

ENVIRONMENTAL COMPLIANCE FOR

12MW COAL BASED CAPTIVE POWER PLANT AT SAMAKHIYALI, KUTCH BY
M/S GALLANTT METAL LTD-ENVIRONMENT CLEARANCE - REGARDING

| No | Conditions | Compliance Status |
|----|--|---|
| 1 | No additional land shall be acquired for the project or any activities associated with it | No additional land has been acquired for the project or any activity associated with it. Captive power plant has been commissioned in the existing premises in an area of 4.86 ha. Complied |
| 2 | A stack of 90 m with exit velocity of not less than 8 m/sec shall be provided with continuous On-line monitoring system. The monitored data shall be analyzed and submitted regularly to the Ministry and its Regional Office at Bhopal | Stack of 90 m height with exit velocity of not less than 8m/sec is provided along with Continuous online Emission monitoring system to monitor SPM, Sox & Nox .The analyzed monitored data is being regularly submitted to the Ministry and its Regional Office at Bhopal. Environmental parameters as per monitoring audit conducted by Royal Environment Auditing & Consultancy Service , Gujarat Pollution Control Board (GPCB) approved Schedule II Auditor having NABL accredited laboratory facility from Oct'17 to March'18 are given in the Table 1 below & copy of the same is attached as Annexure A . Copy of Environmental parameters as per Continuous monitoring reports transmitted to CPCB and GPCB from Oct 2017 to March 2018 is attached as Annexure B . Compliance Assured |



STACK EMISSION MONITORING REPORT

TABLE 1

| Stack Monitoring Station | SPM (mg/Nm ³) | | | | NOX (mg/Nm ³) | | | | SO ₂ (mg/Nm ³) | | | |
|--------------------------|---------------------------|-----|-----|-----|---------------------------|------|------|------|---------------------------------------|------|------|------|
| | Limit | Max | Min | Avg | Limit | Max | Min | Avg | Limit | Max | Min | Avg |
| Power Plant | 100 | 82 | 79 | 81 | 50 | 23.5 | 22.1 | 22.8 | 100 | 40.5 | 31.6 | 36.1 |

3

High efficiency Electrostatic Precipitators (ESPs) shall be installed to limit particulate emission within 100 mg/Nm³

High efficiency **Thermax make** Electrostatic Precipitators (ESPs) has been installed with four nos of Mechanical and four nos of Electrical field to limit particulate emission below 100 mg/Nm³.

Particulate emission parameters as per monitoring audit conducted by **Royal Environment Auditing & Consultancy Service**, Gujarat Pollution Control Board (GPCB) approved Schedule II Auditor having NABL accredited laboratory facility from **Oct'17 to March'18** are given in the **Table 2** below & copy of the same is attached as **Annexure A**.

Copy of Environmental parameters as per Continuous monitoring reports transmitted to CPCB and GPCB from **Oct' 2017 to March' 2018** is attached as **Annexure B**.

Compliance Assured

STACK EMISSION MONITORING REPORT

TABLE 2

| Stack Monitoring Station | SPM (mg/Nm ³) | | | |
|--------------------------|---------------------------|-----|-----|-----|
| | Limit | Max | Min | Avg |
| Power Plant | 100 | 82 | 79 | 81 |



