



Energy (Barmer) Limited

(Formerly : Raj WestPower Limited)

Village & Post : Bhadresh, Post Box No. 30,

Distt : Barmer – 344001 (Rajasthan)

CIN : U31102MH1996PLC185098

Phone : +91 2982 229100

Fax : +91 2982 229222

Website : www.jsw.in

Ref: JSWE(B)L/ENV/20-21/014

Date: 23.06.2020

To,

**Ministry of Environment & Forests
Indira Paryavaran Bhavan,
Ali Ganj, Jorbagh Road,
New Delhi, Delhi 110003**

**Sub: Compliance Report-Environmental Clearance for 1080 MW Lignite based Power Plant at Village-
Bhadresh, District Barmer.**

Dear Sir,

With reference to your letter No. J-13011/58/2006-IA-II (T) dated 20.07.2007 and 19.11.2009, and followed by Letter no. IV/ENV/R/Th-39/679/08/273, we herewith submit half-yearly compliance report, for the period pertaining to **OCTOBER- 2019 to MARCH- 2020**, for the conditions stipulated in the Environmental clearance issued for this Power Project. Analysis Data has uploaded on JSWEBL website – <http://www.jsw.in/energy/about-barmer-plant>.

We have taken up the Project activity at proposed site incorporating the conditions stipulated in this environmental clearance.

Thanking you.

For JSW ENERGY (BARMER) Ltd.

Vinod Jindal

AGM (Operation, Environment & Chemistry)

Enclosure:

- | | |
|---------------------------------|----------------|
| 1. Compliance Report | |
| 2. Water consumption Data | -Annexure I |
| 3. Effluent Water Data | -Annexure II |
| 4. Coal Analysis Data | -Annexure III |
| 5. CEMS & Stack Monitoring DATA | -Annexure IV |
| 6. Ash Utilization Data | -Annexure V |
| 7. Noise Monitoring | -Annexure VI |
| 8. AAQ Monitoring Data | -Annexure VII |
| 9. Last Compliance Report | -Annexure VIII |

C.C.

The Director – MOEF, Lucknow

The Member Secretary – Central Pollution Control Board, Delhi

The Member Secretary – RSPCB, Jaipur

The Regional Officer – RSPCB, Balotra.



Part of O.P.Jindal Group

Regd. Office : JSW Energy (BARMER) Limited, JSW Center, BKC Complex, Bandra (E), Mumbai – 400051

Jaipur Office: Office No. 2 & 3, 7th Floor, Man Upasana Plaza, C-44, Sardar Patel Marg, C-Scheme, Jaipur – 302 001 Ph : 0141 2369772 Fax 0141 2369774

Compliance report for MOEF conditions stipulated in Environmental Clearance (dt. 20-07-2007 as amended on 19-11-2009) for 1080 MW Lignite-based power project of RWPL at Village-Bhadresh, District-Barmer

Reporting Period: OCT, 2019 – MAR, 2020

S.N.	Condition	Status
i	<i>No land in excess of 468 ha shall be acquired for any activity of the project.</i>	Land acquisition has been carried at the time of setting up the Power Project. No additional land been acquired for this Project.
ii	<i>The water requirement for the project shall not exceed 37.3 cusecs. No ground water shall be abstracted for any activity of the project.</i>	Water in excess of the mandated 37.3 cusecs would not be drawn during the operation of the Project. IGNP supplied water is being used for generation of Electricity as per EC conditions. Water being used Records of Water received from IGNP is enclosed. ANNEXURE-I
iii	<i>Closed Circuit Cooling System with induced draft cooling towers shall be installed.</i>	Four numbers of closed circuit cooling tower blocks with induced draft cooling towers have been erected and are in operation.
iv	<i>Treated effluents conforming to the prescribed standards shall be re-circulated and reused within the plant. No effluents shall be discharged outside the plant boundary.</i>	A common ETP (Aeration – Clarifier – Filtration – Ultra Filtration – Reverse Osmosis) to cater to all the 8 power generating units has erected. All the process effluents generated is being treated in this ETP and reused within the plant ensuring zero discharge outside the plant boundary. Effluent Water Quality Data – Annexure – II
v	<i>Lignite with ash content not exceeding 20% and sulphur content not exceeding 2.0% shall be used.</i>	Lignite with ash content less than 20% and Sulphur content less than 2% being used. Third party analysis reports for the same are enclosed. ANNEXURE-III

vi	<i>Space provision for FGD shall be made, if required at a later stage.</i>	<p>The Project is based on Circulating Fluidized Base Combustion technology for fuel firing and involves injection of lime, which absorbs Sulphur.</p> <p>As such, there is no requirement for FGD. However space provision has been made for FGD.</p>
vii	<i>Four stacks of 122 m height each with exit velocity of at least 20 m/s shall be provided with continuous online monitoring system.</i>	<p>A total of four bi-flue stacks, each flue of 122 m height, shall release the flue gases to the atmosphere. All these stacks being equipped with Continuous Emission Monitoring Systems (CEMS), to ensure the emission of PM, SO₂, NO_x & CO to be within prescribed levels. ANNEXURE-IV</p>
viii	<i>Low NO_x burners shall be installed.</i>	<p>The boiler is designed on Circulating Fluidized Bed Combustion, system attains to very low NO_x generation.</p>
ix	<i>High efficiency Electrostatic Precipitator (ESPs) having efficiency of 99.9% shall be installed so as to ensure that particulate emissions do not exceed 100 mg/Nm³.</i>	<p>High efficiency ESPs are installed to maintain PM emission levels at less than 100 mg/Nm³.</p>
xi	<i>Fly ash shall be collected in dry form and its 100% utilization shall be ensured within 3 years from the day of the commissioning of the plant. Ash to be disposed off in the ash pond shall be through HCSD system.</i>	<p>Fly ash is being collected in dry form from the currently operational EIGHT Units and is being lifted by M/s Shree Cement, M/s. JK Lakshmi, M/s. Ambuja Cement Limited & M/s Binani Cements and many Local Brick and Tiles Block manufacturer. Unutilized ash, if any, would be disposed off to the emergency ash pond through HCSD system.</p> <p>Ash Utilization data ANNEXURE-V</p>
xii	<i>Ash pond shall be lined with 0.5 mm thick HDPE geo-membrane lining.</i>	<p>The ash pond is lined with 0.5 mm thick HDPE geo-membrane, to avoid any leachate to the ground.</p>

