



# Royal

## Environment Auditing & Consultancy Service

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

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

Ref. No. 641/04/2014-15

Date: 05/05/2014

### AMBIENT AIR QUALITY MONITORING REPORT

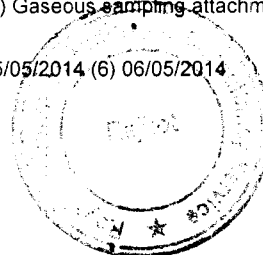
Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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	---	03/04/2014	03/04/2014	03/04/2014
03.	Time of sampling	---	9.00	9.30	10.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	W	W	W
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	49	58	45
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	28	39	24
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	12.4	14.2	11.2
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	20.8	24.4	21.6
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	272	345	242

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. 642/04/2014-15

Date: 05/05/2014

### 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	----	04/04/2014	04/04/2014	04/04/2014
03.	Time of sampling	----	9.15	9.45	10.15
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	W	W	W
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.	<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>	52	62	47
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>	30	41	26
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>	12.2	13.9	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>	21.5	24.1	21.8
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>	264	352	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 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 643/04/2014-15

Date: 05/05/2014

### AMBIENT AIR QUALITY MONITORING REPORT

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

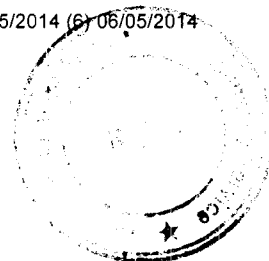
Test Method : As per IS Standards - 5182\_2/4/6

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	---	10/04/2014	10/04/2014	10/04/2014
03.	Time of sampling	---	9.10	9.35	10.05
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 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>	52	61	49
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>	29	38	23
13.	Permissible limits for SO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	11.8	13.7	11.1
15.	Permissible limits for NO <sub>2</sub>	µg/m <sup>3</sup>	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	21.4	23.5	20.8
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	340	374	251

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



Analyst



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

Ref. No. 644/04/2014-15

Date: 05/05/2014

### AMBIENT AIR QUALITY MONITORING REPORT

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

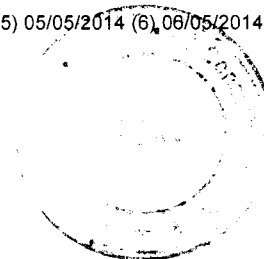
Test Method : As per IS Standards - 5182\_2/4/6

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	---	11/04/2014	11/04/2014	11/04/2014
03.	Time of sampling	---	9.20	9.45	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.	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	56	65	53
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	33	40	28
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	11.4	13.2	12.1
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	22.3	23.9	21.7
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	321	362	271

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



*M. K. Singh*  
Analyst



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

Ref. No. :645/04/2014-15

Date: 05/05/2014

### 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	---	18/04/2014	18/04/2014	18/04/2014
03.	Time of sampling	---	9.10	9.35	10.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	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	55	69	46
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	47	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	13.2	14.4	12.7
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	21.8	24.3	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	344	369	257

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. : 646/04/2014-15

Date: 05/05/2014

### 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	----	19/04/2014	19/04/2014	19/04/2014
03.	Time of sampling	----	9.20	9.50	10.10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	SW	SW
06.	Average Wind Speed	Km/Hr.	3 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	59	75	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	34	49	30
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	13.5	14.7	12.2
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	24.9	21.4
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	357	385	263

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

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Ref. No. :647/04/2014-15

Date: 05/05/2014

### AMBIENT AIR QUALITY MONITORING REPORT

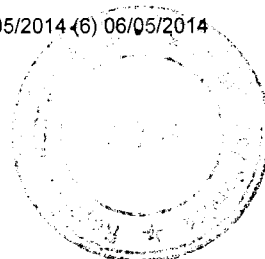
Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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	----	24/04/2014	24/04/2014	24/04/2014
03.	Time of sampling	----	9.20	9.50	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.	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.	Permissible limits for PM 10	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	49	63	42
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	25	41	23
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	11.1	13.9	11.8
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	21.9	22.8	21.1
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	350	371	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)

