

**Annexure-I****Stack Monitoring Data from Dec-2019 to May-2020****BCPL - Lepetkata****SO₂ Emission (mg/Nm³)**

Stacks	Emission Standard	Observed Value		
		Min.	Max.	Average
Stack attached to Furnace-1	SO ₂ = 50 mg/Nm ³	ND	ND	ND
Stack attached to Furnace-2		ND	ND	ND
Stack attached to Furnace-3		ND	ND	ND
Stack attached to Furnace-4		ND	ND	ND
Stack attached to Thermal Oxidizer		ND	ND	ND
Stack attached to HRSG1		ND	ND	ND
Stack attached to HRSG2		ND	ND	ND
Stack attached to UB1		ND	ND	ND
Stack attached to UB2		ND	ND	ND

NO_x Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min.	Max.	Average
Stack attached to Furnace-1	NO _x = 350 mg/Nm ³	20.2	24.6	22.4
Stack attached to Furnace-2		20.9	21.6	21.2
Stack attached to Furnace-3		22.4	22.4	22.4
Stack attached to Furnace-4		24.6	24.6	24.6
Stack attached to Thermal Oxidizer		17.5	18.4	17.9
Stack attached to HRSG1		21.4	22.5	21.9



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

Stack attached to HRSG2		24.4	29.2	26.8
Stack attached to UB1		31.8	31.8	31.8
Stack attached to UB2		30.8	30.8	30.8

CO Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min.	Max.	Average
Stack attached to Furnace-1	CO=150 mg/Nm ³	21.2	24.7	22.9
Stack attached to Furnace-2		24.8	27.2	26
Stack attached to Furnace-3		26.9	26.9	26.9
Stack attached to Furnace-4		27.1	27.1	27.1
Stack attached to Thermal Oxidizer		20.2	21.2	20.7
Stack attached to HRSG1		25.6	27.2	26.4
Stack attached to HRSG2		31.6	35.5	33.5
Stack attached to UB1		26.5	26.5	26.5
Stack attached to UB2		22.7	22.7	22.7

PM Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min.	Max.	Average
Stack attached to Furnace-1	PM = 10 mg/Nm ³	ND	ND	ND
Stack attached to Furnace-2		ND	ND	ND
Stack attached to Furnace-3		ND	ND	ND
Stack attached to Furnace-4		ND	ND	ND



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

Stack attached to Thermal Oxidiser		ND	ND	ND
Stack attached to HRSG1		ND	ND	ND
Stack attached to HRSG2		ND	ND	ND
Stack attached to UB1		ND	ND	ND
Stack attached to UB2		ND	ND	ND

Stack Monitoring Data from Dec-2019 to May-2020

BCPL GDU & CS Duliajan

SO₂Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min.	Max.	Average
Reboiler Stack	SO ₂ = 50 mg/Nm ³	ND	ND	ND
Gas Turbine-1 Stack		ND	ND	ND
Gas Turbine-2 Stack		ND	ND	ND
Gas Engine Generator Stack		ND	ND	ND

NO_x Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min	Max.	Average
Reboiler Stack	NO _x = 350 mg/Nm ³	17.5	19.2	18.3
Gas Turbine-1 Stack		22.4	26.5	24.4
Gas Turbine-2 Stack		19.6	24.2	21.9
Gas Engine Generator Stack		16.8	18.7	17.7

CO Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min	Max.	Average



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

Reboiler Stack	CO = 150 mg/Nm ³	22.6	24.8	23.7
Gas Turbine-1 Stack		32.9	36.6	34.7
Gas Turbine-2 Stack		31.8	38.6	35.2
Gas Engine Generator Stack		24.5	27.5	26

PM Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min	Max.	Average
Reboiler Stack	PM = 10 mg/Nm ³	ND	ND	ND
Gas Turbine-1 Stack		ND	ND	ND
Gas Turbine-2 Stack		ND	ND	ND
Gas Engine Generator Stack		ND	ND	ND