<p>xiii</p>	<p><i>Details of compensation to be paid to the land oustees along with number of land oustees shall be worked out and submitted to this Ministry within three months from the date of issue of this letter or before the start of work on the project whichever is earlier.</i></p>	<p>Resettlement Action Plan (RAP) was compiled and submitted to the MOEF on 30-07-2007.</p>
<p>xiv</p>	<p><i>Necessary prior clearance from NHAI shall be obtained before laying the pipeline.</i></p>	<p>All necessary prior clearance from NHAI had obtained before laying the pipeline and a copy Submitted.</p>
<p>xv</p>	<p><i>Necessary prior clearance from Indian Air Force shall be obtained for construction of stacks of requisite height before starting the work on the project.</i></p>	<p>Before commencing the civil work on the stacks, necessary clearance had obtained from the Indian Air Force.</p>
<p>xvi</p>	<p><i>Adequate measures shall be taken up to maintain the sanctity and protection from any adverse impact from the proposed power project to the temple of Sant Ishardas Samadhi.</i></p>	<p>The Temple is outside the plant premises. In consultation with the local population, suitable developmental measures such as supply of lighting and electricity have been taken for this temple.</p>
<p>xvii</p>	<p><i>Regular monitoring of ground water quality including heavy metals shall be undertaken in the project area to ascertain the change, if any, in the water quality due to leaching of contaminants from the ash disposal area.</i></p>	<p>There is hardly any ground water within 20 km of the Project area.</p>
<p>xviii</p>	<p><i>Noise levels shall be limited to 75 dBA. For people working in the high noise area, protective devices such as earplugs etc. shall be provided.</i></p>	<p>The machinery has been designed to limit the noise levels to 75 dB (A). All personnel working in the Plant have PPEs issued. ANNEXURE-VI</p>
<p>xix</p>	<p><i>A greenbelt shall be developed all around the plant boundary and ash pond covering an area of 154 ha.</i></p>	<p>A total of 154 Ha area brought under green belt developed as designated greenbelt area. Mortality replacement work is continuous process and is being carried.</p>
<p>xx</p>	<p><i>Regular monitoring of the air quality shall be carried out in and around the power plant and records shall be maintained. The location of monitoring stations and frequency of monitoring shall be finalized in consultation with SPCB. Six monthly reports shall be submitted to this Ministry.</i></p>	<p>Regular monitoring of AAQ is being carried out in and around the power plant at locations and frequency finalized in consultation with the RSPCB and records are maintained. ANNEXURE-VII</p>

xxi	<p><i>For controlling fugitive dust, regular sprinkling of water in lignite handling area and other vulnerable areas of the plant shall be ensured.</i></p>	<p>Regular sprinkling of water is being practiced to minimize the fugitive dust emissions.</p>
xxii	<p><i>The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which should be in the vernacular language of the locality concerned, informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board/Committee and may also be seen in the Website of the Ministry of Environment and Forests in the http://envfor.nic.in.</i></p>	<p>Published in Rajasthan Patrika Jodhpur Edition, Dt 19/08/2007</p>
xxiii	<p><i>A separate environment monitoring cell with suitable qualified staff should be set up for implementation of the stipulated environmental safeguards.</i></p>	<p>A dedicated environment monitoring cell with qualified staff has been established and is operative.</p>
xxiv	<p><i>Half yearly report on the status of implementation of the conditions and environmental safeguards should be submitted to this Ministry, its Regional Office, CPCB and SPCB.</i></p>	<p>Being complied with. Copy of Submission enclosed – Annexure VIII</p>
xxv	<p><i>Regional Office of the Ministry of Environment & Forests located at Lucknow will monitor the implementation of the stipulated conditions. Complete set of Environmental Impact Assessment Report and Management Plan along with additional information submitted to this Ministry should be forwarded to the Regional Office for their use during monitoring.</i></p>	<p>Submitted.</p>
xxvi	<p><i>Separate funds should be allocated for implementation of environmental protection measures along with item-wise break-up. These cost should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.</i></p>	<p>The funds earmarked for environmental protection measures will not be diverted for other purposes.</p>
xxvii	<p><i>Full cooperation should be extended to the Scientists/Officers from the Ministry and its Regional Office at Lucknow /the CPCB/the SPCB during monitoring of the project.</i></p>	<p>Being complied.</p>



IGNP WATER BILL

October-2019 To March-2020

Month	Cuft/Month	Cum/Month	Cuft/day	Cusecs – Day
October	50912173	1441680	1642328	19.64
November	56053678	1587272	1868456	21.63
December	49123847	1391040	1584640	18.95
January	60855034	1723232	1963066	23.48
February	51674966	1463280	1781895	19.94
March	27136490	768424	875371	10.47



2752/12

No. 405
01-11-2019

The General Manager JSW Energy Ltd.
Industrial Category Barmer

Subt. Raw water bill for industrial purpose for the month 12/2019

S. No.	Particulars	Reading on 31/10/19	Reading on 31/11/19	Difference as per Meter (in cu meter)	Rate	Amount
1	Supply of Raw water for industrial purpose to JSW Energy Limited	3425071	3425071	147100	2084072	3045684
	Amount of 3045684 Rs. only					3045684

Total 3045684

Say Rupees Three Lakhs Twenty One Thousand Seven Hundred Eighty Four only.

The General Manager
 JSW Energy Ltd.
 Industrial Category Barmer

City of Rajmala

Key 102/1

Raw water bill for month 11/2019

S. No.	Particulars	Reading on 31/10/19	Reading on 31/11/19	Difference as per Meter (in cu meter)	Rate	Amount
1	Supply of Raw water for industrial purpose to JSW Energy Limited from RD 1433-210 of I.C.M.N.	34315344	34465072	150728	1000 CFT	1121073056
						1121073056
						11210741

Total 1121073056

Say Rupees Eleven Lakhs Twenty One Thousand Seven Hundred Fifty Six only.

The General Manager
 JSW Energy Ltd.
 Industrial Category Barmer

The General Manager
JSW Energy Ltd.
Industrial Category Barmer

Subt. Raw water bill for industrial purpose for the month 12/19

S. No.	Particulars	Reading on 31/12/19	Reading on 31/11/19	Difference as per Meter (in cu meter)	Rate	Amount
1	Supply of Raw water for industrial purpose to JSW Energy Ltd from RD 1433-250 of I.C.M.N.	34766884	34775344	131040	1000 CFT	982476024
						982476024
						982477024

Total 982476024

Say Rupees Nine Lakhs Eighty Two Thousand Four Hundred Seventy Six only.

The General Manager
 JSW Energy Ltd.
 Industrial Category Barmer

ANNEXURE-I

To: The General Manager
JSW Energy Limited
Area: Sardarpal & Bad
School, Barmer
250004

Chert of Rajasthan
Industrial Organisation projective

Sub-rawwater bill for industrial purpose for the month of 02/20

S. No	particulars	Reading on 31/1/20	Reading on 31/12/19	Toll charge as per bill	Chert of Rajasthan	Unit	Rate	Amount	
1	Supply of Raw water for industrial purpose to JSW Energy Ltd. from RD/4352M of J.C.M.H.	99483616	99766384	1723232	60551334 CH	11000 CH	20	1217100 = 60	
								Totals	1217100 = 60
								Payable	1217100 / only

(Report: Twelve Lakh Seven hundred and twenty three thousand only)

To: The General Manager
JSW Energy Limited
Industrial Organisation
Sardarpal School, Barmer

Chert of Rajasthan
Industrial Organisation projective

Sub-rawwater bill for industrial purpose for the month of 02/20

S. No	particulars	Reading on 31/1/20	Reading on 31/1/20	Toll charge as per bill	Chert of Rajasthan	Unit	Rate	Amount	
1	Supply of Raw water for industrial purpose to JSW Energy Ltd. from RD/4352M of J.C.M.H.	100952896	99483616	1469380	51633836 CH	11000 CH	20	1037432 = 20	
								Totals	1037432 = 20
								Payable	1037432 / only

(Report: Ten Lakh Thirty three thousand Four hundred and thirty nine only)

To: The General Manager
JSW Energy Limited - Area: Sardarpal School, Barmer

Sub-rawwater bill for the period 1/3/20 to 20/3/20 at 20/115 for industrial purpose

S. No	particulars	Reading on 31/3/20	Reading on 20/3/20	Toll charge as per bill	Chert of Rajasthan	Unit	Rate	Amount	
1	Supply of Raw water from J.C.M.H. to JSW Energy Ltd. for industrial purpose.	100856836	101921520	768484	291364304 CH	11000 CH	20	542720 = 20	
								Totals	542720 = 20
								Payable	542720 / only

(Report: Five Lakh Fourty two thousand Seven hundred thirty only)

Note: - please pay the bill amount and old bill amount with in three days, otherwise interest should be recover. As per instruction of High Authority.

