



# Royal

## Environment Auditing & Consultancy Service

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

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

Ref. No. 419/01/2013-14

Date: 31/01/2014

### 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	---	01/01/2014	01/01/2014	01/01/2014
03.	Time of sampling	---	9.00	9.20	9.35
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	2 to 10	2 to 10	2 to 10
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>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	42	50	35
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	22	35	24
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	11.5	12.5	11.8
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	208.0	22.8	21.9
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	260	320	210

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attechme  
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	---	02/01/2014	02/01/2014	02/01/2014
03.	Time of sampling	---	9.15	9.30	9.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
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.	<b>Permissible limits for PM 10</b>	<b>µg/m<sup>3</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	45	54	35
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m<sup>3</sup></b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	23	33	32
13.	<b>Permissible limits for SO<sub>2</sub></b>	<b>µg/m<sup>3</sup></b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	11.2	12.4	10.9
15.	<b>Permissible limits for NO<sub>2</sub></b>	<b>µg/m<sup>3</sup></b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	22.8	21.7	20.9
17.	<b>Permissible limit for CO **</b>	<b>µg/m<sup>3</sup></b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m <sup>3</sup>	290	330	245

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attechme 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	----	06/01/2014	06/01/2014	06/01/2014
03.	Time of sampling	----	9.10	9.30	9.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	2 to 12	2 to 12	2 to 12
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	41	52	39
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	21	37	28
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	11.8	12.7	11.5
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	21.5	23.9	22.3
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	274	312	248

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attechme 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	---	07/01/2014	07/01/2014	07/01/2014
03.	Time of sampling	---	9.20	9.45	10.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	3 to 10	3 to 10	3 to 10
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>	44	58	37
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	35	30
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>	11.4	12.9	11.3
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	23.7	21.2
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	289	320	236

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attechme 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	----	16/01/2014	16/01/2014	16/01/2014
03.	Time of sampling	----	9.00	9.15	9.30
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	4 to 12	4 to 12	4 to 12
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	45	53	33
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	22	34	26
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	12.1	14.1	13.3
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	22.4	24.7	23.6
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	327	391	216

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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Royal Environment Auditing & Consultancy Service

Munraj  
Analyst



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01.	Location of Ambient	---	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	---	17/01/2014	17/01/2014	17/01/2014
03.	Time of sampling	---	9.10	9.25	9.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NNW	NNW	NNW
06.	Average Wind Speed	Km/Hr.	3 to 15	3 to 15	3 to 15
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	47	59	35
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	21	38	24
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	12.6	13.8	13.1
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	21.8	24.2	22.8
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	306	384	228

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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*M. Mondal*  
Analyst



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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	----	22/01/2014	22/01/2014	22/01/2014
03.	Time of sampling	----	9.00	9.20	9.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	4 to 12	4 to 12	4 to 12
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>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	56	64	48
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	35	42	33
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	12.4	13.7	13.1
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	22.3	23.5	20.9
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	365	338	298

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attechr 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	---	23/01/2014	23/01/2014	23/01/2014
03.	Time of sampling	---	9.15	9.30	10.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	3 to14	3 to14	3 to14
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>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	58	67	49
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	31	48	35
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	12.6	13.4	11.5
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	21.7	23.8	20.6
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	377	305	289

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01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	27/01/2014	27/01/2014	27/01/2014
03.	Time of sampling	----	9.00	9.20	9.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NE	NE	NE
06.	Average Wind Speed	Km/Hr.	3 to 12	3 to 12	3 to 12
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>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	43	59	50
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	22	36	27
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	13.4	14.6	11.8
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	24.2	22.8	20.6
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	339	379	254

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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Ref. No. 428/01/2013-14

Date: 31/01/2014

### 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	----	28/01/2014	28/01/2014	28/01/2014
03.	Time of sampling	----	9.15	9.35	9.55
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NE	NE	NE
06.	Average Wind Speed	Km/Hr.	4 to 14	4 to 14	4 to 14
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>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	46	63	48
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	29	35	22
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	12.8	14.3	13.6
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	23.5	22.1	20.8
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	329	391	245

