

	QUARTERLY PERFORMANCE REPORT W.R.T ENVIRONMENTAL ASPECT.					
Annexure III		DURING QUARTER-I (April-June'18),2018-19				
Online Stack Analyser data						
UNIT	FURNACE STACK	PARAMETER	OBSERVED VALUE		Limiting Concentration in mg/Nm3	Remarks Limit conc. calculated using fuel type& quan. used during the period
			CONC. (In mg/Nm3)			
			MAX.	MIN.		
CDU/VDU	FF-01/02	SO2	407.8	20.0	614	Stack with dual firing (FG:FO=66:34)
		NOX	314.3	30.9	384	
		CO (FF1)	54.6	3.00	167	
		CO (FF2)	10.5	3.00		
DCU	FF-01	SO2	266.8	29.60	616	Stack with dual firing (FG:FO=66:34)
		NOX	223.57	28.1	384	
HCU	FF-01/02	SO2	49.7	12.1	50	Stack with Gas firing
		NOX	113.9	13.9	350	
HCU	FF-03	SO2	215.3	16.57	230	Stack with dual firing (FG:FO=89:11)
		NOX	158.5	17.5	361	
H2U	FF-01	SO2	46.8	10.20	50	Stack with Gas firing
		NOX	51.1	13.55	350	
MS	FF-01	SO2	48.1	11.0	50	Stack with Gas firing
		NOX	53.0	21.10	350	
CPP HRSG		SO2	33.1	10.40	50	Stack with dual firing (FG:NAP=100:00)
		NOX	79.1	15.34	350	
CPP UTILITY BOILER		SO2	42.0	17.7	72	Stack with Dual firing (FG:FO=100:00)
		NOX	221.8	96.90	351	
* 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						

QUARTERLY PERFORMANCE REPORT W.R.T ENVIRONMENTAL ASPECT.							
DURING QUARTER II (July-Sept'18),2018-19							
Online Stack Analyser data				-	-	Annexure III	
UNIT	FURN ACE STAC K	PARAMET ER	OBSERVED VALUE		Limiting Concentration in mg/Nm3		Remarks Limit conc. calculated using fuel type& quan. used during the period
			CONC. (In mg/Nm3)				
			MAX.	MIN.			
CDU/VDU	FF-01/02	SO2	574.0	66.5	655	Stack with dual firing (FG:FO=63:37)	
		NOX	318.4	15.4	387		
		CO (FF1)	9.25	8.50	168		
		CO (FF2)	8.5	8.25			
DCU	FF-01	SO2	433.0	10.17	567	Stack with dual firing (FG:FO=69:31)	
		NOX	176.15	20.4	381		
HCU	FF-01/02	SO2	48	23.1	50	Stack with Gas firing	
		NOX	95.7	10.7	350		
HCU	FF-03	SO2	205.9	37.71	236	Stack with dual firing (FG:FO=89:11)	
		NOX	78.4	17.5	361		
H2U	FF-01	SO2	48	18.59	50	Stack with Gas firing	
		NOX	45.8	8.83	350		
MS	FF-01	SO2	48.6	10.6	50	Stack with Gas firing	
		NOX	30.2	13.41	350		
CPP HRSG		SO2	29.7	3.40	50	Stack with dual firing (FG:NAP=100:00)	
		NOX	19.4	5.13	350		
CPP UTILITY BOILER		SO2	60.8	13.4	66	Stack with Dual firing (FG:FO=99:1)	
		NOX	250.1	58.92	351		
DHDT		SO2	41.5	12.1	66	Stack with Gas firing	
		NOX	28.0	10.30	351		

Annexure -IV								
NUMALIGARH REFINERY LIMITED								
QUARTERLY PERFORMANCE WITH RESPECT TO ENVIRONMENTAL ASPECTS								
DURING QUARTER I (APRIL-JUNE 18), 2018-19								
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	16.4	9.1	13.9		
	NO2	80 (24 hr avg.)	µg/m3	22.6	11.8	17.0		
	O3	100 (8 hr avg.)	µg/m3	36.1	21.1	27.8		
	CO	2000 (8 hr.avg.)	µg/m3	1200.0	600.00 0	1000		
	NH3	400 (24 hr.avg.)	µg/m3	34.2	18.2	26.80		
	PM 10	100 (24 hr.avg.)	µg/m3	78.1	64.2	71.9		
	PM 2.5	60 (24 hr.avg.)	µg/m3	52.1	40.6	46.4		
	Benzene	5.0 (Annual)	µg/m3	2.60	2.00	2.30		
	BaP	01 (Annual)	ng/m3	0.40	0.40	0.40		
	Pb	1.0 (24 hr.avg.)	µg/m3	0.30	0.02	0.02		
	As	6.0 (Annual)	ng/m3	1.00	1.00	1.01		
	Ni	20 (Annual)	ng/m3	4.80	2.10	3.60		
ECO-PARK IN NRL TOWNSHIP	SO2	80 (24 hr avg.)	µg/m3	13.20	7.60	10.7		
	NO2	80 (24 hr avg.)	µg/m3	15.40	9.20	12.7		
	O3	100 (8 hr avg.)	µg/m3	19.2	10.40	13.2		

