



# 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. 571/03/2013-14

Date: 03/04/2014

### 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	----	06/03/2014	06/03/2014	06/03/2014
03.	Time of sampling	----	9.15	9.35	10.15
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	ENE	ENE	ENE
06.	Average Wind Speed	Km/Hr.	2 to 12	2 to 12	2 to 12
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>	42	65	49
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>	26	44	28
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>	11.5	14.3	11.9
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>	21.6	23.8	22.4
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>	259	366	282

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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Ref. No. 572/03/2013-14

Date: 03/04/2014

### 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	---	07/03/2014	07/03/2014	07/03/2014
03.	Time of sampling	---	9.25	9.40	10.20
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 10	3 to 10	3 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	47	69	53
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	24	46	29
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	11.8	14.6	11.4
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	23.2	22.1
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	247	379	278

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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Ref. No 573/03/2013-14

Date: 03/04/2014

### 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	---	12/03/2014	12/03/2014	12/03/2014
03.	Time of sampling	---	9.00	9.20	10.00
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 12	4 to 12	4 to 12
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>	57	66	44
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>	32	42	27
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	14.2	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>	22.5	24.7	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>	319	394	276

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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Ref. No. 574/03/2013-14

Date: 03/04/2014

### 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	----	13/03/2014	13/03/2014	13/03/2014
03.	Time of sampling	----	9.15	9.40	10.10
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 15	3 to 15	3 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>	51	70	48
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	46	25
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	14.7	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>	21.9	24.1	22.3
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	305	387	288

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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Ref. No. :575/03/2013-14

Date: 03/04/2014

### 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	---	21/03/2014	21/03/2014	21/03/2014
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)	----	WNW	WNW	WNW
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	48	64	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	25	43	39
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	12.3	13.7	11.4
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	20.7	23.2	20.2
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	357	261

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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Ref. No. : 576/03/2013-14

Date: 03/04/2014

### 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	---	22/03/2014	22/03/2014	22/03/2014
03.	Time of sampling	---	9.25	10.10	10.30
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 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	51	71	53
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	47	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	12.7	13.9	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	21.4	23.9	20.4
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	334	364	274

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attechmer 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)

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. :577/03/2013-14

Date: 03/04/2014

### 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	---	25/03/2014	25/03/2014	25/03/2014
03.	Time of sampling	----	9.10	9.25	9.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NW	NW	NW
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	44	68	47
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	45	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	11.9	13.1	12.4
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	23.2	20.5
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	363	386	237

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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Date: 03/04/2014

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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	----	26/03/2014	26/03/2014	26/03/2014
03.	Time of sampling	----	9.25	9.55	10.15
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NW	NW	NW
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	47	72	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	30	44	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	12.7	13.8	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	21.9	22.6	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	374	394	249

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: 03/04/2014

Ref. No. :579/03/2013-14

### 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	----	09/03/2014	12/03/2014	09/03/2014	12/03/2014
03.	Time of sampling	----	9.10	9.15	9.30	9.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	ENE	NE	ENE	NE
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	43	62	58	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	26	31	42	33
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	11.9	11.5	16.3	14.8
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	15.3	16.2	22.4	20.1
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	156	229	351	272

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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Date: 03/04/2014

Ref. No. :580/03/2013-14

### 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	----	09/03/2014	12/03/2014	12/03/2014	09/03/2014
03.	Time of sampling	----	9.50	10.00	10.30	10.10
04.	Duration of Sampling	Min.	1440:00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	ENE	NE	NE	ENE
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	46	52	48	62
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	27	30	24	37
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	12.4	10.1	12.7	15.3
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	19.8	20.6	22.5	23.9
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	242	143	232	394

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. : 581/03/2013-14

Date: 03/04/2014

### 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	----	23/03/2014	16/03/2014	16/03/2014
03.	Time of sampling	----	9.15	9.00	9.20
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NW	NW	NW
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	2531	2454	2643
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	17.5	19.3	18.4
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	25.4	24.9	25.8
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	373	459	254