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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Date: 31/01/2014

Ref. No. 429/01/2013-14

### 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 - 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	----	09/01/2014	09/01/2014	12/01/2014	12/01/2014
03.	Time of sampling	----	9.00	9.20	9.10	9.35
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N	N
06.	Average Wind Speed	Km/Hr.	2 to 12	3 to 14	2 to 12	3 to 14
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.	<b>Permissible limits for PM 10</b>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	44	51	68	54
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	20	31	42	27
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	10.5	11.4	14.2	11.6
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	15.6	16.3	22.5	18.8
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	164	226	304	267

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

*Murugan*  
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Date: 31/01/2014

Ref. No. 430/01/2013-14

### 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	----	12/01/2014	12/01/2014	09/01/2014	09/01/2014
03.	Time of sampling	----	9.50	10.10	9.45	10.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N	N
06.	Average Wind Speed	Km/Hr.	2 to 12	3 to 14	2 to 12	3 to 14
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.	<b>Permissible limits for PM 10</b>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
12.	Measured Concentration of PM 10	µg/m3	45	39	47	72
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>
10.	Measured Concentration of PM 2.5	µg/m3	28	21	24	36
13.	<b>Permissible limits for SOx</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SOx	µg/m3	12.7	11.4	12.3	13.7
15.	<b>Permissible limits for Nox</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
	Measured Concentration of NOx	µg/m3	17.6	19.8	20.1	23.2
17	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18	Measured Concentration of	µg/m3	289	191	271	342

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (APM 411)  
(3) Ecotech make Atteachment 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. 431/01/2013-14

Date: 31/01/2014

### 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	----	19/01/2014	08/01/2014	08/01/2014
03.	Time of sampling	----	9.15	9.10	9.25
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	-----	N	N	N
06.	Average Wind Speed	Km/Hr.	5 to 15	5 to 15	4 to 12
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>	<b>µg/m3</b>	<b>3000</b>	<b>3000</b>	<b>3000</b>
10.	Measured Concentration of PM 10	µg/m3	2354	2519	2344
11.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>150</b>	<b>150</b>	<b>150</b>
12.	Measured Concentration of SO2	µg/m3	15.7	16.8	16.2
13.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>120</b>	<b>120</b>	<b>120</b>
14.	Measured Concentration of NO2	µg/m3	23.6	24.3	23.2
15.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>5000</b>	<b>5000</b>	<b>5000</b>
16.	Measured Concentration of CO	µg/m3	312	411	243

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. 432/01/2013-14

Date: 31/01/2014

### 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 "CCM" Area	Sinter 1 Main to PMD
02.	Date of sampling	----	19/01/2014	08/01/2014	19/01/2014
03.	Time of sampling	----	9.45	9.40	10.15
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	4 to 12	4 to 16	4 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.	<b>Permissible limits for PM 10</b>	<b>µg/m<sup>3</sup></b>	<b>3000</b>	<b>3000</b>	<b>3000</b>
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	1832	1518	2118
11.	<b>Permissible limits for SO<sub>2</sub></b>	<b>µg/m<sup>3</sup></b>	<b>150</b>	<b>150</b>	<b>150</b>
12.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	14.4	15.7	13.9
13.	<b>Permissible limits for NO<sub>2</sub></b>	<b>µg/m<sup>3</sup></b>	<b>120</b>	<b>120</b>	<b>120</b>
14.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	22.9	24.8	22.6
15.	<b>Permissible limit for CO **</b>	<b>µg/m<sup>3</sup></b>	<b>5000</b>	<b>5000</b>	<b>5000</b>
16.	Measured Concentration of CO	µg/m <sup>3</sup>	279	394	343