Stack Monitoring Data from Dec-2019 to May-2020

BCPL Lakwa

SO₂ Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min	Max.	Average
Reboiler Stack1	SO ₂ = 50 mg/Nm ³	ND	ND	ND
Gas Turbine-Stack		ND	ND	ND
DG Set		0.018	0.02	0.038

NO_x Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min	Max.	Average
Reboiler Stack1	NO _x = 350	11.6	16.5	14.0



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

Gas Turbine Stack	mg/Nm ³	19.3	24.6	21.9
DG Set	NO _x + HC ≤ 4.0 gm/kw-hr	0.15	0.18	0.16

CO Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min	Max.	Average
Reboiler Stack1	CO = 150 mg/Nm ³	21.2	24.7	22.9
Gas Turbine Stack		26.8	32.5	29.6
DG Set	CO ≤ 3.5 gm/kw-hr	0.059	0.066	0.0625

PM Emission (mg/Nm³)

Stacks	Emission Standard	Observed Value		
		Min	Max.	Average
Reboiler Stack1	PM=10 mg/Nm ³	ND	ND	ND
Gas Turbine Stack		ND	ND	ND
DG Set	PM ≤ 0.2 gm/kw-hr	0.038	0.046	0.042

Stack Monitoring Data from Dec-2019 to May-2020

BCPL Railway Siding

NO_x Emission (mg/Nm³)

Stack	Emission Standard	Observed Value		
		Min	Max.	Average
DG Set Stack	NO _x = 710 mg/Nm ³	182.4	196.5	189.4

CO Emission (mg/Nm³)

Stack	Emission Standard	Observed Value		
		Min	Max.	Average
DG Set Stack	CO = 150 mg/Nm ³	62.4	68.3	65.3





BRAHMAPUTRA CRACKER AND POLYMER LIMITED

PM Emission (mg/Nm³)

Stack	Emission Standard	Observed Value		
		Min	Max.	Average
DG Set Stack	PM=75 mg/Nm ³	38.7	41.4	40.0

NMHC as C Emission (mg/Nm³)

Stack	Emission Standard	Observed Value		
		Min	Max.	Average
DG Set Stack	NMHC as C = 100 mg/Nm ³	17.2	19.5	18.3

Effluent after Treatment (ETP Outlet) Monitoring Data from Dec-2019 to May-2020

BCPL Lepetkata

Sl. No.	Parameters	Standard as per PCB, Assam and IS 2490 (Pt-I)	Min.	Max.	Avg.
1.	pH	6.5 – 8.5	7.47	7.64	7.56
2.	Temperature	40°C	17.2	19.7	18.2
3.	Total Suspended Solids	100 mg/l	17.4	23.4	20.1
4.	Oil & Grease	10 mg/l	BDL(DL=2)	BDL(DL=2)	BDL(DL=2)
5.	COD (as O ₂)	250 mg/l	87	96	92.3
6.	BOD (@27° C for 3 days)	50 mg/l	16	18.5	17.7
7.	Sulphides (as S)	2 mg/l	BDL (DL=0.1)	BDL (DL=0.1)	BDL (DL=0.1)
8.	Chloride (as Cl)	1000 mg/l	134	177	158.3
9.	Ammonical nitrogen (as N)	50 mg/l	3.2	4.4	3.7
10.	Phenolic Compounds	5 mg/l	BDL	BDL	BDL





BRAHMAPUTRA CRACKER AND POLYMER LIMITED

	(as C ₆ H ₅ OH)		(DL=0.1)	(DL=0.1)	(DL=0.1)
11.	Free Ammonia (as NH ₃)	5 mg/l	<1	<1	<1
12.	Total Kjeldahl Nitrogen (as NH ₃)	100 mg/l	14.6	17.4	15.8



