



# Royal

## Environment Auditing & Consultancy Service

303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.

Ph.: +91 281 2360695 ■ E-mail : royalservice@live.com ■ admin@royalconsultancy.com

Ref. No. : 191/08/2013-14

Date: 01/09/2013

### AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	06/08/2013	06/08/2013	06/08/2013
03.	Time of sampling	----	9.50	9.00	9.25
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	wsW	wsW	wsW
06.	Average Wind Speed	Km/Hr.	3 to 13	3 to 13	3 to 13
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>	100	100	100
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	39	41	38
11.	Permissible limits for PM 2.5	µg/m <sup>3</sup>	60	60	60
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	25	29	24
13.	Permissible limits for SO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	12.5	12.1	11.8
15.	Permissible limits for NO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	20.5	21.6	21.3
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	241	268	230

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014 (4) 06/05/2014 (5) 05/05/2014 (6) 06/05/2014

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Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	07/08/2013	07/08/2013	07/08/2013
03.	Time of sampling	----	9.05	9.20	9.40
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	SW	SW
06.	Average Wind Speed	Km/Hr.	4 to 15	4 to 15	4 to 15
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.	<b>Permissible limits for PM 10</b>	µg/m <sup>3</sup>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	37	43	36
11.	<b>Permissible limits for PM 2.5</b>	µg/m <sup>3</sup>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	27	31	25
13.	<b>Permissible limits for SO<sub>2</sub></b>	µg/m <sup>3</sup>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	12.1	12.6	11.5
15.	<b>Permissible limits for NO<sub>2</sub></b>	µg/m <sup>3</sup>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	20.1	22.1	20.3
17.	<b>Permissible limit for CO **</b>	µg/m <sup>3</sup>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m <sup>3</sup>	256	276	240

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109)

(6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	13/08/2013	13/08/2013	13/08/2013
03.	Time of sampling	----	9.35	9.15	10.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	2 to 14	2 to 14	2 to 14
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>	100	100	100
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	37	40	35
11.	Permissible limits for PM 2.5	µg/m <sup>3</sup>	60	60	60
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	23	28	20
13.	Permissible limits for SO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	12.1	12.5	11.5
15.	Permissible limits for NO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	21.8	23.5	21.1
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	223	245	212

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109)

(6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Village: Samaghogha,  
Tal. : Mundra; Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	14/08/2013	14/08/2013	14/08/2013
03.	Time of sampling	----	9.35	9.25	10.05
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	3 to 17	3 to 17	3 to 17
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>	100	100	100
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	38	42	36
11.	Permissible limits for PM 2.5	µg/m <sup>3</sup>	60	60	60
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	25	29	23
13.	Permissible limits for SO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	12.6	13.1	11.9
15.	Permissible limits for NO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	22.1	23.1	21.6
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	230	239	218

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Tal. : Mundra, Dist. Kutch

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Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	20/08/2013	20/08/2013	20/08/2013
03.	Time of sampling	----	9.00	9.25	9.55
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	4 to 19	4 to 19	4 to 19
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>	100	100	100
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	41	47	39
11.	Permissible limits for PM 2.5	µg/m <sup>3</sup>	60	60	60
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	30	34	26
13.	Permissible limits for SO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	13.2	13.8	12.1
15.	Permissible limits for NO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	23.2	23.8	22.2
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	273	298	255

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	21/08/2013	21/08/2013	21/08/2013
03.	Time of sampling	----	9.15	9.35	10.20
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	3 to15	3 to15	3 to15
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	<b>Permissible limits for PM 10</b>	$\mu\text{g}/\text{m}^3$	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	$\mu\text{g}/\text{m}^3$	38	43	36
11.	<b>Permissible limits for PM 2.5</b>	$\mu\text{g}/\text{m}^3$	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	$\mu\text{g}/\text{m}^3$	27	32	24
13.	<b>Permissible limits for SO<sub>2</sub></b>	$\mu\text{g}/\text{m}^3$	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO <sub>2</sub>	$\mu\text{g}/\text{m}^3$	12.6	14.2	11.9
15.	<b>Permissible limits for NO<sub>2</sub></b>	$\mu\text{g}/\text{m}^3$	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO <sub>2</sub>	$\mu\text{g}/\text{m}^3$	22.6	23.5	21.5
17.	<b>Permissible limit for CO **</b>	$\mu\text{g}/\text{m}^3$	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	$\mu\text{g}/\text{m}^3$	265	279	258