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Ref. No. :648/04/2014-15

Date: 05/05/2014

### AMBIENT AIR QUALITY MONITORING REPORT

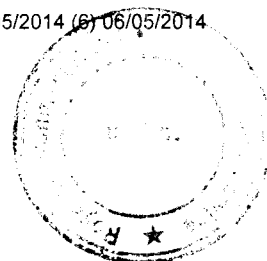
Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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	---	25/04/2014	25/04/2014	25/04/2014
03.	Time of sampling	----	9.30	10.00	10.25
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	52	67	45
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	27	38	25
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	14.2	12.1
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	22.5	23.4	21.7
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	364	380	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)

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. :649/04/2014-15

Date: 05/05/2014

### 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	----	28/04/2014	28/04/2014	28/04/2014
03.	Time of sampling	----	9.00	9.25	10.20
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	59	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	37	26
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	14.4	11.2
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	22.8	23.6	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	368	389	233

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



# Royal

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Ref. No. :650/04/2014-15

Date: 05/05/2014

### AMBIENT AIR QUALITY MONITORING REPORT

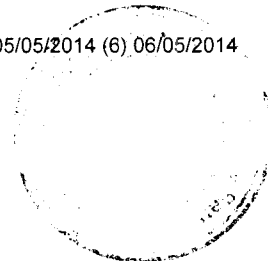
Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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	---	29/04/2014	29/04/2014	29/04/2014
03.	Time of sampling	----	9.20	9.50	10.30
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	57	72	40
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	32	42	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	12.7	15.1	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	23.6	24.2	22.9
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	379	396	247

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



*M. Singh*



# Royal

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Date: 05/05/2014

Ref. No. :651/04/2014-15

### 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	----	13/04/2014	20/04/2014	13/04/2014	20/04/2014
03.	Time of sampling	----	9.00	9.10	9.25	9.40
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WSW	NW	WSW	NW
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	48	67	52	59
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	29	35	46	38
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	11.1	12.4	17.3	13.6
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	14.2	17.6	23.7	21.3
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	134	214	369	251

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (ARM 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: 05/05/2014

Ref. No. :652/04/2014-15

### 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

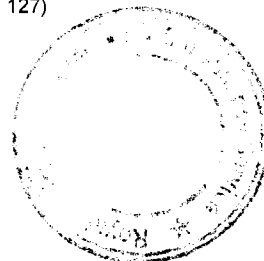
Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (SSE)	AAQM - 8 (E)
01.	Location of Ambient	----	Labour Colony	New Colony (Shopping Centre )	Admin Building	Weigh bridge
02.	Date of sampling	----	20/04/2014	13/04/2014	20/04/2014	13/04/2014
03.	Time of sampling	----	10.05	10.00	10.35	10.30
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NW	WSW	NW	WSW
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	51	57	42	68
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	22	27	20	43
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	11.7	10.9	11.9	16.8
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	18.9	21.2	21.9	24.7
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	221	158	207	412

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

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

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

Royal Environment Auditing & Consultancy Service



Analyst



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Ref. No. :653/04/2014-15

Date: 05/05/2014

### FUGITIVE EMISSION MONITORING REPORT

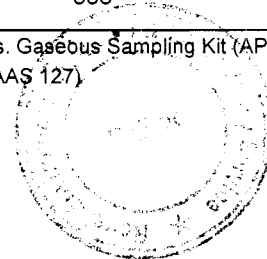
Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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	----	06/04/2014	11/04/2014	06/04/2014
03.	Time of sampling	----	9.05	9.15	9.30
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	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>	2437	2658	2784
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>	18.2	20.7	19.9
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>	26.8	25.3	26.1
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>	358	479	284

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gasebus 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. :654/04/2014-15

Date: 05/05/2014

### FUGITIVE EMISSION MONITORING REPORT

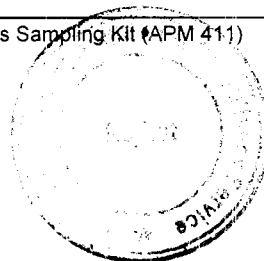
Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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	---	06/04/2014	11/04/2014	11/04/2014
03.	Time of sampling	----	9.50	9.45	10.10
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	2523	1843	1984
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	17.6	15.8	16.7
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	24.4	28.5	25.9
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	249	493	297

