



रिफाइनरी प्रभाग  
Refineries Division

इंडियन ऑयल कॉर्पोरेशन लिमिटेड

बोंगाइगॉंव रिफाइनरी

पता : बोंगाइगॉंव - 783 385

फ़ोन : डिस्क (बंगाल)

Indian Oil Corporation Limited

Bongaigaon Refinery

P.O. : Bongaigaon, Dist. : Chirang, Assam - 783385

Phone : 03664-

Email :

Website : www.iocl.com FAX : 03664-



REF: IOC/BGR/ENV/MSQ/MoEF&CC/2018-19/01

Date: 20.12.2018

The Chief Conservator of Forests  
Regional Office, North East Region  
Ministry of Environment & Forests & Climate Change  
Law-U-SIB, Lumbatngan, Near M.T.C. Workshop,  
Shillong – 793021

Subject: Half yearly Report for the period of 1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018 for  
MS Quality Improvement Project

Dear Sir,

With reference to above, we are enclosing the Six Monthly Report for the period of 1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018 for your kind perusal. The reports are being sent as per EIA Rules, 2006 on the "Environmental Clearances" issued by MoEF&CC to Bongaigaon Refinery, (BGR) for "MS Quality Improvement Project".

Thanking you,

Yours faithfully,

(A. Basumatary)  
DGM (HSE)

Copy to:

1. Member Secretary, Pollution Control Board, Assam  
Bamunimeidam, Guwahati - 781 021
2. Zonal Officer, Central Pollution Control Board  
Eastern Zonal Office, 'TUM-SIR', Lower Motinagar,  
Near Fire Brigade H.Q., Shillong – 793014

राज्यीय कार्यालय : को-9, एन. ए. रोड, नया दिल्ली, पिन कोड - 400 051

राज्यीय कार्यालय : इंडियन ऑयल बंगाल, बोंगाइगॉंव, पिन - 783 385, बोंगाइगॉंव, चिरांग जिला, असम - 783385

Regional Office : G-9, AI Newer Ring Marg, Baroda (Dist) Mumbai-400 051

Refineries Division : Head Quarters : Indian Oil Shovon, SCOPE Complex, Core-2, 7, Institutional Area, Lodhi Road, New Delhi - 110 003

# Half yearly Report for MS Quality Improvement Project

(1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)



**Submitted by:**

**Indian Oil Corporation Limited**

**Bongaigaon Refinery**

**P.O: Dhaligaon District: Chirang. Assam**

## Compliance Status w.r.t. Env. Clearance of MS Quality Improvement Project

Six Monthly Status Report for the period (1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)

Environmental Clearance for “MS Quality Improvement Project (Light Naphtha Isomerisation using existing Xylene Isomerisation unit)” at Dhaligaon, Chirang, Assam by M/s Bongaigaon Refinery & Petrochemicals Ltd. vide MoEF letter No. J.11011/1171/2007-IA-II (I) dated 5/02/2008.

**Project was commissioned in September, 2011**

### INDEX:

Sl. No	Conditions	Status
1.	General conditions and Compliance status of MS Quality improvement Project.	Annexure- A
2.	Six monthly Stack Monitoring/ Air Quality Data	Furnished in Appendix-A1
3.	Six monthly effluent discharged Quality	Furnished in Appendix-A2
4.	Tree Plantation Data	Furnished in Appendix-A3
5.	Additional Information	Furnished in Appendix-A4
6.	Fugitive Emission Data	Furnished in Appendix-A5
7.	Annual return of hazardous waste	Furnished in Appendix-A6(a)
8.	Authorization from PCBA under Hazardous Waste (Management, Handling and Transboundary Movement Rules 2008)	Furnished in Appendix-A6(b)
9.	Details of Waste water treatment and disposal system	Furnished in Appendix-A7
10.	Quarterly Noise Survey Report.	Furnished in Appendix-A8
11.	Status of Rainwater Harvesting	Furnished in Appendix-A9
12.	Screen Shot of IOCL Website upload of report	Furnished in Appendix-A10
13.	Organ gram of HSE Department	Furnished in Appendix-A11
14.	Gazette Notification of BGR Quality Control laboratory (QC Lab) approval under Environment (Protection) Act	Furnished in Appendix-A12
15.	Employees Occupational Health Check up Status	Furnished in Appendix-A13
16.	Flare system.	Furnished in Appendix-A14