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	27/08/2013	27/08/2013	27/08/2013
03.	Time of sampling	----	9.10	9.35	9.55
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	2 to 15	2 to 15	2 to 15
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>	100	100	100
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	40	42	35
11.	Permissible limits for PM 2.5	µg/m <sup>3</sup>	60	60	60
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	31	34	29
13.	Permissible limits for SO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	12.9	13.8	12.5
15.	Permissible limits for NO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	21.5	23.2	20.9
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	267	288	253

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	28/08/2013	28/08/2013	28/08/2013
03.	Time of sampling	----	9.20	9.45	10.05
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	SW	SW
06.	Average Wind Speed	Km/Hr.	3 to 17	3 to 17	3 to 17
07.	Average flow rate during sampling	m3/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/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	44	45	39
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	30	33	27
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	12.1	12.8	11.9
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	21.3	23.6	20.2
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	256	270	239

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109)

(6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

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	----	12/08/2013	13/08/2013	14/08/2013	15/08/2013
03.	Time of sampling	----	9.15	10.35	10.45	9.15
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	4 to 13	2 to 14	3 to 17	4 to 15
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>	39	42	45	46
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>	23	24	21	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>	11.1	11.7	12.2	12.8
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>	18.2	18.6	19.7	21.1
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	222	216	232	240

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (APM 411)  
(3) Ecotech make Attachment of 2 Nos. PM 2.5 Sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014

Royal Environment Auditing & Consultancy Service



*M. Anand*  
Analyst



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Ref. No. : 202/08/2013-14

Date: 01/09/2013

### AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (SSE)	AAQM - 8 (E)
01.	Location of Ambient	----	Labour Colony	New Colony (Shopping Centre )	Admin Building	Weigh bridge
02.	Date of sampling	----	12/08/2013	13/08/2013	14/08/2013	15/08/2013
03.	Time of sampling	----	9.45	11.05	11.20	9.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	4 to 13	2 to 14	3 to 17	4 to 15
07.	Average flow rate during sampling	m3/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/m3	100	100	100	100
12.	Measured Concentration of PM 10	µg/m3	42	44	50	48
11.	Permissible limits for PM 2.5	µg/m3	60	60	60	60
10.	Measured Concentration of PM 2.5	µg/m3	25	28	24	29
13.	Permissible limits for SOx	µg/m3	80	80	80	80
14.	Measured Concentration of SOx	µg/m3	12.1	12.8	13.3	13.0
15.	Permissible limits for Nox	µg/m3	80	80	80	80
16.	Measured Concentration of NOx	µg/m3	19.6	19.7	20.8	21.4
17.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000
18.	Measured Concentration of	µg/m3	230	242	271	264

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (APM 411)

(3) Ecotech make Attachment of 2 Nos. PM 2.5 Sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014

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Ref. No. : 203/08/2013-14

Date: 01/09/2013

### FUGITIVE EMISSION MONITORING REPORT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	Location of Ambient	----	RMH Junction House	RMH Stock House	Sinter RMH Yard
02.	Date of sampling	----	16/08/2013	16/08/2013	17/08/2013
03.	Time of sampling	-----	9.05	9.35	9.15
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	-----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	3 to 18	3 to 18	3 to 16
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>	2245	2321	1952
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>	13.2	13.5	11.8
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>	21.1	22.5	23.1
15.	Permissible limit for CO **	µg/m <sup>3</sup>	5000	5000	5000
16.	Measured Concentration of CO	µg/m <sup>3</sup>	285	327	255

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (APM 411)  
(3) Ecotech make Attachment of 2 Nos. PM 2.5 Sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014

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Ref. No. : 204/08/2013-14

Date: 01/09/2013

### FUGITIVE EMISSION MONITORING REPORT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	Location of Ambient	----	Sinter 2 Ground Hopper	DISP	Sinter 1 Main to PMD
02.	Date of sampling	----	17/08/2013	18/08/2013	18/08/2013
03.	Time of sampling	----	9.40	9.25	9.55
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	3 to 16	4 to 20	4 to 20
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>	1130	1065	2275
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>	12.5	12.9	12.6
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>	20.8	21.9	19.9
15.	Permissible limit for CO **	µg/m <sup>3</sup>	5000	5000	5000
16.	Measured Concentration of CO	µg/m <sup>3</sup>	243	239	255

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (APM 411)