		CO	2000	µg/m3	400	200	267	
		NH3	400 (24 hr.avg.)	µg/m3	16.4	8.80	11.9	
		PM 10	100 (24 hr.avg.)	µg/m3	67.2	54.2	62.8	
		PM 2.5	60 (24 hr.avg.)	µg/m3	36.6	18.8	26.1	
		Benzene	5.0 (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	0.02	0.02	0.02	
		As	6.0 (Annual)	ng/m3	1.00	1.00	1.00	
		Ni	20 (Annual)	ng/m3	2.00	2.00	2.00	
	RAW WATER INTAKE	SO2	80 (24 hr avg.)	µg/m3	12.1	6.8	9.1	
		NO2	80 (24 hr avg.)	µg/m3	13.2	8.7	10.6	
		O3	100 (8 hr avg.)	µg/m3	10.4	10.0	10.1	
		CO	2000 (8 hr.avg.)	µg/m3	100	80	93	
		NH3	400 (24 hr.avg.)	µg/m3	12.6	9.8	11.2	
		PM 10	100 (24 hr.avg.)	µg/m3	54.6	3.8	43.5	
		PM 2.5	60 (24 hr.avg.)	µg/m3	26.2	16.8	20.2	
		Benzene	5.0 (Annual)	µg/m3	2.08	2.08	2.08	
		BaP	01 (Annual)	ng/m3	0.40	0.40	0.40	
		Pb	1.0 (24 hr.avg.)	µg/m3	0.02	0.02	0.02	
		As	6.0 (Annual)	ng/m3	1.00	1.00	1.00	
		Ni	20 (Annual)	ng/m3	0.02	0.02	0.02	

	NH-39 BYPASS	SO2	80 (24 hr avg.)	µg/m3	16.4	9.6	13.6	
		NO2	80 (24 hr avg.)	µg/m3	19.6	11.6	16.4	
		O3	100 (8 hr avg.)	µg/m3	28.6	18.6	24.0	
		CO	2000 (8 hr.avg.)	µg/m3	1400	800	1067	
		NH3	400 (24 hr.avg.)	µg/m3	32.6	19.8	27.6	
		PM 10	100 (24 hr.avg.)	µg/m3	76.8	64.8	70.7	
		PM 2.5	60 (24 hr.avg.)	µg/m3	46.1	26.8	39.1	
		Benzene	5.0 (Annual)	µg/m3	2.80	2.20	2.60	
		BaP	1	ng/m3	0.40	0.40	0.40	
		Pb	1.0 (24 hr.avg.)	µg/m3	0.40	0.02	0.300	
		As	6.0	ng/m3	1.00	1.00	1.00	
		Ni	20 (Annual)	ng/m3	6.80	2.60	3.67	
	KAZIRANGA WILDLIFE SANCTUARY AT AGARTOLI	SO2	80 (24 hr avg.)	µg/m3	9.20	6.20	7.50	
		NO2	80 (24 hr avg.)	µg/m3	9.8	7.4	8.6	
		O3	100 (8 hr avg.)	µg/m3	10.0	10.00	10.0	
		CO	2000 (8 hr.avg.)	µg/m3	100	0.040	67	
		NH3	400 (24 hr.avg.)	µg/m3	10.00	10.00	10	
		PM 10	100 (24 hr.avg.)	µg/m3	44.8	36.4	41.4	
		PM 2.5	60 (24 hr.avg.)	µg/m3	24.1	16.8	21.4	

		Benzene	5.0 (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	6.0	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 limit								