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. : 655/04/2014-15

Date: 05/05/2014

### 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

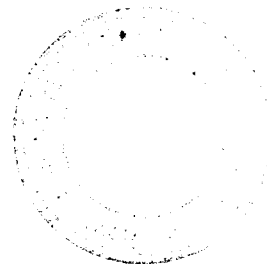
Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6	Stack No. 7
01	Date of Sampling	---	03/04/2014	03/04/2014	04/04/2014	03/04/2014	03/04/2014	23/04/2014	23/04/2014
02	Attached to		Sinter-1 Furnace	Sinter-1 Discharge end	Sinter-1 Flux Screening	Sinter-2 Furnace	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	126	119	46	130	123	55	52
06	Ambient Temperature	°C	32	33	33	35	35	33	34
07	Average Velocity of Flue Gases	M/Sec.	20.5	18.6	14.2	20.1	17.9	12.3	13.2
08	IsoKinetic Flowrate for Sampling	LPM	29	26	25	28	25	21	23
09	Inlet	mg	3056	2751	1964	3329	2052	1864	1771
10	Outlet	mg	52	47	33	60	39	35	31
11	Efficiency	%	98.30	98.29	98.32	98.20	98.10	98.12	98.25

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

Royal Environment Auditing & Consultancy Service



Analyst



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Ref. No. : 656/04/2014-15

Date: 05/05/2014

### 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	---	08/04/2014	05/04/2014	11/04/2014	08/04/2014
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	53	67	44	87
06	Ambient Temperature	°C	32	35	33	34
07	Average Velocity of Flue Gases	M/Sec.	16.3	17.7	15.4	15.8
08	IsoKinetic Flowrate for Sampling	LPM	28	29	27	24
09	Inlet	mg	1744	2694	1972	2185
10	Outlet	mg	16	55	39	48
11	Efficiency	%	99.08	97.96	98.02	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. : 657/04/2014-15

Date: 05/05/2014

### 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	---	10/04/2014	08/04/2014	10/04/2014	05/04/2014	11/04/2014
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	50	48	54	57	46
06	Ambient Temperature	°C	33	34	35	35	34
07	Average Velocity of Flue Gases	M/Sec.	15.9	16.8	15.4	14.9	14.6
08	IsoKinetic Flowrate for Sampling	LPM	27	29	26	25	26
09	Inlet	mg	1838	1912	1749	2248	2152
10	Outlet	mg	18	16	13	49	42
11	Efficiency	%	99.02	99.16	99.26	97.82	98.05

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

Royal Environment Auditing & Consultancy Service



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Ref. No. :658/04/2014-15

Date: 05/05/2014

### 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	---	03/04/2014	03/04/2014	04/04/2014	Not Running During Visit	25/04/2014	04/04/2014
02	Time of sampling	---	9.15	11.30	9.10		9.00	10.05
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	149	138	40	---	51	82
08	Ambient Temperature	°C	32	34	32	---	32	33
09	Average Velocity of Flue Gases	M/Sec.	13.5	19.6	9.4	---	4.8	5.7
10	Isokinetic flow rate for P.M. Sampling	LPM	18	27	17	---	19	20
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	52	47	33	---	30	66
14	Permissible limits for SO2	ppm	100	NA	NA	NA	NA	NA
15	Measured Concentration of SO2	ppm	14.5	---	---	---	---	---
16	Permissible limits for NOx	ppm	50	NA	NA	NA	NA	NA
17	Measured Concentration of NOx	ppm	12.3	---	---	---	---	---

Note : Minimum Detectable Limit of SO2 & 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. : 659/04/2014-15