(3) Ecotech make Attachment of 2 Nos. PM 2.5 Sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014

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Ref. No. : 205/08/2013-14

Date: 01/09/2013

### Bag Filter Efficiency Report

#### APCM Inlet

Name of company : Jindal Saw Limited,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6
01	Date of Sampling	---	17/08/2013	17/08/2013	17/08/2013	Not Running During Visit	19/08/2013	19/08/2013
02	Attached to		Zinc Coating -I	Common stack Mg Converter- I &II	Core Cleaning & Dusting-I	Barrel Grinding - I	Barrel Grinding - II	Sand Reclamation
03	Stack Height	Meter	30	30	30	30	30	32
04	Stack Diameter	Meter	0.488	0.584	0.588	0.584	0.584	---
05	Stack Temperature	°C	57	63	46	---	51	84
06	Ambient Temperature	°C	32	34	34	---	35	32
07	Average Velocity of Flue Gases	M/Sec.	13.8	7.6	10.7	---	12.8	13.4
08	Inlet	mg	1726	1287	1795	---	1655	1523
09	Outlet	mg	16	30	43	---	39	38
10	Efficiency	%	99.07	97.67	97.60	---	97.64	97.50

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

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit have calibration Due on : 05/05/2014



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Ref. No. : 206/08/2013-14

Date: 01/09/2013

### Bag Filter Efficiency Report

#### APCM Inlet

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 7	Stack No. 8	Stack No. 9	Stack No. 10	Stack No. 11	Stack No. 12	Stack No. 13
01	Date of Sampling	---	16/08/2013	16/08/2013	16/08/2013	14/08/2013	18/08/2013	18/08/2013	18/08/2013
02	Attached to	---	Zinc Coating - II	Zinc Coating-III	Zinc Coating -IV & V	Mg Converter - III	Core Cleaning & Dusting-II	Barrel Grinding-III	Barrel Grinding- IV & V
03	Stack Height	Meter	30	30	30	30	30	30	25
04	Stack Diameter	Meter	---	---	---	0.488	0.588	0.584	0.488
05	Stack Temperature	°C	55	56	54	53	51	46	49
06	Ambient Temperature	°C	31	31	32	33	32	31	31
07	Average Velocity of Flue Gases	M/Sec.	11.6	12.7	13.2	7.6	8.9	13.5	12.9
08	Inlet	mg	1754	1665	1545	1489	1422	1465	1623
09	Outlet	mg	17	17	18	35	44	39	28
10	Efficiency	%	99.03	98.98	98.83	97.65	96.91	97.34	98.27

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.  
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I  
Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 207/08/2013-14

Date: 01/09/2013

### STACK EMISSION MONITORING RESULTS

#### Sinter Plant-I

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6
01	Date of Sampling	---	17/08/2013	17/08/2013	17/08/2013	17/08/2013	17/08/2013	17/08/2013
02	Time of sampling	---	10.05	10.50	Not Running During Visit	12.15	11.35	15.10
03	Stack Attached to	---	Sinter Furnace	Discharge End	Fuel & Flux Crusher and Screening	Fuel & Flux Crushing House	Secondary Mixture House	Primary Mixture House
04	Air Pollution Control Measures	---	ESP	ESP	Bag Filter	Bag Filter	---	---
05	Stack Height	Meter	50	32.8	32.8	27.05	36.08	19.75
06	Stack Diameter	Meter	2.0	1.30	1.40	0.70	1.25	1.25
07	Stack Temperature	°C	135	145	---	62	79	61
08	Ambient Temperature	°C	30	30	---	32	31	34
09	Average Velocity of Flue Gases	M/Sec.	10.2	16.5	---	6.1	5.5	4.9
10	Isokinetic flow rate for P.M. Sampling	LPM	14	24	---	23	20	18
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	56	35	---	38	43	41
14	Permissible limits for SO <sub>2</sub>	ppm	100	NA	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	ppm	12.7	---	---	---	---	---
16	Permissible limits for NO <sub>x</sub>	ppm	50	NA	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	ppm	7.2	---	---	---	---	---

