jharkhand
ii.	Industry category primary – (STC- Code)	Primary
iii	Production capacity	2.25 MTPA (as per approved EC) <u>OM DATED 24.01.1992</u> <u>OF MOEF, NEW DELHI</u>
iv	Date of last environment statement submitted.	06/09/2018 (2017-18).

**PART- B.**

**Water and Raw material composition:**

Water Consumption	
1. Mining	350 cum/Day
2 Domestic	400 cum/day
Total	750 cum/day

2. Raw material consumption:

Name of Raw material	Name of product	Consumption of Raw materials per unit of product output	
		During the previous Financial year (17-18)	During the current Financial year (18-19)
Explosive (Kg/Te)	Coal & OB	0.89	0.176
Diesel (Lit/Te)			1.00
Lubricant (Lit/Te)		0.172	0.44

**PART- C**

**Pollution discharged to Environment / unit of output  
(Parameters as specified in the consent issued)**

Pollution	Quantity of pollutants discharged (Cum/day)	Percentage of variation from prescribed stack with reason.
a) water i) From process ii) from colony	90 mine disch) 50	The quality of mine water is meeting the prescribed standard.
b) Air	-	The qualities of SPM/RPM/SOx & NOx generated are well within the prescribed standard as given in Annex.

### **PART- D.**

#### **Hazardous Waste -(As specified under Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016**

Hazardous waste	Total quantity	
	During Previous financial year (2017-2018)	During current financial year (2018-2019)
A)From process (i) Used oil	43.7 KL	19.25 KL
(ii)Automobile Batteries	63 Nos	24 Nos

### **PART – E**

#### **SOLID WASTE:**

Solid Waste	Total Quantity (M.cum)	
	During the previous Financial year (17-18 )	During the current Financial year (18-19 )
a) From process (OB)	3.18	0.77
b) From pollution control facility	Nil	Nil

### **PART – F**

Please specify the Characteristics in terms of concentration and quantity of Hazardous as well as solid waste and indicate, disposal practice adopted for both these categories of wastes.

- **1. HAZARDOUS WASTES :**
- Hazardous wastes is not being produced either from mining operation or from any pollution control facilities. Used oil such as mobile & lubricant are used for the lubrication of HEMM etc.
- 
- **2. SOLID WASTES :**
- During opencast mining over burden produced as solid wastes temporarily as these materials are used for land reclamation. During the year 2018-19, is 0.77 Million cubic meter of overburden was generated. The overburden material is more or less homogeneous comprising mainly shale, sand, silt, clay and gravel.
- **3. DISPOSAL PRACTICE :**
- Presently, the OB material is being filled in decoaled area of quarry.

• SDOCM PLANTATION PHOTOS





**Spreading of grass seed balls at OB dumps in Selected Dhori open cast Mine**



**Wetting of Coal before feeding to crusher to suppress dust.**



**Tarpaulin Cover-Avoid overloading & spillage of valuable coal.**



**28 KL MIST SPRINKLER AT SDOCM**

### **PART- G**

Impact of pollution control measures on conservation of natural resources and consequently on cost of production.

Following pollution control measures have been adopted by the mine management:

#### **1) Air Pollution Control Measures:**

Regular sprinkling of water on haul roads and other roads.

- Dust suppression at all transfer points
- Vegetation of OB dumps
- Regular monitoring of all environment parameters.

#### **2) Water Pollution control measures:**

- The mine water collected in the lagoons acts as sedimentation pond where all suspended particles are settled. The clear water is used for spraying / industrial purpose. The excess water overflows to nallah.
- Work shop ETP is in operation.

Regular monitoring is done to check the parameters.

#### **3) Noise pollution control measures.**

- All HEMM provided with noise /sound proof cabins.
- Ear muffs/plugs are provided to workers.

### **PART- H**

#### **Additional investment proposal for Environmental protection including abatement of pollution.**

The following are the additional investment proposal for Environmental protection

1. All residential quarters constructed for the project has been provided with septic latrines and effluents are disposed off in soak pits.
2. The Environmental Monitoring of the project will be continued quarterly as per guidelines of MOEF
3. Environmental statement report will be prepared for each financial year ending 31st March.

### **PART-I**

#### **Any other particulars in respect of environment protection and abatement of pollution.**

- The Environmental monitoring is carried out quarterly for the project by CMPDI as per the guidelines of the Ministry of Environment & Forest (MOEF).
- The Environmental Statement for the project is prepared every year.
- Ambient air quality, quality of effluent discharged from the mine and noise level all conform to the prescribed limits.
- To control fugitive dust on haul road arrangement of water sprinkling on the haul road has been made.

