

Ref: JSL-IPU/HSE/ENV/MO/12/11

Date: 24.12.12

TO,
The Member Secretary
Gujarat Pollution Control Board,
Paryavaran Bhavan, Sector 10-A
Gandhinagar -382 010

Kind Attn.: Mr. V.R.Ghadge (Senior Environmental Engineer)

Sub: Submission of Environmental Monitoring Report with respect to Blast Furnace, Pipe Plant, Sinter Plant-1 & Sinter Plant-2 for the month of November – 2012.

Ref : Consent Order No.37455 (Blast Furnace), 37730 (Pipe Plant), 43256 (Sinter Plant-1), 32748 (Sinter Plant-2 & PCI),

Dear Sir,

With reference to the above, we are pleased to submit herewith environmental monitoring report of ambient air quality, stack emission, noise level and water & waste water quality with respect to *Samaghogha Unit (IPU) of Jindal Saw Limited* for the month of *November – 2012* as carried out by *M/s Royal Environment Auditing and Consultancy Service, Rajkot.*

Kindly acknowledge receipt for the same.

Thanking you,

Yours faithfully,
For **JINDAL SAW LTD,**



A . K . Pandey
(AGM - HSE)

Encl: As Above



Royal

Environment Auditing & Consultancy Service

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

Ref. No. : 244/11/2012-13

Date: 30/11/2012

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 | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|------------------------------------|--------|----------------|-----------------------|-------------------------------|
| 01. | Location of Ambient | --- | Main Gate (SE) | Sinter Plant - 1 (NW) | Nr. Workshop Spiral - II (SW) |
| 02. | Date of sampling | --- | 05/11/2012 | 05/11/2012 | 05/11/2012 |
| 03. | Time of sampling | Hr. | 9.00 | 9.30 | 10.00 |
| 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 10 | 4 to 10 | 4 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. | Permissible limits for PM 10 | µg/m3 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 52 | 56 | 48 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 30 | 36 | 28 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12.1 | 12.8 | 11.4 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 20.4 | 22.2 | 21.3 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 211.0 | 252.0 | 220 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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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 (SE) | Sinter Plant - 1 (NW) | Nr. Workshop Spiral - II (SW) |
| 02. | Date of sampling | --- | 08/11/2012 | 08/11/2012 | 08/11/2012 |
| 03. | Time of sampling | Hr. | 9.00 | 9.30 | 10.00 |
| 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 11 | 3 to 11 | 3 to 11 |
| 07. | Average flow rate during sampling | m ³ /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 ³ | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m ³ | 51 | 54 | 46 |
| 11. | Permissible limits for PM 2.5 | µg/m ³ | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m ³ | 29 | 34 | 29 |
| 13. | Permissible limits for SO ₂ | µg/m ³ | 80 | 80 | 80 |
| 14. | Measured Concentration of SO ₂ | µg/m ³ | 12.2 | 13.0 | 11.5 |
| 15. | Permissible limits for NO ₂ | µg/m ³ | 80 | 80 | 80 |
| 16. | Measured Concentration of NO ₂ | µg/m ³ | 20.1 | 21.8 | 20.9 |
| 17. | Permissible limit for CO ** | µg/m ³ | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m ³ | 205.0 | 259.0 | 218 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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Date: 30/11/2012

Ref. No. : 246/11/2012-13

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

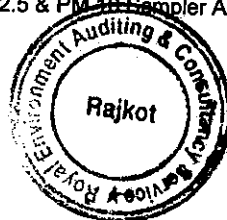
| Sr. No. | Particulars | Unit | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--------------------------------------|--------------|----------------|-----------------------|-------------------------------|
| 01. | Location of Ambient | --- | Main Gate (SE) | Sinter Plant - 1 (NW) | Nr. Workshop Spiral - II (SW) |
| 02. | Date of sampling | --- | 12/11/2012 | 12/11/2012 | 12/11/2012 |
| 03. | Time of sampling | Hr. | 9.00 | 9.30 | 10.00 |
| 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 9 | 4 to 9 | 4 to 9 |
| 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 | 50 | 55 | 45 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 31 | 33 | 30 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12 | 12.5 | 11.7 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 20.2 | 22.5 | 21.1 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 207.0 | 269.0 | 211 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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Ref. No. : 247/11/2012-13

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 (SE) | Sinter Plant - 1 (NW) | Nr. Workshop Spiral - II (SW) |
| 02. | Date of sampling | ---- | 15/11/2012 | 15/11/2012 | 15/11/2012 |
| 03. | Time of sampling | Hr. | 9.00 | 9.30 | 10.00 |
| 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. | 5 to 11 | 5 to 11 | 5 to 11 |
| 07. | Average flow rate during sampling | m ³ /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/m ³ | 53 | 57 | 48 |
| 11. | Permissible limits for PM 2.5 | µg/m³ | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m ³ | 32 | 35 | 29 |
| 13. | Permissible limits for SO₂ | µg/m³ | 80 | 80 | 80 |
| 14. | Measured Concentration of SO ₂ | µg/m ³ | 12.1 | 12.8 | 11.5 |
| 15. | Permissible limits for NO₂ | µg/m³ | 80 | 80 | 80 |
| 16. | Measured Concentration of NO ₂ | µg/m ³ | 21.3 | 23.2 | 22.1 |
| 17. | Permissible limit for CO ** | µg/m ³ | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m ³ | 209.0 | 252 | 201 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

