

इंडियन ऑयल कॉर्पोरेशन लिमिटेड
(भारत सरकार का उपक्रम)
पानीपत रिफाइनरी
डाकघर : पानीपत रिफाइनरी, पानीपत-132140



INDIAN OIL CORPORATION LTD.
(Govt. of India Undertaking)
PANIPAT REFINERY
PO - PANIPAT REFINERY,
PANIPAT- 132140 (Haryana),
Fax : 0180-2578833

Ref. No. PR/HS&E/4/368

Date: 27.07.2012

To

The Additional Director(S)
Ministry of Environment & Forests,
Govt. of India,
Regional Office (N.R.)
Bays No. 24-25,
Sector-31-A, Dakshin Marg,
Chandigarh - 160047

Ref. No. J-11011/76/96-IA.II(I) dated 05.03.97- DHDS

Sub: Compliance report of environmental conditions - DHDS

Dear Sir,

Please find enclosed herewith the half-yearly compliance report of the MoE&F stipulations for the period Jan'12-Jun'12 w.r.t. DHDS (ref no.J-11011/76/96-IA.II(I) dated 05.03.97).

Thanking you

Yours faithfully,

(V.S. Dhakate)
Chief Manager (HS&E)

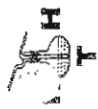
- Encl: (i) Average SO2 emission by stacks
(ii) Effluent quality result
(iii) Copy of ground water quality report

CC: RO, HSPCB, Panipat

**COMPLIANCE TO ENVIRONMENTAL CLEARANCE STIPULATIONS FROM MoEF FOR DHDS
PROJECT AT PANIPAT REFINERY**

Ref No. J-11011/76/96-IA.II(I) dated 05.03.97

Sl. No.	EC Conditions	Compliance Status
1.	The project authority must strictly adhere to the stipulations laid down by the Haryana State Pollution Control Board and State Govt.	We have made a system to ensure strict compliance of conditions of HSPCB / Environment department etc. in NOC.
2.	No expansion or modernization of the plant should be carried out without approval of the Ministry of Environment and forest.	No expansion or modernization of DHDS plant done so far.
3.	The total SO ₂ emission from the Panipat Refinery including DHDS project should not exceed the norm of 1000 Kg/hr stipulated by the ministry.	SO ₂ emission is maintained below prescribed limits and SO ₂ emission data is enclosed as <u>Annexure-I</u> .
4.	The existing ETP should be adequately augmented (if required) to accommodate the additional effluent from DHDS project before commissioning of the project so as to ensure the treated effluent meets the MINAS.	Complied A typical report is enclosed as <u>Annexure-II</u>
5.	Time bound action plan for disposal of oil sludge/recovery of oil and design details of the solid waste disposal pit should be furnished to the ministry within a period of 3 months.	Centrifuges/ Melting are existing provided at the wastewater treatment plant. Lined pits are provided for storage of residual sludge.
6.	SRU having an efficiency of more than 99% should be installed.	With the expansion of Panipat Refinery to 15 MMTPA, 3 SRUs (out of five SRUs) remain in operation and rest two SRUs remain in standby mode.
7.	The ground water quality should be regularly monitored and report submitted to the ministry every six months.	Quarterly monitoring of ground water quality around the Refinery is done regularly. A latest typical report is enclosed as <u>Annexure-III</u>
8.	Time bound action plan to implement the conditions stipulated by Ministry while according environmental clearance to the Refinery complex should be submitted to the Ministry within 3 months alongwith details to funds allocated for implementing the above.	Six monthly compliance report on stipulations laid in Environmental Clearance to Panipat Refinery is being submitted regularly to your office.



HARYANA TEST HOUSE

& Consultancy Services

50-C, Sector-25, Part-II, HUDA, Panipat-132 104 (HARYANA)

Ph: (O) 0180-3290403, (M) 94160-17160, Tele-Fax: 0180-2671112, Website: www.haryanatesthouse.net, e-mail: info@haryanatesthouse.net, mi.dua@sify.com.