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. 433/01/2013-14

Date: 31/01/2014

### 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	---	06/01/2014	23/01/2014	18/01/2014	08/01/2014	08/01/2014	24/01/2014
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	44	72	47	45	40	76
06	Ambient Temperature	°C	28	29	28	29	29	29
07	Average Velocity of Flue Gases	M/Sec.	15.9	17.4	15.3	16.1	15.2	14.5
08	IsoKinetic Flowrate for Sampling	LPM	28	28	27	28	27	23
09	Inlet	mg	1894	2042	1694	2348	2023	1632
10	Outlet	mg	12	52	26	39	51	43
11	Efficiency	%	99.37	97.45	98.47	98.34	97.48	97.37

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. 434/01/2013-14

Date: 31/01/2014

### 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	---	07/01/2014	20/01/2014	08/01/2014	21/01/2014	18/01/2014	22/01/2014	22/01/2014
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	41	48	46	53	49	51	50
06	Ambient Temperature	°C	29	30	29	30	30	29	29
07	Average Velocity of Flue Gases	M/Sec.	15.5	14.6	12.2	13.7	14.8	15.6	13.8
08	IsoKinetic Flowrate for Sampling	LPM	28	25	21	23	26	27	24
09	Inlet	mg	1548	1610	1455	1922	2021	1565	1784
10	Outlet	mg	14	15	12	49	46	48	51
11	Efficiency	%	99.10	99.07	99.18	97.45	97.72	96.93	97.14

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. 435/01/2013-14

Date: 31/01/2014

### 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	---	24/01/2014	24/01/2014	24/01/2014	Not Running During Visit	24/01/2014	24/01/2014
02	Time of sampling	---	9.30	10.35	11.40		14.45	15.50
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	146	141	50	---	58	83
08	Ambient Temperature	°C	28	29	30	---	30	30
09	Average Velocity of Flue Gases	M/Sec.	9.5	17.2	7.1	---	5.3	6.2
10	Isokinetic flow rate for P.M. Sampling	LPM	13	23	12	---	20	22
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>	92	49	52.00	---	38	70
14	Permissible limits for SO <sub>2</sub>	ppm	100	NA	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	ppm	15.6	---	---	---	---	---
16	Permissible limits for NO <sub>x</sub>	ppm	50	NA	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	ppm	11.9	---	---	---	---	---

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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*[Handwritten Signature]*

*[Handwritten Signature]*  
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Ref. No. : 436/01/2013-14

Date: 31/01/2014

### 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	---	25/01/2014	25/01/2014	23/01/2014	23/01/2014	25/01/2014	25/01/2014	Not Running During Visit
02	Time of sampling	Hr.	9.45	10.50	10.00	11.10	11.50	14.15	
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	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	149	131	44	82	54	47	---
08	Ambient Temperature	°C	28	29	29	30	30	30	---
09	Average Velocity of Flue Gases	M/Sec.	12.3	13.6	6.2	5.8	5.2	5.1	---
10	Isokinetic flow rate for P.M. Sampling	LPM	16	19	11	21	20	20	---
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	41	33	64	47	30	---
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	14.5	---	---	---	---	---	---
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	20.2	---	---	---	---	---	---

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

NA= Not Applicable

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

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

Royal Environment Auditing & Consultancy Service

*Munej*  
Analyst



# Royal

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Ref. No. 438/01/2013-14

Date: 31/01/2014

### 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	Stack No. 4
01	Date of Sampling	---	07/01/2014	19/01/2014	19/01/2014	19/01/2014
02	Time of sampling	Hr.	15.25	9.30	10.45	11.50
03	Stack Attached to	---	Dedusting System	Stove Stack	Iron Ore fine & Dust Collecting System	Coke fine building dust collecting system
04	Air Pollution Control Measures	---	Bag Filter	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	30.0	30.0
06	Stack Diameter	Meter	1.484	2.250	0.650	---
07	Stack Temperature	°C	58	310	45	43
08	Ambient Temperature	°C	29	28	30	30
09	Average Velocity of Flue Gases	M/Sec.	6.8	6.3	10.2	9.4
10	Isokinetic flow rate for P.M. Sampling	LPM	26	14	18	17
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	52	9	44	37
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	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
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.

