



# Royal

## Environment Auditing & Consultancy Service

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Ref. No. : 576/02/2015-16

Date : 02/02/2016

### Performance Evaluation of Air Pollution Control Equipments

#### Sinter Plant-1 (GPCB ID 35456)

Name of company : LINGAL SAW LIMITED

Village: Somnagheha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255 Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 6
C1	Date of Sampling	---	19/02/2016	Not in operation during visit	19/02/2016	19/02/2016
C2	Attached to	---	Fuel & Flux crusher & screening building	Fuel & Flux crushing house	Sinter Furnace	Discharge end
C3	Stack Height	Meter	32	27	50	32
C4	Stack Diameter	Meter	1.4	1.4	2.0	1.3
C5	Stack Temperature	°C	49	...	143	122
C6	Ambient Temperature	°C	29	...	29	29
C7	Average Velocity of Flue Gases	m/sec.	28.9	...	37.2	33.1
C8	Isokinetic Flowrate for Sampling	LPM	12	...	13	12
C9	Inlet	mg/Nm <sup>3</sup>	2438	...	3892	3298
C10	Outlet	mg/Nm <sup>3</sup>	21	...	39	28
C11	Efficiency	%	99.14	...	99.00	99.15

Instrument Used : Stack Monitoring Kit - Extech make - GSS 100

Calibration due on 23/08/2015

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Analyst



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Ref. No. : 579/02/2015-16

Date : 02/03/2016

### Blast Furnace Plant-1(GPCB ID:18037)

Name of company : JINDAL SAW LIM TED,

Village: Samaghogha.

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255\_Part - 1/3

Sr. No.	Particulars	Unit	S - 1
01	Date of Sampling	---	11/02/2016
02	Attached to	---	De-dustingSystem
03	Stack Height	Meter	35
04	Stack Duct Diameter	Meter	1.4
05	Stack Temperature	°C	51
06	Ambient Temperature	°C	28
07	Average Velocity of Flue Gases	m/sec.	15.7
08	Isokinetic Flowrate for Sampling	LPM	27
09	Inlet	mg/Nm <sup>3</sup>	1211
10	Outlet	mg/Nm <sup>3</sup>	5
11	Efficiency	%	99.58

Instrument Used : Stack Monitoring Kit - Ecolech make - ESS 100

Calibration due on 25/09/2016





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Ref No.: EAC/02/2015-16

Date: 02/03/2016

### Performance Evaluation of Air Pollution Control Equipments

#### Sinter Plant-2 (GPCB ID:29017)

Name of company: JINDAL SAW LIMITED,  
 Village: Samaghoshia,  
 Tal.: Mundra, Dist. Kutch

Test Method: As per IS Standards - 1:255 Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S - 10
C1	Date of Sampling	—	Not in operation during visit	Not in operation during visit	24/02/2016	12/02/2016	18/02/2016	Not in operation during visit
C2	Attached to	—	Fuel crushing deduster system (Fuel)	Fuel crushing deduster system (Flux)	Fuel screening deduster system (Flux screening)	Sinter Furnace	Discharging end of Sinter dedusting System	Pulverised Coal Injection
C3	Stack Height	Meter	30	30	30	30	30	32
C4	Stack Diameter	Meter	0.7	0.7	0.7	2.0	1.3	1.0
C5	Stack Temperature	°C	48	52	47	145	101	142
C6	Ambient Temperature	°C	—	—	33	38	33	—
C7	Average Velocity of Flue Gases	m/sec.	—	—	3.3	31.7	38.6	—
C8	Isokinetic Flowrate for Sampling	lpm	—	—	23	2	13	—
C9	Inlet	m <sup>3</sup> /min	—	—	2846	4039	3410	—
C10	Outlet	m <sup>3</sup> /min	—	—	23	49	24	—
C11	Efficiency	%	—	—	99.18	95.95	99.30	—

Instrument Used: Stack Monitoring Kit: Ecosach make: E88-100  
 Calibration due on 26/02/2016

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*T. J. Shah*



*manoj*  
Analyst



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Ref. No.: 68102/2015-16

Date: 02/03/2015

### Performance Evaluation of Air Pollution Control Equipments Pipe Plant (GPCB ID:18036)

Name of company: JINDAL SAW LIMITED,  
Village: Samaghogha,  
Tal.: Mundra Dist: Kutch

Test Method: As per IS Standards - 11256, Part - 1/3

Sr. No.	Particulars	Unit	S - 7	S - 8	S - 12	S - 10	S - 22
01	Date of Sampling		20/02/2015	16/02/2015	09/02/2015	09/02/2015	10/02/2015
02	Attached to		Sand Reclamation	Common stack Converter - I & II	Core Cleaning & Dusting - I	Core Cleaning & Dusting - II	Mg Converter - III
03	Stack Height	Meter	32	30	30	33	30
04	Stack Diameter	Meter	0.9	0.5	0.6	0.6	0.5
05	Stack Temperature	°C	114	56	53	57	52
06	Ambient Temperature	°C	30	28	27	29	28
07	Average Velocity of Flue Gases	m/sec.	37.5	16.7	15.2	16.1	15.9
08	IsoKinetic Flowrate for Sampling	LPM	14	27	25	27	24
09	Inlet	mg/Nm <sup>3</sup>	3794	4331	3953	4234	4401
10	Outlet	mg/Nm <sup>3</sup>	50	37	50	48	29
11	Efficiency	%	96.97	99.15	98.05	88.91	99.34

Instrument Used: Stack Monitoring Kit - Scotch make - ESS 100

Calibration due on 22/06/2015

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Ref. No. : EB2022015-18

Date : 02/03/2016

### Performance Evaluation of Air Pollution Control Equipments Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED.

Village: Samagraha,

Tal.: Mandla, Dist. Kukra

Test Method : As per IS Standards - 11265 Part - 102

Sr. No.	Particulars	Unit	S - 8	S - 10	S - 15	S - 16	S - 20	S - 21	S - 23
01	Color of Sampling	---	05/02/2016	Not in operation during visit	05/02/2016	Not in operation during visit	15/02/2016	Not in operation during visit	01/03/2016
02	Attached to	---	Zinc Coating - I	Barrel Grinding-I	Zinc Coating - II	Barrel Grinding-II	Zinc Coating - III	Barrel Grinding-III	Zinc Coating - IV & V
03	Stack Height	Meter	30	30	30	30	30	30	30
04	Stack Dia. Diameter	Meter	0.6	0.6	0.6	0.6	0.6	0.6	0.6
05	Stack Temperature	°C	60	---	54	---	48	---	49
06	Ambient Temperature	°C	27	---	29	---	27	---	29
07	Average Velocity of Flue Gases	m/sec	16.2	---	16.0	---	20.0	---	14.1
08	Isokinetic Flowrate for Sampling	LPM	26	---	27	---	12	---	24
09	TSS	mg/Nm <sup>3</sup>	1929	---	2015	---	2122	---	1603
10	Coarse	mg/Nm <sup>3</sup>	18	---	16	---	17	---	13
11	Efficiency	%	91.07	---	98.25	---	98.20	---	99.19