Test Results of Stack Emissions

Period: April 2012 to May 2012

Unit: Panipat Refinery

Sr. No.	Stack Particular	Date of Sampling	Temp. °C	Diameter of Stack (m)	Gas Velocity (m/sec.)	Flue Gas Volume at 25°C (Nm ³ / Hr.)	Particulate Matter (SPM)		Sulphur Dioxide (SO ₂)		Oxides of Nitrogen (NO _x)		Carbon Monoxide (CO)		Nickel (Ni)		Vanadium (V)		Nickel+Vanadium		
							mg/Nm ³	kg/hr.	ppm	mg/Nm ³	kg/hr.	ppm	mg/Nm ³	kg/hr.	ppm	mg/Nm ³	kg/hr.	mg/Nm ³	kg/hr.	mg/Nm ³	kg/hr.
A PX																					
1	NHT (PX-1)	16.05.2012	215	1.00	7.27	12061.67	41.34	0.50	43.11	113.07	1.36	36.67	69.14	0.83	6	6.90	0.08	0.0000	0.0000	0.00	0.0000
2	COR-H (PX-1)	16.05.2012	192	1.90	7.34	46136.32	9.97	0.46	10.78	28.27	1.30	26.39	49.75	2.30	6	6.90	0.32	0.0000	0.0000	0.00	0.0000
3	ISOMER (PX-2)	16.05.2012	207	1.20	7.46	18119.77	9.67	0.18	13.48	35.34	0.64	24.61	46.39	0.84	6	6.90	0.13	0.0000	0.0000	0.00	0.0000
4	TATORAY (PX-2)	16.05.2012	170	1.20	7.16	18843.63	19.10	0.38	16.17	42.41	0.80	32.62	61.51	1.16	8	9.20	0.17	0.0000	0.0000	0.00	0.0000
5	XYLENE (PX-2)	16.05.2012	220	2.00	7.05	46312.14	22.89	1.06	25.15	65.97	3.06	40.84	76.99	3.57	12	13.80	0.64	0.0000	0.0000	0.00	0.0000
B PTA																					
6	Hot Oil Heater (PTA)	17.05.2012	270	2.35	7.80	64227.82	42.52	2.73	65.28	179.06	11.50	55.82	105.25	6.76	10	11.50	0.74	0.0380	0.0024	1.01	0.0649
7	FCPH (PTA)	17.05.2012	215	2.35	7.27	66610.55	44.85	2.99	73.67	183.20	12.87	51.08	96.31	6.42	8	9.20	0.61	0.0300	0.0020	1.10	0.0733
8	Thermal Oxidizer (PTA)	17.05.2012	85	1.10	--	--	--	--	110.50	289.80	--	54.92	103.55	--	12	13.80	--	--	--	--	--
C TPS / CPP																					
9	Boiler-1 (Utility)	23.05.2012	160	3.04	14.61	252465.58	86.44	21.82	115.96	304.13	76.78	55.85	105.30	26.58	16	18.40	4.65	0.0000	0.0000	0.00	0.0000
10	Boiler-2 (Utility)	23.05.2012	197	3.04	14.76	234978.60	95.13	22.35	84.34	221.19	51.97	65.40	123.31	28.98	14	16.10	3.78	0.0000	0.0000	0.00	0.0000
11	HRSG-1 (CPP)	24.05.2012	188	3.30	6.94	132733.06	62.45	8.29	64.77	169.86	22.55	28.16	53.09	7.05	7	8.05	1.07	0.0000	0.0000	0.00	0.0000
12	HRSG-2 (CPP)	24.05.2012	168	3.30	6.91	138152.96	61.89	8.55	73.76	193.45	26.73	26.97	50.84	7.02	6	6.90	0.95	0.0000	0.0000	0.00	0.0000
13	HRSG-3 (CPP)	24.05.2012	172	3.30	6.82	135127.87	64.20	8.68	75.16	207.60	28.05	29.04	54.76	7.40	8	9.20	1.24	0.0000	0.0000	0.00	0.0000



For Haryana Test House & Consultancy Services

For Haryana Test House & Consultancy Services

Annexure T

Test Results of Stack Emissions
 Period: April 2012 to May 2012
 Unit: Panipat Refinery.