## Annexure- A

SI No	Specific Conditions	Compliance Status
i	The company shall comply with new standards/norms that are being proposed by the CPCB for petrochemical plants and refineries.	Basic Design Engineering Package / Process Package have been prepared in line with the revised standards / norms for Oil Refinery and implemented in the project.
ii	The company shall comply with all the stipulations of environmental clearance issued vide File No. – 11011/375/2006-IA.II (I) dated 22 <sup>nd</sup> March, 2007.	BGR had advertised “Public Notice” in three local news papers that are widely circulated in the region namely “The Assam Tribune” English daily, “Asomiya Pratidin” an Assamese daily & “Sanseyari Bodosa” a Bodo daily on 26 <sup>th</sup> February, 2008.
iii	The process emissions (SO <sub>2</sub> , NO <sub>x</sub> , HC, VOCs and Benzene) from various units shall conform to the standards prescribed by the Assam State Pollution Control Board from time to time. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	Detailed Engineering for the project was carried out considering the revised standards / norms for Oil Refinery and conditions /guidelines issued by SPCB.  Environment Monitoring and control facilities are installed to achieve the stipulated standards.
iv	The improvement project shall be through the retrofitting of existing Xylene fractionation, Isomerisation and Parex units and within the existing land.	The improvement project is only through the retrofitting of existing Xylene Fractionation, Isomerisation and Parex units and within the existing land.
v	Quarterly monitoring of fugitive emissions shall be carried out as per the guidelines of CPCB by fugitive emission detectors (GMI Leak Surveyor) and reports shall be submitted to the Ministry’s regional office at Shillong.	Quarterly monitoring of fugitive emissions is carried out. The quarterly reports for the period of 1 <sup>st</sup> April 2018 to 30 <sup>th</sup> September 2018 are attached as <b><u>Appendix-A5.</u></b>
vi	For control of fugitive emission all unsaturated hydro carbon will be routed to the flare system and the flare system shall be designed for smoke less burning.	Taken care during implementation of the project.
vii	The company shall strictly follow all the recommendation mentioned in the charter on corporate responsibility for environmental protection (CREP)	The company followed all the recommendation mentioned in the charter on Corporate Responsibility for Environmental Protection (CREP) prior to coming of the Revised Standards applicable to refinery for Environment Protection.
viii	Occupational health surveillance of worker shall be done on a regular basis and records maintained as per the Factory Act.	Already in compliance.  The quarterly reports for the period of 1 <sup>st</sup> April 2018 to 30 <sup>th</sup> September 2018 are attached as <b><u>Appendix-A13.</u></b>

Sl. No.	Specific Conditions	Compliance Status
ix	Greenbelt shall be developed to mitigate the effect of fugitive emission all around the plant in a minimum 30% plant area in consultation with DFO as per CPCB guidelines.	Greenbelt is already existed. More than 33% of plant area is having green cover. Tree Census has been carried out through DFO Chirang District in 2013 where 84545 Nos. of grown up trees were enumerated. The company is planting around 5000 nos. of tree every year as a part of its corporate MOU. In the year 2018-19, till 30th September'2018, BGR has planted 14507 nos. of trees.
x	The Company shall make the suitable arrangement for disposal of catalyst waste and alumina balls. The report of waste disposal shall be submitted to Ministry's Regional Office at Shillong.	Complied. Please refer <b><u>Appendix-A6(a)</u></b> .
xi	The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during flaring.	Complied. Necessary measures are in place to prevent fire hazards, containment of oil spill.
xii	To prevent fire and explosion at Oil and Gas facility, potential ignition sources should be kept to a minimum and adequate separation distance between potential ignition sources and flammable material shall be in place.	All necessary precautions are in place as per OISD Guidelines.

## B. General Conditions

S. No.	General Conditions	Compliance status
i	The project authorities must strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government and any other statutory body.	Taken care during implementation of the project.
ii	No further expansion or modification in the project shall be carried without prior approval of the Ministry of Environment and Forests. In case of deviations or alternations in the project proposal from those submitted to the Ministry for clearance, a fresh reference shall be made to the Ministry.	Noted. EC was granted by MoEF&CC to BGR for IndMax & BS-VI projects vide letter <b>F. no.J11011/48/2016-IA-II (I), Dated 19<sup>th</sup> Apr'2017.</b> <b>The project aims to enhance expansion of Crude processing from 2.35 to 2.7 MMTP, DHDT capacity from 1.2 to 1.8 MMTP, HGU from 25 KTPA to 30 KTPA, CRU-MSQ revamp and SDS/SRU unit.</b>
iii	At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system, the respective well site should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved. Provision of adequate height of stack attached to DG sets & flare is to be done.	Taken care during implementation of the project. Emission data for the period of 1 <sup>st</sup> April 2018 to 30 <sup>th</sup> September 2018 are attached as <b><u>Appendix - A1</u></b> . No DG set was installed for the project.
iv	Wastewater shall be properly collected and treated so as to conform to the standards prescribed under EP Act & Rules and mentioned in the Consents provided by the relevant SPCB.	Waste water treatment and disposal system is designed to conform to this norm. Detail of Waste water treatment and disposal system is attached as <b><u>Appendix-A7</u></b> . Treated Effluent and discharge water quality from refinery is attached as <b><u>Appendix-A2</u></b> .

SL. No.	General Conditions	Compliance status
v	The overall noise levels in and around the premises shall be limited within the prescribed standards (75 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Taken care during implementation of the project. Quarterly Noise Survey is being carried out regularly. Quarterly Reports for the period of 1 <sup>st</sup> April 2018 to 30 <sup>th</sup> September 2018 are attached as <b><u>Appendix-A9</u></b> .
vi	The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2008 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the expansion project, if required. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented.	Complied.
vii	Disposal of hazardous wastes shall be as per the Hazardous Wastes (Management and Handling) Rules, 2008. Authorization from the State Pollution Control Board must be obtained for collections / treatment/storage/ disposal of hazardous wastes.	Complied.  Authorization from PCBA for Hazardous Waste (Management, Handling and Transboundary Movement Rules 2008) is attached as <b><u>Appendix –A6(b)</u></b> .
viii	The project authorities will provide adequate funds as non-recurring and recurring expenditure to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Sufficient fund is being made available at the time of implementation and operational phase of the project.
ix	The company shall develop rain water harvesting structures to harvest the runoff water for recharge of ground water.	16 nos. of Rooftop Rainwater Harvesting Projects has been implemented covering roof area of around 17440 SQM having potential volume of rainwater harvesting around 46727M <sup>3</sup> . The harvested rainwater for ground water recharge is through recharge pits and recharge trench on the basis of technical details and guidelines from Central Ground Water Board, North Eastern Region, Guwahati. Details attached as <b><u>Appendix -A9</u></b> .
x	The stipulated conditions will be monitored by the concerned Regional Office of this Ministry /Central Pollution Control Board/State Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly. It will also be displayed on the Website of the Company.	Complied.