| | | |
|---|---|--|
| 4 | AFBC boilers shall be provided | AFBC Boiler has been provided. Complied |
| 5 | Air cooled condensers shall be installed | Air Cooled Condenser has been installed. Complied |
| 6 | Water requirement shall not exceed 363 m³/day and shall be obtained from GWIL Narmada Water Pipeline. No Ground water shall be extracted for any purpose for the project. | Water Consumption is within the limit as per conditions. Water is being obtained from GWIL Narmada Water Pipeline. No Ground water is being extracted for any purpose for the project. Granted permission for total water consumption as per different permits along with actual consumption from Oct'17 to March'18 is attached as per Annexure C . Complied |
| 7 | There shall be zero discharge outside the plant boundary. The treated effluents conforming to the prescribed standards shall be re circulated and reused within the plant boundary. | The effluent generated from the utility area in plant is treated in effluent treatment plant and reused within the plant premises for dust suppression and gardening purpose. Online flow meter and web camera have been installed and connected with CPCB and GPCB and commissioned for zero liquid discharge plant There is no discharge outside the plant premises via drains except during monsoon for storm water. The treated effluent parameters are within prescribed standards. The treated effluent parameters as per analysis conducted by Royal Environment Auditing & Consultancy Service , Gujarat Pollution Control Board (GPCB) approved Schedule II |



| | | |
|--|--|---|
| | | Auditor having NABL accredited laboratory facility from Oct'17 to March'18 are given in the Table 3 below & copy of the same is attached as Annexure D . Complied. |
|--|--|---|

TREATED EFFLUENT RESULTS
TABLE 3

| Parameter | Prescribed norms (mg/L) | Effluent Quality (mg/L) |
|------------------|-------------------------|-------------------------|
| pH | 6.5 TO 8.5 | 7.02 |
| Suspended Solids | 100 | 10 |
| Oil & Grease | 10 | 0.67 |
| Copper | 1.0 | 0.69 |
| Iron as Fe | 1.0 | 0.53 |
| Phosphate | 5 | 1.87 |
| Total Chromium | 0.20 | 0.019 |
| Zinc as Zn | 1.0 | TRACES |
| BOD 3 Days @ °C | 30 | 18 |
| COD | 100 | 63 |

| | | |
|----|---|---|
| 8. | Rain water harvesting shall be practiced. A detailed scheme for rain water harvesting to recharge the ground water aquifer shall be prepared in consultation with Central Ground Water Authority /State Ground Water Board and a copy of the same shall be submitted within three months to this Ministry. | Presently rain water is collected into pond and reused in the process after necessary treatment in the lean season besides recharging the ground water table. Rain water harvesting measures have been implemented by means of creating two ponds for storage of water with capacity of 9000 KL and 3890 KL respectively. Capacity of the reservoir will be enhanced based on the requirements to meet the maximum water requirement. Complied. |
|----|---|---|



| | | |
|---|---|---|
| 9 | <p>Leq of Noise level shall be limited to 75 dBA and regular maintenance of equipments should be undertaken. For people working in high noise areas, personal protection devices should be provided.</p> | <p>Workplace noise level monitoring is being conducted on regular basis to identify high noise levels. Workers employed in High Noise area are provided with proper PPEs. Leq of noise level is being limited to less than 75 dBA & regular maintenance of equipment is done & personal protective equipments are provided to workers. Enclosures are provided with the equipments producing high level of noise. Periodic Audiometric tests of the workmen employed in High Noise Area is also conducted as part of workers 'Health Surveillance Program'. Ambient Noise Level is monitored regularly and is controlled within stipulated limit. Parameters as per monitoring report conducted by Royal Environment Auditing & Consultancy Service, Gujarat Pollution Control Board (GPCB) approved Schedule II Auditor having NABL accredited laboratory facility from Oct'17 to March'18 are given in the Table 4 below & copy of the same is attached as Annexure E.</p> <p>Complied</p> |
|---|---|---|

| Ambient Noise Level Monitoring Station | Noise Level (dBA) TABLE 4 | | | | | | | |
|--|------------------------------|-------|-------|-------|-------|-------|-------|-------|
| | Day | | | | Night | | | |
| | Limit | Max. | Min. | Avg. | Limit | Max. | Min. | Avg. |
| POWER PLANT AREA | 75.0 | 64.20 | 62.10 | 63.10 | 75.0 | 59.80 | 57.80 | 58.80 |



| | | |
|----|--|---|
| 10 | 100 % utilization of ash shall be ensured from day one of commissioning of the plant. | 100 % utilization of ash is being ensured from day one of commissioning of the plant. Captive brick manufacturing plant is installed. Fly ash is partly used for brick manufacturing & partly send to TSDF site for their disposal purpose. Fly ash Generation and its disposal from Oct'17 to March'18 is given in Table 5 below. Action plan for fly ash utilization/disposal from Oct'17 to Mar'18 is also given in Table 6 below. Complied |
|----|--|---|