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

Effluent after Treatment (ETP Outlet) Monitoring Data from Dec-2019 to May-2020

BCPL Lakwa

Sl. No.	Parameters	Standard as per PCB, Assam and IS 2490 (Pt-I)	Min.	Max.	Avg.
1.	pH	6.5 – 8.5	7.53	7.62	7.57
2.	Temperature	40°C	17.3	19.5	18.1
3.	Total Suspended Solids	100 mg/l	21.5	26.4	23.8
4.	Oil & Grease	10 mg/l	BDL (DL=2)	BDL (DL=2)	BDL (DL=2)
5.	COD (as O ₂)	250 mg/l	114	119	115.6
6.	BOD (at 27°C for 3 days)	50 mg/l	20.5	23	21.5
7.	Sulphides (as S)	2 mg/l	BDL (DL=0.1)	BDL (DL=0.1)	BDL (DL=0.1)
8.	Chlorides (as Cl)	1000 mg/l	194	234	214.6
9.	Ammonical nitrogen (as N)	50 mg/l	3.7	5.6	4.4
10.	Phenolic Compounds (as C ₆ H ₅ OH)	5 mg/l	BDL (DL=0.1)	BDL (DL=0.1)	BDL (DL=0.1)
11.	Free Ammonia (as NH ₃)	5 mg/l	<1	<1	<1
12.	Total Kjeldahl Nitrogen (as NH ₃)	100 mg/l	14.6	17.6	16.2

**Storm water Monitoring Data from Dec-2019 to May-2020****BCPL Lepetkata**

Sl. No.	Parameters	Standard as per PCB, Assam and IS2490 (Pt-I)	Min.	Max.	Avg.
1.	pH	6.5 – 8.5	7.22	7.37	7.29
2.	Temperature	40°C	16.8	19.8	18.0
3.	Total Suspended Solids	100 mg/l	12.4	15.3	13.4
4.	Oil & Grease	10 mg/l	BDL (DL=2)	BDL (DL=2)	BDL (DL=2)
5.	COD (as O ₂)	250 mg/l	24	32	26.6
6.	BOD (@27°C for 3 days)	50 mg/l	4	6	5
7.	Sulphides (as S)	2 mg/l	BDL (DL=0.1)	BDL (DL=0.1)	BDL (DL=0.1)
8.	Chlorides (as Cl)	1000 mg/l	84	132	110.6
9.	Ammonical nitrogen (as N)	50 mg/l	<1	<1	<1
10.	Phenolic Compounds (as C ₆ H ₅ OH)	5 mg/l	BDL (DL=0.1)	BDL (DL=0.1)	BDL (DL=0.1)
11.	Free Ammonia (as NH ₃)	5 mg/l	<1	<1	<1
12.	Total Kjeldahl Nitrogen (as NH ₃)	100 mg/l	6.4	8.3	7.4





BRAHMAPUTRA CRACKER AND POLYMER LIMITED

Storm water Monitoring Data from Dec-2019 to May-2020

BCPL Lakwa

Sl. No.	Parameters	Standard as per PCB, Assam and IS2490 (Pt-I)	Min.	Max.	Avg.
1.	pH	6.5 – 8.5	6.78	6.94	6.85
2.	Temperature	40°C	17.4	19.4	18.1
3.	Total Suspended Solids	100 mg/l	5.6	7.6	6.5
4.	Oil & Grease	10 mg/l	BDL (DL=2)	BDL (DL=2)	BDL (DL=2)
5.	COD (as O ₂)	250 mg/l	7.6	12	9.2
6.	BOD (@27°C for 3 days)	50 mg/l	<2	<2	<2
7.	Sulphides (as Cl)	2 mg/l	BDL (DL=0.1)	BDL (DL=0.1)	BDL (DL=0.1)
8.	Chloride (as Cl)	1000 mg/l	48	64	55
9.	Ammonical Nitrogen (as N)	50 mg/l	<1	<1	<1
10.	Phenolic Compounds (as C ₆ H ₅ OH)	5 mg/l	BDL (DL=0.1)	BDL (DL=0.1)	BDL (DL=0.1)
11.	Free Ammonia (as NH ₃)	5 mg/l	<1	<1	<1
12.	Total Kjeldahl Nitrogen (as NH ₃)	100 mg/l	2.6	3.2	2.8