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Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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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 (SE) | Sinter Plant - 1 (NW) | Nr. Workshop Spiral - II (SW) |
| 02. | Date of sampling | ---- | 19/11/2012 | 19/11/2012 | 19/11/2012 |
| 03. | Time of sampling | Hr. | 9.00 | 9.30 | 10.00 |
| 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 10 | 3 to 10 | 3 to 10 |
| 07. | Average flow rate during sampling | m ³ /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/m ³ | 54 | 58 | 46 |
| 11. | Permissible limits for PM 2.5 | µg/m³ | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m ³ | 32 | 36 | 30 |
| 13. | Permissible limits for SO₂ | µg/m³ | 80 | 80 | 80 |
| 14. | Measured Concentration of SO ₂ | µg/m ³ | 12.6 | 13.1 | 11.8 |
| 15. | Permissible limits for NO₂ | µg/m³ | 80 | 80 | 80 |
| 16. | Measured Concentration of NO ₂ | µg/m ³ | 21.7 | 23.5 | 21.9 |
| 17. | Permissible limit for CO ** | µg/m ³ | 2000.0 | 2000.0 | 2000 |
| 18. | Measured Concentration of CO | µg/m ³ | 199.0 | 275.0 | 204 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment
Calibration is due on: 1) 22/04/2013 2) 03/07/2013



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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 (SE) | Sinter Plant - 1 (NW) | Nr. Workshop Spiral - II (SW) |
| 02. | Date of sampling | --- | 22/11/2012 | 22/11/2012 | 22/11/2012 |
| 03. | Time of sampling | Hr. | 9.00 | 9.30 | 10.00 |
| 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 9 | 3 to 9 | 3 to 9 |
| 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 | 52 | 54 | 47 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 32 | 35 | 29 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12.9 | 13.5 | 11.5 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 21.5 | 23.1 | 22.3 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000.0 | 2000.0 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 200.0 | 258.0 | 204.0 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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Ref. No. : 250/11/2012-13

Date: 06/11/2012

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 | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--|-------------------------|----------------|-----------------------|-------------------------------|
| 01. | Location of Ambient | --- | Main Gate (SE) | Sinter Plant - 1 (NW) | Nr. Workshop Spiral - II (SW) |
| 02. | Date of sampling | --- | 26/11/2012 | 26/11/2012 | 26/11/2012 |
| 03. | Time of sampling | Hr. | 9.00 | 9.30 | 10.00 |
| 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 ³ /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/m ³ | 53 | 58 | 50 |
| 11. | Permissible limits for PM 2.5 | µg/m³ | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m ³ | 34 | 37 | 30 |
| 13. | Permissible limits for SO₂ | µg/m³ | 80 | 80 | 80 |
| 14. | Measured Concentration of SO ₂ | µg/m ³ | 12.6 | 13.9 | 11.8 |
| 15. | Permissible limits for NO₂ | µg/m³ | 80 | 80 | 80 |
| 16. | Measured Concentration of NO ₂ | µg/m ³ | 20.7 | 24.0 | 22.6 |
| 17. | Permissible limit for CO ** | µg/m ³ | 2000.0 | 2000.0 | 2000 |
| 18. | Measured Concentration of CO | µg/m ³ | 185.0 | 235.0 | 195.0 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013





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Ref. No. : 251/11/2012-13

Date: 07/11/2012

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 | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--|-------------------------|----------------|-----------------------|-------------------------------|
| 01. | Location of Ambient | --- | Main Gate (SE) | Sinter Plant - 1 (NW) | Nr. Workshop Spiral - II (SW) |
| 02. | Date of sampling | --- | 29/11/2012 | 29/11/2012 | 29/11/2012 |
| 03. | Time of sampling | Hr. | 9.00 | 9.30 | 10.00 |
| 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 10 | 4 to 10 | 4 to 10 |
| 07. | Average flow rate during sampling | m ³ /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/m ³ | 52 | 57 | 48 |
| 11. | Permissible limits for PM 2.5 | µg/m³ | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m ³ | 32 | 35 | 29 |
| 13. | Permissible limits for SO₂ | µg/m³ | 80 | 80 | 80 |
| 14. | Measured Concentration of SO ₂ | µg/m ³ | 12.8 | 14.0 | 11.5 |
| 15. | Permissible limits for NO₂ | µg/m³ | 80 | 80 | 80 |
| 16. | Measured Concentration of NO ₂ | µg/m ³ | 21.2 | 23.7 | 22.2 |
| 17. | Permissible limit for CO ** | µg/m ³ | 2000.0 | 2000.0 | 2000 |
| 18. | Measured Concentration of CO | µg/m ³ | 189.0 | 255.0 | 201.0 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013