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

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 208/08/2013-14

Date: 01/09/2013

### STACK EMISSION MONITORING RESULTS

#### Sinter Plant- II

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6	Stack No. 7
01	Date of Sampling	---	13/08/2013	13/08/2013	13/08/2013	13/08/2013	13/08/2013	13/08/2013	13/08/2013
02	Time of sampling	Hr.	11.30	12.20	14.55	15.45	16.35	Not Running During Visit	Not Running During Visit
03	Stack Attached to	---	Sinter Furnace	Discharging End of sinter de-dusting system	Fuel crushing de-duster system (Flux)	Primary Mixer De-duster system	Secondary Mixer De-duster system	Fuel Screening deduster System (Flux Screening Stack)	Fuel crushing de-duster system (Fuel)
04	Air Pollution Control Measures	---	ESP	ESP	Dust Collector	---	---	Dust Collector	Dust Collector
05	Stack Height	Meter	50	50	30	30	30	30	30
06	Stack Diameter	Meter	2	1.3	0.7	1.25	1.25	0.7	0.7
07	Stack Temperature	°C	142	112	49	52	51	---	---
08	Ambient Temperature	°C	30	31	35	36	36	---	---
09	Average Velocity of Flue Gases	M/Sec.	11.9	10.2	6.2	4.1	4.6	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	17	23	24	16	18	---	---
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	35	27	42	43	46	---	---
14	Permissible limits for SO <sub>2</sub>	ppm	100	NA	NA	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	ppm	11.7	---	---	---	---	---	---
16	Permissible limits for NO <sub>x</sub>	ppm	50	NA	NA	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	ppm	17.5	---	---	---	---	---	---

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

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit have calibration Due on : 05/05/2014

NA= Not Applicable

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Ref. No. : 209/08/2013-14

Date: 01/09/2013

### STACK EMISSION MONITORING RESULTS

#### BLAST FURNACE-1 & PCI

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5
01	Date of Sampling	---	12/08/2013	12/08/2013	12/08/2013	12/08/2013	12/08/2013
02	Time of sampling	Hr.	12.00	16.40	15.45	15.00	Not Running During Visit
03	Stack Attached to	---	Boiler - I	Boiler - II	Dedusting System	Stove Stack	Coal Pulverization
04	Air Pollution Control Measures	---	---	---	Bag Filter	---	Bag Filter
05	Stack Height	Meter	45	45	35.0	50.0	32.00
06	Stack Diameter	Meter	1.380	1.380	1.484	2.250	---
07	Stack Temperature	°C	155	154	65	320	---
08	Ambient Temperature	°C	33	35	36	36	---
09	Average Velocity of Flue Gases	M/Sec.	5.7	7.1	6.5	5.2	---
10	Isokinetic flow rate for P.M. Sampling	LPM	17	21	24	11	---
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>	10	9	43	5	---
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	40	40	40	100 (ppm)
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	5.6	6.7	N.D.	N.D.	---
16	Permissible limits for NO <sub>x</sub>	mg/Nm <sup>3</sup>	25	25	25	25	50 (ppm)
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	7.2	7.3	6.8	5.9	---

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

Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 210/08/2013-14

Date: 01/09/2013

### STACK EMISSION MONITORING RESULTS

#### BLAST FURNACE-2

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3
01	Date of Sampling	---	12/08/2013	13/08/2013	13/08/2013
02	Time of sampling	Hr.	17.20	17.10	17.55
03	Stack Attached to	---	Dedusting System	Stove Stack	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	---	Bag Filter
05	Stack Height	Meter	40.0	65.0	30.0
06	Stack Diameter	Meter	1.484	2.250	0.650
07	Stack Temperature	°C	42	328	38
08	Ambient Temperature	°C	33	32	32
09	Average Velocity of Flue Gases	M/Sec.	6.5	5.2	8.8
10	Isokinetic flow rate for P.M. Sampling	LPM	26	11	23
11	Gaseous Sampling Flow Rate	LPM	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	45	5	42
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	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
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	---	---	---

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

Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 211/08/2013-14

Date: 01/09/2013

### STACK EMISSION MONITORING RESULTS

#### Captive Power Plant

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 6	Stack No. 7	Stack No. 8	Stack No. 9
01	Date of Sampling	---	Not running during visit	16/08/2013	16/08/2013	Not running during visit
02	Time of sampling	Hr.		16.50	16.00	
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	1.984	1.484	1.484	0.980
07	Stack Temperature	°C	---	126	114	---
08	Ambient Temperature	°C	---	34	34	---
09	Average Velocity of Flue Gases	M/Sec.	---	7.1	7.8	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	23	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>	---	35	43	---
14	Permissible limits for SO <sub>2</sub>	ppm	100	100	100	100
15	Measured Concentration of SO <sub>2</sub>	ppm	---	15.3	18.7	---
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	---	12.1	11.3	---