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. :582/03/2013-14

Date: 03/04/2014

### FUGITIVE EMISSION MONITORING REPORT

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

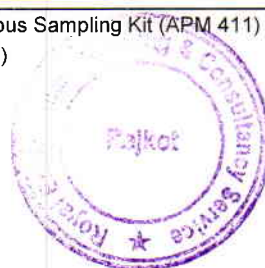
Test Method : As per IS Standards - 5182\_2/4/6

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	----	23/03/2014	16/03/2014	23/03/2014
03.	Time of sampling	----	9.40	9.50	10.00
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NW	NW	NW
06.	Average Wind Speed	Km/Hr.	4 to 12	4 to 16	4 to 16
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	2264	1751	2043
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	16.2	16.9	15.8
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	23.2	27.5	24.8
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	287	438	335

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. : 583/03/2013-14

Date: 03/04/2014

### 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	Stack No. 7
01	Date of Sampling	---	19/03/2014	11/03/2014	09/03/2014	20/03/2014	20/03/2014	21/03/2014	21/03/2014
02	Attached to		Sinter-1 Furnace	Sinter-1 Discharge end	Sinter-1 Flux Screening	Sinter-2 Furnace	Sinter-2 Discharge end	Sinter-2 Flux Crushing	Sinter-2 Flux Screening
03	Stack Height	Meter	---	---	---	---	---	---	---
04	Stack Duct Diameter	Meter	---	---	---	---	---	---	---
05	Stack Temperature	°C	167	154	49	158	136	52	57
06	Ambient Temperature	°C	31	32	32	34	34	33	34
07	Average Velocity of Flue Gases	M/Sec.	21.6	19.8	13.8	21.7	19.5	13.5	14.2
08	IsoKinetic Flowrate for Sampling	LPM	27	26	24	28	27	23	24
09	Inlet	mg	2986	2569	1842	3192	1978	1724	1912
10	Outlet	mg	46	51	38	64	34	31	42
11	Efficiency	%	98.46	98.01	97.94	97.99	98.28	98.20	97.80

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. : 584/03/2013-14

Date: 03/04/2014

### 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. 8	Stack No. 9	Stack No. 10	Stack No. 11
01	Date of Sampling	---	10/03/2014	09/03/2014	11/03/2014	25/03/2014
02	Attached to		Zinc Coating -I	Common stack Mg Converter- I &II	Core Cleaning & Dusting-I	Sand Reclamation
03	Stack Height	Meter	30	30	30	32
04	Stack Duct Diameter	Meter	0.488	0.584	0.588	---
05	Stack Temperature	°C	50	72	42	83
06	Ambient Temperature	°C	33	34	34	33
07	Average Velocity of Flue Gases	M/Sec.	15.6	17.2	14.8	15.1
08	IsoKinetic Flowrate for Sampling	LPM	27	28	26	24
09	Inlet	mg	1824	2535	1864	1987
10	Outlet	mg	18	63	35	42
11	Efficiency	%	99.01	97.51	98.12	97.89

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. : 585/03/2013-14

Date: 03/04/2014

### 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. 12	Stack No. 13	Stack No. 14	Stack No. 15	Stack No. 16
01	Date of Sampling	---	10/03/2014	11/03/2014	11/03/2014	25/03/2014	09/03/2014
02	Attached to	---	Zinc Coating - II	Zinc Coating-III	Zinc Coating -IV & V	Mg Converter - III	Core Cleaning & Dusting-II
03	Stack Height	Meter	30	30	30	30	30
04	Stack Duct Diameter	Meter	---	---	---	0.488	0.588
05	Stack Temperature	°C	48	45	51	59	42
06	Ambient Temperature	°C	34	35	35	34	34
07	Average Velocity of Flue Gases	M/Sec.	15.2	16.1	14.3	15.6	13.5
08	IsoKinetic Flowrate for Sampling	LPM	26	28	25	26	24
09	Inlet	mg	1684	1710	1645	2098	2234
10	Outlet	mg	16	14	17	60	51
11	Efficiency	%	99.05	99.18	98.97	97.14	97.72