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Date: 30/11/2012

Ref. No. : 252/11/2012-13

AMBIENT AIR QUALITY MONITORING REPORT

UpWind Direction

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 | --- | Old Colony (Nr. Environment Laboratory) | Nr. Rain Water Harvesting | LPG Yard (Nr. Water Reservoir) | Between Sinter - 2 & Spiral - 2 |
| 02. | Date of sampling | --- | 21/11/2012 | 22/11/2012 | 23/11/2012 | 24/11/2012 |
| 03. | Time of sampling | Hr. | 9.00 | 11.00 | 10.00 | 10.30 |
| 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 9 | 4 to 11 | 4 to 12 |
| 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 | 0.2 | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m ³ | 100 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m ³ | 28 | 34 | 30 | 35 |
| 11. | Permissible limits for PM 2.5 | µg/m ³ | 60 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m ³ | 46 | 55 | 50 | 58 |
| 13. | Permissible limits for SO ₂ | µg/m ³ | 80 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO ₂ | µg/m ³ | 11.8 | 12.2 | 11.7 | 11.6 |
| 15. | Permissible limits for NO ₂ | µg/m ³ | 80 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO ₂ | µg/m ³ | 19.3 | 20.5 | 21.2 | 22.4 |
| 17. | Permissible limit for CO ** | µg/m ³ | 2000.0 | 2000.0 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m ³ | 206.0 | 210.0 | 289 | 265 |

Instrument used : 2 Nos of Envirotech make (RDS), and 2.5 Attachment Model No. APM - 460 BL, Gaseous Sampling Kit APM 411,
All are Calibration due on: 23/04/2013



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Date: 30/11/2012

Ref. No. : 253/11/2012-13

AMBIENT AIR QUALITY MONITORING REPORT

DownWind Direction

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 | AAQM - 6 | AAQM - 7 | AAQM - 8 |
|---------|---|---------------------|---------------|------------------------------|---------------|--------------|
| 01. | Location of Ambient | --- | Labour Colony | New Colony (Shopping Centre) | ADMN Building | Weigh bridge |
| 02. | Date of sampling | --- | 21/11/2012 | 22/11/2012 | 23/11/2012 | 24/11/2012 |
| 03. | Time of sampling | Hr. | 9.30 | 11.30 | 10.30 | 11.00 |
| 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 9 | 4 to 11 | 4 to 12 |
| 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 | 0.2 | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m ³ | 100 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m ³ | 34 | 30 | 36 | 32 |
| 11. | Permissible limits for PM 2.5 | µg/m ³ | 60 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m ³ | 52 | 48 | 54 | 50 |
| 13. | Permissible limits for SO _x | µg/m ³ | 80 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO _x | µg/m ³ | 12.2 | 11.5 | 12.3 | 12.5 |
| 15. | Permissible limits for NO _x | µg/m ³ | 80 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO _x | µg/m ³ | 19.8 | 20.8 | 21.3 | 22 |
| 17. | Permissible limit for CO ** | µg/m ³ | 2000.0 | 2000.0 | 2000 | 2000 |
| 18. | Measured Concentration of | µg/m ³ | 225.0 | 168.0 | 220 | 210 |

Instrument used : 2 Nos of Envirotech make (RDS), and 2.5 Attachment Model No. APM - 460 BL, Gaseous Sampling Kit APM 411,
All are Calibration due on: 23/04/2013

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Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ■ admin@royalconsultancy.com
Date: 30/11/2012

Ref. No. :255/11/2012-13

FUGITIVE EMISSION MONITORING REPORT

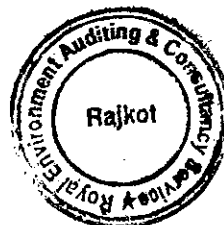
Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

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

| Sr. No. | Particulars | Unit | A - 4 | A - 5 | A - 6 |
|---------|------------------------------------|--------|------------------------|------------|----------------------|
| 01. | Location of Ambient | ---- | Sinter 2 Ground Hopper | DISP | Sinter 1 Main to PMD |
| 02. | Date of sampling | ---- | 23/11/2012 | 24/11/2012 | 24/11/2012 |
| 03. | Time of sampling | Hr. | 12.45 | 9.00 | 9.45 |
| 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 to11 | 4 to12 | 4 to12 |
| 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 | 3000 | 3000 | 3000 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 945 | 1054 | 2254 |
| 11. | Permissible limits for SO2 | µg/m3 | 150 | 150 | 150 |
| 12. | Measured Concentration of SO2 | µg/m3 | 13.1 | 12.9 | 13.7 |
| 13. | Permissible limits for NO2 | µg/m3 | 120 | 120 | 120 |
| 14. | Measured Concentration of NO2 | µg/m3 | 22.2 | 22.1 | 23.8 |
| 15. | Permissible limit for CO ** | µg/m3 | 5000.0 | 5000.0 | 5000 |
| 16. | Measured Concentration of CO | µg/m3 | 222.0 | 201.0 | 190.0 |

