NUMALIGARH REFINERY LIMITED

QUARTERLY PERFORMANCE WITH RESPECT TO ENVIRONMENTAL ASPECTS

DURING THE QUARTER-IV, 2016-17 (Jan March ,2017)

1.0 Liquid Effluent

1.1 Quantity

	JAN'17	Feb'17	March'17	Cummulative QIV, 2016-17	Cumm. for the year 2016-17
Quantity of Effluent Discharged, M3	0	0	0	0.00	0
Effluent Discharged, M3/1000 MT of Crude Processed	0	0	0	0.00	0

Liquid Effluent Pollutant Levels

Sl.No.	PARAMETERS	NO. OF OBS.	CONC. in mg/lit. except pH			CPCB STD. (mg/lit)	Actual kg/1000 MT of crude processed	CPCB STD. kg/1000 MT of crude processed
			MAX.	MIN.	AVG.			
Sl no. 1-8 analysed once in a day.								
1	pH	92	8.5	6.0	**7.1**	**6-8.5**	–	–
2	OIL & GREASE	92	4.9	2.0	**2.90**	**5**	**1.99**	**2.0**
3	SULPHIDE	92	<0.1	<0.1	**<0.1**	**0.5**	**0.07**	**0.2**
4	PHENOL	92	0.34	0.12	**0.16**	**0.35**	**0.11**	**0.14**
5	S. SOLID	92	18.0	9.4	**11.6**	**20.0**	**7.95**	**8.0**
6	COD	92	118.0	26.0	**68.8**	**125.0**	**47.3**	**50.0**
7	BOD3	92	14	6,0	**8.70**	**15.0**	**5.98**	**6.0**
8	CN	92	<0.02	<0.02	**<0.02**	**0.2**	**0.01**	**0.08**
Sl no. 9-21 analysed once in a month.								
9	Ammonia as N	3	1.8	**1.36**	**1.36**	**15.0**	**0.94**	**6.0**
10	Cr (Hexavalent)	3	Nil	**0.00**	**0.00**	**0.1**	**0.00**	**0.04**
11	Cr (Total)	3	0.024	**0.008**	**0.008**	**2.0**	**0.01**	**0.8**
12	Pb	3	0.031	**0.017**	**0.017**	**0.1**	**0.012**	**0.04**
13	Zn	3	0.045	**0.058**	**0.058**	**5.0**	**0.04**	**2.0**
14	Ni	3	0.066	**0.029**	**0.029**	**1.0**	**0.02**	**0.4**
15	Cu	3	0.02	**0.01**	**0.01**	**1.0**	**0.08**	**0.4**
20	Benzene	3	0.006	**0.0200**	**0.02**	**0.1**	**0.014**	**0.04**
21	Benzo (a)- Pyrene	3	0.003	**0.0210**	**0.021**	**0.2**	**0.015**	**0.08**
15	Hg	3	BDL	**BDL**	**BDL**	**0.01**	**0.00**	**0.004**
19	V	3	BDL	**BDL**	**BDL**	**0.2**	**0.00**	**0.8**
10	TKN	3	13.4	**11.9**	**11.9**	**40.0**	**8.16**	**16.0**
11	P	3	2.2	**2.03**	**2.03**	**3.0**	**1.40**	**1.2**

*All the parameters are found to be within limit . Parameters from 9 to 21 are monitored once in a month as per CPCB norms

* Limiting concentration of effluent is as per MoEF new notification on standard vide GSR-186 (E) dated 18th March'08.

NUMALIGARH REFINERY LIMITED						
QUARTERLY PERFORMANCE WITH RESPECT TO ENVIRONMENTAL ASPECTS						
DURING QUARTER IV -2016-17(Jan to March'17)						
Ambient Air Quality Data						
STATION	PARAMETER	STD	Unit	OBSERVATIONS		
		NAAQS-2009		MAX	MIN	AVG.
REFINERY (WATCH TOWER NO. 6)	SO2	80 (24 hr avg.)	µg/m3	11.5	5.5	7.8
	NO2	80 (24 hr avg.)	µg/m3	41.4	22.6	34.2
	O3	100 (8 hr avg.)	µg/m3	36.5	10.0	24.7
	CO	2.0 (8 hr.avg.)	µg/m3	880	360	653
	NH3	400 (24 hr.avg.)	µg/m3	26.6	12.0	16.53
	PM 10	100 (24 hr.avg.)	µg/m3	88.0	51.0	73.5
	PM 2.5	60 (24 hr.avg.)	µg/m3	48.0	27.0	39.4
	Benzene	5 (Annual)	µg/m3	3.17	2.08	2.38
	BaP	1 (Annual)	ng/m3	0.95	0.40	0.51
	Pb	1.0 (24 hr.avg.)	µg/m3	0.05	0.02	0.02
	As	6 (Annual)	ng/m3	2.08	1.00	1.23
	Ni	20 (Annual)	ng/m3	9.52	4.00	6.62
ECO-PARK IN NRL TOWNSHIP	SO2	80 (24 hr avg.)	µg/m3	7.20	4.20	5.7
	NO2	80 (24 hr avg.)	µg/m3	34.20	19.50	25.8
	O3	100 (8 hr avg.)	µg/m3	32.5	10.60	23.1
	CO	2.0 (8 hr.avg.)	µg/m3	740	280	493
	NH3	400 (24 hr.avg.)	µg/m3	20.4	10.00	12.3
	PM 10	100 (24 hr.avg.)	µg/m3	74.0	35.0	62.0
	PM 2.5	60 (24 hr.avg.)	µg/m3	42.0	18.0	33.4
	Benzene	5 (Annual)	µg/m3	2.08	2.08	2.08
	BaP	1.0 (Annual)	ng/m3	0.40	0.40	0.40
	Pb	1.0 (24 hr.avg.)	µg/m3	0.04	0.02	0.02
	As	6.0 (Annual)	ng/m3	1.00	1.00	1.00
	Ni	20 (Annual)	ng/m3	7.65	4.00	5.15
	SO2	80 (24 hr avg.)	µg/m3	6.3	4.0	5.2
	NO2	80 (24 hr avg.)	µg/m3	30.2	17.2	22.6
	O3	100 (8 hr avg.)	µg/m3	27.4	10.0	20.2
	CO	2.0 (8 hr.avg.)	µg/m3	650	320	473