**FLY ASH GENERATION/DISPOSAL/UTILISED QUANTITY FROM
OCTOBER 2017 TO MARCH 2018
TABLE 5**

| OPENING STOCK ON 01/10/17 IN MT | FLY ASH GENERATION IN MT 01/10/17 to 30/03/18 | USED FOR BRICK MAKING IN MT 01/10/17 to 31/03/18 | SEND TO TSDF SITES IN MT 01/10/17 to 31/03/18 | CLOSING STOCK ON 30/09/17 IN MT |
|---------------------------------|---|--|---|---------------------------------|
| 195.450 | 22001.950 | 12889.29 | 7598.11 | 1710.00 |

**FLY ASH GENERATION/DISPOSAL/UTILISATION PLAN FOR FROM
APRIL 2018 TO SEPTEMBER 2018
TABLE 6**

| DESCRIPTION | OPENING STOCK ON 01/04/18 IN MT | EXPECTED GENERATION 01/04/18 TO 30/09/18 IN MT | DISPOSAL/RECYCLE/UTILISATION PLAN | EXPECTED BALANCE STOCK ON 30/09/18 IN MT |
|-------------|---------------------------------|--|---|--|
| FLY ASH | 1710.00 | 22500 | 10-20% TO BE USED FOR BRICK MAKING, 80-90% TO BE SEND TO TSDF SITE | 1000 |



| | | |
|----|---|--|
| 11 | <p>A green belt shall be developed around the plant boundary covering an area of at least 1.86 ha as part of this project.</p> | <p>A total area of 1.86 hectare is allotted for green belt development & company has planted no. of trees within this area. The plant species selected are Neem, Sheesham, Jamun, Kesia Samiya, Kachnar, Karenj, Peepal, Amla, Ashok, Kadam, etc. The company has carried out tree plantation program within & outside the plant premises at regular intervals.</p> <p>Since plantation is continuous process, we assured to raise plantation further as per CPCB guideline.</p> <p>Compliance Assured</p> |
| 12 | <p>First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.</p> | <p>During construction phase First aid and Sanitation arrangements were made for the drivers and other contract workers.</p> <p>Complied</p> |
| 13 | <p>Regular monitoring of the ambient air quality shall be carried out in and around the power plant and records maintained. The location of monitoring stations and frequency of monitoring shall be decided in consultation with the State Pollution Control Board. Periodic reports shall be submitted to the Regional Office of this Ministry at Bhopal</p> | <p>Regular monitoring of the ambient air quality is being carried out in and around the power plant and records are being maintained. Environment Management Plan is attached as Annexure F for the location of monitoring stations and frequency of monitoring decided in consultation with the State Pollution Control Board (GPCB). Periodic reports is being submitted to the Regional Office of this Ministry at Bhopal.</p> <p>Ambient air quality parameters are within the stipulated norms. Parameters as per monitoring audit conducted by Royal Environment Auditing & Consultancy Service, Gujarat</p> |



| | | |
|--|--|--|
| | | <p>Pollution Control Board (GPCB) approved Schedule II Auditor having NABL accredited laboratory facility from Oct'17 to March'18 are given in the Table 7 below & copy of the same is attached as Annexure G.</p> <p>Complied</p> |
|--|--|--|