Effluent Water Quality OCT – 2019 to MAR – 2020

SN	Parameters	UoM	CPCB Limits	Results					
				Oct	Nov	Dec	Jan	Fab	Mar
1.	pH		6.5-8.5	7.23	7.23	7.18	7.08	7.18	7.00
2.	Biochemical Oxygen Demand (BOD) @ 27Deg C for 3 days	mg/L	< 30.0	22.25	22.5	25	21.75	23.25	22.25
3.	Chemical Oxygen Demand (COD)	mg/L	< 250	80.5	77.0	71.0	75.0	78.5	72.5
4.	Total Kjeldhal Nitrogen as NH3	mg/L	< 100	8.08	8.76	8.51	8.20	8.45	8.81
5.	Free Available Chlorine	mg/L	< 0.5	BDL <0.18	BDL <0.18	BDL <0.18	BDL <0.18	BDL <0.18	BDL <0.18
6.	Oil & Grease	mg/L	< 20	2.7	2.7	2.35	2.25	3.45	2.4
7.	Copper as Cu	mg/L	< 1	0.0178	0.0153	0.0148	0.0235	0.0168	0.0183
8.	Zinc as Zn	mg/L	< 1	0.380	0.368	0.400	0.370	0.310	0.363
9.	Iron as Fe	mg/L	< 1	0.428	0.390	0.460	0.365	0.435	0.375
10.	Total Suspended Solid	mg/L	< 100	36.75	38.50	32.50	37.00	39.50	33.25
11.	Ammonical Nitrogen as N	mg/L	< 50	5.17	5.39	5.47	4.91	5.46	5.49
12.	Nitrate Nitrogen	mg/L	< 10	1.96	2.02	1.93	2.15	1.90	2.08
13.	Total Chromium as Cr	mg/L	< 1	BDL <0.01	BDL <0.01	BDL <0.01	BDL <0.01	BDL <0.01	BDL <0.01

COAL ANALYSIS REPORT**COAL ANALYSIS REPORT OCT, 2019 – MAR, 2020**

	<u>AVERAGE</u>					
Month	Total Moisture	Volatile Matter	Ash	Fix Carbon	Gross Calorific Value	Sulfur
	%	%	%	%	Kcal/Kg	%
OCTOBER - 19	42.31	23.39	14.27	20.04	2851.62	0.92
NOVEMEBR - 19	42.69	23.44	14.45	19.42	2843.48	0.90
DECEMBER - 19	42.86	23.56	13.74	19.85	2854.74	0.90
JANUARY-20	43.07	23.87	12.82	20.25	2878.28	0.92
FEBRUARY-20	43.58	24.11	15.56	19.12	2869.13	0.87
MARCH-20	43.81	24.13	12.69	19.38	2871.15	0.89

ANNEXURE-III

Mitra S. K. Private Limited

5/4, Shankar Colony,
Old Fatehpura, Udaipur - 313001 (Rajasthan)
CIN : U51909WB1956PTC023037

T : 0294 2451926
F : 0294 2451926
E : udaipur@mitrask.co.in



Certificate No.: - MSK/UDR/JSW/2019-20/73

Date:- 06.11.2019

CERTIFICATE OF SAMPLING & ANALYSIS

This is to certify that we the under sign surveyor have carried out Conveyor Belt Coal sampling feeding to Unit # 1, 2, 3, 4, 5, 6, 7 & 8 Bunker and analysis for the same LIGNITE COAL sample and report as under

Date & Place of Attendance: At JSW Energy (Barmer) Ltd. Plant, Bhadresh from 01.10.2019 to 31.10.2019

Sampling & Analysis: Continuous sampling was done during feeding of Lignite Coal in Bunker. 24 Hrs. sample thus collected sample was reduced to prepare the Moisture and General analysis sample

COMPOSITE OF UNIT 1, 2, 3, 4, 5, 6, 7 & 8

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
01.10.19	42.43	14.10	23.26	20.21	2836	0.95
02.10.19	42.18	14.01	23.48	20.33	2845	0.89
03.10.19	42.24	14.14	23.12	20.50	2851	0.90
04.10.19	42.05	14.41	23.64	19.90	2862	0.91
05.10.19	42.61	14.25	23.27	19.87	2826	0.91
06.10.19	42.10	14.60	23.54	19.76	2846	0.93
07.10.19	42.75	14.36	23.51	19.38	2826	0.93
08.10.19	42.79	14.45	23.26	19.50	2820	0.92
09.10.19	42.93	14.46	23.16	19.45	2815	0.91
10.10.19	42.74	14.30	23.33	19.63	2830	0.93
11.10.19	42.64	14.44	23.37	19.55	2836	0.88
12.10.19	42.62	14.10	23.28	20.00	2840	0.92
13.10.19	42.56	14.14	23.61	19.69	2844	0.91
14.10.19	42.14	14.09	23.69	20.08	2861	0.90
15.10.19	42.48	14.12	23.35	20.05	2845	0.93
16.10.19	42.18	14.19	23.43	20.20	2849	0.94
17.10.19	42.64	14.21	23.38	19.77	2836	0.92
18.10.19	42.74	14.17	23.11	19.98	2830	0.93
19.10.19	42.65	14.09	23.19	20.07	2840	0.94
20.10.19	42.53	14.44	23.17	19.86	2845	0.91
21.10.19	42.76	14.19	23.34	19.71	2826	0.93

H.O. : Shrachi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata - 700 016, West Bengal, India
T : 91 33 22172249 / 4014 3000 / 2265 0008 / 2265 0007 F : 91 33 2265 0008 E : info@mitrask.com W : www.mitrask.com



ANNEXURE-III

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
22.10.19	43.08	14.70	23.63	18.59	2827	0.94
23.10.19	42.74	14.27	23.19	19.80	2832	0.91
24.10.19	41.97	14.20	23.18	20.65	2881	0.93
25.10.19	40.94	14.27	23.58	21.21	2944	0.91
26.10.19	41.82	14.24	23.51	20.43	2890	0.94
27.10.19	41.48	14.22	23.28	21.02	2895	0.95
28.10.19	41.32	14.42	23.11	21.15	2897	0.94
29.10.19	42.10	14.34	23.62	19.94	2870	0.93
30.10.19	42.08	14.28	23.52	20.12	2865	0.91
31.10.19	41.33	14.35	23.67	20.65	2899	0.93

Note :-

1. These Samples were collected by Mitra S. K. Pvt. Ltd. from JSW Energy (Barmer) Ltd. Plant, Bhadresh & analyzed at our NABL accredited Gandhidham Lab.

