



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. : 24/04/2012-13

Date : 16/04/2012

STACK EMISSION MONITORING RESULTS

BF 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	PCI Unit
01	Date of Sampling	---	04-04-2012	04-04-2012	04-04-2012	07-04-2012	07-04-2012
02	Time of sampling	Hr.	9.00	10.30	11.45	13.30	---
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	32.00
06	Stack Diameter	Meter	1.380	1.380	1.484	2.250	1.38
07	Stack Temperature	°C	210	208	43	375	73
08	Ambient Temperature	°C	30	30	32	33	31
09	Average Velocity of Flue Gases	M/Sec.	10	9.3	8.4	11.00	7
10	Isokinetic flow rate for P.M. Sampling	LPM	26	24	34	21	24
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm ³	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm ³	NIL	NIL	70	25	84
14	Permissible limits for SO ₂	mg/Nm ³	40	40	40	40	100 ppm
15	Measured Concentration of SO ₂	mg/Nm ³	3.2	3.1	N.D.	N.D.	1.4
16	Permissible limits for Nox	mg/Nm ³	25	25	25	25	50 ppm
17	Measured Concentration of Nox	mg/Nm ³	5.4	7.0	4.5	3.8	0.96

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

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

Recalibration is Due on : 06/05/2012

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Ref. No. : 25/04/2012-13

Date : 16/04/2012

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
01	Date of Sampling	---	05-04-2012	05-04-2012	05-04-2012	05-04-2012	05-04-2012
02	Time of sampling	Hr.	9.20	10.35	11.10	14.40	15.45
03	Stack Attached to	---	Mg Converter-I	Zn Coating - I	Zn Coating - II	Annealing Furnace - I	Annealing Furnace - II
04	Air Pollution Control Measures	---	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	---	---
05	Stack Height	Meter	30	30	30	32	32
06	Stack Diameter	Meter	0.488	0.584	0.584	1.375	1.375
07	Stack Temperature	°C	48	45	51	179	128
08	Ambient Temperature	°C	29	29	30	32	32
09	Average Velocity of Flue Gases	M/Sec.	14.5	12.8	13.2	10.1	9.1
10	Isokinetic flow rate for P.M. Sampling	LPM	25	22	23	28	29
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm ³	150	20 (Zn)	20 (Zn)	150	150
13	Measured Concentration of PM	mg/Nm ³	52	18 (Zn)	16 (Zn)	44	54
14	Permissible limits for SO ₂	mg/Nm ³	40	NA	NA	100 ppm	100 ppm
15	Measured Concentration of SO ₂	mg/Nm ³	N.D.	NA	NA	3.0	2.4
16	Permissible limits for Nox	mg/Nm ³	25	NA	NA	50 ppm	50 ppm
17	Measured Concentration of Nox	mg/Nm ³	2	NA	NA	2.7	2.3

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I
Recalibration is Due on : 06/05/2012

N.D= Not Detectable

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Ref. No. : 27/04/2012-13

Date : 16/04/2012

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
01	Date of Sampling	---	06-04-2012	06-04-2012	06-04-2012	03-04-2012
02	Time of sampling	Hr.	12.00	10.15	---	9.15
03	Stack Attached to	---	Core Cleaning & Dusting	Core Shop-I	Shot Blasing (Coating Plant)	Sand Reclamation
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	Cyclone Seprater & Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	32
06	Stack Diameter	Meter	0.588	0.584	0.588	---
07	Stack Temperature	°C	37	33	52	57
08	Ambient Temperature	°C	32	30	33	29
09	Average Velocity of Flue Gases	M/Sec.	9.3	12.9	13.70	11.7
10	Isokinetic flow rate for P.M. Sampling	LPM	17	24	24	20
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm ³	150	150	150	150
13	Measured Concentration of PM	mg/Nm ³	49	41	88	42
14	Permissible limits for SO ₂	mg/Nm ³	40	40	40	40
15	Measured Concentration of SO ₂	mg/Nm ³	N.D.	N.D.	3.6	NIL
16	Permissible limits for Nox	mg/Nm ³	25	25	25	25
17	Measured Concentration of Nox	mg/Nm ³	N.D.	2.2	1.0	NIL