Sr. No.	General Conditions	Compliance status
xi	<p>The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment &amp; Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a>. This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the concerned Regional office of this Ministry.</p>	<p>BGR had advertised "Public Notice" in three local news papers that are widely circulated in the region namely "The Assam Tribune" English daily, "Asomiya Pratidin" an Assamese daily &amp; "Sanseyari Bodosa" a Bodo daily on 26th February, 2008.</p> <p>The information is already submitted to statutory agencies.</p>
xii	<p>A separate environment management cell with full fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a Senior Executive.</p>	<p>BGR is having a separate environmental management cell of HSE department and full fledged laboratory to carry-out environment management and monitoring functions.</p> <p>Organogram of HSE Department is attached as <b><u>Appendix-A11</u></b>.</p> <p>BGR Quality Control laboratory (QC Lab) is NABL accredited and CPCB approved under Section 12 &amp; 13 of Environment (Protection) Act 1986 and notified in the Govt. of India Gazette no. 272 dated July 4, 2016 vide notification number Legal 42(3)/ 87 dated 7th March 2016. (Copy attached as <b><u>Appendix-A12</u></b>).</p>
xiii	<p>The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project</p>	<p>Last capitalization date was 08/01/2015.</p>

### 3.0

## APPENDIX –A1

STACK MONITORING DATA: (1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)

### A. SO<sub>2</sub> Emission (mg/Nm<sup>3</sup>):

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 1700 For F.G. = 50	73	258	686
CDU-II		5	267	511
DCU-I		82	371	884
DCU-II		8	235	602
CPP		32	138	374
Reformer		10	107	359
HO-1		2.3	23	57
Isomerisation		6	17	77
DHDT		3	22	270
HGU		2	4	9
SRU		89	184	650
GTG		8	27	48

### B. NO<sub>x</sub> Emission (mg/Nm<sup>3</sup>):

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 450 For F.G. = 350	86	87	87
CDU-II		21	164	266
DCU-I		20	39	72
DCU-II		52	198	445
CPP		32	102	393
Reformer		22	102	199
HO-1		3	6	9
Isomerisation		16	39	61
DHDT		2	97	268
HGU		7	14	34
SRU		No Analyser		
GTG		27	61	75

### C. PM Emission (mg/Nm<sup>3</sup>)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 100 For F.G. = 10	1.1	2.4	3.6
CDU-II		0.1	4.5	12.8
DCU-I		1.0	2.4	3.7
DCU-II		0.2	8.9	86.4
CPP		2.6	3.0	3.7
Reformer		0.2	0.2	4.6
HO-1/2		0.6	1.2	3.3
Isomerisation		0.3	6.1	13.7
DHDT		0.7	2.3	5.6
HGU		0.3	2.3	4.8
SRU		17.2	35.0	133.0
GTG		1.3	6.9	11.6



**STACK MONITORING DATA: (1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)**

**D. CO Emission (mg/Nm<sup>3</sup>)**

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 200 For F.G. = 150	0.1	4.2	15.4
CDU-II		1.8	26.8	312.0
DCU-I		2.2	5.3	18.4
DCU-II		0.2	56.7	135.5
CPP		1.2	14.6	30.4
Reformer		0.5	9.9	19.0
HO-1/2		0.5	9.9	20.7
ISOMERISATION		0.3	9.9	19.0
DHDT		1.0	7.0	13.9
HGU		6.5	16.2	18.0
SRU		0.9	16.9	18.8
GTG		2.3	3.9	4.9

**E. Ni + V Emission (mg/Nm<sup>3</sup>):**

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 5	BDL	BDL	BDL
CDU-II		BDL	BDL	BDL
DCU-I		BDL	BDL	BDL
DCU-II		BDL	BDL	BDL
CPP		BDL	BDL	BDL
Reformer		BDL	BDL	BDL
HO-1/2		BDL	BDL	BDL
ISOMERISATION		BDL	BDL	BDL
DHDT		BDL	BDL	BDL
HGU		BDL	BDL	BDL
SRU		BDL	BDL	BDL
GTG		BDL	BDL	BDL

**AMBIENT AIR QUALITY AROUND BGR COMPLEX**  
**(Average of monthly sample Schedule – VII)**  
**(1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)**