2. This report reflects our findings at the date and place of Inspection only and does not refer to any other matter.

Checked By:



Authorized Signatory

For Mitra S. K. Private Limited



Authorized Signatory

ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/85

Date:- 05.12.2019

CERTIFICATE OF SAMPLING & ANALYSIS

This is to certify that we the under sign surveyor have carried out Conveyor Belt Coal sampling feeding to Unit # 1, 2, 3, 4, 5, 6, 7 & 8 Bunker and analysis for the same LIGNITE COAL sample and report as under

Date & Place of Attendance: At JSW Energy (Barmer) Ltd. Plant, Bhadresh from 01.11.2019 to 30.11.2019

Sampling & Analysis: Continuous sampling was done during feeding of Lignite Coal in Bunker. 24 Hrs. sample thus collected sample was reduced to prepare the Moisture and General analysis sample

COMPOSITE OF UNIT 1, 2, 3, 4, 5, 6, 7 & 8

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
01.11.19	42.53	15.49	22.98	19.00	2864	0.94
02.11.19	42.08	15.23	23.18	19.50	2861	0.98
03.11.19	42.80	14.57	22.93	19.70	2859	0.89
04.11.19	42.42	16.06	22.99	18.50	2865	0.91
05.11.19	42.23	16.42	23.26	18.10	2860	0.92
06.11.19	42.17	16.53	23.33	18.00	2862	0.88
07.11.19	42.10	15.46	23.15	19.30	2867	0.98
08.11.19	42.23	14.87	22.55	20.40	2854	0.93
09.11.19	42.55	16.24	23.18	18.00	2850	0.92
10.11.19	42.50	12.46	23.52	21.50	2848	0.92
11.11.19	42.53	12.68	23.74	21.10	2851	0.92
12.11.19	42.79	13.35	23.29	20.60	2849	0.88
13.11.19	42.97	13.83	24.54	18.70	2835	0.89
14.11.19	42.82	13.70	24.54	18.90	2844	0.90
15.11.19	42.74	13.95	23.31	20.00	2848	0.90
16.11.19	42.78	14.02	22.99	20.20	2846	0.82
17.11.19	42.69	15.35	23.27	18.70	2849	0.87
18.11.19	42.69	14.38	23.21	19.70	2845	0.97
19.11.19	42.59	13.45	24.41	19.60	2847	0.98
20.11.19	42.65	14.68	23.15	19.50	2848	0.90
21.11.19	42.57	15.39	23.10	18.90	2847	0.91

H.O.:Sharchi Centre (5th Floor), 74B, Acharya Jagadish Chandra Bose Road, Kolkata – 700016, West Bengal, India
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ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/85

Date:- 05.12.2019

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
22.11.19	42.44	14.66	23.40	19.50	2850	0.90
23.11.19	42.50	14.50	24.04	19.00	2847	0.81
24.11.19	42.39	13.80	23.32	20.50	2851	0.89
25.11.19	43.36	15.13	23.43	18.10	2803	0.84
26.11.19	43.23	14.50	22.88	19.40	2806	0.90
27.11.19	43.17	13.11	24.38	19.30	2810	0.90
28.11.19	43.47	12.80	23.73	20.00	2807	0.85
29.11.19	43.54	14.08	24.07	18.30	2809	0.88
30.11.19	43.59	13.84	23.24	19.30	2802	0.90

Note :-

1. These Samples were collected by Mitra S. K. Pvt. Ltd. from JSW Energy (Barmer) Ltd. Plant, Bhadresh & analyzed at our NABL accredited Gandhidham Lab.

2. This report reflects our findings at the date and place of inspection only and does not refer to any other matter.

Checked By:



Authorized Signatory

For Mitra S. K. Private Limited



Authorized Signatory



ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/97

Date:- 06.01.2020

CERTIFICATE OF SAMPLING & ANALYSIS

This is to certify that we the under sign surveyor have carried out Conveyor Belt Coal sampling feeding to Unit # 1, 2, 3, 4, 5, 6, 7 & 8 Bunker and analysis for the same LIGNITE COAL sample and report as under

Date & Place of Attendance: At JSW Energy (Barmer) Ltd. Plant, Bhadresh from 01.12.2019 to 31.12.2019

Sampling & Analysis: Continuous sampling was done during feeding of Lignite Coal in Bunker. 24 Hrs. sample thus collected sample was reduced to prepare the Moisture and General analysis sample

COMPOSITE OF UNIT 1, 2, 3, 4, 5, 6, 7 & 8

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
01.12.19	42.72	13.72	23.39	20.17	2849	0.85
02.12.19	43.12	13.93	23.94	19.00	2826	0.93
03.12.19	43.30	13.34	23.66	19.70	2822	0.88
04.12.19	43.38	13.00	24.11	19.51	2818	0.88
05.12.19	43.63	14.18	23.58	18.60	2811	0.79
06.12.19	43.43	14.62	24.20	17.76	2815	0.97
07.12.19	43.60	14.13	23.88	18.39	2806	0.92
08.12.19	43.61	13.72	23.50	19.17	2809	0.97
09.12.19	42.88	14.50	23.52	19.10	2836	0.95
10.12.19	43.77	13.07	22.81	20.35	2809	0.89
11.12.19	43.65	12.61	23.24	20.50	2811	0.92
12.12.19	43.63	12.91	23.70	19.76	2810	0.92
13.12.19	43.73	14.21	24.25	17.81	2815	0.91
14.12.19	43.44	13.81	22.94	19.81	2821	0.84
15.12.19	43.35	13.92	23.22	19.51	2826	0.94
16.12.19	42.92	13.67	23.68	19.73	2847	0.90
17.12.19	42.91	13.67	23.13	20.28	2856	0.86
18.12.19	43.08	13.44	24.30	19.18	2843	0.92
19.12.19	42.68	13.61	23.32	20.39	2860	0.93
20.12.19	42.39	14.26	23.82	19.53	2877	0.86
21.12.19	42.40	14.35	24.02	19.23	2875	0.95

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ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/97

Date:- 06.01.2020

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
22.12.19	42.56	14.83	23.25	19.36	2872	0.86
23.12.19	41.82	14.70	23.69	19.79	2890	0.99
24.12.19	42.38	13.22	23.09	21.32	2895	0.93
25.12.19	42.22	12.43	23.09	22.26	2907	0.88
26.12.19	42.00	13.72	23.26	21.02	2910	0.85
27.12.19	42.05	13.23	23.94	20.78	2905	0.88
28.12.19	42.51	13.69	23.97	19.84	2911	0.93
29.12.19	41.93	14.16	22.73	21.19	2921	0.88
30.12.19	41.94	13.81	23.45	20.81	2918	0.89
31.12.19	41.72	13.53	23.55	21.21	2920	0.92

Note :-

1. These Samples were collected by Mitra S. K. Pvt. Ltd. from JSW Energy (Barmer) Ltd. Plant, Bhadresh & analyzed at our NABL accredited Gandhidham Lab.