Instrument Used : Stack Monitoring Kit - Ecodesign - FSS 100

Calibration due on 23/08/2016

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Ref. No. : 583/02/2015-15

Date: 02/03/2016

### Performance Evaluation of Air Pollution Control Equipments

#### Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal.: Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255\_Part - 1/5

Sr. No.	Particulars	Unit	S - 1	S - 5	S - 6	S - 8
01	Date of Sampling	—	16/02/2016	15/02/2016	16/02/2016	05/02/2016
02	Attached to	—	Mg Treatment	Zinc Coating	Tri-Grinding	Zinc Coating machine
03	Stack Height	Meter	30	30	30	30
04	Stack Dia; Diameter	Meter	1.00	1.00	1.00	0.6
05	Stack Temperature	°C	54	48	43	41
06	Ambient Temperature	°C	27	28	30	29
07	Average Velocity of Flue Gases	m/sec.	12.5	12.5	12.8	10.6
08	IsoKinetic Flowrate for Sampling	LPM	21	22	23	19
09	Inlet	mg/Nm <sup>3</sup>	3115	3321	2821	1520
10	Outlet	mg/Nm <sup>3</sup>	35	22	16	11
11	Efficiency	%	98.88	99.27	99.43	99.28

Instrument Used : Stack Monitoring KI - Electroprobe - ES8 100

Calibration due on 26/06/2016

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Ref. No. : 584/02/2015-18

Date : 02/03/2016

### Performance Evaluation of Air Pollution Control Equipments

#### Blast Furnace Plant-2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,

Village: Samaghagha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255\_Part 1/3

Sr. No.	Particulars	Unit	S - 1	S - 4	S - 6
01	Date of Sampling	—	13/02/2016	13/02/2016	13/02/2016
02	Attached to	—	Dedusting System	Coke fire building dust collecting system	Iron Ore fine & Dust Collecting System
03	Stack Height	Meter	40	30	30
04	Stack Duct Diameter	Meter	1.5	0.85	0.85
05	Stack Temperature	°C	65	72	48
06	Ambient Temperature	°C	29	29	30
07	Average Velocity of Flue Gases	m/sec	37.6	16.6	15.2
08	IsoKinetic Flowrate for Sampling	LPM	15	27	26
09	Inlet	mg/Nm <sup>3</sup>	4251	1597	1634
10	Outlet	mg/Nm <sup>3</sup>	31	5	5
11	Efficiency	%	99.20	99.68	99.69

Instrument Used : Stack Monitoring Kit - EcoTech make - ESS 100

Calibration due on 25/09/2013

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Ref No. :565/02/2016-16

Date : 02/06/2016

### STACK EMISSION MONITORING RESULTS

#### Sinter Plant - 1(GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,  
Village: Samaghogha,  
Ta. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255 Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6
01	Date of Sampling	---	15/02/2016	Not in operation during visit	18/02/2016	Not Running During Visit	Not Running During Visit	19/02/2016
02	Time of sampling	---	14:15		9:10			11:20
03	Stack Attached to	---	Fuel & Flux Crusher and Screening building	Fuel & Flux Crushing House	Sinter Furnace	Primary Mixture House	Secondary Mixture House	Discharge End
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	ESP	---	---	ESP
05	Stack Height	Meter	32.0	27.00	59	19.75	38.08	32
06	Stack Diameter	Meter	1.40	1.40	2.0	1.25	1.25	1.30
07	Stack Temperature	°C	41	---	149	---	---	127
08	Ambient Temperature	°C	29	---	26	---	---	29
09	Average Velocity of Flue Gases	m/sec.	6.5	---	11.3	---	---	18.8
10	Isokinetic flow rate for P.M. Sampling	LPM	27	---	15	---	---	27
11	Gaseous Sampling Flow Rate	LPM	---	---	2.0	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	100	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	21	---	39	---	---	28
14	Permissible limits for SO <sub>2</sub>	ppm	NA	NA	100	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	ppm	---	---	NU	---	---	---
16	Permissible limits for NO <sub>x</sub>	ppm	NA	NA	50	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	ppm	---	---	7.9	---	---	---

Note : Minimum Detectable Limit of SO<sub>2</sub> & NO<sub>x</sub> is 0.1 and 0.01 ppm respectively.

NA= Not Applicable

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100

Calibration due on : 25/08/2016



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Ref. No. : 556020216-16

Date : 02/08/2016

### STACK EMISSION MONITORING RESULTS

Sinter Plant -2 (GPCB ID:28017)

Name of company : JINDAL SAW LIMITED,

Village: Somnathpali,

Tal - Wadhwa Dist.Kutch

Test Method : As per IS Standards - 14295 Part - 1/2007

Sl. No.	Particulars	Unit	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	S-10
01	Stack Sampling	---			04/08/2016				12/02/2016		12/02/2016	
02	Time of sampling	hr	Not in Operation During The Visit	Not in Operation During The Visit	14.30	Not in Operation During The Visit	NA	NA	9.30	Not in Operation During The Visit	10.15	Not in Operation During The Visit
03	Stack Addressed to	---	Fuel crushing de-duster system Fan#	Fuel crushing de-duster system/Fan#	Fuel Screening products system (Flux Screening)	No.1 Transfer Station De-duster System	Primary Mixer De-duster system	Secondary Mixer De-duster system	Sinter Furnace	Transfer station no. 4 & 5 dedusting system	Discharging end of sinter dedusting system	Pulverized Coal Injection
04	Air Pollution Control Measures	---	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	ESP	Dust Collector	ESP	Bag Filter
05	Stack Height	Meter	35	50	30	30	30	30	50	30	50	32
06	Stack Diameter	Meter	0.7	0.7	0.7	0.7	---	---	0.7	0.7	1.3	1.00
07	Stack Temperature	°C	---	---	26	---	---	---	134	---	101	---
08	Ambient Temperature	°C	---	---	29	---	---	---	28	---	29	---
09	Average Velocity of Flue Gases	m/sec.	---	---	6.7	---	---	---	13.5	---	31.9	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	12	---	---	---	18	---	12	---
11	Gas flow Sampling Flow Rate	LPM	---	---	---	---	---	---	20	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	---	---	23	---	---	---	46	---	74	---
14	Permissible limits for SO <sub>2</sub>	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO <sub>2</sub>	ppm	---	---	---	---	---	---	ND	---	---	---
16	Permissible limits for NO <sub>x</sub>	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NO <sub>x</sub>	ppm	---	---	---	---	---	---	NT	---	---	---

