

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS
AS ON 30.09.2013

Ref: MOEF LETTER NO. J-11011/1/2000-1A II(I) dt.24/04/2000

Sl. No	Conditions	Status as on 30.09.13
	SPECIFIC CONDITIONS	
1.	<p>The gaseous emission (SO₂ and NO_x, HC) from the various process units should conform to the standards prescribed under Environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent.</p> <p>At no time, the emission level should go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.</p>	<p>Complied.</p> <p>Emissions from the process Units are monitored every month and the results are well within the applicable norms. Monitoring results Annex- I.</p> <p>Complied.</p>
2.	<p>Adequate ambient air quality monitoring stations ((SO₂ and NO_x, HC) should be set up in the refinery area in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.</p> <p>Continuous on-line stack monitoring equipment should be installed for measurement of SO₂ and NO_x, HC.</p>	<p>Complied.</p> <p>Already 4 nos. of Ambient Air Monitoring stations based on down wind GLC contour and discussions with APCB are in regular operation. One CAAQM station is commissioned in Dec.2008. Stack Monitoring is done once a month with Stack Monitoring kit. Avg. data for last six months is enclosed as Annexure-I.</p> <p>On line analysers for SO_x & NO_x are operating in CDU, Indmax, DCU, TPS Blrs, HGU, HDT.HC is being monitored through outside agency.</p>
3.	<p>Data on ambient air quality and stack emissions as well as fugitive emissions of HC from product storage tank yard, crude oil tanks etc. must be regularly monitored and submitted to CPCB/SPCB once in 3 months and to Ministry (Regional Office Shillong) once in 6 months.</p>	<p>Complied.</p> <p>Ambient Air and stack emissions are regularly monitored and data submitted to SPCB/CPCB/MoEF as per schedule. Data on last six months enclosed as Annexure-II. Fugitive emission data collected is enclosed as Annexure -III</p>
4.	<p>Liquid effluent generated from the refinery should be treated comprehensively to conform to the load based standards and concentration limits prescribed under EPA rules (MINAS Standards).</p>	<p>Complied.</p> <p>Liquid effluent is treated in ETP through physical, chemical and Biological process to conform to standards.</p>

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	<p>In consultation with SPCB, adequate number of influent and effluent quality monitoring stations has to be planned.</p> <p>Regular monitoring of the effluent (industrial/domestic and others) quality should be carried out and monitored data submitted quarterly to CPCB/SPCB and half yearly to Ministry (Regional Office, Shillong).</p> <p>The Company must undertake maximum recycling/reusing of the treated effluent for process purposes in addition to green belt development and also adopt adequate water conservation measures.</p> <p>The effluent quality must also be monitored periodically by an independent agency authorized by CPCB and report of the independent agency submitted to Ministry/ CPCB/Assam.</p>	<p>Complied. Well identified sampling points are available and being used by refinery as well as APCB. The locations are within refinery as well as at the out-fall near Saraighat in river Brahmaputra</p> <p>Complied. Monitored data are being submitted to SPCB/CPCB quarterly and MoEF six monthly. Monitored Data enclosed as Annexure-IV.</p> <p>At present around 90% of treated effluent water is reused as coke cutting water, Fire fighting, Cooling water make up and Horticulture.</p> <p>Complied. M/S Mitra SK pvt. Ltd. Kolkata.</p>
5.	<p>Guard ponds of sufficient holding capacity should be provided to contain the effluent during process disturbances and or ETP failure. The concerned units must be shutdown in cases of effluent quality exceeding the prescribed limits.</p>	<p>Complied. Besides 2 nos. of guard ponds having capacity of more than 6000 M³, emergency reservoir having equal capacity is also available to contain effluent during process disturbances.</p>
6.	<p>The Company must adopt mounded storage for LPG.</p> <p>The recommendations made in the Risk Assessment Report must be incorporated while firming up the plant layout and equipment design.</p> <p>The Company must prepare a comprehensive risk assessment/ Analysis of the Refinery and associated facilities once the engineering design and lay out is frozen. Based on this, on-site and off-site emergency preparedness plan must be prepared.</p> <p>Approval from the nodal agency must be obtained before commissioning the project.</p>	<p>2 nos. of mounded LPG storage of 750 MT capacity commissioned in Dec.'03.</p> <p>Complied.</p> <p>All recommendations of RA report have implemented. Major recommendations were decommissioning of KTU, installation of mounded bullets for LPG.</p> <p>Complied.</p> <p>Risk Assessment was conducted through M/S KLG-TNO in March '02. It has again carried out by M/S DNV in Oct.'10. On-site and Offsite Emergency Preparedness Plan prepared accordingly and updated periodically.</p> <p>Complied.</p> <p>CCE approval was obtained.</p> <p>Complied.</p>