2. This report reflects our findings at the date and place of Inspection only and does not refer to any other matter.

Checked By:



Authorized Signatory

For Mitra S. K. Private Limited



Authorized Signatory

ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/109

Date:- 05.02.2020

CERTIFICATE OF SAMPLING & ANALYSIS

This is to certify that we the under sign surveyor have carried out Conveyor Belt Coal sampling feeding to Unit # 1, 2, 3, 4, 5, 6, 7 & 8 Bunker and analysis for the same LIGNITE COAL sample and report as under

Date & Place of Attendance: At JSW Energy (Barmer) Ltd. Plant, Bhadrash from 01.01.2020 to 31.01.2020

Sampling & Analysis: Continuous sampling was done during feeding of Lignite Coal in Bunker. 24 Hrs. sample thus collected sample was reduced to prepare the Moisture and General analysis sample

COMPOSITE OF UNIT 1, 2, 3, 4, 5, 6, 7 & 8

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
01.01.20	41.71	12.80	23.82	21.70	2910	0.84
02.01.20	42.30	14.17	23.68	19.90	2890	0.91
03.01.20	42.56	14.55	23.39	19.50	2870	0.98
04.01.20	42.86	12.41	23.55	21.20	2880	0.88
05.01.20	43.20	12.55	23.90	20.40	2875	0.96
06.01.20	42.96	12.92	23.35	20.80	2885	0.92
07.01.20	42.62	13.55	24.17	19.70	2890	0.89
08.01.20	42.65	13.48	23.43	20.40	2895	0.82
09.01.20	42.95	12.58	23.43	21.00	2900	0.99
10.01.20	42.34	13.35	23.55	20.80	2910	0.90
11.01.20	42.69	12.17	24.50	20.60	2890	0.88
12.01.20	42.86	12.49	24.15	20.50	2888	0.88
13.01.20	42.89	12.90	23.59	20.60	2870	0.87
14.01.20	43.20	12.79	23.43	20.60	2865	0.98
15.01.20	43.35	12.57	23.24	20.80	2863	0.90
16.01.20	43.02	12.95	24.72	19.30	2860	0.95
17.01.20	42.99	13.01	24.06	19.90	2871	0.90
18.01.20	42.46	13.30	23.43	20.80	2888	0.90
19.01.20	42.85	12.56	23.81	20.80	2874	0.88
20.01.20	43.41	12.17	24.10	20.30	2870	0.96
21.01.20	43.43	12.23	23.94	20.40	2881	0.93

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ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/109

Date:- 05.02.2020

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
22.01.20	43.10	12.67	24.22	20.00	2878	0.92
23.01.20	43.40	12.51	23.81	20.30	2869	0.98
24.01.20	43.92	12.73	23.45	19.90	2865	0.90
25.01.20	43.80	12.57	24.17	19.50	2867	0.95
26.01.20	43.49	12.16	24.23	20.10	2871	0.94
27.01.20	43.89	13.17	24.02	18.90	2860	0.91
28.01.20	43.56	12.33	24.13	20.00	2873	0.96
29.01.20	43.65	12.79	23.96	19.60	2870	0.98
30.01.20	43.13	12.51	23.15	21.20	2876	0.93
31.01.20	43.42	12.49	25.31	18.80	2882	0.98

Note :-

1. These Samples were collected by Mitra S. K. Pvt. Ltd. from JSW Energy (Barmer) Ltd. Plant, Bhadresh & analyzed at our NABL accredited Gandhidham Lab.

2. This report reflects our findings at the date and place of inspection only and does not refer to any other matter.

Checked By:


Authorized Signatory

For Mitra S. K. Private Limited


Authorized Signatory



ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/121

Date:- 05.03.2020

CERTIFICATE OF SAMPLING & ANALYSIS

This is to certify that we the under sign surveyor have carried out Conveyor Belt Coal sampling feeding to Unit # 1, 2, 3, 4, 5, 6, 7 & 8 Bunker and analysis for the same LIGNITE COAL sample and report as under

Date & Place of Attendance: At JSW Energy (Barmer) Ltd. Plant, Bhadresh from 01.02.2020 to 29.02.2020

Sampling & Analysis: Continuous sampling was done during feeding of Lignite Coal in Bunker. 24 Hrs. sample thus collected sample was reduced to prepare the Moisture and General analysis sample

COMPOSITE OF UNIT 1, 2, 3, 4, 5, 6, 7 & 8

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
01.02.20	43.59	11.47	24.67	20.30	2880	0.97
02.02.20	43.57	12.90	23.80	19.70	2870	0.88
03.02.20	43.12	12.28	23.76	20.80	2885	0.94
04.02.20	43.32	12.36	23.66	20.70	2881	0.85
05.02.20	42.71	12.46	23.92	20.90	2910	0.86
06.02.20	43.26	12.36	24.03	20.30	2876	0.81
07.02.20	43.33	12.46	23.66	20.50	2880	0.92
08.02.20	43.19	12.22	23.92	20.70	2881	0.88
09.02.20	43.49	12.86	24.15	19.50	2878	0.98
10.02.20	43.83	12.55	25.10	18.50	2855	0.90
11.02.20	44.35	12.64	24.27	18.70	2826	0.88
12.02.20	44.25	12.08	23.38	20.30	2839	0.94
13.02.20	43.56	12.53	24.32	19.60	2868	0.79
14.02.20	43.77	13.05	23.65	19.50	2864	0.90
15.02.20	43.35	12.27	23.73	20.70	2866	0.86
16.02.20	43.64	12.42	24.67	19.30	2863	0.90
17.02.20	43.44	12.72	23.49	20.40	2865	0.82
18.02.20	43.69	12.33	25.16	18.80	2860	0.78
19.02.20	43.37	12.94	23.83	19.90	2871	0.82
20.02.20	43.44	12.18	24.83	19.50	2869	0.79
21.02.20	43.42	12.96	23.98	19.60	2872	0.91

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MIRA S.



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ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/121

Date:- 05.03.2020

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
22.02.20	43.66	12.76	24.59	19.00	2867	0.81
23.02.20	43.51	12.07	24.04	20.40	2871	0.87
24.02.20	43.67	12.38	24.11	19.80	2869	0.88
25.02.20	43.77	12.83	24.20	19.20	2868	0.88
26.02.20	43.52	13.29	24.26	18.90	2870	0.78
27.02.20	43.67	13.62	23.83	18.90	2874	0.91
28.02.20	43.74	12.21	23.93	20.10	2877	0.92
29.02.20	44.06	12.78	24.08	19.10	2869	0.89

Note :-

1. These Samples were collected by Mitra S. K. Pvt. Ltd. from JSW Energy (Barmer) Ltd. Plant, Bhadresh & analyzed at our NABL accredited Gandhidham Lab.

2. This report reflects our findings at the date and place of Inspection only and does not refer to any other matter.

Checked By:



Authorized Signatory

For Mitra S. K. Private Limited



Authorized Signatory



ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/133

Date:- 04.04.2020

CERTIFICATE OF SAMPLING & ANALYSIS

This is to certify that we the under sign surveyor have carried out Conveyor Belt Coal sampling feeding to Unit # 1, 2, 3, 4, 5, 6, 7 & 8 Bunker and analysis for the same LIGNITE COAL sample and report as under

Date & Place of Attendance: At JSW Energy (Barmer) Ltd. Plant, Bhadresh from 01.03.2020 to 31.03.2020

Sampling & Analysis: Continuous sampling was done during feeding of Lignite Coal in Bunker. 24 Hrs. sample thus collected sample was reduced to prepare the Moisture and General analysis sample