Note: Measured Concentration Limit of SO<sub>2</sub> & NO<sub>x</sub> is 2.4 and 6.0 mg/Nm<sup>3</sup> respectively.

Laboratory Name : RAJA Marketing Co. - Bhandal Road - Gondal

Calibration No. : 14960004

NA=Not Applicable



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Ref. No. JSR/02/2015-16

Date: 02/03/2016

### STACK EMISSION MONITORING RESULTS

#### BLAST FURNACE - 2 (GPCB ID:29026)

Name of company: JINDAL SAW LIMITED,

Village: Samkhyogha,

Tal: Mundwa, Dist: Kutch

Test Method: As per IS Standards - 11263 Part - 1/2007

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	12/02/2016	15/02/2016	Monitoring Not Possible	19/02/2016	13/02/2016
02	Time of sampling	Hr.	9.30	8.30		14.05	15.45
03	Stack Attached to	---	Dedusting System	Stove Stack	Hare Stack	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measure	---	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	43.0	85.0	45	30.0	30.0
06	Stack Diameter	Meter	1.5	2.250	---	---	0.35
07	Stack Temperature	°C	47	219	---	51	35
08	Ambient Temperature	°C	29	27	---	29	30
09	Average Velocity of Flue Gases	m/sec.	30.5	3.1	---	12.7	10.5
10	Isokinetic flow rate for P.M. Sampling	LPM	13	8	---	22	16
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	160	150
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	34	3	---	5	5
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	NA	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	---	---	---	---	---
16	Permissible limits for NO <sub>x</sub>	mg/Nm <sup>3</sup>	NA	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	mg/Nm <sup>3</sup>	---	---	---	---	---

Note: Minimum Detectable Limit of SO<sub>2</sub> & NO<sub>x</sub> is 0.1 and 0.01 ppm respectively.

Instrument Used: Stack Monitoring Kit - Cootech make - ESS 100

Calibration due on 25/05/2016

NA=Not Applicable





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Ref. No. : 599022015-16

Date: 02/03/2016

### STACK EMISSION MONITORING RESULTS

#### BLAST FURNACE-1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,  
Village: Sameghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255\_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	--	11/02/2015	11/02/2015	11/02/2015	11/02/2015	Monitoring Not Possible
02	Time of sampling	Hr.	9.43	14.50	15.30	8.00	Monitoring Not Possible
03	Stack Attached to	--	Dedusting System	Boiler - I	Boiler - II	Stove Stack	Flare Stack
04	Air Pollution Control Measures	--	Bag Filter	---	---	---	---
05	Stack Height	Meter	35.0	45	46	50.0	30
06	Stack Diameter	Meter	1.5	1.4	1.4	2.25	---
07	Stack Temperature	°C	43	168	175	228	---
08	Ambient Temperature	°C	29	26	20	20	---
09	Average Velocity of Flue Gases	m/sec.	11.2	4.7	5.1	3.5	---
10	Isokinetic flow rate for P.M. Sampling	LPM	20	13	14	9	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	5	9	10	2	---
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	40	40	40	40
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	ND	ND	ND	ND	---
16	Permissible limits for NO <sub>x</sub>	mg/Nm <sup>3</sup>	25	25	25	25	25
17	Measured Concentration of NO <sub>x</sub>	mg/Nm <sup>3</sup>	ND	ND	ND	ND	---

Note : Minimum Detectable Limit of SO<sub>2</sub> & NO<sub>x</sub> is 0.1 and 0.01 ppm respectively  
Instrument Used : Stack Monitoring Kit - Ecotech make - RSS 100  
Calibration due on 25/03/2016

N.D=Not Detectable

Royal Environment Auditing & Consultancy Service

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Ref. No. : 569/02/2015-18

Date : 02/03/2016

### STACK EMISSION MONITORING RESULTS

#### Captive Power Plant (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED.

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255\_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4
01	Date of Sampling	--	Not In Operation During The Visit	17/02/2016	17/02/2016	Not In Operation During The Visit
02	Time of sampling	Hr.		10:30	11:35	
03	Stack Attached to	--	6000 KVA D.G.	3240 KVA D.G.	3240 KVA D.G.	1180 KVA D.G.
04	Air Pollution Control Measures	--	--	--	--	--
05	Stack Height	Meter	57.0	35	35	35
06	Stack Diameter	Meter	1.584	1.484	1.484	0.990
07	Stack Temperature	°C	--	251	246	--
08	Ambient Temperature	°C	--	28	30	--
09	Average Velocity of Flue Gases	m/sec.	--	24.7	24.2	--
10	Isokinetic flow rate for P.M. Sampling	LPM	--	26	26	--
11	Gaseous Sampling Flow Rate	LPM	--	2.0	2.0	--
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	--	67	61	--
14	Permissible limits for SO <sub>2</sub>	ppm	100	100	100	100
15	Measured Concentration of SO <sub>2</sub>	ppm	--	29.4	26.6	--
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	--	23.1	23.9	--

Note: Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : Stack Monitoring Kit - Ecostech make - 888 100