**AMBIENT AIR QUALITY MONITORING REPORT
TABLE 7**

| Ambient Air Quality Station | PM 10 $\mu\text{g}/\text{m}^3$ | | | | PM2.5 $\mu\text{g}/\text{m}^3$ | | | | SOx $\mu\text{g}/\text{m}^3$ | | | | NOx $\mu\text{g}/\text{m}^3$ | | | |
|-----------------------------|--------------------------------|-----|-----|-----|--------------------------------|-----|-----|-----|------------------------------|-----|------|------|------------------------------|------|------|------|
| | Std | Max | Min | Avg | Std | Max | Min | Avg | Std | Max | Min | Avg | Std | Max | Min | Avg |
| NR POWER-PLANT AREA | 100 | 48 | 44 | 46 | 60 | 24 | 21 | 23 | 80 | 17 | 16.4 | 16.7 | 80 | 20.6 | 16.7 | 18.7 |

| | | |
|----|--|--|
| 14 | <p>The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days of issue of this letter, informing that the project has been accorded Environmental Clearance and copies of clearance letter are available with the State Pollution Control Board / Committee and may also be seen at website of the Ministry of Environment and Forests at http:// envfor.nic.in.</p> | <p>The Public were informed of accorded Environment clearance through an advertisement in The Times of India (Gujarat) and Kutch Mitra (in the Gujarati language).</p> <p>Copies of clearance letter are available with the State Pollution Control Board / Committee and may also be seen at website of the Ministry of Environment and Forests at http:// envfor.nic.in.</p> <p>Copies of news paper clippings have been submitted to the Regional office of the MoEF and also attached as Annexure H.</p> <p>Complied</p> |
| 15 | <p>A separate Environment Management cell with qualified staff shall be set up for implementation of the stipulated Environmental Safeguards</p> | <p>A separate Environment Management cell with qualified staff is in place for implementation of the stipulated Environmental Safeguards.</p> |



| | | |
|----|--|--|
| | | Attached herewith the organisational chart for flow of environment related issues as Annexure I. Complied |
| 16 | Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry, its Regional Office and the CPCB/SPCB. | Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards is being regularly submitted to Ministry, its Regional Office and the CPCB/SPCB. Complied |
| 17 | Regional office of the Ministry of Environment & Forests located at Bhopal will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environmental Management Plan along with the additional information submitted to Ministry of Environment & Forests from time to time shall be forwarded to the Regional Office for their use during monitoring. | Noted & agreed for compliance. |
| 18 | Separate funds shall be allocated for implementation of environmental protection measures along with item wise break up. These cost shall be included as part of the project cost. The funds earmarked for the Environment Protection measures shall not be diverted for other purposes and year wise expenditure shall be reported to the | Separate fund is earmarked towards the capital cost and recurring cost/annum towards environmental pollution control measures. The funds provided will not be diverted for any other purpose. Rs.1.39 Cr.,Rs.0.89 Cr., Rs. 1.55 Cr. & Rs. 1.02 Cr. was incurred as capital expenditure during 2011-12,2012-13,2013-14 & 2014-15 respectively. |



| | | |
|----|--|--|
| | Ministry. | Further, recurring expenditure was incurred to the tune of Rs. 0.14 Cr., Rs.0.15 Cr., Rs. 0.16 Cr. & Rs. 0.13 Cr. During 2011-12, 2012-13, 2013-14 & 2014-15 respectively Copy of details of yearwise expenses incurred with regard to pollution control measures attached as Annexure J. Complied |
| 19 | Full cooperation shall be extended to the Scientists /Officers from the Ministry/ Regional Office of the Ministry at Bhopal /the CPCB/the SPCB who would be monitoring the compliance of Environmental Safeguards. | We undertake to give full cooperation to the Scientists /Officers from the Ministry/ Regional Office of the Ministry at Bhopal /the CPCB/the SPCB who would be monitoring the compliance of Environmental Safeguards. Noted & Agreed to Comply |
| 20 | The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the ministry. | Noted & Agreed to Comply |
| 21 | The EC accorded shall be valid for a period of 5 years to start of production operation by the power plant. | Noted & Agreed to Comply |
| 22 | In Case of any deviation or alteration in the project proposed from that submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of the condition(s) imposed and to incorporate additional environmental protection measures required, if any. | Noted & Agreed to Comply |



| | | |
|----|---|-------------------------------------|
| 23 | The above stipulations shall be enforced along with others as under the Water (P & CP) Act,1974, the Air (P & CP) Act,1981, the EP Act,1986, the MSIHC Rules 1989, HWMH Rules, 1989, the PLI Act,1991 and rules there under. | Noted & Agreed to Comply |
|----|---|-------------------------------------|