COMPOSITE OF UNIT 1, 2, 3, 4, 5, 6, 7 & 8

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
01.03.2020	44.47	12.40	23.82	19.30	2867	0.86
02.03.2020	43.67	12.20	23.70	20.40	2871	0.93
03.03.2020	43.89	12.70	24.36	19.00	2868	0.91
04.03.2020	43.85	12.80	24.69	18.70	2870	0.93
05.03.2020	43.67	13.20	23.62	19.50	2867	0.91
06.03.2020	43.81	12.70	23.74	19.70	2869	0.91
07.03.2020	43.74	13.30	24.31	18.60	2870	0.92
08.03.2020	43.70	13.10	23.77	19.40	2872	0.86
09.03.2020	43.52	13.00	23.91	19.60	2873	0.90
10.03.2020	43.70	12.50	24.74	19.10	2874	0.87
11.03.2020	43.60	12.50	24.65	19.20	2880	0.85
12.03.2020	43.86	12.10	24.02	20.10	2885	0.90
13.03.2020	43.24	12.60	23.52	20.60	2892	0.91
14.03.2020	43.24	13.10	23.99	19.70	2900	0.90
15.03.2020	43.53	12.70	23.82	20.00	2904	0.98
16.03.2020	43.98	12.50	23.18	20.30	2897	0.84
17.03.2020	43.18	12.70	24.55	19.60	2888	0.81
18.03.2020	43.88	12.70	24.36	19.10	2887	0.86
19.03.2020	43.59	12.70	24.10	19.60	2881	0.90
20.03.2020	43.88	12.80	25.01	18.30	2872	0.89
21.03.2020	43.72	12.50	24.38	19.40	2873	0.93

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ANNEXURE-III

Certificate No.: - MSK/UDR/JSW/2019-20/133

Date:- 04.04.2020

Date	TM% (ARB)	ASH% (ARB)	VM% (ARB)	FC% (ARB)	GCV (Kcal/kg) (ARB)	Sulfur% (ARB)
22.03.2020	43.67	12.40	24.96	18.90	2875	0.81
23.03.2020	43.95	12.60	24.40	19.10	2862	0.90
24.03.2020	43.85	12.60	24.71	18.80	2850	0.80
25.03.2020	44.51	13.20	24.03	18.30	2831	0.90
26.03.2020	44.30	12.60	23.25	19.80	2835	0.78
27.03.2020	44.21	13.10	24.35	18.30	2844	0.93
28.03.2020	44.04	12.40	23.79	19.70	2850	0.84
29.03.2020	44.39	12.50	23.86	19.20	2845	0.87
30.03.2020	43.96	12.70	23.39	19.90	2847	0.91
31.03.2020	44.01	12.60	24.69	18.70	2863	0.95

Note :-

1. These Samples were collected by Mitra S. K. Pvt. Ltd. from JSW Energy (Barmer) Ltd. Plant, Bhadresh

2. This report reflects our findings at the date and place of Inspection only and does not refer to any other matter.

Checked By:



Authorized Signatory

For Mitra S. K. Private Limited



Authorized Signatory

ANNEXURE-IV

STACK EMISSION MONITORING RESULTS OCT – 2019 to MAR – 2020

Month: Oct' 2019

SN	Parameters	UOM	Unit-I	Unit - II	Unit - III	Unit - IV	Unit - V	Unit - VI	Unit-VII	Unit-VIII
1	Average Velocity	m/Sec	14.6	16.9	14.5	16.4	17.7	17.4	18.6	16.7
2	Flow	Nm ³ /Sec	122.7	139.3	123.7	134.1	147.3	141.6	149.9	139
3	Stack Exit Temp.	°C	125	133	119	136	129	138	142	129
4	Particulate Matter	mg/Nm ³	63	50	69	69	45	42.8	57.2	60.2
5	Sulphur Dioxide (SO ₂) at 6% O ₂ Ref.	mg/Nm ³	480.7	494.9	450.2	403.3	474.9	479	429.5	429
6	Oxides of Nitrogen (NO _x) at 6% O ₂ Ref.	mg/Nm ³	181.6	203	154.3	137.3	192.6	205.1	185.6	155.1

Month: Nov' 2019

SN	Parameters	UOM	Unit-I	Unit - II	Unit - III	Unit - IV	Unit - V	Unit - VI	Unit-VII	Unit-VIII
1	Average Velocity	m/Sec	17.2	15.4	18.3	17	16.6		15.7	16.4
2	Flow	Nm ³ /Sec	135.4	126.6	145.8	132.6	133.8		129.7	134.5
3	Stack Exit Temp.	°C	152	134	147	156	142		132	135
4	Particulate Matter	mg/Nm ³	59	59	68	52	64	S/D	53	49
5	Sulphur Dioxide (SO ₂) at 6% O ₂ Ref.	mg/Nm ³	473	449	495	552	529		497	514
6	Oxides of Nitrogen (NO _x) at 6% O ₂ Ref.	mg/Nm ³	194	158	203	188	184		153	181

Month: Dec' 2019

SN	Parameters	UOM	Unit-I	Unit - II	Unit - III	Unit - IV	Unit - V	Unit - VI	Unit-VII	Unit-VIII
1	Average Velocity	m/Sec	16.9	15.4	17.1	16.8	14.8	13.2	17.4	17.9
2	Flow	Nm ³ /Sec	135.6	125	135.2	131	126.3	116.5	140.9	146.4
3	Stack Exit Temp.	°C	144	139	150	156	119	106	140	136
4	Particulate Matter	mg/Nm ³	64	59	55	60	54	50	64	68
5	Sulphur Dioxide (SO ₂) at 6% O ₂ Ref.	mg/Nm ³	478	497	467	459	496	423	438	358
6	Oxides of Nitrogen (NO _x) at 6% O ₂ Ref.	mg/Nm ³	176	188	167	164	145	134	210	191

ANNEXURE-IV
Month: Jan' 2020

SN	Parameters	UOM	Unit-I	Unit - II	Unit - III	Unit - IV	Unit - V	Unit - VI	Unit-VII	Unit-VIII
1	Average Velocity	m/Sec	16.7	17.4	15	17.6	15.7	16.8	17.4	18.4
2	Flow	Nm ³ /Sec	132.4	135.4	126.4	138.2	129.7	135.8	141.6	147.3
3	Stack Exit Temp.	°C	149	157	124	153	132	141	138	145
4	Particulate Matter	mg/Nm ³	56	64	52	70	48	65	59	53
5	Sulphur Dioxide (SO ₂) at 6% O ₂ Ref.	mg/Nm ³	471	488	477	499	420	431	442	475
6	Oxides of Nitrogen (NO _x) at 6% O ₂ Ref.	mg/Nm ³	218.3	197	152.9	227	190.8	165.8	158	177.7

Month: Feb' 2020

SN	Parameters	UOM	Unit-I	Unit - II	Unit - III	Unit - IV	Unit - V	Unit - VI	Unit-VII	Unit-VIII
1	Average Velocity	m/Sec	16.2	17.4	17.4	17	18	16	15.7	17.9
2	Flow	Nm ³ /Sec	128.4	137	140.9	140.4	141.7	134.2	128.7	148.2
3	Stack Exit Temp.	°C	149	152	140	132	152	126	135	131
4	Particulate Matter	mg/Nm ³	56	62	55	51	48	58	65	68
5	Sulphur Dioxide (SO ₂) at 6% O ₂ Ref.	mg/Nm ³	505	446	472	415	453	471	490	504
6	Oxides of Nitrogen (NO _x) at 6% O ₂ Ref.	mg/Nm ³	192.1	204	181.6	216.3	175.7	225.9	192.7	188.2

Month: Mar' 2020

SN	Parameters	UOM	Unit-I	Unit - II	Unit - III	Unit -IV	Unit - V	Unit - VI	Unit-VII	Unit-VIII
1	Average Velocity	m/Sec	17.4	18.2	16.9	19.3		18	19.2	
2	Flow	Nm ³ /Sec	140.9	143.3	137.2	153.4		139.4	158.2	
3	Stack Exit Temp.	°C	140	152	139	148		159	133	
4	Particulate Matter	mg/Nm ³	64	59	54	70	S/D	65	58	S/D
5	Sulphur Dioxide (SO ₂) at 6% O ₂ Ref.	mg/Nm ³	427	340	456	465		294	482	
6	Oxides of Nitrogen (NO _x) at 6% O ₂ Ref.	mg/Nm ³	183.1	159.9	218.7	246.1		153.6	175.2	