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

Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit have calibration Due on : 05/05/2014



Royal Environment Auditing & Consultancy Service

M. J. J. Analyst



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Ref. No. : 212/08/2013-14

Date: 01/09/2013

### STACK EMISSION MONITORING RESULTS

#### Pipe Complex

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist, Kutch

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6	Stack No. 7
01	Date of Sampling	---	16/08/2013	16/08/2013	16/08/2013	16/08/2013	04/08/2013	16/08/2013	16/08/2013
02	Time of sampling	Hr.	Not Running During Visit	Not Running During Visit	Not Running During Visit	Not Running During Visit	16.00	Not Running During Visit	15.00
03	Stack Attached to	---	Shot Blasing (Coating Plant) - I	Shot Blasing (Coating Plant) - II	Shot Blasing (Coating Plant) - III	Bitumin Drying Oven - I	Common stack Bitumin Drying Oven - II & Boiler	Barrel Grinding - I	Barrel Grinding - II
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	10.0	10.0	10.0	32.8	32.8	30	30
06	Stack Diameter	Meter	0.41	0.41	1.125	1.375	1.375	0.584	0.584
07	Stack Temperature	°C	---	---	---	---	137	---	42
08	Ambient Temperature	°C	---	---	---	---	34	---	36
09	Average Velocity of Flue Gases	M/Sec.	---	---	---	---	14.1	---	13.2
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	---	---	7.7	---	24
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	2.00	---	2.0
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	---	---	---	---	45	---	39
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	40	40	100 ppm	100 ppm	40	40
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	---	---	---	---	7.4	---	3.6
16	Permissible limits for Nox	mg/Nm <sup>3</sup>	25	25	25	50 ppm	50 ppm	25	25
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	---	---	---	---	8.2	---	3.9

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

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 213/08/2013-14

Date: 01/09/2013

### STACK EMISSION MONITORING RESULTS

#### Pipe Copmplex

Name of company : Jindal Saw Limited,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 8	Stack No. 9	Stack No. 10	Stack No. 11	Stack No. 12	Stack No. 13
01	Date of Sampling	---	14/08/2013	16/08/2013	16/08/2013	16/08/2013	16/08/2013	16/08/2013
02	Time of sampling	Hr.	11.00	11.20	12.00	12.45	15.15	16.30
03	Stack Attached to	---	Common stack Mg Converter- I&II	Mg Converter -III	Zn Coating - I	Zn Coating - II	Zn Coating - III	Zn Coating - IV & V
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.488	0.488	0.584	0.584	0.584	0.850
07	Stack Temperature	°C	62	51	46	45	44	43
08	Ambient Temperature	°C	30	32	32	33	34	35
09	Average Velocity of Flue Gases	M/Sec.	15.3	10.5	13.8	10.6	9.2	10.1
10	Isokinetic flow rate for P.M. Sampling	LPM	25	18	24	19	16	18
11	Gasooous Sampling Flow Rate	LPM	2.0	2.0	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	20 (Zn)	20 (Zn)	20 (Zn)	20 (Zn)
13	Measured Concentration of PM	mg/Nm3	30	35	16(Zn)	17(Zn)	17 (Zn)	18 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	40	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	N.D.	N.D.	---	---	---	---
16	Permissible limits for Nox	mg/Nm3	25	25	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	4.5	3.8	---	---	---	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

N D= Not Detectable

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit have calibration Due on : 05/05/2014

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Date: 01/09/2013

Ref. No. : 214/08/2013-14

### STACK EMISSION MONITORING RESULTS

#### Pipe Complex

Name of company : Jindal Saw Limited.

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 14	Stack No. 15	Stack No. 16	Stack No. 17	Stack No. 18	Stack No. 19
01	Date of Sampling	---	18/08/2013	18/08/2013	18/08/2013	18/08/2013	18/08/2013	18/08/2013
02	Time of sampling	Hr.	9.45	10.30	11.20	Not Running During Visit	15.00	15.50
03	Stack Attached to	---	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II	Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	---	---
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.588	0.59	0.584	0.584	0.584	0.584
07	Stack Temperature	°C	43	40	38	---	39	42
08	Ambient Temperature	°C	30	31	32	---	32	35
09	Average Velocity of Flue Gases	M/Sec.	14.6	13.8	4.9	---	4.6	---
10	Isokinetic flow rate for P.M. Sampling	LPM	10	10	20	---	19	---
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	150
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	43	44	32	35	31	---
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	40	40	40	40	40
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	3.0	3.4	N.D.	3.7	3.5	---
16	Permissible limits for Nox	mg/Nm <sup>3</sup>	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	6.8	5.7	3.5	4.5	3.6	---