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. :586/03/2013-14

Date: 03/04/2014

### 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	---	13/03/2014	13/03/2014	12/03/2014	Not Running During Visit	12/03/2014	12/03/2014
02	Time of sampling	---	9.30	10.45	9.00		9.50	10.40
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	154	142	43	---	55	84
08	Ambient Temperature	°C	33	34	32	---	33	34
09	Average Velocity of Flue Gases	M/Sec.	11.8	20.6	8.8	---	4.1	5.2
10	Isokinetic flow rate for P.M. Sampling	LPM	15	28	16	---	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
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	78	44	53.00	---	39	61
14	Permissible limits for SO <sub>2</sub>	ppm	100	NA	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	ppm	13.5	---	---	---	---	---
16	Permissible limits for NO <sub>x</sub>	ppm	50	NA	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	ppm	11.7	---	---	---	---	---

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. : 587/03/2013-14

Date: 03/04/2014

### 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	---	13/03/2014	13/03/2014	14/03/2014	14/03/2014	14/03/2014	14/03/2014	Not Running During Visit
02	Time of sampling	Hr.	14.30	15.25	9.15	10.10	11.15	14.40	
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	146	122	45	75	52	48	---
08	Ambient Temperature	°C	35	34	32	32	33	35	---
09	Average Velocity of Flue Gases	M/Sec.	12.8	15.9	8.5	5.8	4.9	4.2	---
10	Isokinetic flow rate for P.M. Sampling	LPM	17	22	15	21	19	17	---
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>	56	48	32	66	47	28	---
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	14.4	---	---	---	---	---	---
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	21.6	---	---	---	---	---	---

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

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Ref. No. :588/03/2013-14

Date: 03/04/2014

### 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	---	25/03/2014	25/03/2014	26/03/2014	26/03/2014
02	Time of sampling	Hr.	9.00	10.10	9.15	10.30
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	54	324	45	42
08	Ambient Temperature	°C	31	33	32	33
09	Average Velocity of Flue Gases	M/Sec.	5.7	6.9	11.8	10.7
10	Isokinetic flow rate for P.M. Sampling	LPM	22	15	21	19
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>	53	9	44	46
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

Royal Environment Auditing & Consultancy Service



Munoj  
Analyst



# Royal

## Environment Auditing & Consultancy Service

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Ref. No. : 589/03/2013-14

Date: 03/04/2014

### 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	---	15/03/2014	15/03/2014	27/03/2014	27/03/2014	Not Running During Visit
02	Time of sampling	Hr.	9.00	10.15	9.15	10.35	
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	51	329	---
08	Ambient Temperature	°C	32	33	32	33	---
09	Average Velocity of Flue Gases	M/Sec.	5.7	4.8	5.2	6.1	---
10	Isokinetic flow rate for P.M. Sampling	LPM	16	14	20	13	---
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>	18	15	54	7	---
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>	4.4	4.1	N.D.	1.45	---
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>	7.3	6.9	N.D.	5.1	---

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



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Ref. No. : 590/03/2013-14

Date: 03/04/2014

### 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	---	24/03/2014	Not running during visit	Not running during visit	Not running during visit
02	Time of sampling	Hr.	9.30			
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	164.00	---	---	---
08	Ambient Temperature	°C	31.00	---	---	---
09	Average Velocity of Flue Gases	M/Sec.	8.8	---	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	26	---	---	---
11	Gaseous Sampling Flow Rate	LPM	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>	59.00	---	---	---
14	Permissible limits for SO <sub>2</sub>	ppm	100	100	100.0	100
15	Measured Concentration of SO <sub>2</sub>	ppm	25.8	---	---	---
16	Permissible limits for Nox	ppm	50	50	50.0	50
17	Measured Concentration of Nox	ppm	20.6	---	---	---

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



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Ref No : 591/03/2013-14

Date: 03/04/2014

### 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	---	---	---	---	---	10/03/2014	Not in operation	Not in operation
02	Time of sampling	Hr.	Not Running During Visit	Not Running During Visit	Not Running During Visit	Not Running During Visit	11.45		
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	---	---	---	---	154	---	---
08	Ambient Temperature	°C	---	---	---	---	33	---	---
09	Average Velocity of Flue Gases	M/Sec.	---	---	---	---	10.3	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	---	---	13	---	---
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>	---	---	---	---	91	---	---
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>	---	---	---	---	8.8	---	---
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>	---	---	---	---	12	---	---