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7.	The Company should explore the feasibility of increasing the density of green belt within the refinery.	Complied. Because of space constraint & safety reason green belt cannot be expanded in the refinery. However the plantation is taken up in township areas. About 2000 tree saplings planted in 2013-14.
GENERAL CONDITIONS		
1.	The project authority must adhere to the stipulations made by the Assam State Pollution Control Board and State Government.	Complied. Stipulation of SPCB are complied.
2.	No expansion or modification of the plant should be carried out without prior approval of this Ministry.	Being Complied. Expansion of ISOSIV, Indmax unit shall not be done without approval of Ministry.
3.	Handling, manufacturing, storage and transportation of hazardous chemicals should be carried out in accordance with the Manufacture, Storage and Import of Hazardous chemicals Rules, 1989, as amended in 1991. Permissions from State and Central nodal agencies in this regard must be obtained.	Complied.
4.	Hazardous wastes, if any, must be handled and disposed as per Hazardous waste (Management and Handling) Rules, 1989. Authorization from State Pollution Control Board in this regard must be obtained.	Complied. Present authorization is valid upto 27 th August '14.
5.	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction workers during the construction phase so as to avoid felling of trees and pollution of water and the surroundings.	Complied. Facilities viz. Water, shelter sanitation etc. were provided to construction workers while implementing the project.
6.	The overall noise levels in and around the plant area should be kept well within the standards (85 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 (daytime) and 70 dBA (nighttime).	Complied. Regular monitoring is done results are well within the prescribed limits. Observations are attached as Annx-V. Complied. Regular monitoring is done. Results are well within the prescribed limits.
7.	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained.	Complied. Surveillance of the workers is done as per schedule. Health Check up for operators working in hazardous area is done yearly and for other

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		employees of more than 40 years age and above is done once in a year as per normal practices and record maintained.
8.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP.	Complied. Recommendations of EIA & EMP are complied.
9.	A separate environmental management cell with full fledged laboratory facilities to carryout various management and monitoring functions should be set up under the control of Senior Executive.	Complied. Separate environment management cell headed by DGM (HSE) exists. Laboratory facility is available in the refinery.
10.	The funds earmarked for the environmental protection measures should not be diverted for any other purpose. Year-wise expenditure should be reported to this Ministry and SPCB.	Complied. Following funds is being utilized during the year 2012-13 Environment monitoring – Rs 18 Lakhs (approx.). Bioremediation: Rs 43.4 lakhs (approx.) No funds diverted.
11.	Six monthly status report on the project vis-à-vis implementation of environmental measures should be submitted to this Ministry (Regional Office, Shillong/CPCB/SPCB).	Complied. Reports are being sent as per recommended schedule and also uploaded on the website “www.iocl.com”
12.	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 and Forests at http://WWW.envfor.nic.in . This should be advertised in at least two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned.	Complied. Publication in Local Dailies Assamese and English has been done on 10.6.2000.
13.	The Project Authorities should 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 land development work.	Complied. Approval by IOCL Board ISOSIV : 02.01.98, INDMAX : 19.8.98 The date of start of land development work is not applicable as the Project works started within the existing refinery land

Annexure -I

Data on Stack Emission Monitoring at Guwahati Refinery (April'13-Sept'13)

Stack	Concentration (mg/NM3)		
	PM	SO2	NOX
CDU	71-98	413-688	226-315
DCU	43-68	314-456	163-198
TPS Boilers			
Blr 5	61-78	386-558	185-244
Blr 6 & 7	72-89	518-628	206-289
HDT	54-72	30-48	148-182
HGU	29-54	125-189	82-102
Indmax	78-97	69-175	61-154
ISOM	25-48	31-51	90-123

Annexure-II

Data on Ambient Air Monitoring at Guwahati Refinery (April'13-Sept'13) Values in ug/m3