N.D= Not Detectable

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

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit have calibration Due on : 05/05/2014



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Ref. No. : 215/08/2013-14

Date: 01/09/2013

### STACK EMISSION MONITORING RESULTS

#### Pipe Complex

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 20	Stack No. 21	Stack No. 22	Stack No. 23	Stack No. 24	Stack No. 25
01	Date of Sampling	---	19/08/2013	19/08/2013	19/08/2013	19/08/2013	19/08/2013	19/08/2013
02	Time of sampling	Hr.	10.20	11.05	9.30	12.35	11.50	15.00
03	Stack Attached to	---	Annealing Furnace - I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding -III	Barrel Grinding -IV&V	Sand Reclamation
04	Air Pollution Control Measures	---	---	---	---	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	32	32	32	30	25	32
06	Stack Diameter	Meter	1.375	1.375	1.375	0.488	0.488	0.835
07	Stack Temperature	°C	135	142	168	45	47	71
08	Ambient Temperature	°C	29	30	29	31	30	35
09	Average Velocity of Flue Gases	M/Sec.	8.2	6.7	7.2	11.8	9.5	11.8
10	Isokinetic flow rate for P.M. Sampling	LPM	25	20	21	21	17	20
11	Gaseous Sampling Flow Rate	LPM	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
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	35	36	37	40	44	43
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	100 (PPM)	100 (PPM)	100 (ppm)	40	40	40
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	3.1 (PPM)	3.6 (PPM)	3.9 (PPM)	2.7	3.5	N.D.
16	Permissible limits for Nox	mg/Nm <sup>3</sup>	50 (PPM)	50 (PPM)	50 (PPM)	25	25	25
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	4.0 (PPM)	5.5 (PPM)	5.6 (PPM)	4.9	5.5	N.D.

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.  
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I  
Both Stack kit have calibration Due on : 05/05/2014

N.D= Not Detectable

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Ref. No. : 216/08/2013-14

Date: 01/09/2013

### STACK EMISSION MONITORING RESULTS

#### Small Dia Ductile Iron Pipe Complex

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6
01	Date of Sampling	---	14/08/2013	14/08/2013	14/08/2013	14/08/2013	14/08/2013	14/08/2013
02	Time of sampling	Hr.	10.45	12.10	16.45	11.30	15.50	16.00
03	Stack Attached to	---	Annealing Furnace - I	Annealing Furnace - I	Magnesium Treatment	Socket Cleaning	Zinc Coating	Tri- Grinding Section
04	Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	45	45	30	30	30	30
06	Stack Diameter	Meter	---	---	---	---	---	---
07	Stack Temperature	°C	133	141	71	36	38	33
08	Ambient Temperature	°C	30	32	35	31	35	34
09	Average Velocity of Flue Gases	M/Sec.	7.9	6.2	6.4	12.2	9.9	12.6
10	Isokinetic flow rate for P.M. Sampling	LPM	25	19	24	22	17	24
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	50	50	50	50	50	50
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	17	21	44	38	28	38
14	Permissible limits for SO <sub>2</sub>	PPM	100	100	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	PPM	14.3	14.9	---	---	---	---
16	Permissible limits for Nox	PPM	50	50	NA	NA	NA	NA
17	Measured Concentration of Nox	PPM	4.2	5.1	---	---	---	---

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.  
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I  
Both Stack kit have calibration Due on : 05/05/2014

N.D= Not Detectable

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### 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, BF, DISP, JCO & Coating Units at Jindal Saw Limited, Samaghogha.
- 2 Raw materials, by products and finished products involved in the process. TOTAL DUST
- 3 Particulars of sampling