Instrument used : 2 Nos of Envirotech make (RDS),and 2.5 Attachment Model No. APM - 460 BL, Gaseous Sampling Kit APM 411,
All are Calibration due on: 23/04/2013

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Ref. No. : 257/11/2012-13

Date: 30/11/2012

STACK EMISSION MONITORING RESULTS APCM Inlet of Phase - 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 |
|---------|---|--------------------|---------------------|---------------------|----------------------------|------------------------|---------------------|
| 01 | Date of Sampling | — | 22-11-2012 | 22-11-2012 | 22-11-2012 | 24-11-2012 | 24-11-2012 |
| 02 | Time of sampling | Hr. | 14.15 | 15.00 | 16.00 | 16.45 | 17.30 |
| 03 | APCM Attached to | — | Zinc Coating - I | Mg Converter - I | Core Cleaning & Dusting | Barrel Grinding - I | Sand Reclamation |
| 04 | Air Pollution Control Measures Device | — | Bag Filter | Bag Filter | Bag Filter | Bag Filter | Bag Filter |
| 05 | Stack Temperature | °C | 45 | 52 | 53 | 40 | 42 |
| 06 | Ambient Temperature | °C | 35 | 35 | 34 | 35 | 33 |
| 07 | Average Velocity of Flue Gases | M/Sec. | 4.7 | 6.6 | 10.6 | 11.4 | 14.2 |
| 08 | Isokinetic flow rate for P.M. Sampling | LPM | 19 | 11 | 18 | 20 | 25 |
| 09 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 10 | Measured Concentration of PM. | mg/Nm ³ | 1564 (Zn) | 954 | 754 | 1632 | 1087 |
| 11 | Measured Concentration of SO ₂ | mg/Nm ³ | NA | N.D. | N.D. | 1.8 | N.D. |
| 12 | Measured Concentration of NO _x | mg/Nm ³ | NA | 4 | N.D. | 4.1 | N.D. |

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 Recalibration is Due on : 21/04/2013

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Ref. No. : 258/11/2012-13

Date: 30/11/2012

STACK EMISSION MONITORING RESULTS APCM Inlet of Phase - 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. 5 | Stack No. 6 |
|---------|---|--------------------|-------------------|-------------------|----------------------|------------------|---------------------|
| 01 | Date of Sampling | --- | 24-11-2012 | 24-11-2012 | 23-11-2012 | 23-11-2012 | 23-11-2012 |
| 02 | Time of sampling | Hr. | 14.00 | 15.00 | 15.30 | 17.00 | 17.45 |
| 03 | APCM Attached to | --- | Zinc Coating - II | Mg Converter - II | Barrel Grinding - II | Zn Coating - III | Zn Coating - IV & V |
| 04 | Air Pollution Control Measures Device | --- | Bag Filter | Bag Filter | Bag Filter | Bag Filter | Bag Filter |
| 05 | Stack Temperature | °C | 49 | 53 | 44 | 56 | 48 |
| 06 | Ambient Temperature | °C | 35 | 35 | 35 | 34 | 34 |
| 07 | Average Velocity of Flue Gases | M/Sec. | 9.1 | 4.3 | 12.9 | 11.2 | 12.1 |
| 08 | Isokinetic flow rate for P.M. Sampling | LPM | 16 | 17 | 23 | 19 | 21 |
| 09 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 10 | Measured Concentration of PM. | mg/Nm ³ | 1684 (Zn) | 1124 | 1585 | 1605 (Zn) | 1540 (Zn) |
| 11 | Measured Concentration of SO ₂ | mg/Nm ³ | NA | N.D. | 1.8 | NA | 1.5 |
| 12 | Measured Concentration of NO _x | mg/Nm ³ | NA | 3 | 4.1 | NA | 4.5 |

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 Recalibration is Due on : 21/04/2013

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Ref. No. : 259/11/2012-13

Date: 30/11/2012

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 | --- | 19/11/2012 | 19/11/2012 | 19/11/2012 | 19/11/2012 | 19/11/2012 | 19/11/2012 |
| 02 | Time of sampling | Hr. | 10.30 | 11.15 | 12.00 | 12.45 | 14.00 | 14.45 |
| 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 | 123 | 127 | 48 | 54 | 63 | 90 |
| 08 | Ambient Temperature | °C | 30 | 30 | 31 | 31 | 33 | 34 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 9.8 | 6.6 | 6.1 | 6.3 | 5.8 | 6.2 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 14 | 21 | 24 | 24 | 22 | 22 |
| 11 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 12 | Permissible limits for PM | mg/Nm3 | 150 | 150 | 150 | 150 | 150 | 150 |
| 13 | Measured Concentration of PM. | mg/Nm3 | 46 | 47 | 43 | 47 | 45 | 42 |
| 14 | Permissible limits for SO2 | ppm | 100 | NA | NA | NA | NA | NA |
| 15 | Measured Concentration of SO2 | ppm | 10.8 | --- | --- | --- | --- | --- |
| 16 | Permissible limits for NOx | ppm | 50 | NA | NA | NA | NA | NA |
| 17 | Measured Concentration of NOx | ppm | 6 | --- | --- | --- | --- | --- |