\*\*NA=Not Applicable

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. 437/01/2013-14

Date: 31/01/2014

### 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	---	10/01/2014	10/01/2014	10/01/2014	26/01/2014	26/01/2014
02	Time of sampling	Hr.	14.40	15.55	9.45	9.40	10.45
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	32.0
06	Stack Diameter	Meter	1.380	1.380	1.484	2.250	---
07	Stack Temperature	°C	176	164	62	321	44
08	Ambient Temperature	°C	30	30	30	29	30
09	Average Velocity of Flue Gases	M/Sec.	5.8	4.9	6.4	6.1	5.70
10	Isokinetic flow rate for P.M. Sampling	LPM	16	14	24	13	23
11	Gaseous Sampling Flow Rate	LPM	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
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	6	7	53	11	21.00
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>	5.2	5.4	N.D.	1.28	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>	8.4	8.6	N.D.	5.2	N.D.

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. : 439/01/2013-14

Date: 31/01/2014

### 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	Not running during visit	27/01/2014	27/01/2014
02	Time of sampling	Hr.			9.15	10.30
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	---	---	151	132
08	Ambient Temperature	°C	---	---	28	29
09	Average Velocity of Flue Gases	M/Sec.	---	---	8.8	6.4
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	26	20
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>	---	---	47	39
14	Permissible limits for SO <sub>2</sub>	ppm	100	100	100.0	100
15	Measured Concentration of SO <sub>2</sub>	ppm	---	---	23.8	21.7
16	Permissible limits for Nox	ppm	50	50	50.0	50
17	Measured Concentration of Nox	ppm	---	---	18.6	15.5

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. 440/01/2013-14

Date: 31/01/2014

### 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	---	---	---	---	---	11/01/2014	25/01/2014	25/01/2014
02	Time of sampling	Hr.	Not Running During Visit	Not Running During Visit	Not Running During Visit	Not Running During Visit	10.10	9.30	10.45
03	Stack Attached to	---	Shot Blasing - I	Shot Blasing - II	Shot Blasing - 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	---	---	---	---	153	45	48
08	Ambient Temperature	°C	---	---	---	---	27	28	29
09	Average Velocity of Flue Gases	M/Sec.	---	---	---	---	8.8	14.3	13.8
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	---	---	12	25	24
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	2.0	2.0	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>	---	---	---	---	79	54	49
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>	---	---	---	---	7.8	---	---
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>	---	---	---	---	10.4	---	---

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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Analyst



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Ref. No. 441/01/2013-14

Date: 31/01/2014

### 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	---	11/01/2014	11/01/2014	06/01/2014	07/01/2014	25/01/2014	25/01/2014
02	Time of sampling	Hr.	14.30	15.30	14.35	11.25	14.35	15.40
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	57	48	48	43	42	54
08	Ambient Temperature	°C	30	30	28	29	30	30
09	Average Velocity of Flue Gases	M/Sec.	14.7	10.4	12.7	13.5	14.3	10.2
10	Isokinetic flow rate for P.M. Sampling	LPM	25	18	22	24	25	18
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	20 (Zn)	20 (Zn)	20 (Zn)	20 (Zn)
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	78	61	14 (Zn)	19 (Zn)	18 (Zn)	12 (Zn)
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	40	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	N.D.	N.D.	---	---	---	---
16	Permissible limits for Nox	mg/Nm <sup>3</sup>	25	25	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	5.8	4.7	---	---	---	---

Note : Minimum Detectable Limit of SO<sub>2</sub> & 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

Royal Environment Auditing & Consultancy Service

*(Signature)*  
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Ref. No. : 442/01/2013-14

Date: 31/01/2014

### 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	---	12/01/2014	12/01/2014	12/01/2014	12/01/2014	12/01/2014	12/01/2014
02	Time of sampling	Hr.	9.45	10.50	11.55	14.10	15.15	16.20
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	42	40	34	35	42	39
08	Ambient Temperature	°C	29	29	29	30	30	30
09	Average Velocity of Flue Gases	M/Sec.	13.4	14.2	5.6	5.2	5.9	6.2
10	Isokinetic flow rate for P.M. Sampling	LPM	24	25	23	21	24	25
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	43	37	31	38	44	54
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	5.3	4.4	N.D.	N.D.	N.D.	N.D.
16	Permissible limits for Nox	mg/Nm3	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	9.5	8.2	N.D.	N.D.	N.D.	N.D.