Annexure-IV						
NUMALIGARH REFINERY LIMITED						
QUARTERLY PERFORMANCE WITH RESPECT TO ENVIRONMENTAL ASPECTS						
DURING QUARTER II (JULY-SEPT' 18), 2018-19						
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	19.4	11.40	15.8
	NO2	80 (24 hr avg.)	µg/m3	21.6	13.8	17.5
	O3	100 (8 hr avg.)	µg/m3	28.1	16.1	23.3
	CO	2.000 (8 hr.avg.)	mg/m3	1.100	0.800	0.967
	NH3	400 (24 hr.avg.)	µg/m3	29.6	16.1	22.33
	PM 10	100 (24 hr.avg.)	µg/m3	74.1	67.2	70.3
	PM 2.5	60 (24 hr.avg.)	µg/m3	52.6	39.8	46.6
	Benzene	05 (Annual)	µg/m3	2.40	2.10	2.20
	BaP	01 (Annual)	ng/m3	<0.4	<0.4	<0.4
	Pb	1.0 (24 hr.avg.)	µg/m3	0.40	0.20	0.30
	As	06 (Annual)	ng/m3	<1.0	<1.0	0.80
	Ni	20 (Annual)	ng/m3	3.80	2.60	3.20
ECO-PARK IN NRL TOWNSHIP	SO2	80 (24 hr avg.)	µg/m3	12.40	8.60	10.6
	NO2	80 (24 hr avg.)	µg/m3	14.80	9.40	11.6
	O3	100 (8 hr avg.)	µg/m3	14.6	10.80	11.6
	CO	2.000 (8 hr.avg.)	mg/m3	0.300	0.200	0.233
	NH3	400 (24 hr.avg.)	µg/m3	14.2	9.80	11.1
	PM 10	100 (24 hr.avg.)	µg/m3	69.8	58.2	64.6

	PM 2.5	60 (24 hr.avg.)	µg/m3	44.2	28.8	35.3
	Benzene	05 (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	0.30	0.20	0.20
	As	6.0 (Annual)	ng/m3	1.00	1.00	1.00
	Ni	20 (Annual)	ng/m3	<2.0	<2.0	<2.0
RAW WATER INTAKE	SO2	80 (24 hr avg.)	µg/m3	12.2	7.6	8.7
	NO2	80 (24 hr avg.)	µg/m3	11.6	8.4	9.5
	O3	100 (8 hr avg.)	µg/m3	10.8	10.1	10.3
	CO	2.000 (8 hr.avg.)	mg/m3	0.200	0.040	0.067
	NH3	400 (24 hr.avg.)	µg/m3	<10.0	<10.0	<10.0
	PM 10	100 (24 hr.avg.)	µg/m3	61.4	36.8	51.6
	PM 2.5	60 (24 hr.avg.)	µg/m3	28.1	18.7	15.4
	Benzene	05 (Annual)	µg/m3	2.08	2.08	2.08
	BaP	01 (Annual)	ng/m3	0.40	0.40	0.40
	Pb	1.0 (24 hr.avg.)	µg/m3	0.02	0.02	0.02
	As	06 (Annual)	ng/m3	1.00	1.00	1.00
	Ni	20 (Annual)	ng/m3	2.00	2.00	2.00
NH-39 BYPASS	SO2	80 (24 hr avg.)	µg/m3	16.2	9.2	11.8
	NO2	80 (24 hr avg.)	µg/m3	16.8	11.2	13.6
	O3	100 (8 hr avg.)	µg/m3	26.1	11.6	19.1
	CO	2.000 (8 hr.avg.)	mg/m3	1.400	0.800	1.033
	NH3	400 (24 hr.avg.)	µg/m3	26.4	11.2	18.6

	PM 10	100 (24 hr.avg.)	µg/m3	71.8	58.8	67.6
	PM 2.5	60 (24 hr.avg.)	µg/m3	52.6	34.8	44.4
	Benzene	05 (Annual)	µg/m3	2.30	2.20	2.30
	BaP	1	ng/m3	0.40	0.40	0.40
	Pb	1.0 (24 hr.avg.)	µg/m3	0.30	0.20	0.233
	As	6	ng/m3	1.00	1.00	1.00
	Ni	20 (Annual)	ng/m3	3.80	2.20	3.00
KAZIRANGA WILDLIFE SANCTUARY AT AGARTOLI	SO2	80 (24 hr avg.)	µg/m3	8.80	7.10	7.99
	NO2	80 (24 hr avg.)	µg/m3	9.8	7.3	8.6
	O3	100 (8 hr avg.)	µg/m3	10.0	10.00	10.0
	CO	2.000 (8 hr.avg.)	mg/m3	0.100	0.020	0.053
	NH3	400 (24 hr.avg.)	µg/m3	10.00	10.00	10.00
	PM 10	100 (24 hr.avg.)	µg/m3	51.8	39.2	42.8
	PM 2.5	60 (24 hr.avg.)	µg/m3	28.4	16.8	20.9
	Benzene	05 (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	6.0	ng/m3	1.00	1.00	1.00
	Ni	20 (Annual)	ng/m3	2.00	2.00	2.00
BDL:Below Detection Level, All the parameters are found to be within limit						