Sr. No.	Stack Particular	Date of Sampling	Temp. °C	Diameter of Stack (m)	Gas Velocity (m/sec)	Flue Gas Volume at 25°C (Nm ³ /Hr)	Particulate Matter (SPM)		Sulphur Dioxide (SO ₂)		Oxides of Nitrogen (NO _x)		Carbon Monoxide (CO)		Nickel (Ni)		Vanadium (V)		Nickel+Vanadium Limit: (Ni+V) Liquid: 5 mg/Nm ³				
							mg/Nm ³	kg/hr.	ppm	mg/Nm ³	kg/hr.	ppm	mg/Nm ³	kg/hr.	ppm	mg/Nm ³	kg/hr.	ppm	mg/Nm ³	kg/hr.	ppm	mg/Nm ³	kg/hr.
14	HRSG-4 (CPP)	24.05.2012	176	3.30	7.09	139.23	66.67	0.01	79.04	207.29	0.03	40.52	76.39	0.01	8	9.20	0.00	0.0000	0.00	0.0000	0.00	0.0000	
15	HRSG-5 (CPP)	24.05.2012	150	3.30	6.77	141113.59	63.97	9.03	61.08	160.18	22.60	36.55	68.91	9.72	7	8.05	1.14	0.0000	0.00	0.0000	0.00	0.0000	
16	Boiler-1 (TPS)	23.05.2012	198	3.04	14.83	235591.76	91.49	21.55	168.68	442.37	104.22	71.50	134.81	31.76	10	11.50	2.71	0.0000	0.00	0.0000	0.00	0.0000	
17	Boiler-3 (TPS)	23.05.2012	180	3.04	14.72	243136.11	87.66	21.31	137.05	359.43	87.39	67.50	127.27	30.94	9	10.35	2.52	0.0000	0.00	0.0000	0.00	0.0000	
D PR																							
18	CDU/VDU/NSU (AVU-1)	22.05.2012	175	5.09	5.79	271099.55	44.86	12.16	102.42	268.60	72.82	27.46	51.78	14.04	10	11.50	3.12	0.0000	0.00	0.0000	0.00	0.0000	
19	Reformer Heater-1 (CCRU)	22.05.2012	240	2.34	7.19	62134.95	12.15	0.75	10.78	28.27	1.76	19.92	37.56	2.33	8	9.20	0.57	0.0110	0.0007	0.14	0.0087	0.15	0.0094
20	Reformer Heater-2 (CCRU)	22.05.2012	205	1.64	7.20	32800.84	13.41	0.44	8.08	21.20	0.70	29.88	56.34	1.85	8	9.20	0.30	0.0000	0.0000	0.0000	0.00	0.0000	
21	Reformer Heater-3 (CCRU)	22.05.2012	220	1.68	7.31	33882.99	18.03	0.61	10.78	28.26	0.96	29.23	55.10	1.87	10	11.50	0.39	0.0000	0.0000	0.0000	0.00	0.0000	
22	PR HGU	21.05.2012	-	2.64	-	-	-	-	7.18	18.84	-	30.78	58.04	-	8	9.20	-	-	-	-	-	-	-
23	DHDS	21.05.2012	135	1.26	6.42	26225.94	10.80	0.28	12.58	32.98	0.86	29.88	56.34	1.48	9	10.35	0.27	0.0230	0.0006	0.30	0.0079	0.32	0.0085
24	LP Suction Furnace (OHCU)	23.05.2012	215	2.42	7.52	73067.03	9.67	0.71	8.38	21.99	1.61	33.43	63.03	4.61	8	9.20	0.67	0.0000	0.0000	0.0000	0.00	0.0000	
25	Recycle Gas Heater (OHCU)	23.05.2012	190	1.35	7.44	23711.13	8.72	0.21	5.39	14.13	0.34	31.01	56.47	1.39	6	6.90	0.16	0.0000	0.0000	0.0000	0.00	0.0000	
26	BBU Stack	17.05.2012	225	0.85	7.09	8328.13	22.89	0.19	75.45	197.87	1.65	54.92	103.54	0.86	10	11.50	0.10	0.0080	0.0001	0.89	0.0074	0.90	0.0075
E MSQ																							
27	HDS Heater (MSQ)	18.05.2012	178	2.22	7.11	62905.94	9.55	0.60	12.57	32.97	2.07	34.98	65.95	4.15	8	9.20	0.58	0.0190	0.0012	0.50	0.0315	0.52	0.0326



Test Results of Stack Emissions
 Period: April 2012 to May 2012
 Unit: Fertiliser Refinery.