AMBIENT AIR QUALITY MONITORING REPORT												
Sampling and analysis done by M/S Mitrask pvt. Ltd.,Kolkata												
	Concentration of Pollutants											
	SO2	NO ₂	PM 10	PM 2.5	Ozone (O ₃)	Lead (Pb)	CO	Ammonia (NH ₃)	Benzene (C ₆ H ₆)	Benzo(a) Pyrene	Arsenic (As)	Nickel (Ni)
	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	ng/m ³
Limit as per CPCB notification, New Delhi,18th Nov, 2009.for Ambient air quality	80	80	100	60	100	1	2	400	5	1	6	20
Location : Admn Building												
Max.	7.6	38.7	96.0	55.0	BDL	0.2	0.9	44.3	6.5	BDL	BDL	16.8
Min.	4.0	19.6	43.0	22.0	BDL	0.0	0.4	19.6	0.0	BDL	BDL	3.3
Avg.	5.1	25.9	64.8	35.9	BDL	0.0	0.6	30.7	2.1	BDL	BDL	5.7
Location : Guest House												
Max.	6.7	33.2	84.0	51.0	0.0	0.1	0.8	44.8	5.6	BDL	BDL	9.2
Min.	4.0	14.9	39.0	21.0	0.0	0.0	0.2	15.5	0.0	BDL	BDL	0.0
Avg.	4.9	25.4	60.4	33.6	0	0.0	0.4	30.8	1.4	BDL	BDL	4.8
Location : Sector II												
Max.	7.4	36.7	99.4	58.0	BDL	0.1	0.9	45.6	4.6	BDL	BDL	13.0
Min.	4.0	18.4	46.0	21.0	BDL	0.0	0.3	21.8	0.0	BDL	BDL	0.0
Avg.	5.3	26.6	66.2	36.4	BDL	0.0	0.4	33.1	2.1	BDL	BDL	6.5
Location : WTP												
Max.	6.7	33.2	84.0	47.0	BDL	0.07	0.6	40.2	BDL	BDL	BDL	9.2
Min.	4.0	13.8	31.0	19.0	BDL	0.0	0.2	15.9	BDL	BDL	BDL	0.0
Avg.	4.6	22.3	52.9	30.1	BDL	0.0	0.4	27.6	BDL	BDL	BDL	4.3
BDL : Below Detections Limit	Note : Detection Limit of O ₃ : 19.62 µg/m ³ ,Pb : 0.02 µg/m ³ , Ni: 1.0 ng/m ³ ,As : 2 ng/ m ³ , C ₆ H ₆ : 2.8 µg/m ³ , Benzo(a)pyrene : 0.2 ng/m ³ .											

Annexure III

RESULTS OF FUGITIVE EMISSION MONITORING

AT GUWAHATI REFINERY FOR (April'13-Sept'13)

Location of Sampling	Total Hydrocarbons, ppm	Benzene, mg/m ³
CDU	0.97-1.23	0.08 -0.1
SRU	1.23-1.86	0.03-0.08
HGU & HDT	0.41-0.91	0.04-0.08
DCU	1.07-1.75	0.06-0.12
TPS Blr 6&&	0.08-0.11	0.02-0.11

Annexure-IV

Data on Discharged Effluent Analysis at Guwahati Refinery (April'13-Sept'13)

Sl. No.	Parameter	Concentration value (mg/l except pH)	Concentration value (mg/l except pH)	%age Compliance
		National Limit	Average	
1	pH	6.0 – 8.5	6.6-7.05	100
2	Oil & Grease,ppm	5	1.87	100
3	BOD,ppm	15	5.52	100
4	COD,ppm	125	24.17	100
5	Suspended Solids	20	15.56	100
6	Phenols	0.35	0.15	100
7	Sulphides	0.5	0.01	100
8	CN	0.2	0.01	100
9	Ammonia as N	15	0.70	100
10	TKN	40	0.74	100
11	P	3	0.26	100
12	Cr (Hexavalent)	0.1	0.05	100
13	Cr (Total)	2	0.04	100
14	Pb	0.1	0.01	100
15	Hg	0.01	0.00	100
16	Zn	5	0.05	100
17	Ni	1	0.01	100
18	Cu	1	0.02	100
19	V	0.2	0.20	100
20	Benzene	0.1	0.01	100
21	Benzo (a) - Pyrene	0.2	0.01	100

Load Mass Based Effluent data

Figs in Kg/1000 tonnes crude

Sl. No.	Parameter	Quantum value (kg/TMT of Crude processed)	Quantum value (kg/TMT of Crude processed)
		National Limit	Average
1	pH	--	--
2	Oil & Grease	2	0.379
3	BOD,ppm	6	1.097
4	COD,ppm	50	4.764
5	Suspended Solids	8	3.140
6	Phenols	0.14	0.029
7	Sulphides	0.2	0.002
8	CN	0.08	0.002
9	Ammonia as N	6	0.091
10	TKN	16	0.147
11	P	1.2	0.049
12	Cr (Hexavalent)	0.04	0.010
13	Cr (Total)	0.8	0.008
14	Pb	0.04	0.002
15	Hg	0.004	0.000
16	Zn	2	0.009
17	Ni	0.4	0.002
18	Cu	0.4	0.005
19	V	0.8	0.039
20	Benzene	0.04	0.001
21	Benzo (a) - Pyrene	0.08	0.001
	Effluent discharge,M3/TMT of crude processed	400/700	196