Ambient Air Quality Analysis from Dec-2019 to May-2020

BCPL Lepetkata

Parameters	Locations Name			
	Near Energy Gate	At RWTP Control Room	At Sub Station-8	BHEL Site near CISF camp
PM ₁₀ (Std.-100µg/m ³)				
Min.	36.5	46.3	43.6	42.2
Max.	66.3	62.4	64.4	57.2
Avg.	55.2	53.7	56.1	47.8
PM _{2.5} (Std.-60 µg/m ³)				
Min.	30.2	33.1	30.9	26.4
Max.	44.8	43.6	46.4	39.3
Avg.	39.8	39.1	38.5	34.2
SO ₂ (Std.-80 µg/m ³)				



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

Min.	7.5	8.8	9.2	8.2
Max.	12.5	13.5	13.6	11.6
Avg.	9.4	10.4	11.1	9.8
NO ₂ (Std.-80 µg/m ³)				
Min.	12.2	14.8	15.6	13.2
Max.	22.5	23.5	24.8	23.2
Avg.	17.4	19.8	20.9	19.1
CO (Std.-4 mg/m ³ one hourly basis)				
Min.	BDL	BDL	BDL	BDL
Max.	BDL	BDL	BDL	BDL
Avg.	BDL	BDL	BDL	BDL

Ambient Air Quality Analysis from Dec-2019 to May-2020

BCPL Lakwa

Parameters	At Lab Building	At Main Control Room
PM ₁₀ (Std.-100µg/m ³)		
Min.	44.8	48.9
Max.	66.5	62.7
Avg.	59.0	57.4
PM _{2.5} (Std.-60 µg/m ³)		
Min.	37.5	32.8
Max.	51.3	45.4
Avg.	42.4	39.9
SO ₂ (Std.-80 µg/m ³)		
Min.	9.7	8.6
Max.	13.5	12.6
Avg.	11.6	10.2
NO ₂ (Std.-80 µg/m ³)		
Min.	18.3	16.5
Max.	29.6	24.5
Avg.	22.9	20.7
CO (Std.-4 mg/m ³ one hourly basis)		
Min.	BDL	BDL
Max.	BDL	BDL
Avg.	BDL	BDL



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

Ambient Air Quality Analysis from Dec-2019 to May-2020

BCPL GDU & CS Duliajan

Parameters	At Canteen Building
PM ₁₀ (Std.-100µg/m ³)	
Min.	45.2
Max.	59.7
Avg.	54.9
PM _{2.5} (Std.-60 µg/m ³)	
Min.	36
Max.	44.5
Avg.	40.0
SO ₂ (Std.-80 µg/m ³)	
Min.	8.8
Max.	12.6
Avg.	10.8
NO ₂ (Std.-80 µg/m ³)	
Min.	15.5
Max.	23.5
Avg.	20.1
CO (Std.-4 mg/m ³ one hourly basis)	
Min.	BDL
Max.	BDL
Avg.	BDL

Ambient Air Quality Analysis from Dec-2019 to May-2020

BCPL Railway Siding

Parameters	At Fire Water Pump House
PM ₁₀ (Std.-100µg/m ³)	
Min.	48.3
Max.	59.8
Avg.	54.0
PM _{2.5} (Std.-60 µg/m ³)	
Min.	35.2
Max.	45.5
Avg.	39.8
SO ₂ (Std.-80 µg/m ³)	
Min.	8.8
Max.	13.6
Avg.	11.5