  
Signature of Project Officer  
SPOCM  
Project Officer  
Bel Dhar Open Cast Mines



**TEST REPORT**

<b>06/18 Test Report No. 1607</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	*Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Apr-18 1st FN</b>	12/04/18-13/04/18	17/04/18	17/04/18-20/04/18	242	82	45	< 25	< 6	East Sunny
<b>Apr-18 2nd FN</b>	28/04/18-29/04/18	02/05/18	02/05/18-05/05/18	136	61	26	< 25	< 6	East Sunny
<b>May-18 3rd FN</b>	11/05/18-12/05/18	16/05/18	16/05/18-19/05/18	284	88	48	< 25	< 6	East Sunny
<b>May-18 4th FN</b>	29/05/18-30/05/18	01/06/18	01/06/18-06/06/18	174	67	37	< 25	< 6	West Sunny
<b>Jun-18 5th FN</b>	13/06/18-14/06/18	19/06/18	19/06/18-23/06/18	217	71	45	< 25	< 6	East Rain
<b>Jun-18 6th FN</b>	27/06/18-28/06/18	02/07/18	02/07/18-04/07/18	288	112	61	< 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.

**TEST REPORT**

<b>06/18 Test Report No. 1608</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Tunio Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	*Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Apr-18 1st FN</b>	13/04/18-14/04/18	17/04/18	17/04/18-20/04/18	296	94	52	< 25	< 6	South Sunny
<b>Apr-18 2nd FN</b>	29/04/18-30/04/18	02/05/18	02/05/18-05/05/18	250	81	38	< 25	< 6	South Sunny
<b>May-18 3rd FN</b>	11/05/18-12/05/18	16/05/18	16/05/18-19/05/18	381	164	63	< 25	< 6	East Sunny
<b>May-18 4th FN</b>	29/05/18-30/05/18	01/06/18	01/06/18-06/06/18	228	82	48	< 25	< 6	West Sunny
<b>Jun-18 5th FN</b>	13/06/18-14/06/18	19/06/18	19/06/18-23/06/18	340	128	72	< 25	< 6	East Rain
<b>Jun-18 6th FN</b>	27/06/18-28/06/18	02/07/18	02/07/18-04/07/18	318	126	79	< 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.

**TEST REPORT**

<b>06/18 Test Report No. 1609</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Gunjadih Magazine

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	*Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Apr-18 1st FN</b>	13/04/18-14/04/18	17/04/18	17/04/18-20/04/18	296	94	52	< 25	< 6	South Sunny
<b>Apr-18 2nd FN</b>	29/04/18-30/04/18	02/05/18	02/05/18-05/05/18	250	81	38	< 25	< 6	South Sunny
<b>May-18 3rd FN</b>	11/05/18-12/05/18	16/05/18	16/05/18-19/05/18	381	164	63	< 25	< 6	East Sunny
<b>May-18 4th FN</b>	29/05/18-30/05/18	01/06/18	01/06/18-06/06/18	228	82	48	< 25	< 6	West Sunny
<b>Jun-18 5th FN</b>	13/06/18-14/06/18	19/06/18	19/06/18-23/06/18	340	128	72	< 25	< 6	East Rain
<b>Jun-18 6th FN</b>	27/06/18-28/06/18	02/07/18	02/07/18-04/07/18	318	126	79	< 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.
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- \*Out of NABL scope.



**TEST REPORT**

<b>06/18 Test Report No. 1611</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	<b>Jun-18</b>
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	<b>MOEF -SCH-VI STANDARDS, Class 'a'</b>		
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:** Dhori      **Project:** Selected Dhori      **Stations:** Lagoon Discharge

<b>Analysis Results of FN Effluent Water</b>							
Parameters →				<b>COD</b>	<b>O &amp; G</b>	<b>pH value</b>	<b>TSS</b>
<b>Detection Limit</b>				<b>4</b>	<b>2</b>	<b>0.2</b>	<b>10</b>
<b>MOEF -SCH-VI, STANDARDS, Class 'A'</b>				<b>250</b>	<b>10</b>	<b>5.5 to 9.0</b>	<b>100</b>
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	<b>Value in mg/l, except pH</b>			
<b>Apr-18 1st FN</b>	14/04/18	18/04/18	18/04/18-02/05/18	20	<2.00	8.1	28
<b>Apr-18 2nd FN</b>	30/04/18	02/05/18	02/05/18-26/05/18	32	<2.00	8.25	30
<b>May-18 3rd FN</b>	13/05/18	16/05/18	16/05/18-09/06/18	20	<2.00	7.8	26
<b>May-18 4th FN</b>	30/05/18	01/06/18	01/06/18-22/06/18	24	<2.00	7.62	20
<b>Jun-18 5th FN</b>	15/06/18	18/06/18	18/06/18-30/06/18	32	<2.00	8.41	22
<b>Jun-18 6th FN</b>	27/06/18	02/07/18	02/07/18-10/07/18	52	<2.00	8.16	124
<b>BIS Standard &amp; Method</b>				APHA, 22 <sup>nd</sup> 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