	Station	Continuous Monitoring Station	Near Tube Well No.14	Near LPG Bottling plant	Rural Health Centre	Bartala Rail Gate	Near TW No.7 in Township
<b>1</b>	<b>SO<sub>2</sub> (Std. 50/80 µg/m<sup>3</sup>)</b>						
	Min	0.03	4.80	4.20	4.50	4.20	5.00
	Average	8.36	6.25	6.25	6.67	6.31	5.92
	Max	46.83	7.80	7.80	8.50	8.50	6.50
	No. of observation	Continuous	55	55	55	55	55
<b>2</b>	<b>NO<sub>2</sub> (Std. 40/80 µg/m<sup>3</sup>)</b>						
	Min	3.38	9.20	9.20	9.20	9.20	9.20
	Average	7.72	11.20	11.19	12.04	11.12	10.74
	Max	13.47	13.50	13.50	15.20	13.80	11.80
	No. of observation	Continuous	55	55	55	55	55
<b>3</b>	<b>PM-10 (Std. 60/100 µg/m<sup>3</sup>)</b>						
	Min	49.1	16.0	34.0	40.0	38.0	30.0
	Average	53.9	52.3	52.0	59.3	56.7	45.9
	Max	59.6	70.0	70.0	78.0	74.0	62.0
	No. of observation	Continuous	55	55	55	55	55
<b>4</b>	<b>PM-2.5 (Std. 40/60 µg/m<sup>3</sup>)</b>						
	Min	3.1	16.0	15.0	18.0	18.0	14.0
	Average	12.8	24.9	24.6	28.3	27.1	21.5
	Max	48.8	34.0	34.0	38.0	36.0	30.0
	No. of observation	Continuous	55	55	55	55	55
<b>5</b>	<b>Ammonia (Std. 100/400 µg/m<sup>3</sup>)</b>						
	Min	3.02	6.80	6.20	6.50	5.80	8.00
	Average	5.24	9.89	9.69	9.79	9.71	9.67
	Max	13.77	12.80	12.80	12.80	12.50	11.80
	No. of observation	Continuous	55	55	55	55	55
<b>6</b>	<b>Pb (Std. 0.5/1.0 µg/m<sup>3</sup>)</b>						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Max		BDL	BDL	BDL	BDL	BDL
	No. of observation		55	55	55	55	55

<b>7</b>	<b>Arsenic (As) (Std. 6 ng/m<sup>3</sup>)</b>						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Max		BDL	BDL	BDL	BDL	BDL
	No. of observation		55	55	55	55	55
<b>8</b>	<b>Ni (Std. 20 ng/m<sup>3</sup>)</b>						
	Min		BDL	1.50	1.40	1.20	BDL
	Average		BDL	1.95	2.24	2.03	BDL
	Max		BDL	2.20	3.50	2.80	BDL
	No. of observation		55	55	55	55	55
<b>9</b>	<b>CO (Std. 2/4 mg/m<sup>3</sup>)</b>						
	Min	0.01	BDL	BDL	BDL	BDL	BDL
	Average	0.24	BDL	BDL	BDL	BDL	BDL
	Max	1.00	BDL	BDL	BDL	BDL	BDL
	No. of observation	Continuous	55	55	55	55	55
<b>10</b>	<b>Ozone (Std.100/180 µg/m<sup>3</sup> for 8 hrs/1 hr)</b>						
	Min	21.0	14.0	12.0	12.0	14.0	12.0
	Average	30.8	19.7	18.8	20.0	20.1	18.4
	Max	40.8	25.0	24.0	26.0	25.0	22.0
	No. of observation	Continuous	55	55	55	55	55
<b>11</b>	<b>Benzene (Std. 5 µg/m<sup>3</sup>)</b>						
	Min	0.30	BDL	0.15	BDL	BDL	BDL
	Average	0.36	BDL	0.15	BDL	BDL	BDL
	Max	0.43	BDL	0.15	BDL	BDL	BDL
	No. of observation	Continuous	55	55	55	55	55
<b>12</b>	<b>Benzo (a) Pyrene (Std. 1 ng/m<sup>3</sup>)</b>						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Max		BDL	BDL	BDL	BDL	BDL
	No. of observation		55	55	55	55	55

Average of Six Stations												
Parameter	SO <sub>2</sub>	NO <sub>2</sub>	PM-10	PM-2.5	NH <sub>3</sub>	Pb	As	Ni	Benzo (a) Pyrene	CO	C <sub>6</sub> H <sub>6</sub>	O <sub>3</sub>
Unit	µg/m <sup>3</sup>					ng/m <sup>3</sup>			mg/m <sub>3</sub>	µg/m <sup>3</sup>		
NAAQ Std. 2009	50/80	40/80	60/100	40/60	100/400	0.5/1.0	Max 6	Max 20	Max 1	2/4	Max 5	100/180
Min	0.03	3.38	16.00	3.13	3.02	BDL	BDL	1.20	BDL	0.01	0.15	5.80
Average	6.63	10.67	53.35	23.19	10.73	BDL	BDL	2.07	BDL	0.24	0.25	19.59
Max	46.83	15.20	78.00	48.79	25.00	BDL	BDL	3.50	BDL	1.00	0.43	40.84

## 4.0

### APPENDIX-A2

#### Effluent Discharged (Figure in M<sup>3</sup>/Hr):( 1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)

A	Industrial Effluent M <sup>3</sup> /Hr	171.0
B	Domestic Effluent from BGR Township M <sup>3</sup> /Hr	50.6
C	Total Effluent Treated (A + B) M <sup>3</sup> /Hr	221.6
D	Treated Effluent Reused M <sup>3</sup> /Hr	218.6
E	Effluent Discharged M <sup>3</sup> /Hr	3.0
F	M <sup>3</sup> of Effluent discharged for 1000 tons of Crude processed	11.01

#### 1. Treated Effluent Quality

(1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)