RAW WATER INTAKE	NH3	400 (24 hr.avg.)	µg/m3	16.6	10.0	12.1
	PM 10	100 (24 hr.avg.)	µg/m3	63.0	35.0	49.7
	PM 2.5	60 (24 hr.avg.)	µg/m3	33.0	19.0	26.3
	Benzene	5 (Annual)	µg/m3	2.08	2.08	2.08
	BaP	1 (Annual)	ng/m3	0.40	0.40	0.40
	Pb	1.0 (24 hr.avg.)	µg/m3	0.02	0.02	0.02
	As	6 (Annual)	ng/m3	1.00	1.00	1.00
	Ni	20 (Annual)	ng/m3	6.20	4.00	4.38
NH-39 BYPASS	SO2	80 (24 hr avg.)	µg/m3	6.9	4.5	5.8
	NO2	80 (24 hr avg.)	µg/m3	36.0	18.6	27.3
	O3	100 (8 hr avg.)	µg/m3	32.4	10.0	22.5
	CO	2.0 (8 hr.avg.)	µg/m3	740	36	557
	NH3	400 (24 hr.avg.)	µg/m3	19.6	10.8	13.0
	PM 10	100 (24 hr.avg.)	µg/m3	77.0	460.0	63.4
	PM 2.5	60 (24 hr.avg.)	µg/m3	41.0	25.0	33.8
	Benzene	5 (Annual)	µg/m3	2.33	2.08	2.09
	BaP	1	ng/m3	0.48	0.40	0.40
	Pb	1.0 (24 hr.avg.)	µg/m3	0.05	0.02	0.023
	As	6	ng/m3	1.00	1.00	1.20
	Ni	20 (Annual)	ng/m3	8.66	4.00	5.43
KAZIRANGA WILDLIFE SANCTUARY AT AGARTOLI	SO2	80 (24 hr avg.)	µg/m3	6.20	4.00	4.61
	NO2	80 (24 hr avg.)	µg/m3	28.7	15.3	20.4
	O3	100 (8 hr avg.)	µg/m3	19.6	10.00	14.8
	CO	2.0 (8 hr.avg.)	µg/m3	440	160	266.67
	NH3	400 (24 hr.avg.)	µg/m3	13.60	10.00	10.20
	PM 10	100 (24 hr.avg.)	µg/m3	55.0	26.0	38.8
	PM 2.5	60 (24 hr.avg.)	µg/m3	31.0	15.0	21.7
	Benzene	5 (Annual)	µg/m3	2.08	2.08	2.08
	BaP	1.0	ng/m3	0.40	0.40	0.40
	Pb	1.0 (24 hr.avg.)	µg/m3	0.02	0.02	0.02
	As	6	ng/m3	1.00	1.00	1.00
	Ni	20 (Annual)	ng/m3	4.00	4.00	4.00

BDL:Below Detection Level, All the parameters are found to be within limt

QUARTERLY PERFORMANCE REPORT W.R.T ENVIRONMENTAL ASPECT.

DURING QUARTER IV,2016-17 (Jan-March'17)

Online Stack Analyser data

UNIT	FURNACE STACK	PARAMETER	OBSERVED VALUE CONC. (In mg/Nm^3) MAX.	OBSERVED VALUE CONC. (In mg/Nm^3) MIN.	Limiting Concentration in mg/Nm^3	Remarks Limit conc. calculated using fuel type& quan. used during the period
CDU/VDU	FF-01/02	SO_2	299.0	52.8	598	Stack with dual firing (FG:FO=67:33)
		NOX	310.0	25.1	383	
		CO (FF1)	35.8	11.88	167	
		CO (FF2)	41.0	8.88		
DCU	FF-01	SO_2	282.0	19.79	412	Stack with dual firing (FG:FO=78:22)
		NOX	199..64	13.2	372	
HCU	FF-01/02	SO_2	45.5	9.6	50	Stack with Gas firing
		NOX	223.0	23.1	350	
HCU	FF-03	SO_2	201.0	11.80	209	Stack with dual firing (FG:FO=90:10)
		NOX	248.1	12.3	360	
H2U	FF-01	SO_2	36.1	4.86	50	Stack with Gas firing
		NOX	114.1	8.88	350	
MS	FF-01	SO_2	47.3	11.9	50	Stack with Gas firing
		NOX	212.1	11.25	350	
CPP HRSG		SO_2	48.6	8.15	50	Stack with dual firing (FG:NAP=100:00)
		NOX	162.0	12.15	350	
170.6		SO_2	158.1	10.3	366	Stack with Dual firing (FG:FO=81:19)
		NOX	170.7	13.70	369	

Limiting concentration of emission calculated as per MOEF new notification on standard vide GSR- 186 (E) dated 18th March, 2008. Emission level for all the stacks are found to be within limit