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

NO ₂ (Std.-80 µg/m ³)	
Min.	16.5
Max.	24.4
Avg.	21.2
CO (Std.-4 mg/m ³ one hourly basis)	
Min.	BDL
Max.	BDL
Avg.	BDL

Noise Monitoring Data from Dec-2019 to May-2020

BCPL - Lepetkata

Sl. No	Locations Name	Min.	Max.	Avg.
Day Time(Std.-75 dB(A))				
1.	Near Energy Gate	57.2	65.4	61.6
2.	Near Substation-8	53.5	64.2	59.9
3.	Near RWTP Control Room	57.8	64.5	60.6
4.	Near BHEL Site	55.2	63.5	59.9
Night Time(Std.-70 dB(A))				
1.	Near Energy Gate	45.8	54.5	50.3
2.	Near Substation-8	42.2	52.5	46.7
3.	Near RWTP Control Room	45.2	58.3	48.8
4.	Near BHEL Site	42.5	50.5	45.5

Noise Monitoring Data from Dec-2019 to May-2020

BCPL - Lakwa

Sl. No	Locations Name	Min.	Max.	Avg.
Day Time(Std.-75 dB(A))				
1.	Near Main Control Room	57.4	66.4	63.0
2.	Near Lab.	58.8	63.5	61.5
Night Time(Std.-70 dB(A))				



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

1.	Near Main Control Room	44.5	54.5	49.6
2.	Near Lab.	45.5	53.2	49.0

Noise Monitoring Data from Dec-2019 to May-2020

BCPL - Duliajan

Sl. No	Location Name	Min.	Max.	Avg.
1.	Near Canteen Building(Day Time) (Std.-75 dB(A))	58.5	66.8	63.2
2.	Near Canteen Building(Night Time) (Std.-70 dB(A))	48.3	53.9	51.3

Noise Monitoring Data from Dec-2019 to May-2020

BCPL – Railway Siding

Sl. No	Location Name	Min.	Max.	Avg.
1.	Near Fire Water Pump House (Day Time)) (Std.-75 dB(A))	57.8	63.6	61.1
2.	Near Fire Water Pump House (Night Time) (Std.-70 dB(A))	44.2	52.2	48.5

Note:

1. ND – Not detectable
2. BDL- Below Detection Limit.
3. DL-- Detection Limit



GOVERNMENT OF ASSAM
OFFICE OF THE DEPUTY COMMISSIONER ::DIBRUGARH DISTRICT
(LAND ACQUISITION BRANCH)

No. DRA.5/2007/

Dated Dibrugarh 24.../04/ 2019.

Certificate of Completion of Rehabilitation

This is to certify that 22 Nos. of Sonowal Kachari families and 44 Nos. TGL and Ex-TGL families, totaling 66 Nos. were affected during the acquisition of land for setting up of the Gas Cracker Project (Brahmaputra Cracker and Polymer Limited) at Lepetkata under Dibrugarh West Revenue Circle and among 66 affected families, 22 Nos. of Sonowal Kachari families were rehabilitated at VGR Dag No.23 situated at Dulia-Gaon by providing them 1Bigha of land each and the remaining 44 Nos. of TGL and Ex-TGL families were also rehabilitated at 45 Nos. Bolai FS Grant (B) by providing them 1 Bigha of land each.

This certificate is based on the report of Circle Officer, Dibrugarh West Revenue Circle.

Pallav Gopal Jha
23.4.19
(Pallav Gopal Jha, IAS)
Deputy Commissioner & Collector,
Dibrugarh.

Memo No. DRA.5/2007/

-A-

Dated Dibrugarh 24.../04/ 2019.

Copy to :

1. Circle Officer, Dibrugarh West Revenue Circle, Dibrugarh.
2. Chief Manager (HR), BCPL, Lepetkata, 786006 for information and necessary action.

Pallav Gopal Jha
23.4.19
(Pallav Gopal Jha, IAS)
Deputy Commissioner & Collector,
Dibrugarh.