Sl. No	Parameter	Std,2008	Min	Avg.	Max
1	p <sup>H</sup> value	6.0 - 8.5	6.5	7.3	8.0
2	Oil and Grease, mg/l	5.0	1.0	1.6	4.8
3	Bio-Chemical Oxygen Demand (3 Day at 27°C), mg/l	15.0	1.2	7.5	15.0
4	Chemical Oxygen Demand (COD), mg/l	125.0	28.2	52.4	100.0
5	Suspended solids, mg/l	20.0	5.0	13.7	20.0
6	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l	0.35	0.010	0.074	0.300
7	Sulphide (as S), mg/l	0.50	0.03	0.08	0.21
8	CN mg/l	0.20	BDL	BDL	BDL
9	Ammonia as N, mg/l	15.0	0.70	1.35	1.80
10	TKN, mg/l	40.0	1.10	4.50	6.20
11	P, mg/l	3.0	0.22	0.13	0.80
12	Cr (Hexavalent), mg/l	0.10	-	BDL	-
13	Cr (Total), mg/l	2.0	-	BDL	-
14	Pb, mg/l	0.10	-	BDL	-
15	Hg, mg/l	0.01	-	BDL	-
16	Zn, mg/l	5.0	-	0.31	-
17	Ni, mg/l	1.0	-	BDL	-
18	Cu, mg/l	1.0	-	0.04	-
19	V, mg/l	0.20	-	BDL	-
20	Benzene, mg/l	0.10	-	BDL	-
21	Benzo (a) pyrene, mg/l	0.20	-	BDL	-

## EFFLUENT QUALITY

### 2. Final Outlet (From the Complex) Effluent Quality

(1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)

Sl. No.	Parameter	Std 2008	Min	Avg.	Max
1	p <sup>H</sup> value	6.0 - 8.5	6.0	7.26	8.5
2	Oil and Grease, mg/l	5.0	1.0	1.88	4.6
3	Bio-Chemical Oxygen Demand (3 Days at 27° C), mg/l	15.0	1.6	7.3	15.0
4	Chemical Oxygen Demand (COD), mg/l	125.0	8.0	53.1	100.0
5	Suspended Solids, mg/l	20.0	2.0	11.5	20.0
6	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l	0.35	0.01	0.105	2.8
7	Sulphide (as S), mg/l	0.50	0.04	0.132	0.48
8	CN, mg/l	0.20	BDL	BDL	BDL
9	Ammonia as N , mg/l	15.0	0.0	2.39	2.6
10	TKN, mg/l	40.0	0.0	5.18	7.9
11	P, mg/l	3.0	0.0	0.12	0.8
12	Cr (Hexavalent), mg/l	0.10	-	BDL	-
13	Cr (Total), mg/l	2.0	-	BDL	-
14	Pb, mg/l	0.10	-	BDL	-
15	Hg, mg/l	0.01	-	BDL	-
16	Zn, mg/l	5.0	-	0.31	-
17	Ni, mg/l	1.0	-	BDL	-
18	Cu, mg/l	1.0	-	0.06	-
19	V, mg/l	0.20	-	BDL	-
20	Benzene, mg/l	0.10	-	BDL	-
21	Benzo (a) pyrene, mg/l	0.20	-	BDL	-



## 5.0

## APPENDIX - A3

### **Tree Plantation (1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)**

The entire area inside BGR covers with Greenery through massive plantation activities. Through massive plantation work and by giving protection to natural forest growth in side BGR premises, the entire area has become green. The entire plant area where processing plant facilities do not exist has a green cover. This helps in reduction of noise and air pollution level in one hand while on the other hand provides protection to ecological features of the area. The refinery has an excellent quality environment around its complex. Natural greenery can be seen all around the complex and in all seasons of the year.

Tree Census was done by Divisional Forest Office, Chirang. As per census, 84545 numbers of plants which include trees including shrubs, ocular estimated 33000 numbers bamboos in 1150 no. bamboo culms and also trees planted by BGR during 2003 to 2012.

**During, 1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018 BGR has planted 14507 nos. of trees.**



**WITHIN THE COMPLEX AN OLD DEBRIS YARD DEVELOPED INTO GREEN BELT. GROWTH as on 30.11.18**



**IOCL, BGR TOWNSHIP PLANTATION as on 03.09.2018**



**Tree Plantation 2018-19**



**IOCL, BGR TOWNSHIP PLANTATION**



**J N V, BIJNI PLANTATION, 3500 SAPLING PLANTED**



## **APPENDIX – A 4**

### **Additional Information (1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018)**

Effluent reused during the period was around **98.64 %** of the total effluent treated which includes plant effluent as well as BGR Township sewer.

Under the Leak Detection and Repair programme (LDAR), BGR is conducting quarterly Fugitive Emission Survey. During the period from **1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018**, **23247** potential leaky points checked and **197** Leaky points detected and rectified. By following LDAR program in true spirit, the company could not only avoid potential loss of **55.17** MTA (approx.) of light Hydrocarbon to the atmosphere through fugitive sources but also able to keep healthy work environment in the plants.

To ensure work area quality and health of equipments, quarterly noise survey was conducted covering all the operating plants, control rooms and ambient surrounding the BGR. During **1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018**, Noise Survey for two quarters of 2016 -17 has been completed and no abnormality was reported.

As a measure of Haz. Waste Management, M/s Balmer Lawrie & Co. Limited was awarded the contract of mechanized treatment of tank bottom sludge. A new contact has been lined up for processing of accumulated oily sludge, which are stored in the concrete lagoon. Melting pit facility is available for recovering oil from oily sludge.

One old slurry thickener from Petrochemical section was converted to confined space bio-remediation reactor to treat oily sludge with help from IOCL-R&D. The process of bio-remediation started from July 2017 and at present per batch approximately 35 m<sup>3</sup> of oily sludge is being processed. From April'18 to Sept'18, 224 MT of oily sludge has been processed in the Bio-reactor.