**TEST REPORT**

<b>06/18 Test Report No. 1612</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	<b>Surface Water</b>	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 :** Dhori **Project:** Selected Dhori  
**Stations:** 1. Tisri Nala (2) before confluence with Damodar **Date of Sampling:** 14/04/18  
2. Damodar after conf. with Tisri Nala **Date of Sampling:** 14/04/18

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, 22 <sup>nd</sup> Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	80	42			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	Dissolved Oxygen, min.	6.3	6.3			0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.97	0.41			0.02	APHA, 22 <sup>nd</sup> Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 22 <sup>nd</sup> 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	0.006			0.005	APHA, 22 <sup>nd</sup> Edition AAS-GTA
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	5.98	4.34			0.50	APHA, 22 <sup>nd</sup> Edition, UV-Spectrophotometric
12	pH value	8.25	7.44			0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 22 <sup>nd</sup> Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	APHA, 22 <sup>nd</sup> Edition AAS-GTA
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	85	58			2.00	APHA, 22 <sup>nd</sup> Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	526	312			25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	20	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

**TEST REPORT**

<b>09/18 Test Report No. 1607</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter ( $\text{PM}_{10} + >\text{PM}_{10}$ )TPM	Particulate Matter ( $\text{PM}_{10}$ )	*Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_2$ )	
<b>Jul-18 1st FN</b>	12/07/18-13/07/18	16/07/18	16/07/18-19/07/18	246	87	49	< 25	< 6	East Cloud
<b>Jul-18 2nd FN</b>	18/07/18-19/07/18	01/08/18	01/08/18-06/08/18	154	59	30	< 25	< 6	East Cloud
<b>Aug-18 3rd FN</b>	11/08/18-12/08/18	16/08/18	16/08/18-20/08/18	218	85	44	< 25	< 6	East Rain
<b>Aug-18 4th FN</b>	18/08/18-19/08/18	03/09/18	03/09/18-07/09/18	163	63	32	< 25	< 6	East Sunny
<b>Sep-18 5th FN</b>	04/09/18-05/09/18	17/09/18	17/09/18-20/09/18	117	51	28	< 25	< 6	East Sunny
<b>Sep-18 6th FN</b>	19/09/18-20/09/18	01/10/18	01/10/18-05/10/18	204	72	37	< 25	< 6	West 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.

**TEST REPORT**

<b>09/18 Test Report No. 1608</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Tunio Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter ( $\text{PM}_{10} + >\text{PM}_{10}$ )TPM	Particulate Matter ( $\text{PM}_{10}$ )	*Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_2$ )	
<b>Jul-18 1st FN</b>	12/07/18-13/07/18	16/07/18	16/07/18-19/07/18	246	87	49	< 25	< 6	East Cloud
<b>Jul-18 2nd FN</b>	18/07/18-19/07/18	01/08/18	01/08/18-06/08/18	154	59	30	< 25	< 6	East Cloud
<b>Aug-18 3rd FN</b>	11/08/18-12/08/18	16/08/18	16/08/18-20/08/18	218	85	44	< 25	< 6	East Rain
<b>Aug-18 4th FN</b>	18/08/18-19/08/18	03/09/18	03/09/18-07/09/18	163	63	32	< 25	< 6	East Sunny
<b>Sep-18 5th FN</b>	04/09/18-05/09/18	17/09/18	17/09/18-20/09/18	117	51	28	< 25	< 6	East Sunny
<b>Sep-18 6th FN</b>	19/09/18-20/09/18	01/10/18	01/10/18-05/10/18	204	72	37	< 25	< 6	West Sunny

**Note:**

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
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- \*Out of NABL scope.