Date of Sampling : 16 to 18th August . 2013

Sr. No	Location Operation monitored	Identified Contaminate	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	Spiral Plant Nr. ID/OD	Total Dust	Personal Respirable Dust sampler APM 800	02	3-4	3.5	10	Gravimetric	8	----	 Mr. Manoj Sonrat	Mr. Manoj Sonrat
2	JCO Plant Nr. JCO Press	Total Dust		02	3.5-4.5	4.0	10	Gravimetric	6	----		
3	Sinter Plant At First Floor	Total Dust		02	3-5	4	10	Gravimetric	5	----		
4	BF Plant (Cast House)	CO		02	0.4-0.6	0.5	2	Gravimetric	9	----		
		Total Dust			3-5	4.0	10					
5	Coating Plant-1 (Blasting Area)	Total Dust		02	4-4	4.5	10	Gravimetric	4	----		
6	DISP Plant Main Entrance	Total Dust		02	5-6	5.5	10	Gravimetric	10	----		
7	Spiral Plant -2 Nr. ID/OD	Total Dust		02	2-3	2.5	10	Gravimetric	8	----		
8	Coating Plant-2 (Blasting Area)	Total Dust		02	3-4	3.5	10	Gravimetric	6	----		
9	Coating Plant-3 (Blasting Area)	Total Dust		02	4-5	4.5	10	Gravimetric	6	----		
10	Small Dia Ductile Iron pipe	Total Dust	02	4-6	5.0	10	Gravimetric	5	----			

Instruments used : Envirotech make personal sampler, Model No. APM 800

Calibration Date Due on : 11/12/2013



For: Royal Environment Auditing &amp; Consultancy Services

  
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Ref. No. : 218/08/2013-14

Date: 01/09/2013

### WORK ZONE NOISE LEVEL MEASUREMENT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Date of Sampling : 16 to 18th August , 2013

Sr. No.	Location of Sampling	Results Avg. in dB(A)
01.	Inside Control Room of Sinter Plant	70.5
02.	Nr. Stock House of BF	72.6
03.	Inside Control Room of BF	69.1
04.	Inside Control Room of Blower House	68.5
05.	Inside Control of Cast House	66.9
06.	Inside Control Room of CPP	67.2
07.	Inside Control Room of Annealing Furnace of DISP	63.5
08.	Inside Laboratory of BF	62.0
09.	Inside Laboratory of DISP	64.3
10.	Inside ID & OD Control Room of JCO Plant	66.9
11.	Inside Control Room – Mill area of Spiral Plant	65.2
12.	Inside Spiral – 1	70.3
13.	Nr. Pipe cutting Area of Spiral Plant	72.4
14.	Inside JCO Plant	69.8
15.	Nr. JCO Press	66.5
16.	Inside DISP Plant	70.1
17.	Inside Coating Plant	68.5
18.	Nr. CCM SDP-II	73.3
19.	Inside Control Room of Annealing Furnace of SDP-II	68.4
20.	Inside New Coating Plant	75.2
21.	Inside Control Room of BF-2	69.2
22.	Inside Spiral-2	70.4
23.	Nr. Zinc Coating SDP-II	74.5
24.	Nr. Stock House of BF-2	69.5
25.	C/R Blower House of BF-2	67.2

Instruments used : Sound level meter, Model : SL - 4001 (Lutron Make)  
Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.  
Recalibration is due on : 05/10/2013

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Ref. No. : 219/08/2013-14

Date: 01/09/2013

### AMBIENT NOISE LEVEL MEASUREMENT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Date of Sampling : 16 to 18th August , 2013

Sr. No.	Location of Sampling	Results in dB(A) (Day Time)	Results in dB(A) (Night Time)
	Permissible Limits	75.0	70.0
01.	Nr. Admin. Building	68.9	65.4
02.	Nr. Old Colony	67.8	64.2
03.	Nr. LPG Yard	68.5	63.3
04.	Nr. Sinter Plant	70.4	67.1
05.	Nr. R. O. Plant	69.4	64.8
06.	Nr. Gate No. 2	64.9	62.2
07.	Nr. New Colony	68.3	61.9

Instruments used : Sound level meter, Model : SL - 4001 (Lutron Make)  
Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.  
Recalibration is due on : 05/10/2013



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Ref. No. : 221/08/2013-14

Date: 01/09/2013

### REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Source Of Sample Collection : Domestic Effluent After Treatment  
Date of Sample Collection : 19/08/2013

Sr. No.	Parameters	Unit	GPCB limits	STP Inlet	STP Outlet
01.	pH	pH Unit	----	7.62	7.28
02.	BOD (3 Days at 27°C)	mg/l	<20	196	10
03.	Suspended Solids	mg/l	<30	95	24
04.	Residual Chlorine	mg/l	Min. 0.5	----	0.69

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