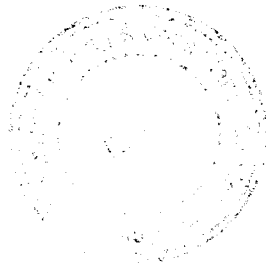
Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

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

Royal Environment Auditing & Consultancy Service



*M. M. M.*  
Analyst



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Ref. No. : 443/01/2013-14

Date: 31/01/2014

### 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	---	28/01/2014	28/01/2014	28/01/2014	09/01/2014	25/01/2014	11/01/2014
02	Time of sampling	Hr.	9.45	10.50	12.10	14.45	15.45	16.10
03	Stack Attached to	---	Annealing Furnace - I	Annealing Furnace - II	Annealing Furnace - III	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	0.885
07	Stack Temperature	°C	122	154	164	52	46	49
08	Ambient Temperature	°C	28	30	30	30	30	30
09	Average Velocity of Flue Gases	M/Sec.	5.8	7.6	8.2	14.3	13.5	9.2
10	Isokinetic flow rate for P.M. Sampling	LPM	19	23	24	25	24	16
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	47	39	43	51	53	58
14	Permissible limits for SO2	mg/Nm3	100 (PPM)	100 (PPM)	100 (ppm)	40	40	40
15	Measured Concentration of SO2	mg/Nm3	5.2(PPM)	5.6(PPM)	6.1(PPM)	5.3	3.8	N.D.
16	Permissible limits for Nox	mg/Nm3	50 (PPM)	50 (PPM)	50 (PPM)	25	25	25
17	Measured Concentration of Nox	mg/Nm3	6.3 (PPM)	6.8 (PPM)	7.3 (PPM)	6.4	6.6	N.D.

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

Royal Environment Auditing & Consultancy Service

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Ref. No.: 444/01/2013-14

Date: 31/01/2014

### 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	---	28/01/2014	28/01/2014	09/012014	---	09/012014	09/012014
02	Time of sampling	Hr.	14.45	16.00	9.30	Not Running During Visit	10.45	11.50
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	131	142	46	---	38	41
08	Ambient Temperature	°C	30	30	27	---	28	28
09	Average Velocity of Flue Gases	M/Sec.	6.9	7.8	5.1	---	4.8	6.3
10	Isokinetic flow rate for P.M. Sampling	LPM	22	24	20	---	9	11
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	---	---	---	---
12	Permissible limits for PM	mg/Nm3	50	50	50	50	50	50
13	Measured Concentration of PM.	mg/Nm3	27	34	36	---	09 (Zn)	22
14	Permissible limits for SO2	PPM	100	100	NA	NA	NA	NA
15	Measured Concentration of SO2	PPM	13.6	14.9	---	---	---	---
16	Permissible limits for Nox	PPM	50	50	NA	NA	NA	NA
17	Measured Concentration of Nox	PPM	6.3	7.2	---	---	---	---

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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Ref. No. : 446/01/2013-14

Date: 31/01/2014

### WORK ZONE NOISE LEVEL MEASUREMENT

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

Date of sampling : 6th to 13th January,2014

Sr. No.	Location of Sampling	Results Avg. in dB(A)
01.	Inside Control Room of Sinter Plant	61.4
02.	Nr. Stock House of BF	71.6
03.	Inside Control Room of BF	63.2
04.	Inside Control Room of Blower House	64.7
05.	Inside Control of Cast House	67.2
06.	Inside Control Room of CPP	59.5
07.	Inside Control Room of Annealing Furnace of DISP	60.6
08.	Inside Laboratory of BF	57.4
09.	Inside Laboratory of DISP	61.1
10.	Inside ID & OD Control Room of JCO Plant	62.5
11.	Inside Control Room – Mill area of Spiral Plant-2	63.8
12.	Inside Spiral – 1	65.5
13.	Nr. Pipe cutting Area of Spiral Plant	70.8
14.	Inside JCO Plant	63.2
15.	Nr. JCO Press	65.9
16.	Inside DISP Plant	73.8
17.	Inside Coating Plant	69.4
18.	Nr. CCM SDP-II	73.1
19.	Inside Control Room of Annealing Furnace of SDP-II	62.3
20.	Inside New Coating Plant	71.7
21.	Inside Control Room of BF-2	63.6
22.	Inside Spiral-2	70.3
23.	Nr. Zinc Coating SDP-II	74.2
24.	Nr. Stock House of BF-2	71.7
25.	C/R Blower House of BF-2	69.5