**TEST REPORT**

<b>09/18 Test Report No. 1609</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Gunjadih Magazine

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter ( $\text{PM}_{10} + >\text{PM}_{10}$ )/TPM	Particulate Matter ( $\text{PM}_{10}$ )	*Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_2$ )	
<b>Jul-18 1st FN</b>	13/07/18-14/07/18	16/07/18	16/07/18-19/07/18	282	114	61	< 25	< 6	East Cloud
<b>Jul-18 2nd FN</b>	19/07/18-20/07/18	01/08/18	01/08/18-06/08/18	228	88	45	< 25	< 6	East Cloud
<b>Aug-18 3rd FN</b>	13/08/18-14/08/18	16/08/18	16/08/18-20/08/18	166	70	33	< 25	< 6	East Rain
<b>Aug-18 4th FN</b>	19/08/18-20/08/18	03/09/18	03/09/18-07/09/18	176	76	41	< 25	< 6	East Sunny
<b>Sep-18 5th FN</b>	05/09/18-06/09/18	17/09/18	17/09/18-20/09/18	120	58	34	< 25	< 6	East Sunny
<b>Sep-18 6th FN</b>	20/09/18-21/09/18	01/10/18	01/10/18-05/10/18	131	61	29	< 25	< 6	West Cloud

**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.

**TEST REPORT**

<b>09/18 Test Report No. 1610</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	Noise	Quarter Ending	Sep-18
Customer	CCL		
Testing Protocol:	<i>'The noise pollution (Regulation and Control), Rules,2000</i>		
Remarks:			

**TEST RESULT**

The sample has been tested with the following results:-

**Area :** **Dhori** **Project:** **Selected Dhori**

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	12/07/18	18/07/18	11/08/18	18/08/18	04/09/18	19/09/18
<b>Colony</b>	50.4	50.4	50.1	46.1	50.3	50.3
Date of recording	12/07/18	18/07/18	11/08/18	18/08/18	04/09/18	19/09/18
<b>Tunio Village</b>	49.5	49.6	49.6	45.2	49.5	49.4

<i>Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000</i>		
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
<i>Industrial Area</i>	75	70
<i>Commercial Area</i>	65	55
<i>Residential area</i>	55	45
<i>Silence Zone</i>	50	40

**TEST REPORT**

<b>09/18 Test Report No. 1611</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	<b>Sep-18</b>
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	<b>MOEF -SCH-VI STANDARDS, Class 'a'</b>		
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:** Dhori

**Project:** Selected Dhori

**Stations:** Lagoon Discharge

<b>Analysis Results of FN Effluent Water</b>							
Parameters →				<b>COD</b>	<b>O &amp; G</b>	<b>pH value</b>	<b>TSS</b>
<b>Detection Limit</b>				<b>4</b>	<b>2</b>	<b>0.2</b>	<b>10</b>
<b>MOEF -SCH-VI, STANDARDS, Class 'A'</b>				<b>250</b>	<b>10</b>	<b>5.5 to 9.0</b>	<b>100</b>
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	<b>Value in mg/l, except pH</b>			
<b>Jul-18 1st FN</b>	12/07/18	16/07/18	16/07/18-03/08/18	28	<2.00	8.11	26
<b>Jul-18 2nd FN</b>	20/07/18	01/08/18	01/08/18-20/08/18	20	<2.00	7.68	20
<b>Aug-18 3rd FN</b>	13/08/18	16/08/18	16/08/18-03/08/18	28	<2.00	6.72	26
<b>Aug-18 4th FN</b>	20/08/18	03/09/18	03/09/18-18/03/18	36	<2.00	7.32	22
<b>Sep-18 5th FN</b>	05/09/18	17/09/18	17/09/18-08/10/18	36	<2.00	7.77	26
<b>Sep-18 6th FN</b>	21/09/18	01/10/18	01/10/18-15/10/18	12	<2.00	7.92	22
<b>BIS Standard &amp; Method</b>				APHA, 22 <sup>nd</sup> 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

**TEST REPORT**

<b>09/18 Test Report No. 1612</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	<b>Surface Water</b>	Quarter Ending	<b>Sep-18</b>
Customer	CCL	Date of Receipt:	<b>16/07/18</b>
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	<b>16.07.18-14.09.18</b>
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:-

<b>Area :</b>	<b>Dhori</b>	<b>Project:</b>	<b>Selected Dhori</b>
<b>Stations:</b>	1. Tisri Nala (2) before confluence with Damodar 2. Damodar after conf. with Tisri Nala	<b>Date of Sampling:</b>	12/07/18 12/07/18