Annexure - V

**NOISE LEVEL MONITORING
BATTERY AREA
GUWAHATI REFINERY(April'13-Sept'13)**

SL. NO.	AREA	LOCATION	AVERAGE EXPOSURE FOR AN EMPLOYEE PER SHIFT (HRS)	READING IN dBA
1	TPS	Boiler - 3	1.30 hrs	93.0
		Boiler - 4	1.30 hrs	off
		Boiler - 5	1.30 hrs	95.0
		Boiler - 6	1.30 hrs	92.5
		Boiler - 7	1.30 hrs	92.5
		Boiler Control Room	8.0 hrs	62.0
		TG - 3	1.30 hrs	98.0
		TG - 4	1.30 hrs	98.0
		TG - 5	1.30 hrs	97.0
		Turbine Control Room	8.0 hrs	67.5
		DM Plant Pump Area	1.30 hrs	94.5
		DM Plant Control Room	8.0 hrs	63.5
2	CDU	Model Pump House	1.30 hrs	93.5
		Cold Pump House	1.30 hrs	92.5
		Hot Pump House	1.30 hrs	91.5
		NSF Area	1.30 hrs	95.5
		CDU Field Control Room	8.0 hrs	66.0
3	DCU	Cold Pump House	1.30 hrs	94.5
		Hot Pump House	1.30 hrs	95.0
		Air Compressor Area	1.30 hrs	95.0
		DCU Field Control Room	8.0 hrs	69.5
4	NITROGEN	Air Compressor 013-K-01A	1.00 hr	98.0
		Air Compressor 013-K-01B	1.00 hr	99.0
		Air Compressor 013-K-01C	1.00 hr	off
		Nitrogen Field Control Room	8.0 hrs	65.5
5	INDMAX	Main Air Blower Area	1.00 hr	95.0
		INDMAX Field Control Room	8.0 hrs	62.5
6	SRU	Main Air Blower 51A-K-01A	1.30 hrs	98.0
		Main Air Blower 51A-K-01B	1.30 hrs	97.0
		SRU Field Control Room	8.0 hrs	63.0
7	HDT	Pump Area	1.00 hr	95.0
		HDT/HGU Field Control Room	8.0 hrs	67.5
8	HGU	Pump Area	1.00 hr	94.5
		HDT/HGU Field Control Room	8.0 hrs	67.5
9	MSQU	Pump Area	1.00 hr	95.0
		MSQU Field Control Room	8.0 hrs	64.5
10	ETP	Air Blower Area	1.00 hr	97.0
		ETP Control Room	8.0 hrs	67.5

**Permissible Noise Level For Continuous Exposure
(OISD-GDN-166, JULY 1997)**

Duration per day (hour)	Sound level (dBA)
8.0	90
6.0	92
4.0	95
3.0	97
2.0	100
1.5	102
1.0	105
0.5	110
0.25 or less	115

Ref. No.: GR//HSE/303/2013/1

Date: 12/11/2013

To,

**Joint Director(S)
Ministry of Environment & Forest,
Govt. of India,
North Eastern Regional Office,
Lumbatngen (LAW-U-SIB),
Shillong-793 021**

Sub: Submission of half-yearly compliance report on Environment Stipulations.

- a. **Ref. No: MOEF LETTER NO J-11011/1/2000-1A 11(1) dt. 24/04/2000 for ISOSIV & INDMAX.**
- b. **Ref. No: MOEF LETTER NO J-11011/215/2007-1A 11(1) dt. 07/02/2008 for ISOM unit.**

Dear Sir,

Please find enclosed herewith the compliance report of environmental stipulations for (April'13-Sep'13)

With warm Regards,

Your Sincerely
For and on behalf of IOCL,
Guwahati Refinery,

(Monika Das)
Chief Manager (HSE)

**Copy to :
Dr. Sunita V Auluck, Director,
Ministry of Environment and forests,
Paryavaran Bhavan, CGO complex,
Lodhi Road, New Delhi-110 003**

Ref. No.: GR//HSE/303/2013/1

Date: 12/11/2013

To,

**The Zonal Office
Central Pollution Control Board
North East Zonal Office
Lower Motinagar
Near Fire Brigade HQ
Shillong-793014**

Sub: Submission of half-yearly compliance report on Environment Stipulations.

- c. **Ref. No: MOEF LETTER NO J-11011/1/2000-1A 11(1) dt. 24/04/2000 for ISOSIV & INDMAX.**
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(Monika Das)
Chief Manager (HSE)

Copy to :

- (1) MoEF
- (2) SPCB

Ref. No.: GR//HSE/303/2013/1

Date: 12/11/2013

To,

**The Member Secretary
Pollution Control Board, Assam
Bamunimaidan
Guwahatu-781021**

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Copy to :

- (3) MoEF, New Delhi**
- (4) CPCB, Shillong**