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 : 29/09/2014



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Ref. No. : 447/01/2013-14

Date: 31/01/2014

### AMBIENT NOISE LEVEL MEASUREMENT

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

Date of sampling : 6th to 13th January, 2014

Sr. No.	Location of Sampling	Results in dB(A) (Day Time)	Results in dB(A) (Night Time)
	<b>Permissible Limits</b>	<b>75.0</b>	<b>70.0</b>
01.	Nr. Admin. Building	61.3	59.8
02.	Nr. Old Colony	57.9	56.7
03.	Nr. LPG Yard	64.8	62.5
04.	Nr. Sinter Plant	72.5	67.7
05.	Nr. R. O. Plant	63.6	60.2
06.	Nr. Gate No. 2	71.4	67.9
07.	Nr. New Colony	60.3	58.4
08.	Nr. SDP-2	69.7	66.8
09.	Nr. BLAST FURNACE-2	72.1	70.9
10.	Nr. New Coating	68.3	64.7

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 : 29/09/2014

Royal Environment Auditing & Consultancy Service

*M. M. M. M.*  
Analyst



# Royal

## Environment Auditing & Consultancy Service

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Date: 31/01/2014

Ref. No. 448/01/2013-14

### 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 Sampling : 26/01/2014

Sr. No.	Parameters	Unit	GPCB limits	STP Inlet	STP Outlet
01.	pH	pH Unit	-----	7.65	7.28
02.	BOD (3 Days at 27°C)	mg/l	<20	172	17
03.	Suspended Solids	mg/l	<30	128	21
04.	Residual Chlorine	mg/l	Min. 0.5	----	0.40

Royal Environment Auditing & Consultancy Service

*Mehraj*  
Analyst

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

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

- 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 : 6th to 26th January, 2014

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concert ration (As given in Second Schedule)	Refrance 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/m3					
1	Spiral Plant Nr. ID/OD	Total Dust	Personal Respirable Dust sampler APM 800	02	4-5.5	4.75	10	Gravimetric	9	---	<i>Manoj</i>	Mr. Manoj Sonrat
2	JCO Plant Nr. JCO Press	Total Dust		02	3-4	3.50	10	Gravimetric	8	---		
3	Sinter Plant At First Floor	Total Dust		02	2.5-3	2.75	10	Gravimetric	7	---		
4	BF Plant (Cast House)	CO		02	1-1.5	1.25	2	Gravimetric	7	---		
		Total Dust			3-4.5	3.8	10					
5	Coating Plant-1 (Blasting Area)	Total Dust		02	3-5	4.0	10	Gravimetric	7	---		
6	DISP Plant Main Entrance	Total Dust		02	4.5-5.5	5.0	10	Gravimetric	8	---		
7	Spiral Plant -2 Nr. ID/OD	Total Dust		02	3-4.5	3.8	10	Gravimetric	7	---		
8	Coating Plant-2 (Blasting Area)	Total Dust		02	4-5	4.5	10	Gravimetric	8	---		
9	Coating Plant-3 (Blasting Area)	Total Dust		02	5-6	5.5	10	Gravimetric	6	---		
10	Small Dia Ductile Iron pipe	Total Dust	02	5-6.5	5.8	10	Gravimetric	8	---			

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

Calibration Date Due on : 02/12/2014



For. Royal Environment Auditing & Consultancy Service

*Manoj*  
Authorized Sign