Calibration due on 26/03/2016

Royal Environment Auditing & Consultancy Service



memoj  
Analyst





# Royal

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Ref. No. : 09102/2016-16

Date : 09/03/2016

### STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,  
Village: Samaghogha,  
Tal. : Munira, Dist. Kutch

Test Method : As per IS Standards - 11255\_1/2/3/7

Sr. No.	Particulars	Unit	S - I	S - II	S - III	S - IV	S - V	S - VI
01	Date of Sampling	—	18/02/2016	09/02/2016	06/02/2016	15/02/2016	10/02/2016	15/02/2016
02	Time of sampling	hr.	9.40	9.20	11.15	8.10	10.00	11.00
03	Stack Attached to	—	Common stack Mg Converter-4&II	Zn Coating - I	Zn Coating - II	Zn Coating - III	Mg Converter - III	Zn Coating - IV & V
04	Air Pollution Control Measures	—	Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & bag filter	Cyclone Separator & Bag Filter	Bag Filter	Cyclone Separator & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.5	0.5	0.6	0.6	0.5	0.9
07	Stack Temperature	°C	45	42	44	40	55	37
08	Ambient Temperature	°C	38	37	29	27	28	29
09	Average Velocity of Flue Gases	m/sec.	25.7	13.7	14.2	14.5	10.9	4.3
10	Isokinetic flow rate for P.V. Sampling	LPM	12	24	25	26	10	10
11	Gaseous sampling flow rate	LPM	2.0	—	—	—	2.0	—
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	20 (Zn)	20 (Zn)	20 (Zn)	150	20 (Zn)
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	37	10 (Zn)	10 (Zn)	17 (Zn)	25	13 (Zn)
14	Permissible limits for SO <sub>2</sub>	ug/Nm <sup>3</sup>	40	NA	NA	NA	40	NA
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	ND	—	—	—	ND	—
16	Permissible limits for NO <sub>x</sub>	mg/Nm <sup>3</sup>	25	NA	NA	NA	25	NA
17	Measured Concentration of NO <sub>x</sub>	mg/Nm <sup>3</sup>	2.1	—	—	—	1.7	—

Note : Min must Detectable Limit of SO<sub>2</sub> & NO<sub>x</sub> is 0.1 and 0.01 ppm respectively.

Instrument Used : Stack Monitoring Kit - Cootech make - E38 100

Calibration due on 25/03/2016

NA-Not Applicable





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Ref. No.: 502/02/2016-16

Date: 02/03/2016

### STACK EMISSION MONITORING RESULTS

#### Pipe Plant (GPCB ID:18036)

Name of company: JINDAL SAW LIMITED,  
Village: Samaghogha,  
Tal.: Mantra, Dist. Kutch

Test Method: As per IS Standards - 11255\_10/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 12	S - 18
01	Date of Sampling	---	08/02/2016	08/02/2016	08/02/2016	08/02/2016	08/02/2016	08/02/2016	08/02/2016	08/02/2016
02	Time of sampling	hr.	08:45	09:30	10:15	11:05	14:20	15:40	08:10	15:05
03	Stack Attached to	---	Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV	Core Shop-V	Core Shop-VI	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II
04	Air Pollution Control Measures	---	---	---	---	---	---	---	Bag Filter	Bag Filter
06	Stack Height	meter	30	30	30	30	30	30	30	30
08	Stack Diameter	meter	0.684	0.516	0.684	0.516	0.684	0.684	0.6	0.6
07	Stack Temperature	°C	38	37	38	38	40	42	45	48
05	Ambient Temperature	°C	25	27	27	28	28	28	27	28
09	Average Velocity of Flue Gases	m/sec.	4.0	4.2	4.7	5.7	5.9	5.5	13.8	14.7
10	Isokinetic flow rate for P.M. Sampling	LPM	13	17	19	23	24	23	24	28
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	15	25	30	37	42	38	38	43
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	40	40	40	40	40	40	40
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	1.3	1.7	1.9	2.4	1.8	2.1	ND	ND
16	Permissible limits for NO <sub>x</sub>	mg/Nm <sup>3</sup>	25	25	25	25	25	25	25	25
17	Measured Concentration of NO <sub>x</sub>	mg/Nm <sup>3</sup>	2.3	3.1	2.5	2.1	3.3	2.2	4.0	4.1

Note: Minimum Detectable Limit of SO<sub>2</sub> & NO<sub>x</sub> is 0.1 and 0.01 respectively.

Instrument Used: Stack Monitoring Kit - Ecotech make - FSS 100

Calibration due on 25/02/2016

ND- Not Detectable

Royal Environment Auditing & Consultancy Service

*[Handwritten Signature]*



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Analyst



# Royal

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Ref. No.: 506/2025/MS-1X

Date: 02/03/2016

### STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of Company: JINDAL SAW LIMITED

Village: Ramnagar

Tal: Munda, Dist: Kutch

Test Method: As per IS Standards - 10256:10/07

Sr. No.	Particulars	Unit	S - 7	S - 10	S - 13	S - 14	S - 16	S - 17	S - 21	S - 24
01	Date of Sampling	---	20/02/2016	Not in operation during visit	19/02/2016	13/02/2016	Not in operation during visit	15/02/2016	Not in operation during visit	Not in operation during visit
02	Time of sampling	---	16.00	---	5.10	10.15	---	11.35	---	---
03	Stack Attached to	---	Stack Reclamation	Barrel Grinding - I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding - II	Annealing Furnace - II	Barrel Grinding - II	Barrel Grinding - MSV
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	Bag Filter	---	Bag Filter	Bag Filter
05	Stack Height	Meter	35	33	35	32	30	32	30	30
06	Stack Diameter	Meter	0.9	0.9	1.375	1.375	0.9	1.375	0.9	0.9
07	Stack Temperature	°C	37	---	163	166	---	166	---	---
08	Ambient Temperature	°C	30	---	27	29	---	29	---	---
09	Average Velocity of Flue Gases	m/sec	14.2	---	5.2	5.5	---	5.4	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	20	---	10	16	---	16	---	---
11	Gaseous Sampling Flow Rate	LPM	2.0	---	2.0	2.0	---	2.0	---	---
12	Permissible limits for PM	ng/m <sup>3</sup>	150	150	104	161	150	150	160	150
13	Measured Concentration of PM	ng/m <sup>3</sup>	39	---	13	10	---	12	---	---
14	Permissible limits for SO <sub>2</sub>	ng/m <sup>3</sup>	40	40	100 (PPM)	100 (PPM)	40	100 (ppm)	40	40
15	Measured Concentration of SO <sub>2</sub>	ng/m <sup>3</sup>	7.2	---	3.1	4.2	---	3.5	---	---
16	Permissible limits for NO <sub>x</sub>	ng/m <sup>3</sup>	25	25	60 (PPM)	60 (PPM)	25	60 (PPM)	25	25
17	Measured Concentration of NO <sub>x</sub>	ng/m <sup>3</sup>	14.3	---	5.8 (PPM)	8.8 (PPM)	---	7.6 (PPM)	---	---

Note: Maximum Permissible Limit of SO<sub>2</sub> is less than 2.1 and CO is ppm measured hourly.