Date: 05/05/2014

### 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	---	03/04/2014	03/04/2014	23/04/2014	04/04/2014	09/04/2014	23/04/2014	Not Running During Visit
02	Time of sampling	Hr.	14.45	16.15	9.00	10.30	14.15	11.15	
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	143	129	42	79	49	45	---
08	Ambient Temperature	°C	35	35	32	33	35	34	---
09	Average Velocity of Flue Gases	M/Sec.	13.9	16.8	9.1	6.3	4.2	4.6	---
10	Isokinetic flow rate for P.M. Sampling	LPM	19	23	16	23	17	18	---
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	60	39	35	60	42	31	---
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	15.3	---	---	---	---	---	---
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	20.8	---	---	---	---	---	---

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

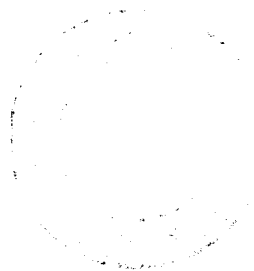
NA= Not Applicable

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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*[Signature]*  
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Ref. No. :660/04/2014-15

Date: 05/05/2014

### 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	---	24/04/2014	24/04/2014	24/04/2014	24/04/2014
02	Time of sampling	Hr.	9.10	10.30	11.35	14.45
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	51	334	42	40
08	Ambient Temperature	°C	32	33	34	35
09	Average Velocity of Flue Gases	M/Sec.	6.2	5.8	12.4	11.6
10	Isokinetic flow rate for P.M. Sampling	LPM	24	12	22	21
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	47	6	39	42
14	Permissible limits for SO2	mg/Nm3	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	---	---	---	---
16	Permissible limits for NOx	mg/Nm3	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	---	---	---	---

Note : Minimum Detectable Limit of SO2 & 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. : 661/04/2014-15

Date: 05/05/2014

### 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	---	21/04/2014	21/04/2014	24/04/2014	04/04/2014	Not Running During Visit
02	Time of sampling	Hr.	9.15	10.30	15.45	9.30	
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	173	161	48	324	---
08	Ambient Temperature	°C	32	33	35	32	---
09	Average Velocity of Flue Gases	M/Sec.	5.1	4.2	5.8	6.9	---
10	Isokinetic flow rate for P.M. Sampling	LPM	14	12	23	15	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	13	10	59	5	---
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	100 (ppm)
15	Measured Concentration of SO2	mg/Nm3	5.2	4.8	N.D.	0.75	---
16	Permissible limits for NOx	mg/Nm3	25	25	25	25	50 (ppm)
17	Measured Concentration of Nox	mg/Nm3	7.9	6.1	N.D.	4.7	---

Note : Minimum Detectable Limit of SO2 & 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. : 662/04/2014-15

Date: 05/05/2014

### 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	---	03/04/2014	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	173	---	---	---
08	Ambient Temperature	°C	33	---	---	---
09	Average Velocity of Flue Gases	M/Sec.	9.5	---	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	27	---	---	---
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>	64.00	---	---	---
14	Permissible limits for SO <sub>2</sub>	ppm	100	100	100.0	100
15	Measured Concentration of SO <sub>2</sub>	ppm	26.7	---	---	---
16	Permissible limits for Nox	ppm	50	50	50.0	50
17	Measured Concentration of Nox	ppm	21.8	---	---	---

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. : 663/04/2014-15

Date: 05/05/2014

### 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	---	---	---	---	---	21/04/2014	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	14.15		
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	---	---	---	---	158	---	---
08	Ambient Temperature	°C	---	---	---	---	35	---	---
09	Average Velocity of Flue Gases	M/Sec.	---	---	---	---	11.7	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	---	---	15	---	---
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	2.0	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	---	---	---	---	97	---	---
14	Permissible limits for SO2	mg/Nm3	40	40	40	100 ppm	100 ppm	40	40
15	Measured Concentration of SO2	mg/Nm3	---	---	---	---	8.1	---	---
16	Permissible limits for Nox	mg/Nm3	25	25	25	50 ppm	50 ppm	25	25
17	Measured Concentration of Nox	mg/Nm3	---	---	---	---	14	---	---

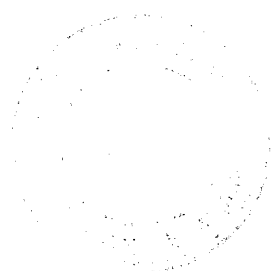
Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