ANNEXURE-IV

Unit # 1 - Continuous Emission Monitoring System-CEMS DATA

Month		SOX mg/m3	NOX mg/m3	SPM mg/m3
OCT- 19	Average	172	112	65
	Max	320	164	70
NOV- 19	Average	201	53	65
	Max	289	107	69
DEC - 19	Average	217	34	62
	Max	340	103	69
JAN-20	Average	252	54	61
	Max	435	90	66
Feb-20	Average	247	49	48
	Max	350	86	65
MAR-20	Average	57	195	61
	Max	156	291	76

Unit # 2 - Continuous Emission Monitoring System-CEMS DATA

Month		SOX mg/m3	NOX mg/m3	SPM mg/m3
OCT- 19	Average	191	98	45
	Max	423	197	58
NOV- 19	Average	232	63	47
	Max	381	111	57
DEC - 19	Average	270	92	45
	Max	396	128	55
JAN-20	Average	213	47	38
	Max	347	79	43
Feb-20	Average	256	61	37
	Max	353	129	44
MAR-20	Average	252	65	34
	Max	389	155	40

ANNEXURE-IV

Unit # 3 - Continuous Emission Monitoring System-CEMS DATA

Month		SOX mg/m3	NOX mg/m3	SPM mg/m3
OCT- 19	Average	255	105	62
	Max	391	164	71
NOV- 19	Average	244	53	67
	Max	364	107	69
DEC - 19	Average	327	83	63
	Max	387	128	74
JAN-20	Average	310	54	57
	Max	407	120	63
Feb-20	Average	340	48	57
	Max	409	67	71
MAR-20	Average	350	112	64
	Max	402	127	68

Unit # 4 - Continuous Emission Monitoring System-CEMS DATA

Month		SOX mg/m3	NOX mg/m3	SPM mg/m3
OCT- 19	Average	141	40	32
	Max	342	134	63
NOV- 19	Average	214	50	51
	Max	332	95	77
DEC - 19	Average	241	47	65
	Max	428	145	86
JAN-20	Average	252	26	53
	Max	405	52	64
Feb-20	Average	326	78	49
	Max	416	134	59
MAR-20	Average	280	74	42
	Max	419	143	45

ANNEXURE-IV

Unit # 5 - Continuous Emission Monitoring System-CEMS DATA

Month		SOX mg/m3	NOX mg/m3	SPM mg/m3
OCT- 19	Average	327	151	44
	Max	389	169	51
NOV- 19	Average	303	87	54
	Max	391	104	74
DEC - 19	Average	237	68	51
	Max	374	100	76
JAN-20	Average	305	59	61
	Max	397	72	72
Feb-20	Average	262	44	59
	Max	389	90	73
MAR-20	Average	S/D	S/D	S/D
	Max			

Unit # 6 - Continuous Emission Monitoring System-CEMS DATA

Month		SOX mg/m3	NOX mg/m3	SPM mg/m3
OCT- 19	Average	319	158	35
	Max	422	248	41
NOV- 19	Average	79	38	18
	Max	320	124	37
DEC - 19	Average	305	112	47
	Max	435	150	55
JAN-20	Average	267	40	47
	Max	380	94	51
Feb-20	Average	259	62	44
	Max	424	130	54
MAR-20	Average	239	203	42
	Max	398	252	50

ANNEXURE-IV

Unit # 7 - Continuous Emission Monitoring System-CEMS DATA

Month		SOX mg/m3	NOX mg/m3	SPM mg/m3
OCT- 19	Average	226	70	43
	Max	361	121	45
NOV- 19	Average	224	55	41
	Max	339	85	45
DEC - 19	Average	345	113	45
	Max	442	158	50
JAN-20	Average	271	59	43
	Max	406	103	52
Feb-20	Average	304	111	44
	Max	397	143	49
MAR-20	Average	281	90	38
	Max	414	187	48

Unit # 8 - Continuous Emission Monitoring System-CEMS DATA

Month		SOX mg/m3	NOX mg/m3	SPM mg/m3
OCT- 19	Average	188	51	50
	Max	354	172	73
NOV- 19	Average	245	71	54
	Max	431	133	80
DEC - 19	Average	280	71	53
	Max	412	99	79
JAN-20	Average	223	66	50
	Max	402	98	85
Feb-20	Average	197	55	47
	Max	391	87	64
MAR-20	Average	317	119	48
	Max	444	166	51

**Energy (Barmer) Limited**

(Formerly : Raj WestPower Limited)

Village & Post : Bhadresh, Post Box No. 30,

Distt : Barmer – 344001 (Rajasthan)

CIN : U31102MH1996PLC185098

Phone : +91 2982 229100

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Website : www.jsw.in**ANNEXURE-V****Ministry of Environment, Forest and Climate Change
Monthly Abstract of Ash Generation and Utilisation**

(For the Period from April, 2019 to March, 2020)

Name of Thermal Power Plant: Raj West Power Limited - Jalipa-Kapurdi Thermal Plant Lignite Coal Base Thermal Plant

Sl. No.	ASH GENERATION AND UTILIZATION						Mode of Ash Utilisation and Utilisation in Each Mode (IN LAKH TON)					
	Month	Coal consumed (Lakh Ton)	Lime Coal Consumed (Lakh Ton)	Ash content of coal (%)	Ash Generation (Lakh Ton)	Ash Utilization (Lakh Ton)	% age Utilization	In making of Fly Ash based/ Bricks/ Blocks/ Tiles etc. (Lakh Ton)	In manufacture of Portland Pozzolana Cement (Lakh Ton)	In Mine filling (Lakh Ton)	In Agriculture/ Waste land Development (Lakh Ton)	Others
(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)	(9)	(15)	(16)	(17)
1	APRIL	4.3423	0.1108	13.41	0.6800	0.7131	104.87	0.0697	0.6434	0.0000		
2	MAY	4.8290	0.1928	13.89	0.8407	0.7112	84.60	0.1243	0.4778	0.1092		
3	JUNE	4.7745	0.1904	14.45	0.8573	0.8018	93.52	0.1185	0.5088	0.1744		
4	JULY	4.3206	0.2005	14.29	0.7939	0.8541	107.58	0.1215	0.4940	0.2386		
5	AUGUST	4.2628	0.2288	14.56	0.8220	0.7760	94.41	0.1337	0.4248	0.2176		
6	SEPTEMBER	4.5289	0.1867	14.45	0.8189	0.7541	92.09	0.1573	0.4198	0.1770		
7	OCTOBER	4.0489	0.1658	14.27	0.7237	0.7125	98.46	0.1337	0.4901	0.0887		
8	NOVEMBER	4.0501	0.1505	14.45	0.7176	0.7678	107.00	0.1387	0.5102	0.1190		
9	DECEMBER	4.6463	0.1609	13.74	0.7800	0.8642	110.79	0.1633	0.5521	0.1488		
10	JANUARY	4.5046	0.1454	12.82	0.7054	0.7729	109.57	0.1529	0.5290	0.0911		
11	FEBRUARY	4.8619	0.1745	12.56	0.7641	0.8104	106.06	0.1714	0.5195	0.1195		
12	MARCH	3.9691	0.1719	12.69	0.6549	0.6213	94.87	0.1023	0.3194	0.1996		
	TOTAL	53.1386614	2.0790	13.79	9.1584	9.1594	100.01	1.5872	5.8889	1.6834	0.000	0.000