ANNEXURE A

STACK MONITORING ANALYSIS REPORT

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007



Royal

Environment Auditing & Consultancy Service

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

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

Ref. No. : 754/09/2017-18

Date : 01/10/2017

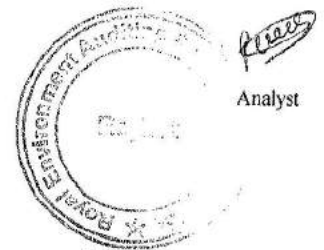
REPORT OF STACK EMISSION ANALYSIS

Name of company : Gallantt Metal Limited
Survey No. 175/1,
Near toll gate,
Village : Samakhyali,
Taluka : Bhachau,
Kutch, Gujarat.

| Sr. No. | Particulars | Unit | Stack - 1 |
|---------|---|--------------------|----------------------------|
| 01. | Date of sampling | --- | 23-09-2017 |
| 02. | Time of sampling | Hr | 9.35 |
| 03. | Stack Attached to | --- | AFBC Boiler of Power Plant |
| 04. | Air Pollution Control Measures | --- | ESP |
| 05. | Stack Height | Meter | 90 |
| 06. | Stack Diameter | Meter | 3.8 |
| 07. | Ambient Temperature | Degree Centi. | 29 |
| 08. | Stack Temperature | Degree Centi. | 106 |
| 09. | Average Velocity of Flue Gases | M/Sec. | 8.4 |
| 10. | Isokinetic flow rate for P.M. Sampling | LPM | 19 |
| 11. | Gaseous Sampling Flow Rate | LPM | 2.0 |
| 12. | Permissible Limit for P.M. | mg/Nm ³ | 100 |
| 13. | Measured Concentration of P.M. | mg/Nm ³ | 67 |
| 14. | Permissible Limit for SO ₂ | ppm | 100 |
| 15. | Measured Concentration of SO ₂ | ppm | 24.8 |
| 16. | Permissible Limit for NOx | ppm | 50 |
| 17. | Measured Concentration of NOx | ppm | 22.1 |
| 18. | Permissible Limit for CO* | --- | --- |
| 19. | Measured Concentration of CO* | ppm | 62 |

*Permissible limit not specified in EC copy as well as in GPCB CC&A
Instruments used : Ecotech Stack Sampler, Model No. ESS 100
Calibration Due On. : 16/09/2018

Royal Environment Auditing & Consultancy Service





Royal

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Ref. No. : 774/12/2017-18

Date : 01/01/2018

REPORT OF STACK EMISSION ANALYSIS

Name of company : Gallantt Metal Limited
Survey No. 175/1,
Near toll gate,
Village : Samakhyali,
Taluka : Bhachau,
Kutch, Gujarat.