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 Recalibration is Due on : 21/04/2013

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Ref. No. : 260/11/2012-13

Date: 30/11/2012

STACK EMISSION MONITORING RESULTS Sinter Plant- II

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

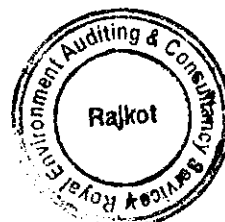
Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No: Particulars | Unit | Stack No. 1 | Stack No. 2 | Stack No. 3 | Stack No. 4 | Stack No. 5 | Stack No. 6 |
|--|--------------------|----------------|----------------|-------------|--------------------------------|----------------------------------|---|
| 01 Date of Sampling | --- | 20-11-2012 | 20-11-2012 | 20-11-2012 | 19-11-2012 | 19-11-2012 | 19-11-2012 |
| 02 Time of sampling | Hr. | 11.00 | 11.45 | 12.30 | 15.30 | 16.15 | 17.00 |
| 03 Stack Attached to | --- | Sinter Furnace | Tail End Stack | Flux | Primary Mixer De-duster system | Secondary Mixer De-duster system | Fuel Screening deduster System (Screening Flux Stack) |
| 04 Air Pollution Control Measures | --- | ESP | ESP | Bag Filter | --- | --- | Dust Collector |
| 05 Stack Height | Meter | 50 | 50 | 30 | 30 | 30 | 30 |
| 06 Stack Diameter | Meter | 2 | 1.3 | 0.7 | 1.25 | 1.25 | --- |
| 07 Stack Temperature | °C | 144 | 142 | 52 | 52 | 54 | 44 |
| 08 Ambient Temperature | °C | 31 | 32 | 32 | 35 | 35 | 34 |
| 09 Average Velocity of Flue Gases | M/Sec. | 15.8 | 8.2 | 5.8 | 7.9 | 6.6 | 6.9 |
| 10 Isokinetic flow rate for P.M. Sampling | LPM | 23 | 25 | 23 | 15 | 26 | 28 |
| 11 Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2 | 2.0 | 2.0 |
| 12 Permissible limits for PM | mg/Nm ³ | 150 | 150 | 150 | 150 | 150 | 150 |
| 13 Measured Concentration of PM | mg/Nm ³ | 48 | 45 | 47 | 32 | 41 | 32 |
| 14 Permissible limits for SO ₂ | ppm | 100 | NA | NA | NA | NA | NA |
| 15 Measured Concentration of SO ₂ | ppm | 15.8 | NA | NA | NA | NA | NA |
| 16 Permissible limits for NO _x | ppm | 50 | NA | NA | NA | NA | NA |
| 17 Measured Concentration of NO _x | ppm | 21.1 | NA | NA | NA | NA | NA |

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 Recalibration is Due on : 21/04/2013

NA= Not Applicable

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Ref. No. : 261/11/2012-13

Date: 30/11/2012

STACK EMISSION MONITORING RESULTS

BLAST FURNCE-ID-18037

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 | --- | 21-11-2012 | 21-11-2012 | 21-11-2012 | 21-11-2012 | 21-11-2012 |
| 02 | Time of sampling | Hr. | 10.00 | 11.45 | 10.45 | 12.00 | 12.45 |
| 03 | Stack Attached to | --- | Boiler - I | Boiler - II | Dedusting System | Stove Stack | Coal Pulverization |
| 04 | Air Pollution Control Measures | --- | --- | --- | Bag Filter | ----- | Bag Filter |
| 05 | Stack Height | Meter | 45 | 45 | 35.0 | 50.0 | 32.00 |
| 06 | Stack Diameter | Meter | 1.380 | 1.380 | 1.484 | 2.250 | --- |
| 07 | Stack Temperature | °C | 175 | 185 | 62 | 340 | 62 |
| 08 | Ambient Temperature | °C | 30 | 31 | 30 | 32 | 32 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 7.5 | 7.7 | 7.1 | 8.9 | 7.9 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 21 | 21 | 27 | 18 | 30 |
| 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 | 2 | 3 | 42 | 5 | 45 |
| 14 | Permissible limits for SO ₂ | mg/Nm ³ | 40 | 40 | 40 | 40 | 100 (ppm) |
| 15 | Measured Concentration of SO ₂ | mg/Nm ³ | 6.0 | 4.9 | N.D. | N.D. | 2.1(ppm) |
| 16 | Permissible limits for NO _x | mg/Nm ³ | 25 | 25 | 25 | 25 | 50 (ppm) |
| 17 | Measured Concentration of Nox | mg/Nm ³ | 7.8 | 7.4 | 6.0 | 5.0 | 0.92 (ppm) |