Sr. No.	Stack Particular	Date of Sampling	Temp. °C	Diameter of Stack (m)	Gas Velocity (m/sec)	Flue Gas Volume at 25°C (Nm ³ /Hr.)	Particulate Matter (SPM)		Sulphur Dioxide (SO ₂)		Oxides of Nitrogen (NO _x)		Carbon Monoxide (CO)		Nickel (Ni)		Vanadium (V)		Nickel+Vanadium			
							mg/Nm ³	kg/hr.	ppm	kg/hr.	ppm	kg/hr.	ppm	kg/hr.	mg/Nm ³	kg/hr.	mg/Nm ³	kg/hr.	mg/Nm ³	kg/hr.	mg/Nm ³	kg/hr.
28	NHT Heater (MSQ)	18.05.2012	--	3.05	--	--	--	14.37	37.88	--	36.68	69.15	10	11.50	--	--	--	--	--	--		
F PREP																						
29	CDU/VDU (AVU-II)	18.05.2012	175	5.10	7.20	338444.54	47.35	86.23	226.14	76.54	34.51	65.06	10	11.50	3.89	0.0380	0.0129	2.04	0.6904	2.08	0.7033	
30	HCU Stack (HCU)	18.05.2012	192	1.70	6.97	35072.79	12.75	9.88	25.91	0.91	31.48	59.35	10	11.50	0.40	0.0150	0.0005	0.59	0.0207	0.61	0.0212	
31	DHDT-1 (Heater-1)	18.05.2012	172	1.80	6.7	39495.94	28.14	19.76	51.82	2.05	30.56	57.62	8	9.20	0.36	0.0230	0.0009	1.11	0.0438	1.13	0.0447	
32	DHDT-2 (Heater-2)	18.05.2012	135	1.80	6.87	44170.70	25.97	16.16	42.39	1.87	33.43	63.03	7	8.05	0.36	0.0210	0.0009	0.99	0.0437	1.01	0.0447	
33	HGU-76 (HGU)	21.05.2012	--	3.40	--	--	--	9.88	25.91	--	30.15	56.84	8	9.20	--	--	--	--	--	--	--	--
34	HGU-77 (HGU)	21.05.2012	--	3.40	--	--	--	8.08	21.19	--	27.46	51.77	10	11.50	--	--	--	--	--	--	--	--
35	DCU (Heater I & II)	21.05.2012	222	0.96	7.32	11034.20	23.75	12.58	32.98	0.36	45.22	85.26	8	9.20	0.10	0.0130	0.0001	0.39	0.0043	0.40	0.0044	
Total in (Kg/ hr)								164.84		616.34		298.12		32.03		0.02		1.00				1.02





HARYANA TEST HOUSE & Consultancy Services

50-C, Sector-25, Part-II, HUDA, Panipat-132.104 (HARYANA)

Ph: (O) 0180-3290403, (M) 94160-17160, Tele-Fax: 0180-2671112, Website: www.haryanatesthouse.net, e-mail: info@haryanatesthouse.net, ml.dura@aiyf.com.

Test Results of Waste water sample

Period: June-2012

Unit: Panipat Refinery

Date of Sampling: 22.06.2012

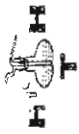
Sl. No	Parameters	Unit	Limit	Protocol Used	EFFLUENT WATER SAMPLES	
					ETP-1 (Treated Effluent)	ETP-2 (Treated Effluent)
1	pH	-	6.0 - 8.5	IS: 3025 (P-11)	6.93	6.14
2	Oil & Grease (Free & Dissolved)	mg/l	5	IS: 3025 (P-39)	4.00	3.60
3	Chemical Oxygen Demand (COD)	mg/l	125	APHA Open Reflux method	86.27	62.74
4	BOD for 3 days at 27°C	mg/l	15	IS: 3025 (P-44)	13.29	10.38
5	Suspended Solids	mg/l	20	IS: 3025 (P-17)	16.00	13.00
6	Phenol as C ₆ H ₅ OH	mg/l	0.35	IS: 3025 (P-43)	0.20	0.15
7	Sulphide as S	mg/l	0.5	IS: 3025 (P-29)	0.42	0.42
8	Cyanide as CN	mg/l	0.2	APHA	< 0.02	< 0.02
9	Ammonical Nitrogen as N	mg/l	15	IS: 3025 (P-34)	14.18	10.89
10	Total Kjeldhal Nitrogen as N	mg/l	40	APHA	24.81	23.01
11	Phosphate as P	mg/l	3	IS: 3025 (P-31)	1.58	0.95
12	Hexavalent Chromium as Cr ⁶⁺	mg/l	0.1	DPC Method	< 0.01	< 0.01
13	Total Chromium as Cr	mg/l	2	AAS	< 0.01	< 0.01
14	Lead as Pb	mg/l	0.1	AAS	< 0.05	< 0.05
15	Mercury as Hg	mg/l	0.01	IS: 3025 (P-48)	< 0.001	< 0.001
16	Zinc as Zn	mg/l	5	AAS	< 0.1	< 0.1
17	Nickel as Ni	mg/l	1	AAS	< 0.1	< 0.1
18	Copper as Cu	mg/l	1	AAS	< 0.05	< 0.05
19	Vanadium as V	mg/l	0.2	APHA H ₂ O ₂ Method	N.T.	N.T.
20	Benzene	mg/l	0.1	-	N.T.	N.T.
21	Benzof(a) Pyrene	mg/l	0.2	-	N.T.	N.T.