| Sr. No. | Particulars | Unit | Stack - 1 |
|---------|---|--------------------|----------------------------|
| 01. | Date of sampling | --- | 25-12-2017 |
| 02. | Time of sampling | Hr | 9.00 |
| 03. | Stack Attached to | --- | AFBC Boiler of Power Plant |
| 04. | Air Pollution Control Measures | --- | ESP |
| 05. | Stack Height | Meter | 90 |
| 06. | Stack Diameter | Meter | 3.8 |
| 07. | Ambient Temperature | Degree Centi. | 28 |
| 08. | Stack Temperature | Degree Centi. | 121 |
| 09. | Average Velocity of Flue Gases | M/Sec. | 7.3 |
| 10. | Isokinetic flow rate for P.M. Sampling | LPM | 21 |
| 11. | Gaseous Sampling Flow Rate | LPM | 2.0 |
| 12. | Permissible Limit for P.M. | mg/Nm ³ | 100 |
| 13. | Measured Concentration of P.M. | mg/Nm ³ | 69.2 |
| 14. | Permissible Limit for SO ₂ | ppm | 100 |
| 15. | Measured Concentration of SO ₂ | ppm | 36.7 |
| 16. | Permissible Limit for NO _x | ppm | 50 |
| 17. | Measured Concentration of NO _x | ppm | 21.6 |
| 18. | Permissible Limit for CO* | --- | --- |
| 19. | Measured Concentration of CO* | ppm | 49 |

*Permissible limit not specified in EC copy as well as in GPCB CC&A
Instruments used : Ecotech Stack Sampler, Model No. ESS 100
Calibration Due On. : 16/09/2018

Royal Environment Auditing & Consultancy Service



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Analyst



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Ref. No. : 776/01/2017-18

Date : 01/02/2018

REPORT OF STACK EMISSION ANALYSIS

Name of company : Gallantt Metal Limited
Survey No. 175/1,
Near toll gate,
Village : Samakhyali,
Taluka : Bhachau,
Kutch, Gujarat.

| Sr. No. | Particulars | Unit | Stack - 1 |
|---------|---|--------------------|----------------------------|
| 01. | Date of sampling | --- | 20-01-2018 |
| 02. | Time of sampling | Hr | 09.30 |
| 03. | Stack Attached to | --- | AFBC Boiler of Power Plant |
| 04. | Air Pollution Control Measures | --- | ESP |
| 05. | Stack Height | Meter | 90 |
| 06. | Stack Diameter | Meter | 3.8 |
| 07. | Ambient Temperature | Degree Centi. | 27 |
| 08. | Stack Temperature | Degree Centi. | 118 |
| 09. | Average Velocity of Flue Gases | M/Sec. | 8.2 |
| 10. | Isokinetic flow rate for P.M. Sampling | LPM | 20 |
| 11. | Gaseous Sampling Flow Rate | LPM | 2.0 |
| 12. | Permissible Limit for P.M. | mg/Nm ³ | 100 |
| 13. | Measured Concentration of P.M. | mg/Nm ³ | 76.3 |
| 14. | Permissible Limit for SO ₂ | ppm | 100 |
| 15. | Measured Concentration of SO ₂ | ppm | 31.6 |
| 16. | Permissible Limit for NO _x | ppm | 50 |
| 17. | Measured Concentration of NO _x | ppm | 18.9 |
| 18. | Permissible Limit for CO* | --- | --- |
| 19. | Measured Concentration of CO* | ppm | 42 |

*Permissible limit not specified in EC copy as well as in GPCB CC&A
Instruments used : Ecotech Stack Sampler, Model No. ESS 100
Calibration Due On. : 16/09/2018

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Ref. No. : 792/02/2017-18

Date : 01/03/2018

REPORT OF STACK EMISSION ANALYSIS

Name of company : Gallantt Metal Limited
Survey No. 175/1,
Near toll gate,
Village : Samakhyali,
Taluka : Bhachau,
Kutch, Gujarat.