150 mg/m<sup>3</sup> Used: Stack Monitoring Kit - Sorbent (100) - SSS 100

Lab No: 02/03/2016

N/C= Not Collectable

Royal Environment Auditing & Consultancy Service

*[Handwritten Signature]*



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Analyst



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Ref No. : 894202016-18

Date : 02/02/2016

### STACK EMISSION MONITORING RESULTS

Pipe Plant (SDF-2) (GPCB ID: 18036)

Name of Company : JINDAL SAAR LIMITED,  
Wing: Garaphosa,  
Tal.: Varda, Dist. Kutch

Test Method : As per IS 5130 (Pt. 1) - 1982, 1987

Sr. No.	Particulars	Unit	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8
01	Date of Sampling	---	16/02/2016	17/02/2016	17/02/2016	17/02/2016	16/02/2016	16/02/2016	16/02/2016	09/02/2016
02	Time of sampling	Hr.	0:25	1:10	10:30	11:40	10:35	11:40	Not in operation during stack	11:00
03	Stack Attached to	---	Wegmentum Treatment	Socket Cleaning	Annularing Furnace - I	Annularing Furnace - II	Disc Coating	Tin Grinding Section	Pre & Post Heating	Zinc Coating Machine
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	Bag Filter	Bag Filter	---	---
05	Stack Height	Metre	35	30	45	45	35	30	30	30
06	Stack Diameter	Meter	1.20	0.90	0.85	0.85	1.00	1.00	1.05	1.20
07	Stack Temperature	°C	44	35	142	132	35	30	---	30
08	Ambient Temperature	°C	27	27	23	25	29	29	---	29
09	Average Velocity of Flue Gases	m/sec	4.2	3.7	4.5	4.2	8.0	6.8	---	3.5
10	Isokinetic flow rate for PM Sampling	LPM	17	15	14	12	16	18	---	14
11	Corrosion Sampling Flow Rate	LPM	---	---	2.0	2.0	---	---	---	---
12	Permissible Limits for PM	mg/M <sup>3</sup>	50	50	50	50	50	50	50	50
13	Measured Concentration of PM	mg/M <sup>3</sup>	30	14	10	12	22 (2-)	15	---	11
14	Permissible Limits for SO <sub>2</sub>	PPM	NA	NA	100	100	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	PPM	---	---	2.7	3.2	---	---	---	---
16	Permissible Limits for NO <sub>x</sub>	PPM	NA	NA	50	50	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	PPM	---	---	4.2	4.6	---	---	---	---

Note : Maximum Detectable Limit of SO<sub>2</sub> & NO<sub>x</sub> is 100 PPM (100 mg/M<sup>3</sup>)  
Reference used : Stack Monitoring Kit - Ecotech make - PPM-100  
Calibration on 25/02/2016

ND - Not Detectable  
NA - Not Applicable

Royal Environment Auditing & Consultancy Service

*[Handwritten Signature]*



*[Handwritten Signature]*  
Analyst

Ref No. : 595/02/2015-16

Date : 02/03/2016

**Form No. 37**  
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (z)(e).

- 1 Name of the Department/Plant: Sinter Plant-2 of JINDAL SAW LIMITED, Samaghgha. (GPOB ID:29017)
- 2 Raw materials, by products and finished products involved in the process. TOTAL DUST
- 3 Particulars of sampling

Date of Sampling : 16th February, 2016

Sr. No	Location Operation monitored	Identified Contaminants	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m <sup>3</sup>					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	3-5	4.0	10	Gravimetric	4	—	<i>Mandaj</i>	MR. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on : 02/11/2016

For: Royal Environment Auditing & Consultancy Service



*Mandaj*  
Authorized Sign

**Form No. 37**  
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment, required under Section 7-A (a)(c).

- 1 Name of the Department/Plant : Sinter Plant-1 at JINDAL SAW LIMITED, Sonmughgha, (GPCB ID: 31-166)
- 2 Raw materials, by products and finished products involved in the process: TOTAL DUST
- 3 Particulars of samples:

Date of Sampling : 16th February, 2016

Sr. No	Location Operation monitored	Identified Contaminant	Sampling Instrument used	Airborne Contamination			TWA concent ration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (In Block letters)
				Number of sample	Range	Average						
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	3.4	3.5	10	Gravimetric	4	—	<i>manoj</i>	Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on : 02/11/2016

For: Royal Environment Auditing & Consultancy Service

*Manoj*  
Authorized Sign



**Form No. 37**  
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(ii)

1. Name of the Department/Plant: BF Plant-1 at JINDAL SAW LIMITED, Samsatghoga. (GPCB ID: 1407)
2. Raw materials, by products and finished products involved in the process: TOTAL DUST & CO.
3. Particulars of sampling

Date of Sampling : 10th February, 2016

Sr. No	Location Operation monitored	Identified Contaminant	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average						
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler (AS 02)	02	17-19	18.0	55	Gravimetric	4	---	Mamuj	Mr. MANOJ SONRAT
		Total Dust			4-8	5.6	10					

Instruments used: Envirotech make personal sampler, Model No. IAS 001  
Calibration Due on : 02/11/2016

For, Royal Environment Auditing & Consultancy Service

*Mamuj*  
Authorized Sign



**Form No. 37**  
**(Prescribed under Rule 12-B)**

Register containing particulars of monitoring of working environment required under Section 7-A (a)(c).

1. Name of the Department/Plant: **BF Plant-2 at JINDAL SAW LIMITED, Sarangboghla, (CPCR 19-28073)**
2. Raw materials, by products and finished products involved in the process: **TOTAL DUST & CO.**
3. Particulars of sampling

Date of Sampling: 19th February, 2016

Sr. No	Location Operation monitored	Identified Contaminants	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (In block letters)
				Number of sample	Range	Average	mg/m <sup>3</sup>					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler IAS CO1	02	18-18	17.0	55	Gravimetric	5	---	<i>Manoj</i>	Mr. MANOJ SUNKAT
		Total Dust			3-6	4.5	10					

Instrument used: Envirotech make personal sampler, Model No. IAS CO1

Calibration Due on: 02/11/2016

For: Royal Environment Auditing & Consultancy Services

*Manoj*  
Signature Sign



**Form No. 37**  
**(Prescribed under Rule 12-B)**

Register containing particulars of monitoring of working environment required under Section 7-A (a)(2).