### **BIO-REMEDICATION FACILITY**

Further two more Rain Water Harvesting (Ground Water Recharging) schemes in BGR Township have been implemented during 2016-17.

6.0

## APPENDIX –A5

Quarterly Fugitive emission Data 1<sup>st</sup> April 2018 to 30<sup>th</sup> September 2018



FUG EMISSION DATA  
1ST QTR 18-19.docx



FUG EMISSION DATA  
2ND QTR 18-19.docx

8.0

**APPENDIX-A6 (a)**



Haz Waste Return  
FORM-4 (2017-18).doc

**9.0**

**APPENDIX–A6 (b)**

**Authorization from PCBA for Hazardous Waste**

**(Management, Handling and Transboundary Movement Rules 2008)**



**Consent under HW  
Rules 2008.pdf**

**10.0**

**APPENDIX-A7**

**Detail of Waste water treatment and disposal system.**



**ETP Description.pdf**

11.0

**ANNEXURE-A8**

**Quarterly Noise Survey Data**

**HSE (ENVIRONMENT) DEPARTMENT**



**NOISE SURVEY DATA  
1ST QTR 18-19.docx**



**NOISE SURVEY DATA  
2ND QTR 18-19.docx**

## 12.0

**Appendix-A9**  
**Rain Water Harvesting Data**

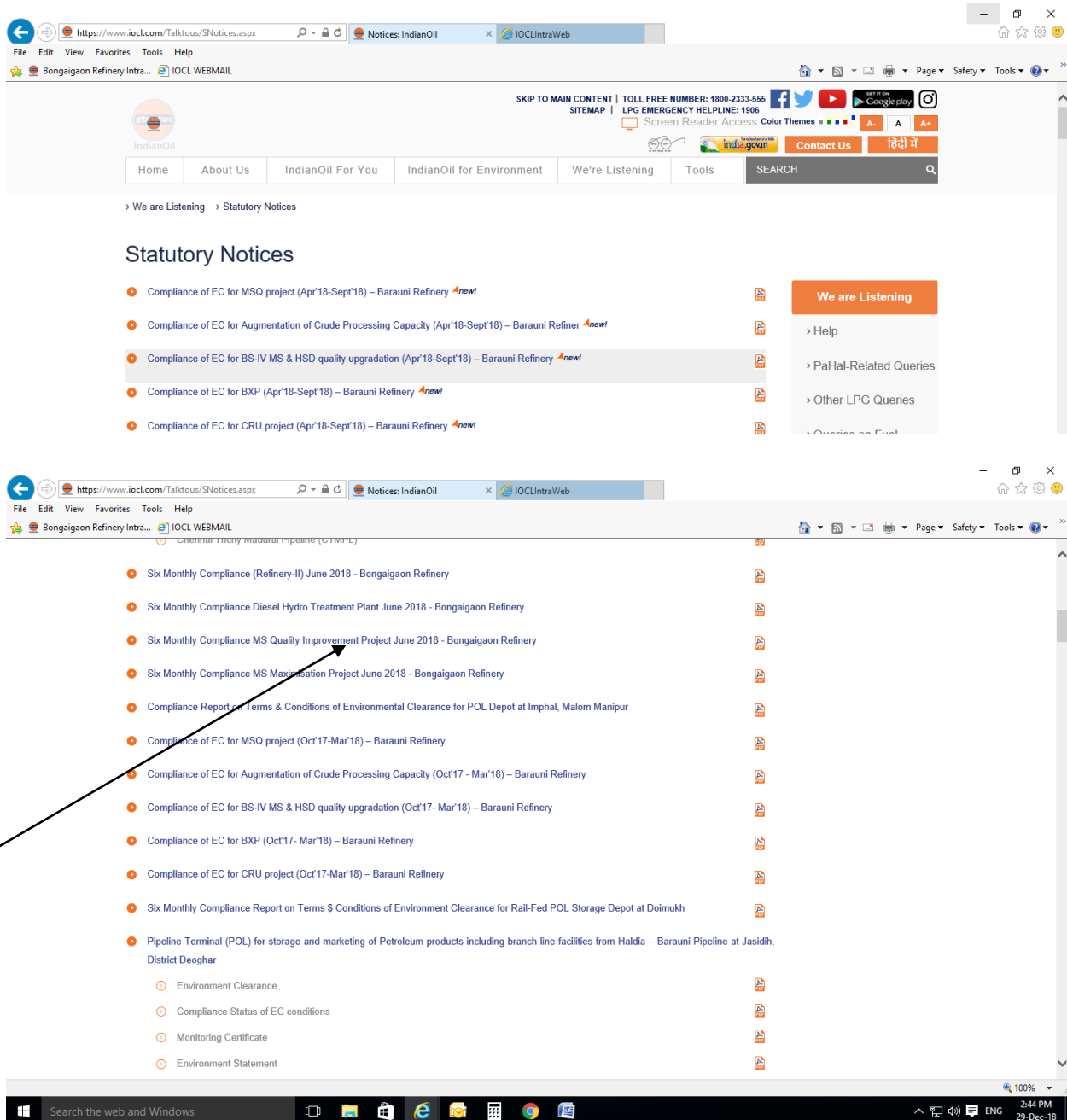
<b>Status of Rainwater Harvesting</b>				
Sl. No	Location	Roof top Area In M <sup>2</sup>	Volume of Rainwater harvesting potential (CUM)	Year of implementation
<b>Implemented</b>				
1	Rainwater Harvesting at Manjeera Guest House	677	1733	2008-09
2	Rainwater Harvesting at Deoshri Guest House	581	1487	2008-09
3	Mandir Complex	833	2132	2011-13
4	MANAS GUEST HOUSE	639	1636	2011-13
5	BRPL VIDYALAYA	1361	3484	2011-13
6	DPS BLOCK-I	704	1802	2011-13
7	DPS BLOCK-II	1810	4634	2011-13
8	Artificial Recharge thru' TW # 3 Roof Top water from Canteen, Cycle/Scooter Shades, CISF bldg. etc.	3134	8023	2011-13
9	Rainwater Harvesting from roof top area of Champa Club	1080	3100	2013-14
10	Rainwater Harvesting from roof top area of Refinery Club Cum Community Centre	2833	8132	2013-14
11	Rain Water Harvesting at CISF ADM Building	825	2368	2014-15
12	Rain Water Harvesting at BGREU Office	275	789	2014-15
13	CISF Barrack	1050	3013	2015-16
14	BGR Community Hall	650	1865	2015-16
15	Gallery of Football Stadium (BGR Township)	988	2529	2016-17
16	Gallery of Volleyball Stadium (BGR Township)			
Total		17440	46727	