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. :592/03/2013-14

Date: 03/04/2014

### 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. 8	Stack No. 9	Stack No. 10	Stack No. 11	Stack No. 12	Stack No. 13
01	Date of Sampling	---	09/03/2014	25/03/2014	10/03/2014	10/03/2014	11/03/2014	11/03/2014
02	Time of sampling	Hr.	10.15	14.10	10.30	11.40	11.15	12.20
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 Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & 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	58	51	49	45	43	48
08	Ambient Temperature	°C	33	35	33	34	34	35
09	Average Velocity of Flue Gases	M/Sec.	14.7	11.8	14.3	15.3	15.7	10.2
10	Isokinetic flow rate for P.M. Sampling	LPM	25	21	25	27	28	18
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	---	---	---	---
h	Permissible limits for PM	mg/Nm3	150	150	20 (Zn)	20 (Zn)	20 (Zn)	20 (Zn)
13	Measured Concentration of PM	mg/Nm3	81	63	19 (Zn)	16 (Zn)	18 (Zn)	12 (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	6.9	6.1	---	---	---	---

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. :593/03/2013-14

Date: 03/04/2014

### 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	---	09/03/2014	09/03/2014	21/03/2014	21/03/2014	21/03/2014	21/03/2014
02	Time of sampling	Hr.	14.30	15.40	9.00	9.40	10.30	11.40
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	41	45	35	38	42	39
08	Ambient Temperature	°C	35	35	32	32	33	33
09	Average Velocity of Flue Gases	M/Sec.	12.7	14.3	5.2	6.4	5.7	6.1
10	Isokinetic flow rate for P.M. Sampling	LPM	23	25	21	26	23	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/Nm <sup>3</sup>	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	43	38	33	38	45	56
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>	6.9	5.8	N.D.	N.D.	N.D.	N.D.
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>	9.2	8.4	N.D.	N.D.	N.D.	N.D.

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

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Ref. No. :594/03/2013-14

Date: 03/04/2014

### 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	---	23/03/2014	23/03/2014	23/03/2014	Not in operation	Not in operation	10/03/2014
02	Time of sampling	Hr.	9.15	10.20	11.25			14.45
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	129	142	154	---	---	60
08	Ambient Temperature	°C	31	32	33	---	---	34
09	Average Velocity of Flue Gases	M/Sec.	4.8	5.9	7.1	---	---	9.8
10	Isokinetic flow rate for P.M. Sampling	LPM	15	18	21	---	---	17
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>	45	38	42	---	---	67
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>	4.0(PPM)	5.1(PPM)	5.7(PPM)	---	---	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>	4.8 (PPM)	5.5 (PPM)	6.2 (PPM)	---	---	N.D.

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

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Ref. No. :595/03/2013-14

Date: 03/04/2014

### 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	---	22/03/2014	22/03/2014	22/03/2014	---	22/03/2014	Not in operation
02	Time of sampling	Hr.	9.00	10.00	11.15	Not Running During Visit	14.30	
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	---
06	Stack Diameter	Meter	---	---	---	---	---	---
07	Stack Temperature	°C	138	149	46	---	39	---
08	Ambient Temperature	°C	31	32	34	---	35	---
09	Average Velocity of Flue Gases	M/Sec.	6.5	7.1	3.9	---	5.9	---
10	Isokinetic flow rate for P.M. Sampling	LPM	20	21	15	---	11	---
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>	27	33	48	---	17 (Zn)	---
14	Permissible limits for SO <sub>2</sub>	PPM	100	100	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	PPM	11.5	12.2	---	---	---	---
16	Permissible limits for Nox	PPM	50	50	NA	NA	NA	NA
17	Measured Concentration of Nox	PPM	6.3	7.0	---	---	---	---