LIQUID EFFLUENT POLLUTANT LEVEL DURING QR. I (April-June) 2018-19								
MONITORED VALUES in mg/lit.except pH								Annexure-V
SL. NO	PARAMETERS	NO. OF OBS	MAX.	MIN.	AVG.	Limiting value for conc. (mg/l except for pH)	Quantum limit in Kg / 1000 MT of crude processed	
								Actual
1	pH	91	8.5	6.0	6.9	6-8.5	-	-
2	OIL & GREASE	91	4.4	1.2	3.67	5	1.26	2.0
3	SULPHIDE	91	<0.1	<0.1	<0.1	0.5	0.03	0.2
4	PHENOL	91	0.33	0.05	0.18	0.35	0.06	0.14
5	S. SOLID	91	17.2	5.5	11.5	20.0	3.97	8.0
6	COD	91	122.0	22.00	69.1	125.0	23.8	50.0
7	BOD3	91	14.0	8.0	11.63	15.0	4.01	6.0
8	CN	91	<0.02	<0.02	<0.02	0.2	0.01	0.08
9	Ammonia as N	3	7.65		3.85	15.0	1.33	6.0
10	Cr (Hexavalent)	3	Nil		0.00	0.1	0.00	0.04
11	Cr (Total)	3	0.053		0.022	2.0	0.01	0.8
12	Pb	3	0.042		0.023	0.1	0.008	0.04
13	Zn	3	0.055		0.038	5.0	0.01	2.0
14	Ni	3	0.067		0.041	1.0	0.01	0.4
15	Cu	3	0.059		0.02	1.0	0.007	0.4
16	Benzene	3	0.005		0.00	0.1	0.001	0.04
17	Benzo (a)-Pyrene	3	BDL		BDL	0.2	0.0000	0.08
18	Hg	3	BDL		BDL	0.01	0.00	0.004
19	V	3	BDL		BDL	0.2	0.0	0.8
20	TKN	3	14.5		11.0	40.0	3.79	16.0
21	P	3	1.3		0.92	3.0	0.32	1.2
Limiting concentration of effluent is as per MoEF notification on standard vide GSR-186 (E)dated 18th March, 2008.								
* BDL- Detectable Limit : 0.1 microgram/Litre								
* Parameters from 9 to 21 are monitored once in a month as per CPCB norms								

LIQUID EFFLUENT POLLUTANT LEVEL DURING QR. II (July-Sept'18) 2018-19								
MONITORED VALUES in mg/lit.except pH								Annexure-V
SL. NO	PARAMETERS	NO. OF OBS	MAX.	MIN.	AVG.	Limiting value for conc. (mg/l except for pH)	Quantum limit in Kg / 1000 MT of crude processed	
							Actual	Standard
1	pH	92	8.0	6.0	7.2	6-8.5	-	-
2	OIL & GREASE	92	4.9	1.9	3.17	5	1.07	2.0
3	SULPHIDE	92	<0.1	<0.1	<0.1	0.5	0.03	0.2
4	PHENOL	92	0.32	0.04	0.17	0.35	0.06	0.14
5	S. SOLID	92	18.8	6.0	11.87	20.0	4.02	8.0
6	COD	92	122.0	48.00	78.1	125.0	26.4	50.0
7	BOD3	92	14.0	8.0	13.26	15.0	4.49	6.0
8	CN	92	<0.02	<0.02	<0.02	0.2	0.01	0.08
9	Ammonia as N	3	8.6		6.57	15.0	2.22	6.0
10	Cr (Hexavalent)	3	0		0.00	0.1	0.00	0.04
11	Cr (Total)	3	0.07		0.058	2.0	0.02	0.8
12	Pb	3	0.061		0.036	0.1	0.012	0.04
13	Zn	3	0.25		0.146	5.0	0.05	2.0
14	Ni	3	0.07		0.061	1.0	0.02	0.4
15	Cu	3	0.008		0.01	1.0	0.002	0.4
16	Benzene	3	BDL		0.00	0.1	0.000	0.04
17	Benzo (a)-Pyrene	3	0.0001		0.00	0.2	0.0000	0.08
18	Hg	3	0.001		0.00	0.01	0.00	0.004
19	V	3	0.2		0.00	0.2	0.0	0.8
20	TKN	3	17.6		9.6	40.0	3.23	16.0
21	P	3	0.6		0.39	3.0	0.13	1.2
Limiting concentration of effluent is as per MoEF notification on standard vide GSR-186 (E)dated 18th March, 2008.								
* BDL- Detectable Limit : 0.1 microgram/Litre								
* Parameters from 9 to 21 are monitored once in a month as per CPCB norms								