13.0  
13.0

## APPENDIX-A10

### Screen Shot of IOCL Website upload of report

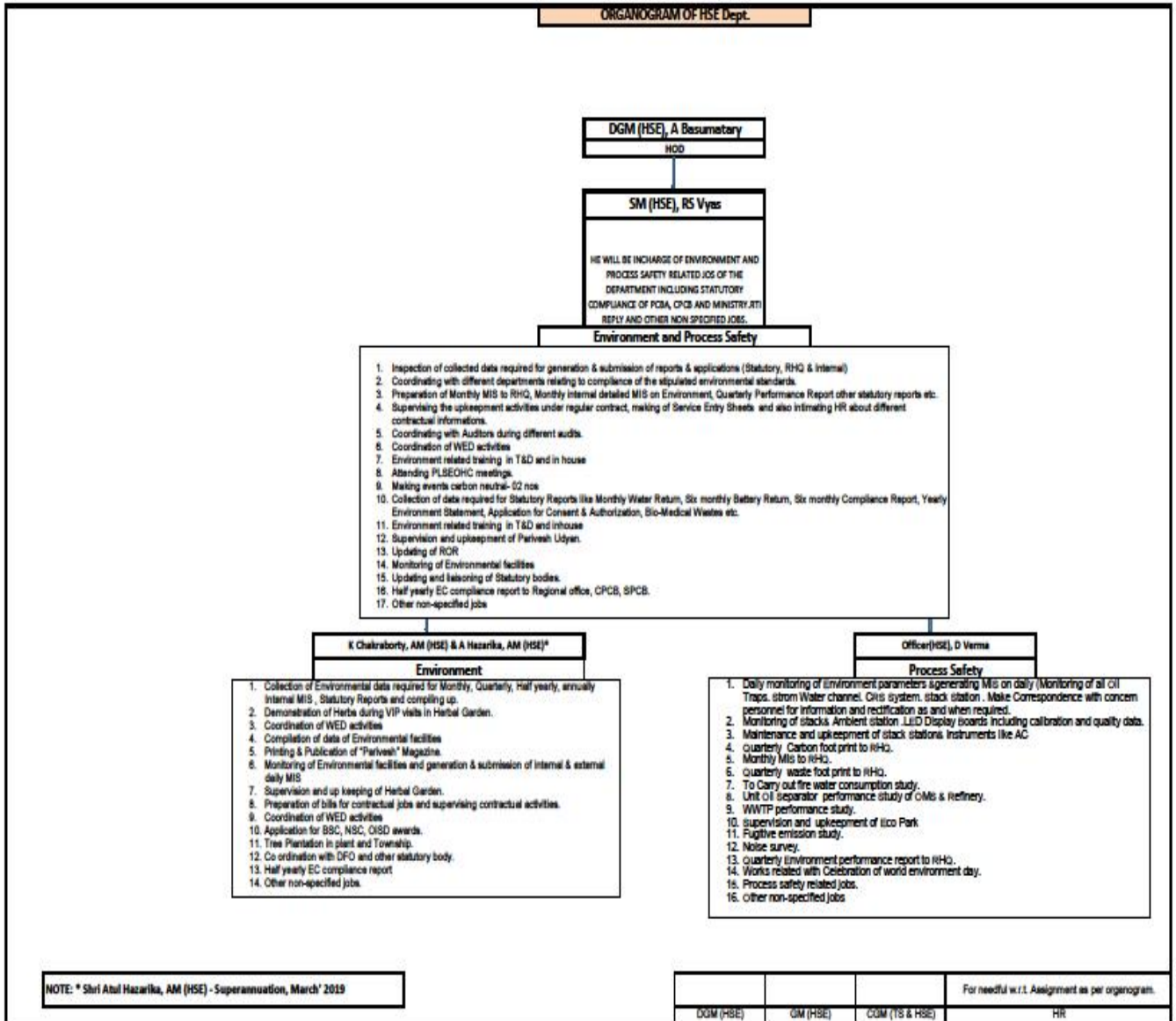
Link: <https://iocl.com/Talktous/SNotices.aspx>





## APPENDIX-A11

### HSE Organogram of IOCL-BGR



15.0

## APPENDIX-A12



केन्द्रीय प्रदूषण नियंत्रण बोर्ड  
CENTRAL POLLUTION CONTROL BOARD  
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार  
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE GOVT. OF INDIA