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Regd. Office : JSW Energy (BARMER) Limited, JSW Center, BKC Complex, Bandra (E), Mumbai – 400051

Jaipur Office: Office No. 2 & 3, 7th Floor, Man Upasana Plaza, C-44, Sardar Patel Marg, C-Scheme, Jaipur – 302 001 Ph : 0141 2369772 Fax 0141 2369774

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S N	Month Noise Levels dB (A)	October		November		December		January		February		March	
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
1	MAIN GATE INSIDE	70.5	60.7	72.4	63.2	68.5	57.4	71.1	61.9	71.4	61.6	73.2	61.8
2	COOLING TOWER END	70.6	59.3	74.7	62.3	72.5	62.6	73.4	61.0	71.5	60.2	74.6	64.6
3	NORTH WEST CORNER	71.3	61.9	71.8	64.0	69.9	63.2	70.5	62.7	72.2	62.8	73.8	63.2
4	Bhadresh Village	50.9	39.8	53.7	41.6	52.4	40.4	52.4	40.3	51.8	40.7	52.0	41.0
5	Isharpura Village	53.8	44.6	51.8	40.2	53.3	43.6	50.5	38.9	54.7	45.5	53.8	44.2
6	Chuli Village	55.3	44.2	54.3	44.0	51.7	42.0	53.0	42.7	56.2	45.1	54.5	44.6



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ANNEXURE-VII
Ambient Air Quality Data- Oct – 2019 to Mar – 2020
Month – Oct' 2019

SN	Location (Avg.24 Hrs.)	PM-10 ($\mu\text{g}/\text{m}^3$)	SO2 ($\mu\text{g}/\text{m}^3$)	NO2 ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)	PM-2.5 ($\mu\text{g}/\text{m}^3$)
1	Main Gate	38	S/D	13	0.21	27
2	Ash pond	32	42	22	0.71	9
3	Reservoir Area	22	20	19	1.78	13
4	Bhadresh Village	76	18	26	0.21	40
5	Isharpura Village	77	15	25	0.25	40
6	Chuli Village	77	16	25	0.25	39

Month – Nov' 2019

SN	Location (Avg.24 Hrs.)	PM-10 ($\mu\text{g}/\text{m}^3$)	SO2 ($\mu\text{g}/\text{m}^3$)	NO2 ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)	PM-2.5 ($\mu\text{g}/\text{m}^3$)
1	Reservoir Area	40	S/D	13	0.40	27
2	Main Gate	32	27	21	0.79	9
3	Ash pond	24	24	20	1.78	15
4	Bhadresh Village	77	18	26	0.21	40
5	Isharpura Village	76	14	26	0.26	39
6	Chuli Village	78	16	25	0.26	39

Month – Dec' 2019

SN	Location (Avg.24 Hrs.)	PM-10 ($\mu\text{g}/\text{m}^3$)	SO2 ($\mu\text{g}/\text{m}^3$)	NO2 ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)	PM-2.5 ($\mu\text{g}/\text{m}^3$)
1	Reservoir Area	41	S/D	13	0.56	26
2	Main Gate	31	21	21	0.85	9
3	Ash pond	24	20	19	1.36	21
4	Bhadresh Village	77	18	25	0.22	40
5	Isharpura Village	77	14	27	0.26	40
6	Chuli Village	78	16	24	0.25	39

ANNEXURE-VII

Month – Jan' 2020

SN	Location (Avg.24 Hrs.)	PM-10 ($\mu\text{g}/\text{m}^3$)	SO2 ($\mu\text{g}/\text{m}^3$)	NO2 ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)	PM-2.5 ($\mu\text{g}/\text{m}^3$)
1	Reservoir Area	43	S/D	13	0.51	27
2	Main Gate	33	18	21	1.80	10
3	Ash pond	26	24	19	1.01	18
4	Bhadresh Village	75	17	24	0.21	39
5	Isharpura Village	75	14	26	0.25	39
6	Chuli Village	77	16	23	0.25	38

Month – Feb' 2020

SN	Location (Avg.24 Hrs.)	PM-10 ($\mu\text{g}/\text{m}^3$)	SO2 ($\mu\text{g}/\text{m}^3$)	NO2 ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)	PM-2.5 ($\mu\text{g}/\text{m}^3$)
1	Reservoir Area	40	S/D	20	0.43	27
2	Main Gate	31	21	20	0.83	9
3	Ash pond	36	10	15	1.49	11
4	Bhadresh Village	74	17	24	0.21	39
5	Isharpura Village	74	13	26	0.27	38
6	Chuli Village	76	16	23	0.24	38

Month – Mar' 2020

SN	Location (Avg.24 Hrs.)	PM-10 ($\mu\text{g}/\text{m}^3$)	SO2 ($\mu\text{g}/\text{m}^3$)	NO2 ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)	PM-2.5 ($\mu\text{g}/\text{m}^3$)
1	Reservoir Area	44	S/D	6	0.83	32
2	Main Gate	32	27	25	1.18	9
3	Ash pond	21	18	13	1.56	13
4	Bhadresh Village	74	17	24	0.21	38
5	Isharpura Village	73	13	26	0.26	38
6	Chuli Village	76	15	22	0.24	38



ANNEXURE-VIII



Energy (Barmer) Limited

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Phone : +91 2982 229100

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Website : www.jsw.in

Ref: JSWE(B)L/ENV/19-20/002

Date: 10.12.2019

To,
Ministry of Environment & Forests
Indira Paryavaran Bhavan,
All Ganj, Jorbagh Road,
New Delhi, Delhi 110003

श्री. आर. अनुपम द्वारा प्राप्त
Received by
श्री. आर. अनुपम द्वारा प्राप्त
18/12/19

Sub: Compliance Report-Environmental Clearance for 1080 MW Lignite based Power Plant at Village-Bhadresh, District Barmer.

Dear Sir,

With reference to your letter No.J-13011/58/2006-IA-II (T) dated 20.07.2007 and 19.11.2009, and followed by Letter no. IV/ENV/R/Th-39/679/08/273, we herewith submit half-yearly compliance report, for the period pertaining to **APRIL - 2019 to SEPTEMBER - 2019**, for the conditions stipulated in the Environmental clearance issued for this Power Project. Analysis Data has uploaded on JSWEBL website – <http://www.jsw.in/energy/about-barmer-plant>.

We have taken up the Project activity at proposed site incorporating the conditions stipulated in this environmental clearance.

Thanking you.

For JSW ENERGY (BARMER) Ltd, (Formerly- Raj West Power Ltd)


Chandan Singh Deora
Jr. Manager (Environment & Chemistry)

Enclosure:

1. Compliance Report
2. Water consumption Data
3. Coal Analysis Data
4. Stack monitoring Data
5. Ash Utilization Data
6. AAQ Monitoring Data
7. Effluent Water Data

C.C.

The Director – MOEF, Lucknow

The Member Secretary – Central Pollution Control Board, Delhi

The Member Secretary – RSPCB, Jaipur

The Regional Officer – RSPCB, Balotra.



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