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 Recalibration is Due on : 21/04/2013

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Ref. No. : 262/11/2012-13

Date: 30/11/2012

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 | --- | 19-11-2012 | Not Running | 19-11-2012 | 20-11-2012 | 20-11-2012 |
| 02 | Time of sampling | Hr. | 17.45 | During Visit | 18.30 | 14.30 | 13.15 |
| 03 | Stack Attached to | --- | Core Shop-II | Bitumin Drying Oven - I | Bitumin Drying Oven - II | Barrel Grinding - I | Barrel Grinding - II |
| 04 | Air Pollution Control Measures | --- | --- | --- | --- | Bag Filter | Bag Filter |
| 05 | Stack Height | Meter | 30 | 32.8 | 32.8 | 30 | 30 |
| 06 | Stack Diameter | Meter | 0.584 | 1.375 | 1.375 | 0.584 | 0.584 |
| 07 | Stack Temperature | °C | 60 | --- | 146 | 38 | 42 |
| 08 | Ambient Temperature | °C | 32 | --- | 31 | 35 | 35 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 15.1 | --- | 7.5 | 11.5 | 13.2 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 10 | --- | 23 | 8 | 9 |
| 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 | 150 |
| 13 | Measured Concentration of PM. | mg/Nm ³ | 34 | --- | 45 | 47 | 49 |
| 14 | Permissible limits for SO ₂ | mg/Nm ³ | 40 | 40 | 40 | 40 | 40 |
| 15 | Measured Concentration of SO ₂ | mg/Nm ³ | 4.5 | --- | 7.6 | 1.8 | 1.5 |
| 16 | Permissible limits for Nox | mg/Nm ³ | 25 | 25 | 25 | 25 | 25 |
| 17 | Measured Concentration of Nox | mg/Nm ³ | 4.9 | --- | 10.6 | 4.1 | 6.1 |

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 Recalibration is Due on : 21/04/2013

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Ref. No. : 263/11/2012-13

Date: 30/11/2012

STACK EMISSION MONITORING RESULTS PIPE PLANT-ID-18036

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

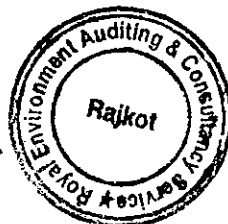
Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 1 | Stack No. 2 | Stack No. 3 | Stack No. 4 | Stack No. 5 |
|---------|---|--------------------|----------------|-------------------------------|-------------------------------|----------------------|-----------------------|
| 01 | Date of Sampling | --- | 20/11/2012 | 20/11/2012 | 20/11/2012 | 20/11/2012 | 20/11/2012 |
| 02 | Time of sampling | Hr. | 15.15 | 16.00 | 16.15 | 17.45 | 17.00 |
| 03 | Stack Attached to | --- | Mg Converter-I | Zn Coating - I | Zn Coating - II | Anneling Furnace - I | Anneling 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 | 50 | 43 | 47 | 161 | 162 |
| 08 | Ambient Temperature | °C | 35 | 35 | 34 | 34 | 34 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 6.8 | 4.9 | 9.5 | 7.3 | 6.7 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 12 | 9 | 17 | 21 | 20 |
| 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 | 45 | 15(Zn) | 16 (Zn) | 25 | 31 |
| 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 | 3.5(PPM) | 3.9 (ppm) |
| 16 | Permissible limits for Nox | mg/Nm ³ | 25 | NA | NA | 50 (PPM) | 50 (ppm) |
| 17 | Measured Concentration of Nox | mg/Nm ³ | 4 | NA | NA | 5.8 (PPM) | 5.0 (ppm) |

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 Recalibration is Due on : 21/04/2013

N.D= Not Detectable

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Ref. No. : 264/11/2012-13

Date: 30/11/2012

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 | — | 21-11-2012 | 21-11-2012 | 21-11-2012 | 21-11-2012 |
| 02 | Time of sampling | Hr. | 14.00 | 16.15 | 14.45 | 15.30 |
| 03 | Stack Attached to | — | Core Cleaning & Dusting | Core Shop-I | Shot Blasing (Coating Plant) | Sand Reclamation |
| 04 | Air Pollution Control Measures | — | 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 | 50 | 38 | 45 | 39 |
| 08 | Ambient Temperature | °C | 34 | 33 | 34 | 34 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 9.9 | 12.6 | 12.8 | 13 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 18 | 23 | 23 | 24 |
| 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 |
| 13 | Measured Concentration of PM | mg/Nm3 | 45 | 25 | 41 | 46 |
| 14 | Permissible limits for SO2 | mg/Nm3 | 40 | 40 | 40 | 40 |
| 15 | Measured Concentration of SO2 | mg/Nm3 | N.D. | N.D. | 4.0 | N.D. |
| 16 | Permissible limits for Nox | mg/Nm3 | 25 | 25 | 25 | 25 |
| 17 | Measured Concentration of Nox | mg/Nm3 | N.D. | 2.9 | 2.0 | N.D. |