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

N.D.= Not Detectable

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

Recalibration is Due on : 06/05/2012

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Ref. No. : 26/04/2012-13

Date : 16/04/2012

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
01	Date of Sampling	---	06-04-2012	NOT IN	06-04-2012	NOT IN	06-04-2012
02	Time of sampling	Hr.	11.00	OPERATION	17.00	OPERATION	14.30
03	Stack Attached to	---	Core Shop-II	Bitumin Drying Oven - I	Bitumin Drying Oven - II	Barrel Grinding & Dusting - I	Barrel Grinding & Dusting - II
04	Air Pollution Control Measures	---	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	32	32	30	30
06	Stack Diameter	Meter	0.584	1.375	1.375	0.584	0.584
07	Stack Temperature	°C	58	---	173	---	52
08	Ambient Temperature	°C	31	---	29	---	32
09	Average Velocity of Flue Gases	M/Sec.	20.2	---	8.6	---	17.7
10	Isokinetic flow rate for P.M. Sampling	LPM	14	---	25	---	12
11	Gaseous Sampling Flow Rate	LPM	2.0	---	2.0	---	2.0
12	Permissible limits for PM	mg/Nm ³	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm ³	35	---	138	---	59
14	Permissible limits for SO ₂	mg/Nm ³	40	100 ppm	100 ppm	40	40
15	Measured Concentration of SO ₂	mg/Nm ³	2.4	---	3.9	---	3.1
16	Permissible limits for Nox	mg/Nm ³	25	50 ppm	50 ppm	25	25
17	Measured Concentration of Nox	mg/Nm ³	3.4	---	3.2	---	2.0

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I
Recalibration is Due on : 06/05/2012

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Sheepal
Analyst



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Ref. No. : 28/04/2012-13

Date : 16/04/2012

STACK EMISSION MONITORING RESULTS Pipe Complex- SDP

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

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3
01	Date of Sampling	---	02-04-2012	02-04-2012	02-04-2012
02	Time of sampling	Hr.	14.00	15.00	16.30
03	Stack Attached to	---	Mg Converter -II	Zn Coating - III	Zn Coating - IV & V
04	Air Pollution Control Measures	---	Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter
05	Stack Height	Meter	30	---	---
06	Stack Diameter	Meter	0.488	---	---
07	Stack Temperature	°C	42	48	50
08	Ambient Temperature	°C	32	32	31
09	Average Velocity of Flue Gases	M/Sec.	16.2	11.8	13.50
10	Isokinetic flow rate for P.M. Sampling	LPM	29	20	23
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm ³	150	20 (Zn)	20 (Zn)
13	Measured Concentration of PM.	mg/Nm ³	35	15 (Zn)	17 (Zn)
14	Permissible limits for SO ₂	ppm	40	NA	NA
15	Measured Concentration of SO ₂	ppm	N.D.	NA	NA
16	Permissible limits for Nox	ppm	25	NA	NA
17	Measured Concentration of Nox	ppm	2.2	NA	NA

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I
Recalibration is Due on : 06/05/2012

N.D= Not Detectable

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Royal Environment Auditing & Consultancy Service



Shirpal
Analyst



Royal

Environment Auditing & Consultancy Service

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Ref. No. : 29/04/2012-13

Date : 16/04/2012

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	AAQM - 2	AAQM - 3	AAQM - 4
01.	Location of Ambient	----	Nr. New Colony	Nr. Old Colony	Nr. Sinter Plant	Nr. Temple
02.	Date of sampling	----	02/04/2012	03/04/2012	02/04/2012	03/04/2012
03.	Time of sampling	Hr.	8.00	8.30	8.15	8.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NW	NW	NW	NW
06.	Average Wind Speed	Km/Hr.	3 to 12	3 to 12	3 to 15	3 to 15
07.	Average flow rate during sampling	m ³ /Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	2.0	2.0	2.0	2.0
09.	Permissible limits for PM 10	µg/m ³	100	100	100	100
10.	Measured Concentration of PM 10	µg/m ³	51	43	48	44
11.	Permissible limits for PM 2.5	µg/m ³	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m ³	32	26	25	32
13.	Permissible limits for SO _x	µg/m ³	80	80	80	80
14.	Measured Concentration of SO _x	µg/m ³	11.9	12.5	13.4	10.7
15.	Permissible limits for Nox	µg/m ³	80	80	80	80
16.	Measured Concentration of NO _x	µg/m ³	19.8	22.3	21.6	24.2
17.	Permissible limits for CO	µg/m ³	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m ³	N.D.	N.D.	N.D.	N.D.

Instrument used : Envirotech make (RDS), Model No. APM - 460 BL, Gaseous Sampling Kit ,
Calibration due on 1.) 10/12/2012, 10/12/2012 & 17/09/2012

N.D= Not Detectable

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Shivpal
Analyst



Royal

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

Ref. No. : 32/04/2012-13

Date : 16/04/2012

AMBIENT NOISE LEVEL MEASUREMENT

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

Date of Sampling: 7th April 2012

Sr. No.	Location of Sampling	Results in dB(A) (Day Time)	Results in dB(A) (Night Time)
	Permissible Limits	75.0	70.0
01.	Nr. Admin. Building	68.0	66.0
02.	Nr. Old Colony	67.9	65.4
03.	Nr. LPG Yard	66.2	65.5
04.	Nr. Sinter Plant	69.9	63.8
05.	Nr. R. O. Plant	70.2	68.4
06.	Nr. Gate No. 2	66.2	63.8
07.	Nr. New Colony	71.1	67.5

Instruments used : Sound level meter, Model : SL - 4001 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.
Recalibration is Due On : 06/10/2012