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, 22 <sup>nd</sup> Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	18	18			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	Dissolved Oxygen, min.	6.3	6.3			0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.63	0.6			0.02	APHA, 22 <sup>nd</sup> Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 22 <sup>nd</sup> Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	0.28	<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, 22 <sup>nd</sup> Edition AAS-GTA
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	4.03	2.88			0.50	APHA, 22 <sup>nd</sup> Edition, UV-Spectrophotometric
12	pH value	8.09	8.24			0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 22 <sup>nd</sup> Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	APHA, 22 <sup>nd</sup> Edition AAS-GTA
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	26	32			2.00	APHA, 22 <sup>nd</sup> Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	162	168			25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	28	22			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

**TEST REPORT**

<b>12/18 Test Report No. 1608</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	*Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Oct-18 1st FN</b>	04/10/18-05/10/18	15/10/18	15/10/18-24/10/18	211	74	32	< 25	< 6	East Sunny
<b>Oct-18 2nd FN</b>	29/10/18-30/10/18	01/11/18	01/11/18-05/11/18	235	83	42	< 25	< 6	West Sunny
<b>Nov-18 3rd FN</b>	12/11/18-13/11/18	16/11/18	16/11/18-20/11/18	218	77	47	< 25	< 6	East Sunny
<b>Nov-18 4th FN</b>	19/11/18-20/11/18	03/12/18	03/12/18-06/12/18	248	74	42	< 25	< 6	East Sunny
<b>Dec-18 5th FN</b>	04/12/18-05/12/18	17/12/18	17/12/18-20/12/18	228	70	45	< 25	< 6	East Sunny
<b>Dec-18 6th FN</b>	18/12/18-19/12/18	01/01/19	01/01/19-04/01/19	228	62	38	< 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.

**TEST REPORT**

<b>12/18 Test Report No. 1609</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Tunio Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	*Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Oct-18 1st FN</b>	05/10/18-06/10/18	15/10/18	15/10/18-24/10/18	211	74	32	< 25	< 6	East Sunny
<b>Oct-18 2nd FN</b>	29/10/18-30/10/18	01/11/18	01/11/18-05/11/18	235	83	42	< 25	< 6	East Sunny
<b>Nov-18 3rd FN</b>	12/11/18-13/11/18	16/11/18	16/11/18-20/11/18	218	77	47	< 25	< 6	East Sunny
<b>Nov-18 4th FN</b>	20/11/18-21/11/18	03/12/18	03/12/18-06/12/18	248	74	42	< 25	< 6	East Sunny
<b>Dec-18 5th FN</b>	05/12/18-06/12/18	17/12/18	17/12/18-20/12/18	228	70	45	< 25	< 6	East Sunny
<b>Dec-18 6th FN</b>	19/12/18-20/12/18	01/01/19	01/01/19-04/01/19	228	62	38	< 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.

**TEST REPORT**

<b>12/18 Test Report No. 1610</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Gunjadih Magazine

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter (PM <sub>10</sub> + >PM <sub>10</sub> )TPM	Particulate Matter (PM <sub>10</sub> )	*Particulate Matter (PM <sub>2.5</sub> )	Sulphur Dioxide (SO <sub>2</sub> )	Nitrogen Oxides (as NO <sub>2</sub> )	
<b>Oct-18 1st FN</b>	05/10/18-06/10/18	15/10/18	15/10/18-24/10/18	234	83	42	< 25	< 6	East Sunny
<b>Oct-18 2nd FN</b>	29/10/18-30/10/18	01/11/18	01/11/18-05/11/18	281	93	59	< 25	< 6	East Sunny
<b>Nov-18 3rd FN</b>	12/11/18-13/11/18	16/11/18	16/11/18-20/11/18	319	116	68	< 25	< 6	East Sunny
<b>Nov-18 4th FN</b>	20/11/18-21/11/18	03/12/18	03/12/18-06/12/18	273	94	53	< 25	< 6	East Sunny
<b>Dec-18 5th FN</b>	05/12/18-06/12/18	17/12/18	17/12/18-20/12/18	158	49	27	< 25	< 6	East Sunny
<b>Dec-18 6th FN</b>	19/12/18-20/12/18	01/01/19	01/01/19-04/01/19	250	87	54	< 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.

**TEST REPORT**

<b>12/18 Test Report No. 1611</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	Noise	Quarter Ending	Dec-18
Customer	CCL		
Testing Protocol:	<i>The noise pollution (Regulation and Control), Rules,2000</i>		
Remarks:			

**TEST RESULT**

The sample has been tested with the following results:-

**Area :** **Dhori** **Project:** **Selected Dhori**

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	29/10/18	12/11/18	19/11/18	04/12/18	18/12/18
<b>Colony</b>	45.7	52.1	51.3	46.3	44.8	52.8
Date of recording	04/10/18	29/10/18	12/11/18	19/11/18	04/12/18	18/12/18
<b>Tunio Village</b>	44.2	47.4	50.5	45.6	45.3	52.2

<i>Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000</i>		
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.