- 1 Name of the Department/Plant: DISP, JCO & Coating Units at JINDAL SAW LIMITED, Samagheppla, (GPCB ID: 18036)
- 2 Raw materials, by products and finished products involved in the process: TOTAL DUST
- 3 Particulars of samples:

Date of Sampling: 17th & 18th February, 2016

Sr. No	Location Operation monitored	Identified Contaminant	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average						
1	Splial Part (Nr. 10/00)	Total Dust	Personal Respirable Dust sampler (AS 301)	02	1-5	3.0	10	Gravimetric	4	---	<i>Mamraj</i>	MR. MANOJ SONRAT
2	JCO Plant (Nr. JCO Press)	Total Dust		02	2-5	5.0	10	Gravimetric	3	---		
3	Coating Plant-1 (Shot Blasting Area)	Total Dust		02	4-6	4.5	10	Gravimetric	4	---		
4	DCM Area (SDP, DISP)	Total Dust		02	5-6	5.5	10	Gravimetric	5	---		
5	Coating Plant-2 (Shot Blasting Area)	Total Dust		02	4-7	5.5	10	Gravimetric	5	---		
6	DCM Area (SDP, 2)	Total Dust		02	5-8	6.5	10	Gravimetric	4	---		

Instruments used: lowtech make personal sampler, Model No. MS 001

Calibration Date: 10/11/2016

For: Royal Environment Auditing & Consultancy Services



*Mamraj*  
Authorized Sign



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Ref. No. : 600/02/2015-16

Date : 02/03/2016

### WORK ZONE NOISE LEVEL MEASUREMENT

#### SINTER PLANT- 1 (GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	43.9	49.6	45.9
2	Inside Mechanical Room	50.1	55.9	51.8
3	Inside Electrical Room	49.7	54.3	50.3
4	Inside Plant Office	53.1	60.8	55.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Recalibration is due on : 25/09/2016

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Manoj  
Analyst



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Ref. No. : 301/02/2015-16

Date : 02/03/2016

### WORK ZONE NOISE LEVEL MEASUREMENT BLAST FURNACE- 1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Nr. Stock House	68.1	76.7	69.1
02.	Inside Control Room	47.5	56.1	49.8
03.	Inside Control room of Cast House	48.7	53.4	50.4
04.	Inside Laboratory	44.9	50.1	46.1
05.	Inside Control Room of Blower House	58.2	64.7	61.2
06.	Inside Control Room of CFP	54.9	53.9	56.7

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service



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Analyst



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Ref. No. : 602/02/2015-16

Date : 02/03/2016

### WORK ZONE NOISE LEVEL MEASUREMENT PIPE PLANT (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha

Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	50.8	55.6	53.4
02	Inside Control Room – Mill Area of Spiral Plant	62.3	66.2	63.5
03	Nr. Pipe Cutting Area of Spiral Plant	69.5	79.3	73.3
04	Inside JCO Plant	66.7	77.8	69.2
05	Inside DISP / SDP Plant	70.9	81.3	75.4
06	Inside Coating Plant	67.4	76.2	72.2
07	Nr. CCM SDP-2	66.2	74.5	68.9
08	Inside Control Room of Annealing Furnace of SDP-2	52.5	56.3	53.7
09	Nr. Zinc Coating SDP-2	68.7	79.8	74.6
10	Near Mould Shop	78.3	89.6	80.5

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Recalibration is due on : 25/09/2016





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Ref. No : 603/02/2015-16

Date : 02/03/2016

### AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED.

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 22nd February, 2016

Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Admin. Building	44.0	52.3	45.6	39.7	45.5	41.5
02.	Old Colony	38.7	43.4	40.3	35.5	41.2	36.4
03.	Nr. LPG Yard	54.5	62.8	55.7	50.8	56.7	52.2
04.	New Colony (Schcol)	39.5	45.9	41.2	33.3	40.3	37.2
05.	Nr. SDP-2	58.8	66.3	59.7	55.4	61.8	57.3
06.	Nr. Coating Plant	56.3	65.4	60.6	53.7	63.3	56.6
07.	Nr. Gate No. 2	57.8	64.7	59.2	51.4	59.2	52.9
08.	Nr. Sinter Plant-1	62.5	67.2	63.2	55.7	61.4	57.4
09.	Nr. Sinter Plant-2	59.8	68.3	61.8	56.8	62.7	58.3
10.	Nr. Blast Furnace-1	58.5	62.8	59.3	53.7	60.5	55.2
11.	Nr. Blast Furnace-2	57.8	63.2	58.5	47.2	53.4	50.7
12.	Nr. Main Gate (Security Office)	45.4	54.4	47.3	41.6	46.3	43.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-50 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service



Mamta  
Analyst



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Ref. No. : 004/02/2015-16

Date : 02/03/2016

### WORK ZONE NOISE LEVEL MEASUREMENT BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED.

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	59.3	64.5	60.7
02.	Nr. Stock House	66.7	71.4	68.3
03.	C/R Blower House	67.5	76.2	70.6

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Recalibration is due on : 25/09/2016

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Ref. No. : #05/02/2015-16

Date : 02/03/2016

### WORK ZONE NOISE LEVEL MEASUREMENT

#### SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	52.6	54.8	53.4
02.	Inside Operator Room	61.5	66.9	62.8
03.	Near Proportioning Bulding	65.2	67.8	66.7
04.	Near Crusher House	69.8	77.7	72.3

Instruments used : Sound level meter, Model : SL - 4030 (Liutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Recalibration is due on : 25/09/2016

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Ref. No. : 608/02/2015-16

Date : 02/03/2016

### REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : JINDAL SAW LIMITED,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Source of Sample Collection : Sewage Treatment Plant (Inlet & Outlet)

Date of Sampling : 26/02/2016

Test Method : As per IS Standards - 3021

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	---	7.52	7.29
02.	BOD (3 Days at 27°C)	mg/l	<20	186	13
03.	Total Dissolve Solid	mg/l	---	1693	1854
04.	COD	mg/l	---	278	45
05.	Total Suspended Solid	mg/l	<30	306	22
06.	Oil & Grease	mg/l	---	ND	ND
07.	Residual Chlorine	mg/l	Min. 0.5	---	0.60