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. 664/04/2014-15

Date: 05/05/2014

### 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	---	05/04/2014	05/04/2014	08/04/2014	10/04/2014	08/04/2014	10/04/2014
02	Time of sampling	Hr.	9.30	11.45	9.15	9.45	11.40	11.50
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 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	62	53	52	48	45	55
08	Ambient Temperature	°C	33	35	33	34	35	35
09	Average Velocity of Flue Gases	M/Sec.	15.3	12.4	14.9	16.1	16.8	11.6
10	Isokinetic flow rate for P.M. Sampling	LPM	26	22	26	28	29	20
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	55	49	16 (Zn)	18 (Zn)	16 (Zn)	13 (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	6.2	5.7	---	---	---	---

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. :665/04/2014-15

Date: 05/05/2014

### 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	---	11/04/2014	11/04/2014	10/04/2014	10/04/2014	10/04/2014	08/04/2014
02	Time of sampling	Hr.	10.00	14.20	9.10	9.45	10.20	11.30
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	44	42	36	35	40	38
08	Ambient Temperature	°C	34	35	32	33	33	34
09	Average Velocity of Flue Gases	M/Sec.	11.8	13.6	4.7	5.6	5.1	5.9
10	Isokinetic flow rate for P.M. Sampling	LPM	21	24	19	23	21	24
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>	39	42	37	34	41	52
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>	5.8	4.9	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>	8.7	7.8	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. :666/04/2014-15

Date: 05/05/2014

### 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	---	09/04/2014	09/04/2014	09/04/2014	Not in operation	Not in operation	08/04/2014
02	Time of sampling	Hr.	9.00	10.10	11.15			15.40
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	133	146	157	---	---	67
08	Ambient Temperature	°C	31	33	33	---	---	35
09	Average Velocity of Flue Gases	M/Sec.	4.2	5.1	6.7	---	---	10.5
10	Isokinetic flow rate for P.M. Sampling	LPM	13	15	20	---	---	18
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>	40	47	51	---	---	48
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>	4.8(PPM)	5.9(PPM)	6.4(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>	5.2 (PPM)	6.1 (PPM)	7.3 (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. :667/04/2014-15

Date: 05/05/2014

### 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	---	07/04/2014	07/04/2014	07/04/2014	07/04/2014	07/04/2014	Not in operation
02	Time of sampling	Hr.	9.15	10.25	14.20	11.30	15.35	
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	142	153	42	39	37	---
08	Ambient Temperature	°C	31	32	35	35	35	---
09	Average Velocity of Flue Gases	M/Sec.	5.8	6.7	3.4	3.9	5.3	---
10	Isokinetic flow rate for P.M. Sampling	LPM	18	20	14	16	10	---
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	32	38	43	27.00	14 (Zn)	---
14	Permissible limits for SO2	PPM	100	100	NA	NA	NA	NA
15	Measured Concentration of SO2	PPM	10.7	11.6	---	---	---	---
16	Permissible limits for Nox	PPM	50	50	NA	NA	NA	NA
17	Measured Concentration of Nox	PPM	6.9	7.8	---	---	---	---