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 Recalibration is Due on : 21/04/2013

N.D= Not Detectable

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Analyst



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Ref. No. : 265/11/2012-13

Date: 30/11/2012

STACK EMISSION MONITORING RESULTS Pipe Complex- SDP

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

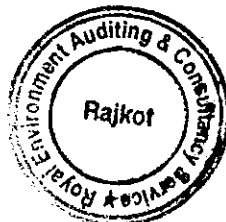
Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 1 | Stack No. 2 | Stack No. 3 | Stack No. 4 |
|---------|---|--------------------|------------------|--------------------------------|--------------------------------|---------------------|
| 01 | Date of Sampling | --- | 21-11-2012 | 21-11-2012 | 24-11-2012 | 24-11-2012 |
| 02 | Time of sampling | Hr. | 17.00 | 17.45 | 16.00 | 17.15 |
| 03 | Stack Attached to | --- | Mg Converter -II | Zn Coating - III | Zn Coating - IV & V | Barrel Grinding-III |
| 04 | Air Pollution Control Measures | --- | Bag Filter | Cyclone Separator & Bag Filter | Cyclone Separator & Bag Filter | Bag Filter |
| 05 | Stack Height | Meter | 30 | 30 | 30 | 30 |
| 06 | Stack Diameter | Meter | 0.488 | --- | --- | --- |
| 07 | Stack Temperature | °C | 50 | 45 | 53 | 40 |
| 08 | Ambient Temperature | °C | 33 | 32 | 32 | 34 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 4.5 | 11.5 | 12.5 | 11.5 |
| 10 | Isokinetic flow rate for P.M. Sampler | LPM | 8 | 21 | 22 | 21 |
| 11 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2.0 |
| 12 | Permissible limits for PM | mg/Nm ³ | 150 | 20 (Zn) | 20 (Zn) | 150 |
| 13 | Measured Concentration of PM. | mg/Nm ³ | 39 | 14 (Zn) | 16 (Zn) | 44 |
| 14 | Permissible limits for SO ₂ | mg/Nm ³ | 40 | NA | NA | 40 |
| 15 | Measured Concentration of SO ₂ | mg/Nm ³ | N.D. | NA | NA | 1.5 |
| 16 | Permissible limits for Nox | mg/Nm ³ | 25 | NA | NA | 25 |
| 17 | Measured Concentration of Nox | mg/Nm ³ | 2.8 | NA | NA | 4.5 |

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 Recalibration is Due on : 21/04/2013

N.D= Not Detectable

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Ref. No. : 268/11/2012-13

Date: 30/11/2012

WORK ZONE NOISE LEVEL MEASUREMENT

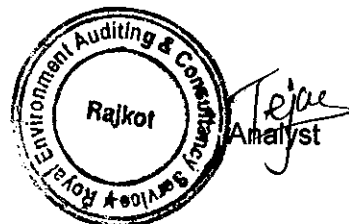
Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of Sampling : 22nd & 23rd November , 2012

| Sr. No. | Location of Sampling | Results Avg. in dB(A) |
|---------|--|-----------------------|
| 01. | Inside Control Room of Sinter Plant | 67.5 |
| 02. | Nr. Stock House of BF | 68.1 |
| 03. | Inside Control Room of BF | 67.3 |
| 04. | Inside Control Room of Blower House | 70.8 |
| 05. | Inside Control of Cast House | 68.7 |
| 06. | Inside Control Room of CPP | 71.7 |
| 07. | Inside Control Room of Annealing Furnace of DISP | 69.2 |
| 08. | Inside Laboratory of BF | 70.6 |
| 09. | Inside Laboratory of DISP | 68.6 |
| 10. | Inside ID & OD Control Room of JCO Plant | 70.9 |
| 11. | Inside Control Room – Mill area of Spiral Plant | 73.1 |
| 12. | Inside Spiral – 1 | 71.9 |
| 13. | Nr. Pipe cutting Area of Spiral Plant | 72.2 |
| 14. | Inside JCO Plant | 70.0 |
| 15. | Nr. JCO Press | 71.2 |
| 16. | Inside DISP Plant | 73.2 |
| 17. | Inside Coating Plant | 69.2 |

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

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Ref. No. :269/11/2012-13

Date: 30/11/2012

AMBIENT NOISE LEVEL MEASUREMENT

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

Date of Sampling : 22nd & 23rd November , 2012

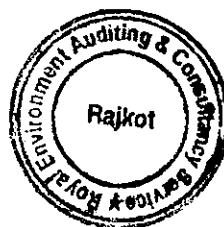
| Sr. No. | Location of Sampling | Results in dB(A) (Day Time) | Results in dB(A) (Night Time) |
|---------|---------------------------|--------------------------------|----------------------------------|
| | Permissible Limits | 75.0 | 70.0 |
| 01. | Nr. Admin. Building | 66.9 | 67.3 |
| 02. | Nr. Old Colony | 66.8 | 65.2 |
| 03. | Nr. LPG Yard | 66.2 | 64.2 |
| 04. | Nr. Sinter Plant | 70.8 | 68.6 |
| 05. | Nr. R. O. Plant | 68.2 | 67.1 |
| 06. | Nr. Gate No. 2 | 68.5 | 67.7 |
| 07. | Nr. New Colony | 68.5 | 67.2 |