ND=Not Detectable

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Ref. No. : RA/000016/16

Date : 02/02/2016

### NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - FEBRUARY : 2016

Name of company : JINDAL SAW LIMITED

Village : Samagraha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards : IS 102\_2012/2009

Sr. No.	Particulars	Unit	Location No.1 : Security Main Gate (S)							
			01		02		03		04	
01.	No. of Week	---								
02.	Date & Time Starting of Monitoring	---	03/02/2016; 08:30	04/02/2016; 09:10	05/02/2016; 09:00	10/02/2016; 09:30	15/02/2016; 08:15	15/02/2016; 08:30	22/02/2016; 08:25	26/02/2016; 08:10
03.	Date & Time Ending of Monitoring	---	04/02/2016; 05:30	05/02/2016; 05:10	10/02/2016; 08:00	12/02/2016; 08:10	16/02/2016; 08:15	20/02/2016; 05:30	23/02/2016; 08:25	27/02/2016; 08:10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	SNE	NE	NW	NE	NW	NNE	NNE	NW
06.	Average Wind Speed	Km/hr.	1.5	3.0	1.7	2.7	2.7	2.7	2.2	2.1
07.	Average flow rate for Dust Monitoring PM10	m <sup>3</sup> /hr.	1.27	1.79	1.23	1.22	1.18	1.20	1.19	1.21
08.	Average flow rate for Dust Monitoring PM2.5	m <sup>3</sup> /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM10*	µgm3	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM10	µgm3	43	31	43	29	40	37	40	45
12.	Permissible limits for PM2.5*	µgm3	60	60	60	60	60	60	60	60
13.	Measured Concentration of PM2.5	µgm3	19	13	21	16	22	13	17	20
14.	Permissible limits for SO2*	µgm3	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO2	µgm3	4.8	4.1	3.8	3.4	4.2	3.6	4.8	4.3
16.	Permissible limits for NO2*	µgm3	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO2	µgm3	14.0	14.0	15.2	16.1	14.8	16.4	12.7	16.2
18.	Permissible limit for CO **	µgm3	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µgm3	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

Instrument used : (1) 3 Nos. NIOS (APM - 21701), (2) 3 Nos. of Gaseous Sampler (RAS 102) (3) 3 Nos. PM 2.5 Sampler (RAS 127)

All Calibration done : 2015/06/02

\*Permissible Limits as per IS/ISIRI Standard 151/November 2005.

B.D.L. = Below Detectable Limit





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Ref. No : 579022015-16

Date : 02/02/2016

### NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - FEBRUARY : 2016

Name of company : JINDAL SAW LIMITED

Village: Samagholia,

Tal.: Mundwa, Dist. Kutch

Test Method : As per IS Standards - 5102, 5103, 5104

Sr. No.	Particulars	Unit	Location No.2 : Sinter plant - 1 (N/W)							
			01		02		03		04	
01.	No. of Week	---	01		02		03		04	
02.	Date & Time Starting of Monitoring	---	03/02/2016 08:30	05/02/2016 08:25	06/02/2016 08:20	12/02/2016 08:30	10/02/2016 08:35	15/02/2016 08:25	22/02/2016 08:45	26/02/2016 08:25
03.	Date & Time Ending of Monitoring	---	04/02/2016 08:35	07/02/2016 08:25	10/02/2016 08:20	13/02/2016 08:00	16/02/2016 08:35	20/02/2016 08:25	28/02/2016 08:45	27/02/2016 08:25
04.	Direction of Sampling	Mts	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	ENE	NE	W	NE	NW	ENE	NNE	NNW
06.	Average Wind Speed	Km/hr	1.6	3.0	1.7	2.7	2.7	2.7	2.2	2.1
07.	Average flow rate for Dust Monitoring PMS	m <sup>3</sup> /min	1.16	1.18	1.17	1.12	1.12	1.14	1.18	1.2
08.	Average flow rate for Dust Monitoring PMS	m <sup>3</sup> /hr	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM <sub>10</sub> *	µg/m <sup>3</sup>	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM <sub>10</sub>	µg/m <sup>3</sup>	42	39	40	40	40	43	50	50
12.	Permissible limits for PM <sub>2.5</sub> *	µg/m <sup>3</sup>	60	60	60	60	60	60	60	60
13.	Measured Concentration of PM <sub>2.5</sub>	µg/m <sup>3</sup>	20	15	17	22	23	18	24	22
14.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	50	50	50	50	50	50	50	50
15.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	7.1	6.9	3.1	4.8	3.2	3.7	3.8	4.2
16.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	15.0	15.4	10.9	10.7	10.1	15.8	14.0	13.8
18.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m <sup>3</sup>	B.D.L.	B.D.L.	B.D.L.	B.G.I.	B.U.L.	B.O.L.	B.D.L.	B.D.L.

\*Instrument used: (1) 2 Nos. RGA (APM - 217 H), (2) 1 Nos. of Gaseous Sampler (GAAS 102) (3) 1 Nos. PM 2.5 Sampler (APR 127)

All Calibration see on: 52659966

\*\*Permissible Limit as per IS (IAAQ) Standard (28 November 2008)