**TEST REPORT**

<b>12/18 Test Report No. 1612</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>2018-19</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	<b>Dec.'18</b>
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	<b>MOEF -SCH-VI STANDARDS, Class 'a'</b>		
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:** Dhori

**Project:** Selected Dhori

**Stations:** Lagoon Discharge

<b>Analysis Results of FN Effluent Water</b>							
Parameters →				<b>COD</b>	<b>O &amp; G</b>	<b>pH value</b>	<b>TSS</b>
<b>Detection Limit</b>				<b>4</b>	<b>2</b>	<b>0.2</b>	<b>10</b>
<b>MOEF -SCH-VI, STANDARDS, Class 'A'</b>				<b>250</b>	<b>10</b>	<b>5.5 to 9.0</b>	<b>100</b>
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	<b>Value in mg/l, except pH</b>			
<b>Oct-18 1st FN</b>	06/10/18	15/10/18	15/10/18-08/11/18	16	<2.00	8.06	26
<b>Oct-18 2nd FN</b>	30/10/18	31/10/18	31/10/18-24/11/18	24	<2.00	7.51	28
<b>Nov-18 3rd FN</b>	13/11/18	16/11/18	16/11/18-30/11/18	156	<2.00	5.82	248
<b>Nov-18 4th FN</b>	21/11/18	03/12/18	03/12/18-17/12/18	24	<2.00	7.25	24
<b>Dec-18 5th FN</b>	10/12/18	17/12/18	17/12/18-04/01/19	32	<2.00	7.97	36
<b>Dec-18 6th FN</b>	00/01/00	00/01/00	00/01/00-00/01/00	0	0	0	0
<b>BIS Standard &amp; Method</b>				APHA, 22 <sup>nd</sup> 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

**TEST REPORT**

<b>12/18 Test Report No. 1613</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>2018-19</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	<b>Dec.'18</b>
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:	<b>MOEF -SCH-VI STANDARDS, Class 'a'</b>	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 :** Dhori **Project:** Selected Dhori

**Stations:** 1. Lagoon Discharge **Date of Sampling:** 19/12/2018  
2.  
3.

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	0.18			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, 22 <sup>nd</sup> Edition, AAS-GTA
5	COD, mg/l, Max	32			4.00	250.0	APHA, 22 <sup>nd</sup> 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, 22 <sup>nd</sup> Edition Molybdovanadate
8	Fluoride (as F) mg/l, Max	1.35			0.02	2.0	APHA, 22 <sup>nd</sup> Edition, SPADNS
9	Free Ammonia, mg/l, Max	<0.02			0.02	5.0	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium, mg/l, Max	<0.01			0.01	0.1	APHA, 22 <sup>nd</sup> 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, 22 <sup>nd</sup> 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	0.03			0.01	3.0	IS-3025/54:2003, AAS-Flame
15	Nitrate Nitrogen, mg/l, Max	1.50			0.50	10.0	APHA, 22 <sup>nd</sup> Edition, UV-Spectrophotometric
16	Oil & Grease, mg/l, Max	<2.00			2.00	10.0	IS 3025/39:1991, R : 2003, Partition Gravimetric
17	pH value	8.26			0.2	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric
18	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH),mg/l, Max	<0.001			0.001	1.0	APHA, 22 <sup>nd</sup> Edition 4-Amino Antipyrine
19	Selenium (as Se), mg/l, Max	<0.002			0.002	0.05	APHA, 22 <sup>nd</sup> Edition, AAS-GTA
20	Sulphide (as SO <sub>3</sub> ), mg/l, Max	0.006			0.005	2.0	APHA, 22 <sup>nd</sup> Edition Methylene Blue
21	Temperature (°C )	24.4			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, Thermometric
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	<1.00			1.00	100.0	IS:3025/34:1988, Nessler's
24	Total Residual Chlorine, mg/l, Max	<0.02			0.02	1.0	APHA, 22 <sup>nd</sup> Edition, DPD
25	Total Suspended Solids, mg/l, Max	24			10.00	100.0	IS 3025/17:1984, R :1996, Gravimetric
26	Zinc (as Zn), mg/l, Max	0.04			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.  
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4) This is computer generated report and requires no signature.