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

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Date: 03/04/2014

Ref. No. :597/03/2013-14

### WORK ZONE NOISE LEVEL MEASUREMENT

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

Date of sampling : 7th to 15th March,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	70.5
03.	Inside Control Room of BF	62.8
04.	Inside Control Room of Blower House	64.5
05.	Inside Control of Cast House	64.7
06.	Inside Control Room of CPP	58.6
07.	Inside Control Room of Annealing Furnace of DISP	57.9
08.	Inside Laboratory of BF	56.5
09.	Inside Laboratory of DISP	59.8
10.	Inside ID & OD Control Room of JCO Plant	60.9
11.	Inside Control Room – Mill area of Spiral Plant-2	61.6
12.	Inside Spiral – 1	67.3
13.	Nr. Pipe cutting Area of Spiral Plant	73.4
14.	Inside JCO Plant	66.9
15.	Nr. JCO Press	69.6
16.	Inside DISP Plant	73.8
17.	Inside Coating Plant	71.9
18.	Nr. CCM SDP-II	70.2
19.	Inside Control Room of Annealing Furnace of SDP-II	60.5
20.	Inside New Coating Plant	71.7
21.	Inside Control Room of BF-2	60.3
22.	Inside Spiral-2	73.5
23.	Nr. Zinc Coating SDP-II	72.6
24.	Nr. Stock House of BF-2	69.7
25.	C/R Blower House of BF-2	74.4

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. : 598/03/2013-14

Date: 03/04/2014

### AMBIENT NOISE LEVEL MEASUREMENT

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

Date of sampling : 7th to 15th March,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	63.6	58.7
02.	Nr. Old Colony	57.7	54.2
03.	Nr. LPG Yard	62.2	59.1
04.	Nr. Sinter Plant	70.4	67.9
05.	Nr. R. O. Plant	65.8	60.2
06.	Nr. Gate No. 2	73.8	68.4
07.	Nr. New Colony	62.5	58.3
08	Nr. SDP-2	71.9	68.6
09	Nr. BLAST FURNACE-2	74.2	68.1
10	Nr. New Coating	70.6	64.2

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

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

Recalibration is due on : 29/09/2014

Royal Environment Auditing & Consultancy Service



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Ref. No. : 599/03/2013-14

Date: 03/04/2014

### 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 : 29/03/2014

Sr. No.	Parameters	Unit	GPCB limits	STP Inlet	STP Outlet
01.	pH	pH Unit	---	7.50	7.32
02.	BOD (3 Days at 27°C)	mg/l	<20	176	17
03.	Suspended Solids	mg/l	<30	149	26
04.	Residual Chlorine	mg/l	Min. 0.5	---	0.65

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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)(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 : 7th to 15th March, 2014

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (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	4.50	10	Gravimetric	7	---	<i>Manoj</i>	Mr. Manoj Sonrat
2	JCO Plant Nr. JCO Press	Total Dust		02	4.5-6	5.25	10	Gravimetric	8	---		
3	Sinter Plant At First Floor	Total Dust		02	4-5.5	4.75	10	Gravimetric	9	---		
4	BF Plant (Cast House)	CO		02	2-3	2.5	2	Gravimetric	7	---		
		Total Dust			4-5	4.5	10					
5	Coating Plant-1 (Blasting Area)	Total Dust		02	4.5-6	5.3	10	Gravimetric	9	---		
6	DISP Plant Main Entrance	Total Dust		02	5-6	5.5	10	Gravimetric	9	---		
7	Spiral Plant -2 Nr ID/OD	Total Dust		02	4-5.5	4.8	10	Gravimetric	8	---		
8	Coating Plant-2 (Blasting Area)	Total Dust		02	4-6	5.0	10	Gravimetric	8	---		
9	Coating Plant-3 (Blasting Area)	Total Dust		02	4.5-5.5	5.0	10	Gravimetric	8	---		
10	Small Dia Ductile Iron pipe	Total Dust	02	4.5-6.5	5.5	10	Gravimetric	8	---			

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

Calibration Date Due on : 02/12/2014



For. Royal Environment Auditing &amp; Consultancy Service

*Manoj*  
Authorized Sign