C-11012/90/1998-Tech/

13209

November 29, 2018

Speed Post

To

Sh H.K.Sarma  
Quality Control Manager  
Quality Control Laboratory  
Indian Oil Corporation Limited  
Bangaigaon  
P.O. Dhaligaon-783385  
Dist. Chirang Assam

**Sub: Notification of Government Analysts of Quality Control Laboratory of Indian Oil Corporation Limited Bangaigaon P.O. Dhaligaon-783385 Dist. Chirang Assam, in Govt. of India Gazette-reg.**

Ref: Your letter no.: Dated 23.04.2018

Our letter no.: C-11012/90/1998 Tech/3256 Dated 20.07.2016

Sir,

Apropos above, it is to inform that the proposal of substitution of superannuated/transferred Government Analysts of Quality Control Laboratory of Indian Oil Corporation Limited Bangaigaon P.O. Dhaligaon-783385 Dist. Chirang Assam was approved in the 181<sup>st</sup> Board Meeting held on June 19, 2018 and afterward notified in the Govt. of India Gazette No. 439 Dated November 20, 2018 vide notification number Lega. 42(3)/87 dated October 3, 2018. The copy of Gazette Notification is enclosed herewith for your reference and record please.

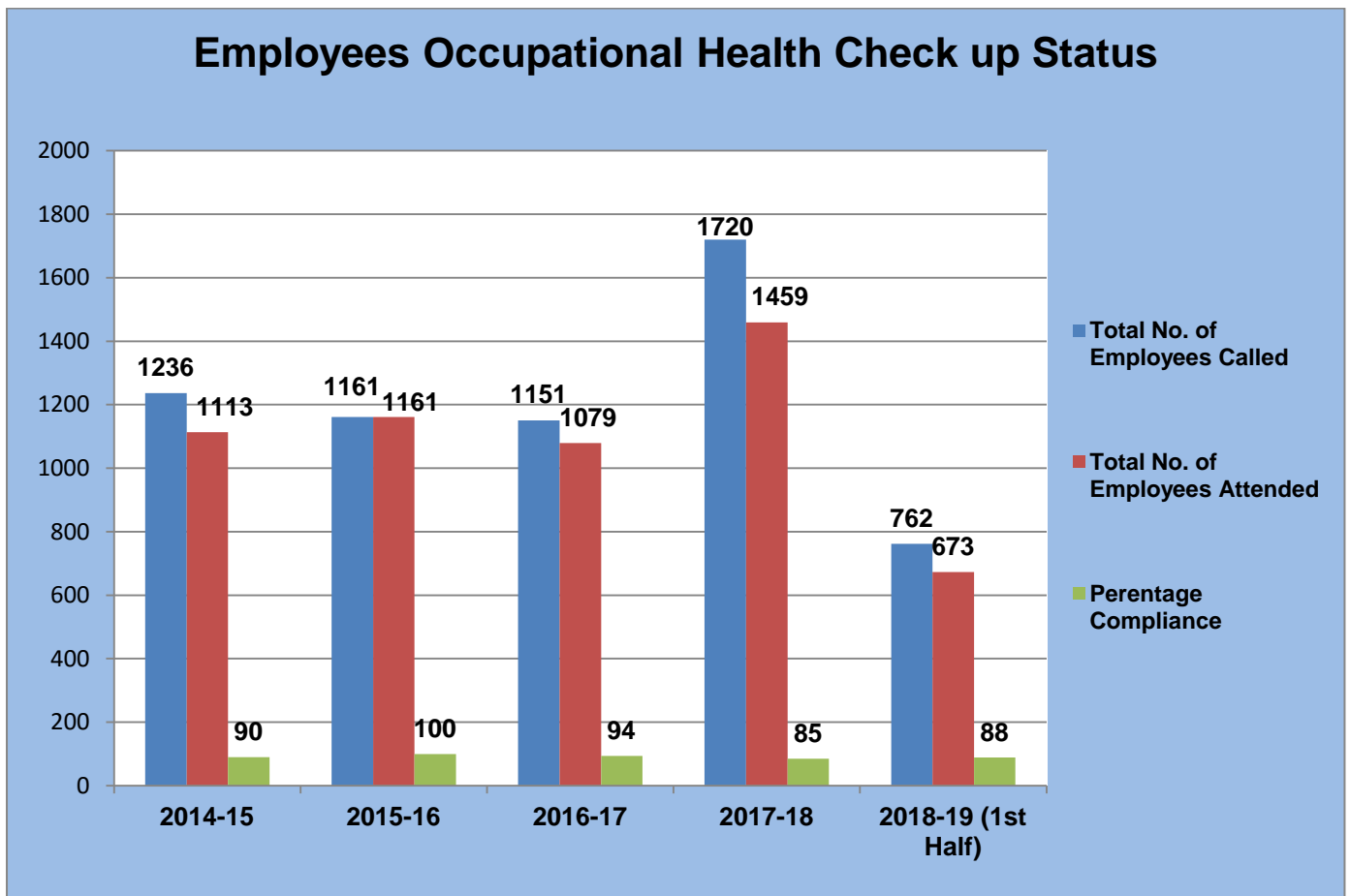
Yours Faithfully

(R.K. Jakhmola)

Scientist-E & Divisional Head  
Instrumentation Laboratory

Appendix-A13

Employees Occupational Health Check up Status



17.0

# Appendix-A14

## Flare system.