B.D.L. = Below Detection Limit



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Ref. No. : 57302/2015-16

Date : 02/03/2016

### NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - FEBRUARY : 2016

Name of company : JINCAL SAW LIMITED

Village : Samaghogha,

Tal : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5152, 26/10/23

Sr. No	Particulars	Unit	Location No.3 : Nr. Work Shop Spiral-II (W)							
			01		02		03		04	
01.	No. of Week	---								
02.	Date & Time Starting of Monitoring	---	03/02/2016 08.15	03/02/2016 09.40	04/02/2016 08.25	12/02/2016 09.10	15/02/2016 08.10	19/02/2016 09.45	22/02/2016 09.00	26/02/2016 08.40
03.	Date & Time Ending of Monitoring	---	04/02/2016 08.15	07/02/2016 09.40	10/02/2016 08.25	13/02/2016 09.10	16/02/2016 08.20	20/02/2016 09.45	23/02/2016 09.00	27/02/2016 08.40
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction(From)	---	NNE	NE	NW	NE	NNW	NNE	NNE	NNW
06.	Average Wind Speed	Km/Hr	1.5	3.0	1.7	2.7	2.7	2.7	2.2	2.1
07.	Average flow rate for Dust Monitoring PM <sub>10</sub>	m <sup>3</sup> /min	1.22	1.20	1.18	1.21	1.20	1.17	1.15	1.16
08.	Average flow rate for Dust Monitoring PM <sub>2.5</sub>	m <sup>3</sup> /hr	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM <sub>10</sub> *	µg/m <sup>3</sup>	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM <sub>10</sub>	µg/m <sup>3</sup>	34	31	30	33	30	40	42	39
12.	Permissible limits for PM <sub>2.5</sub> *	µg/m <sup>3</sup>	50	50	50	50	50	50	50	50
13.	Measured Concentration of PM <sub>2.5</sub>	µg/m <sup>3</sup>	12	15	13	15	18	22	14	16
14.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	2.2	2.0	3.2	3.6	4.5	4.8	3.3	4.1
16.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	13.9	12.8	13.0	14.0	13.7	14.3	11.7	11.4
18.	Permissible limit for CO *	ppm	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	ppm	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L

Instrument used : (1) 5 hrs. PMS (PM<sub>10</sub>-2170L), (2) 1 hr. of Gormox 8110 (CO<sub>2</sub> IC) (3) 5 hrs. PM 2.5 Samler (4) 8 hrs.

All Calibration done on : 02/06/2015

\*Permissible Air Limits are as per WHO Ambient Air Quality Standard 2005.

B.D.L\* Below Detectable Limit

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Ref. No. : 574/02/2015-15

Date : 02/03/2016

### AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5102\_2/5/10/23

Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	Location of Ambient	---	Old Colony (Nr. Environment Laboratory)	Nr. Rain Water Harvesting	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	---	11/02/2016	11/02/2016	12/02/2016	13/02/2016
03.	Time of sampling	---	8.30	8.50	9.45	9.35
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNW	NNW	NNE	NNE
06.	Average Wind Speed	Km/Hr.	1.7	1.7	2.3	2.3
07.	Average flow rate during sampling	m <sup>3</sup> /Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m <sup>3</sup>	100	100	100	100
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	29	43	46	36
11.	Permissible limits for PM 2.5*	µg/m <sup>3</sup>	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	13	19	22	17
13.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	1.8	2.0	3.4	3.1
15.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	8.3	11.5	10.3	9.5
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	BDL	BDL	HUL	BDL

Instrument used : (1) Ecotech make 3 Nos. RCS (AFM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (AFM 106), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

\*Permissible Limits are as per N/AQ Standard 10th November 2010

BDL = Below Detectable Limit





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Ref. No. : 575/02/2015-16

Date : 02/03/2016

### AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED  
 Village: Samaghogha,  
 Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_26/10/23

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (ESE)	AAQM - 8 (E)
01.	Location of Ambient	---	Labour Colony	New Colony (Shopping Centre)	VIP Guest House	Weigh bridge
02.	Date of sampling	---	13/02/2016	13/02/2016	14/02/2016	14/02/2016
03.	Time of sampling	---	9.00	9.20	9.15	9.35
04.	Duration of Sampling	Min.	1443.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNE	NNE	NE	NE
06.	Average Wind Speed	Km/Hr.	1.0	1.0	2.7	2.7
07.	Average flow rate during sampling	m <sup>3</sup> /Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m <sup>3</sup>	100	100	100	100
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	44	31	37	50
11.	Permissible limits for PM 2.5*	µg/m <sup>3</sup>	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	21	18	19	24
13.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	4.5	2.8	3.5	7.4
15.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	10.9	11.4	14.5	16.9
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	BDL	BDL	BDL	BDL

Instrument Used : (1) EcoLab make 3 Nos. RDS (APM - 217 5L), (2) 3 Nos. Gasoline Sampling Kit (AQM 100), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on: 25/05/2016

BDL= Below Detectable Limit

\*Permissible limits are as per NAAQ Standard 10th November 2014.





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Ref. No. 576/02/2015-16

Date : 02/03/2016

### FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED  
Village: Samaghogha,  
Tal : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182, Part - 2/3/10/20/22

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	Location of Ambient	---	RMH Junction House	RNH Stock House	Sinter RMH Yard
02.	Date of sampling	---	17/02/2016	17/02/2016	19/02/2016
03.	Time of sampling	---	8.15	8.35	8.00
04.	Duration of Sampling	Hr.	8.00	8.00	6.00
05.	Dominant Wind Direction (From)	---	NNW	NNW	NNE
06.	Average Wind Speed	Km/Hr.	4.2	4.2	4.6
07.	Average flow rate during sampling	m <sup>3</sup> /Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m <sup>3</sup>	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	1361	1243	1108
11.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	150	150	150
12.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	12.8	11.8	13.7
13.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	120	120	120
14.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	25.8	26.3	24.9
15.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
16.	Measured Concentration of CO	µg/m <sup>3</sup>	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m <sup>3</sup>	2	2	2
18.	Measured Concentration of Pb	µg/m <sup>3</sup>	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (AFM 105)  
All Calibration due on : 25/05/2016

BDL = Below Detectable Limit  
ND = Not Detectable





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Ref. No. :577/02/2015-16

Date : 02/03/2016

### FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED

Village : Samnagaha.

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 6182 Part - 2:6/10/2012

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	Location of Ambient	---	Sinter 2 Ground Hopper	DISP "GCM" Arca	BF CAST HOUSE
02.	Date of sampling	---	18/02/2016	19/02/2016	18/02/2016
03.	Time of sampling	---	8.20	8.10	8.30
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	---	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	4.8	4.6	4.6
07.	Average flow rate during sampling	m <sup>3</sup> /hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m <sup>3</sup>	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	746	513	550
11.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	150	150	150
12.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	10.7	14.8	11.4
13.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	120	120	120
14.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	21.6	27.5	25.2
15.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
16.	Measured Concentration of CO	µg/m <sup>3</sup>	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m <sup>3</sup>	2	2	2
18.	Measured Concentration of Pb	µg/m <sup>3</sup>	ND	ND	ND

Instrument used: (1) 3 Nos. RCS (APV - 217 BL), (2) 3 Nos. Cerebus Sampler (APM 100)  
All Calibration due on : 25/06/2018

BDL - Below Detectable Limit  
ND - Not Detectable

Royal Environment Auditing & Consultancy Service



manoj  
Analyst