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

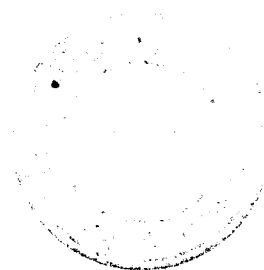
N.D= Not Detectable

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

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

Royal Environment Auditing & Consultancy Service

Analyst





# Royal

## Environment Auditing & Consultancy Service

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Ref. No. :669/04/2014-15

Date: 05/05/2014

### WORK ZONE NOISE LEVEL MEASUREMENT

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

Date of sampling : 2nd to 12th April,2014

Sr. No.	Location of Sampling	Results Avg. in dB(A)
01.	Inside Control Room of Sinter Plant	63.5
02.	Nr. Stock House of BF	73.7
03.	Inside Control Room of BF	64.3
04.	Inside Control Room of Blower House	61.2
05.	Inside Control of Cast House	63.4
06.	Inside Control Room of CPP	59.5
07.	Inside Control Room of Annealing Furnace of DISP	58.8
08.	Inside Laboratory of BF	55.2
09.	Inside Laboratory of DISP	56.7
10.	Inside ID & OD Control Room of JCO Plant	59.8
11.	Inside Control Room – Mill area of Spiral Plant-2	60.4
12.	Inside Spiral – 1	69.6
13.	Nr. Pipe cutting Area of Spiral Plant	74.8
14.	Inside JCO Plant	68.5
15.	Nr. JCO Press	71.7
16.	Inside DISP Plant	74.5
17.	Inside Coating Plant	72.3
18.	Nr. CCM SDP-II	68.8
19.	Inside Control Room of Annealing Furnace of SDP-II	59.7
20.	Inside New Coating Plant	70.2
21.	Inside Control Room of BF-2	58.1
22.	Inside Spiral-2	72.8
23.	Nr. Zinc Coating SDP-II	71.1
24.	Nr. Stock House of BF-2	67.9
25.	C/R Blower House of BF-2	73.9

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

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Ref. No. : 670/04/2014-15

Date: 05/05/2014

### AMBIENT NOISE LEVEL MEASUREMENT

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

Date of sampling : 2nd to 12th April,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	62.7	56.1
02.	Nr. Old Colony	55.3	52.5
03.	Nr. LPG Yard	63.7	60.1
04.	Nr. Sinter Plant	71.5	66.7
05.	Nr. R. O. Plant	66.4	59.8
06.	Nr. Gate No. 2	72.7	66.4
07.	Nr. New Colony	60.6	56.2
08.	Nr. SDP-2	72.5	67.4
09.	Nr. BLAST FURNACE-2	73.8	67.2
10.	Nr. New Coating	72.3	65.9

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



*[Signature]*  
Analyst



# Royal

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Ref. No. : 671/04/2014-15

Date: 05/05/2014

### 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 : 30/04/2014

Sr. No.	Parameters	Unit	GPCB limits	STP Inlet	STP Outlet
01.	pH	pH Unit	---	7.55	7.43
02.	BOD (3 Days at 27°C)	mg/l	<20	157	14
03.	Suspended Solids	mg/l	<30	163	23
04.	Residual Chlorine	mg/l	Min. 0.5	---	0.70

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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**

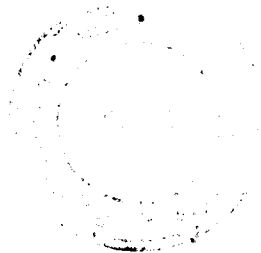
3 Particulars of sampling

Date of Sampling : 2nd to 12th April, 2014

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m <sup>3</sup>					
1	Spiral Plant Nr. ID/OD	Total Dust	Personal Respirable Dust sampler APM 800	02	3-5	4.00	10	Gravimetric	6	---	<i>M / Sonrat</i>	Mr. Manoj Sonrat
2	JCO Plant Nr. JCO Press	Total Dust		02	4-6	5.00	10	Gravimetric	7	---		
3	Sinter Plant At First Floor	Total Dust		02	3-6	4.5	10	Gravimetric	8	---		
4	BF Plant (Cast House)	CO		02	2-4.5	3.25	2	Gravimetric	8	---		
		Total Dust			3-5.5	4.3	10					
5	Coating Plant-1 (Blasting Area)	Total Dust		02	3-6.5	4.8	10	Gravimetric	8	---		
6	DISP Plant Main Entrance	Total Dust		02	4-7	5.5	10	Gravimetric	9	---		
7	Spiral Plant -2 Nr. ID/OD	Total Dust		02	4-6.5	5.3	10	Gravimetric	9	---		
8	Coating Plant-2 (Blasting Area)	Total Dust		02	4-5	4.5	10	Gravimetric	7	---		
9	Coating Plant-3 (Blasting Area)	Total Dust		02	3-5.5	4.3	10	Gravimetric	9	---		
10	Small Dia Ductile Iron pipe	Total Dust	02	4-6	5.0	10	Gravimetric	9	---			

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

Calibration Date Due on : 02/12/2014



For. Royal Environment Auditing &amp; Consultancy Service

Authorized Sign