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Sheupal
Analyst



Royal

Environment Auditing & Consultancy Service

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Ref. No. : 31/04/2012-13

Date : 16/04/2012

WORK ZONE NOISE LEVEL MEASUREMENT

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

Date of Sampling : 2nd to 7th April-2012

Sr. No.	Location of Sampling	Results Avg. in dB(A)
01.	Inside Control Room of Sinter Plant	67.9
02.	Nr. Stock House of BF	71.2
03.	Inside Control Room of BF	67.3
04.	Inside Control Room of Blower House	72.1
05.	Inside Control of Cast House	68.3
06.	Inside Control Room of CPP	69.2
07.	Inside Control Room of Annealing Furnace of DISP	68.3
08.	Inside Laboratory of BF	71.3
09.	Inside Laboratory of DISP	69.3
10.	Inside ID & OD Control Room of JCO Plant	71.8
11.	Inside Control Room – Mill area of Spiral Plant	73.4
12.	Inside Spiral – 1	68.2
13.	Nr. Pipe cutting Area of Spiral Plant	71.2
14.	Inside JCO Plant	66.6
15.	Nr. JCO Press	73.0
16.	Inside DISP Plant	72.5
17.	Inside Coating Plant	67.3

Instruments used : Sound level meter, Model : SL - 4001 (Lutron Make)

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

Recalibration is Due On : 06/10/2012

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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 7th April-2012

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	1-3	1.5	10	Gravimetric	9	----	<i>Sheepal</i>	Mr. Shivpal Singh
2	JCO Plant Nr. JCO Press	Total Dust		02	1-5	2.5	10	Gravimetric	3	----		
3	Sinter Plant At First Floor	Total Dust		02	1-2	1.5	10	Gravimetric	5	----		
4	BF Plant (Cast House)	CO		02	0.1-0.5	0.25	2	Gravimetric	6	----		
		Total Dust			1-4	2	10					
5	Coating Plant (Blasting Area)	Total Dust		02	2-6	4.0	10	Gravimetric	4	----		
6	DISP Plant Main Entrance	Total Dust	02	3-7	5	10	Gravimetric	7	----			

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

Calibration Date Due on : 10/12/2012



For. Royal Environment Auditing & Consultancy Service

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

Ref. No. : 35/04/2012-13

Date : 16/04/2012

Bag Filter Efficiency Report

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

Date of Sampling: 2nd to 7th April-2012

Sr. No.	Particulars	Unit	Stack Attached to			
			Mg Converter-I	Zn Coating - I	Barrel Grinding - II	Zn Coating - II
1	Stack Height	Meter	30	30	30	30
2	Stack Diameter	Meter	0.488	0.584	0.584	0.584
3	Stack Temperature	°C	48	45	52	51
4	Ambient Temperature	°C	29	29	32	30
5	Average Velocity of Flue Gases	M/Sec.	14.5	12.8	17.7	13.2
6	Inlet	mg	1574	1859	1196	17492
7	outlet	mg	52	18	59	16
8	Efficiency	Percentage	96.7	99.0	95.1	99.9

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Sheepal
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Ref. No. : 33/04/2012-13

Date : 16/04/2012

WATER SAMPLES ANALYSIS REPORT

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

Date of Sample Collection : 7th April 2012

Source of Sample : Borewell Water Sample From Nr, Mess

Sr. No.	Parameters	Unit	Permissible Limits(*)	Results
01.	Colour	Pt.Co.Scale	5	Colourless
02	Odour	--	Unobjectionable	Odourless
03	pH	pH Unit	6.5 to 8.5	7.52
04.	T.D.S.	Mg/L	500	1269
05.	Total Hardness	Mg/L	300	200
06.	Turbidity	NTU	5	1.1
07.	Chloride	Mg/L	250	238
08.	Alkalinity	Mg/L	200	194
09.	Phenolic Compound	Mg/L	0.001	NIL
10.	Oil & Grease	Mg/L	---	NIL
11.	Residual Chlorine	Mg/L	0.2	NIL
12.	Fluoride	Mg/L	1	0.3
13.	Ca as Ca	Mg/L	75	88
14.	Mg as Mg	Mg/L	30	32
15.	Copper	Mg/L	0.05	NIL
16.	Iron	Mg/L	0.3	0.03
17.	Manganese	Mg/L	0.1	0.09
18.	Sulphate	Mg/L	200	128
19.	Nitrate	Mg/L	45.0	12

(*) Permissible Limit in the Absense of Alternate Source as per IS 10500 : 2004, Drinking Water Specification

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Ref. No. : 34/04/2012-13

Date : 16/04/2012

REPORT OF EFFLUENT ANALYSIS

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

Source Of Sample Collection : Domestic Effluent After Treatment

Date of Sample Collection : 7th April 2012

Sr. No.	Parameters	Unit	GPCB limits	STP Inlet	STP Outlet
01.	pH	pH Unit	-----	6.40	7.51
02.	BOD (3 Days at 27°C)	Mg/L	20	172	16
03.	Suspended Solids	Mg/L	30	104	18
04.	Residual Chlorine	Mg/L	Min. 0.5	----	0.60

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