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

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

Recalibration is due on : 05/10/2013

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Ref. No. : 270/11/2012-13

Date: 30/11/2012

WATER SAMPLES ANALYSIS REPORT

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

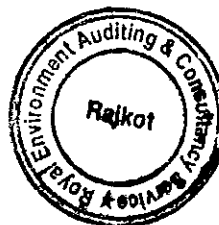
Date of Sample Collection : 23/11/2012

Source of Sample : Borewell Water Sample From Nr, Mess

| Sr. No. | Parameters | Unit | Acceptable Limit(*) | Permissible Limits(*) | Results |
|---------|-------------------|-------------|---------------------|-----------------------|------------|
| 01. | Colour | Pt.Co.Scale | 5 | 15 | Colourless |
| 02 | Odour | -- | Agreable | Agreable | Odourless |
| 03 | pH | pH Unit | 6.5 to 8.5 | No Relaxation | 7.58 |
| 04. | T.D.S. | mg/l | 500 | 2000 | 1325 |
| 05. | Total Hardness | mg/l | 200 | 600 | 525 |
| 06. | Turbidity | NTU | 1 | 5 | 1.1 |
| 07. | Chloride | mg/l | 250 | 1000 | 538 |
| 08. | Alkalinity | mg/l | 200 | 600 | 312 |
| 09. | Phenolic Compound | mg/l | 0.001 | 0.002 | NIL |
| 10. | Residual Chlorine | mg/l | 0.2 | 1.0 | NIL |
| 11. | Fluoride | mg/l | 1.0 | 1.5 | 0.31 |
| 12. | Ca as Ca | mg/l | 75 | 200 | 230 |
| 13. | Mg as Mg | mg/l | 30 | 100 | 295 |
| 14. | Copper | mg/l | 0.05 | 1.5 | NIL |
| 15. | Iron | mg/l | 0.3 | No Relaxation | 0.37 |
| 16. | Manganese | mg/l | 0.1 | 0.3 | 0.56 |
| 17. | Sulphate | mg/l | 200 | 400 | 0.11 |
| 18. | Nitrate | mg/l | 45 | No Relaxation | 12 |

(*) Acceptable Limit & Permissible Limits as per IS 10500 : 2012, Drinking Water Specification

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Ref. No. : 271/11/2012-13

Date: 30/11/2012

REPORT OF DOMESTIC WASTEWATER 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 : 23/11/2012

| Sr. No. | Parameters | Unit | GPCB limits | STP Inlet | STP Outlet |
|---------|----------------------|---------|-------------|-----------|------------|
| 01. | pH | pH Unit | ---- | 7.98 | 7.51 |
| 02. | BOD (3 Days at 27°C) | mg/l | <20 | 178 | 17 |
| 03. | Suspended Solids | mg/l | <30 | 88 | 16 |
| 04. | Residual Chlorine | mg/l | Min. 0.5 | --- | 0.57 |

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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 : 22nd & 23rd November , 2012

| Sr. No | Location Operation monitored | Identified Contaminate | Sampling Instrument used | Airborne Contamination | | | TWA concert ration (As given in Second Schedule) | Refrance Method | Number of workers exposed at the location being monitored | Remark | Signature person taking samples | Name (in block letters) |
|--------|-------------------------------|------------------------|--|------------------------|---------|---------|--|-----------------|---|--------|---------------------------------|-------------------------|
| | | | | Number of sample | Range | Average | mg/m3 | | | | | |
| 1 | Spiral Plant Nr. ID/OD | Total Dust | Personal Respirable Dust sampler APM 800 | 02 | 1-5 | 3.0 | 10 | Gravimetric | 8 | --- | <i>Tejas</i> | Mr. Tejas Patel |
| 2 | JCO Plant Nr. JCO Press | Total Dust | | 02 | 1-5 | 3.0 | 10 | Gravimetric | 6 | --- | | |
| 3 | Sinter Plant At First Floor | Total Dust | | 02 | 2-6 | 4 | 10 | Gravimetric | 5 | --- | | |
| 4 | BF Plant (Cast House) | CO | | 02 | 0.3-0.5 | 0.4 | 2 | Gravimetric | 9 | --- | | |
| | | Total Dust | | | 2-5 | 3.5 | 10 | | | | | |
| 5 | Coating Plant (Blasting Area) | Total Dust | | 02 | 2-6 | 4.0 | 10 | Gravimetric | 4 | --- | | |
| 6 | DISP Plant Main Entrance | Total Dust | 02 | 2-5 | 3.5 | 10 | Gravimetric | 10 | --- | | | |

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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Authorized Sign