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

**TEST REPORT**

<b>12/18 Test Report No. 1614</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	<b>Surface Water</b>	Quarter Ending	<b>Dec-18</b>
Customer	CCL	Date of Receipt:	<b>15/10/18</b>
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	<b>15.10.18-22.01.19</b>
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 :** Dhori **Project:** Selected Dhori  
**Stations:** 1. Tisri Nala (2) before confluence with Damodar **Date of Sampling:** 06/10/18  
 2. Damodar after conf. with Tisri Nala 06/10/18

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, 22 <sup>nd</sup> Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	14	12			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	Dissolved Oxygen, min.	6.3	6.3			0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.87	0.65			0.02	APHA, 22 <sup>nd</sup> Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 22 <sup>nd</sup> Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	0.28	<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, 22 <sup>nd</sup> Edition AAS-GTA
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	25.87	9.61			0.50	APHA, 22 <sup>nd</sup> Edition, UV-Spectrophotometric
12	pH value	8.24	8.12			0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 22 <sup>nd</sup> Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	APHA, 22 <sup>nd</sup> Edition AAS-GTA
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	44.58	61.97			2.00	APHA, 22 <sup>nd</sup> Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	212	174			25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	26	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

**TEST REPORT**

<b>03/19 Test Report No. 1607</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter ( $\text{PM}_{10} + >\text{PM}_{10}$ )TPM	Particulate Matter ( $\text{PM}_{10}$ )	*Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_2$ )	
<b>Jan-19 1st FN</b>	04/01/19-05/01/19	16-01-2019	16/01/19-19/01/19	314	110	64	< 25	< 6	East Sunny
<b>Jan-19 2nd FN</b>	18/01/19-19/01/19	01-02-2019	01/02/19-05/02/19	296	97	56	< 25	< 6	East Sunny
<b>Feb-19 3rd FN</b>	05/02/19-06/02/19	18-02-2019	18/02/19-21/02/19	293	92	56	< 25	< 6	East Sunny
<b>Feb-19 4th FN</b>	17/02/19-18/02/19	01-03-2019	01/03/19-05/03/19	291	87	62	< 25	< 6	West Sunny
<b>Mar-19 5th FN</b>	12/03/19-13/03/19	18-03-2019	18/03/19-22/03/19	143	49	28	< 25	< 6	East Sunny
<b>Mar-19 6th FN</b>	17/03/19-18/03/19	01-04-2019	01/04/19-04/04/19	160	60	37	< 25	< 6	South Cloud

**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.

**TEST REPORT**

<b>03/19 Test Report No. 1608</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Tunio Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter ( $\text{PM}_{10} + >\text{PM}_{10}$ )/TPM	Particulate Matter ( $\text{PM}_{10}$ )	*Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_2$ )	
<b>Jan-19 1st FN</b>	04/01/19-05/01/19	16-01-2019	16/01/19-19/01/19	220	70	44	< 25	< 6	East Sunny
<b>Jan-19 2nd FN</b>	18/01/19-19/01/19	01-02-2019	01/02/19-05/02/19	212	66	38	< 25	< 6	East Sunny
<b>Feb-19 3rd FN</b>	05/02/19-06/02/19	18-02-2019	18/02/19-21/02/19	338	126	74	< 25	< 6	East Sunny
<b>Feb-19 4th FN</b>	17/02/19-18/02/19	01-03-2019	01/03/19-05/03/19	246	96	52	< 25	< 6	West Sunny
<b>Mar-19 5th FN</b>	12/03/19-13/03/19	18-03-2019	18/03/19-22/03/19	155	57	30	< 25	< 6	East Sunny
<b>Mar-19 6th FN</b>	17/03/19-18/03/19	01-04-2019	01/04/19-04/04/19	350	149	64	< 25	< 6	South Cloud

**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.

**TEST REPORT**

<b>03/19 Test Report No. 1609</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
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 :** Dhori      **Project:** Selected Dhori      **Stations:** Gunjadih Magazine

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters ( in $\mu\text{g}/\text{m}^3$ )					Wind Direction (from) & Weather
				*Total Particulate Matter ( $\text{PM}_{10} + >\text{PM}_{10}$ )/TPM	Particulate Matter ( $\text{PM}_{10}$ )	*Particulate Matter ( $\text{PM}_{2.5}$ )	Sulphur Dioxide ( $\text{SO}_2$ )	Nitrogen Oxides (as $\text{NO}_2$ )	
<b>Jan-19 1st FN</b>	05/01/19-06/01/19	16-01-2019	16/01/19-19/01/19	160	52	32	< 25	< 6	East Sunny
<b>Jan-19 2nd FN</b>	19/01/19-20/01/19	01-02-2019	01/02/19-05/02/19	280	89	53	< 25	< 6	East Sunny
<b>Feb-19 3rd FN</b>	06/02/19-07/02/19	18-02-2019	18/02/19-21/02/19	207	58	36	< 25	< 6	East Sunny
<b>Feb-19 4th FN</b>	18/02/19-19/02/19	01-03-2019	01/03/19-05/03/19	265	76	39	< 25	< 6	West Sunny
<b>Mar-19 5th FN</b>	12/03/19-13/03/19	18-03-2019	18/03/19-22/03/19	208	77	43	< 25	< 6	East Sunny
<b>Mar-19 6th FN</b>	18/03/19-19/03/19	01-04-2019	01/04/19-04/04/19	235	94	55	< 25	< 6	West 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.