N.T. Not Traceable



Annexure-II

2



HARYANA TEST HOUSE

& Consultancy Services

50-C, Sector-25, Part-II, HUDA, Panipat-132 104 (HARYANA)
 Ph: (O) 0180-3290403, (M) 94160-17160, Tele-Fax: 0180-2671112, Website: www.haryanatesthouse.net, e-mail: info@haryanatesthouse.net, ml.dua@sify.com,

Test Results of Ground Water Sample

Period: May-2012

Unit: Panipat Refinery

Date of Sampling: 25.05.2012

Sr. No.	Parameters	Unit	Protocol Used	GROUND WATER SAMPLES				
				Nr. DM Water Tank (No. 91T-416A)	Nr. OHCU Plant	Nr. CISF Gate	Nr. Gurdwara	Nr. Melting Pit Area
1	Colour	Hazen	IS: 3025 (P-04)	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
2	Odour	-	IS: 3025 (P-05)	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
3	Taste	-	-	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable
4	Turbidity	NTU	IS: 3025 (P-10)	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
5	pH	-	IS: 3025 (P-11)	8.00	8.40	7.90	7.90	7.90
6	Total Hardness as CaCO ₃	mg/l	IS: 3025 (P-21)	218.9	88.30	154.60	158.6	168.70
7	Iron as Fe	mg/l	APHA	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8	Residual Chlorine	mg/l	IS: 3025 (P-26)	N.T	N.T	N.T	N.T	N.T
9	Chloride as Cl	mg/l	IS: 3025 (P-32)	36.5	29.90	7.50	10.3	6.50
10	Coliform Organisms	MPN/ 100ml	IS: 1822	< 3	< 3	< 3	< 3	< 3

N.T: Not Traceable

For Haryana Test House

Test Results of Ground Water Sample

Period: May-2012

Unit: Panipat Refinery

Date of Sampling: 25.05.2012

Sr. No.	Parameters	Unit	Protocol Used	GROUND WATER SAMPLES			
				Nr. PTA - ETP	Nr. Bio-Remediation (New Area-1)	Nr. Bio-Remediation (New Area-2)	Nr. PTA Gate
1	Colour	Hazen	IS: 3025 (P-04)	< 5.00	< 5.00	< 5.00	< 5.00
2	Odour	-	IS: 3025 (P-05)	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
3	Taste	-	-	Aggreable	Aggreable	Aggreable	Aggreable
4	Turbidity	NTU	IS: 3025 (P-10)	< 5.00	< 5.00	< 5.00	< 5.00
5	pH	-	IS: 3025 (P-11)	8.50	7.90	7.40	7.40
6	Total Hardness as CaCO ₃	mg/l	IS: 3025 (P-21)	144.50	118.5	136.50	208.80
7	Iron as Fe	mg/l	APHA	< 0.05	< 0.05	< 0.05	< 0.05
8	Residual Chlorine	mg/l	IS: 3025 (P-26)	N.T	N.T	N.T	N.T
9	Chloride as Cl	mg/l	IS: 3025 (P-32)	60.80	5.6	5.60	51.50
10	Coliform Organisms	MPN/100ml	IS: 1622	< 3	< 3	< 3	< 3

N.T: Not Traceable

For Haryana Test House