**TEST REPORT**

<b>03/19 Test Report No. 1610</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	Noise	Quarter Ending	Mar-19
Customer	CCL		
Testing Protocol:	<i>'The noise pollution (Regulation and Control), Rules,2000</i>		
Remarks:			

**TEST RESULT**

The sample has been tested with the following results:-

**Area :** **Dhori** **Project:** **Selected Dhori**

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	04-01-2019	18-01-2019	05-02-2019	17-02-2019	12-03-2019	17-03-2019
<b>Colony</b>	49.8	47.9	46.2	53.3	48.2	54.5
Date of recording	04-01-2019	19-01-2019	05-02-2019	17-02-2019	12-03-2019	17-03-2019
<b>Tunio Village</b>	51.4	48.2	45.3	49.6	47.6	49.7

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

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**TEST REPORT**

<b>03/19 Test Report No. 1611</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	<b>Effluent Water</b>	Quarter Ending	<b>Mar-19</b>
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	<b>MOEF -SCH-VI STANDARDS, Class 'a'</b>		
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:** Dhori

**Project:** Selected Dhori

**Stations:** Lagoon Discharge

<b>Analysis Results of FN Effluent Water</b>							
Parameters →				<b>COD</b>	<b>O &amp; G</b>	<b>pH value</b>	<b>TSS</b>
<b>Detection Limit</b>				<b>4</b>	<b>2</b>	<b>0.2</b>	<b>10</b>
<b>MOEF -SCH-VI, STANDARDS, Class 'A'</b>				<b>250</b>	<b>10</b>	<b>5.5 to 9.0</b>	<b>100</b>
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	<b>Value in mg/l, except pH</b>			
<b>Jan-19 1st FN</b>	06/01/19	16/01/19	16/01/19-05/02/19	36	<2.00	8.41	42
<b>Jan-19 2nd FN</b>	21/01/19	01/02/19	01/02/19-28/02/19	24	<2.00	8.37	28
<b>Feb-19 3rd FN</b>	07/02/19	18/02/19	18/02/19-16/03/19	24	<2.00	7.72	26
<b>Feb-19 4th FN</b>	20/02/19	01/03/19	01/03/19-23/03/19	20	<2.00	7.92	26
<b>Mar-19 5th FN</b>	15/03/19	18/03/19	18/03/19-03/04/19	32	<2.00	8.33	38
<b>Mar-19 6th FN</b>	19/03/19	01/04/19	01/04/19-15/04/19	32	<2.00	7.89	42
<b>BIS Standard &amp; Method</b>				APHA, 22 <sup>nd</sup> 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



**TEST REPORT**

<b>03/19 Test Report No. 1612</b>	<b>Job No. 094318021</b>	<b>Year</b>	<b>FY2018-19</b>
Type of Sample:	<b>Surface Water</b>	Quarter Ending	<b>Mar-19</b>
Customer	CCL	Date of Receipt:	<b>16-01-2019</b>
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	<b>16.01.19-02.02.19</b>
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 :** Dhori **Project:** Selected Dhori  
**Stations:** 1. Tisri Nala (2) before confluence with Damodar **Date of Sampling:** 06-01-2019  
2. Damodar after conf. with Tisri Nala 06-01-2019

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, 22 <sup>nd</sup> Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	16	18			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	Dissolved Oxygen, min.	6.3	6.3			0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.87	0.83			0.02	APHA, 22 <sup>nd</sup> Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 22 <sup>nd</sup> 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, 22 <sup>nd</sup> Edition AAS-GTA
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	34.51	38.63			0.50	APHA, 22 <sup>nd</sup> Edition, UV-Spectrophotometric
12	pH value	8.17	8.13			0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 22 <sup>nd</sup> Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002	<0.002			0.002	APHA, 22 <sup>nd</sup> Edition AAS-GTA
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	57	56			2.00	APHA, 22 <sup>nd</sup> Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	208	234			25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	22	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