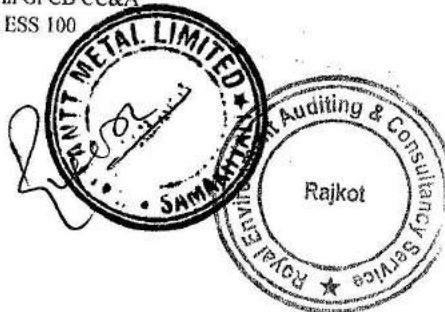
| Sr. No. | Particulars | Unit | Stack - 1 |
|---------|---|--------------------|----------------------------|
| 01. | Date of sampling | --- | 19-02-2018 |
| 02. | Time of sampling | Hr | 9.15 |
| 03. | Stack Attached to | --- | AFBC Boiler of Power Plant |
| 04. | Air Pollution Control Measures | --- | ESP |
| 05. | Stack Height | Meter | 90 |
| 06. | Stack Diameter | Meter | 3.8 |
| 07. | Ambient Temperature | Degree Centi. | 29 |
| 08. | Stack Temperature | Degree Centi. | 116 |
| 09. | Average Velocity of Flue Gases | M/Sec. | 8.4 |
| 10. | Isokinetic flow rate for P.M. Sampling | LPM | 18 |
| 11. | Gaseous Sampling Flow Rate | LPM | 2.0 |
| 12. | Permissible Limit for P.M. | mg/Nm ³ | 100 |
| 13. | Measured Concentration of P.M. | mg/Nm ³ | 81.6 |
| 14. | Permissible Limit for SO ₂ | ppm | 100 |
| 15. | Measured Concentration of SO ₂ | ppm | 33.8 |
| 16. | Permissible Limit for NO _x | ppm | 50 |
| 17. | Measured Concentration of NO _x | ppm | 22.1 |
| 18. | Permissible Limit for CO* | --- | --- |
| 19. | Measured Concentration of CO* | ppm | 39 |

*Permissible limit not specified in EC copy as well as in GPCB CC&A

Instruments used : Ecotech Stack Sampler, Model No. ESS 100

Calibration Due On. : 16/09/2018

Royal Environment Auditing & Consultancy Service



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Analyst



Royal

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Ref. No. : 094/03/2017-18

Date : 20/03/2018

REPORT OF STACK EMISSION ANALYSIS

Name of company : Gallantt Metal Limited
Survey No. 175/1,
Near toll gate,
Village : Samakhyali,
Taluka : Bhachau,
Kutch, Gujarat.

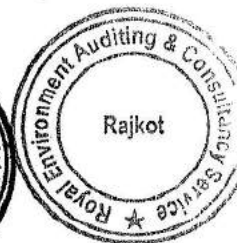
| Sl. No. | Particulars | Unit | Stack - 1 |
|---------|---|--------------------|----------------------------|
| 01. | Date of sampling | --- | 12-03-2018 |
| 02. | Time of sampling | Hr | 9.30 |
| 03. | Stack Attached to | --- | AFBC Boiler of Power Plant |
| 04. | Air Pollution Control Measures | --- | ESP |
| 05. | Stack Height | Meter | 90 |
| 06. | Stack Diameter | Meter | 3.8 |
| 07. | Ambient Temperature | Degree Centi. | 30 |
| 08. | Stack Temperature | Degree Centi. | 114 |
| 09. | Average Velocity of Flue Gases | M/Sec. | 8.5 |
| 10. | Isokinetic flow rate for P.M. Sampling | LPM | 19 |
| 11. | Gaseous Sampling Flow Rate | LPM | 2.0 |
| 12. | Permissible Limit for P.M. | mg/Nm ³ | 100 |
| 13. | Measured Concentration of P.M. | mg/Nm ³ | 79.5 |
| 14. | Permissible Limit for SO ₂ | ppm | 100 |
| 15. | Measured Concentration of SO ₂ | ppm | 40.5 |
| 16. | Permissible Limit for NOx | ppm | 50 |
| 17. | Measured Concentration of NOx | ppm | 23.5 |
| 18. | Permissible Limit for CO* | --- | --- |
| 19. | Measured Concentration of CO* | ppm | 40 |

*Permissible limit not specified in EC copy as well as in GPCB CC&A

Instruments used : Ecotech Stack Sampler, Model No. ESS 100

Calibration Due On. : 16/09/2018

Royal Environment Auditing & Consultancy Service



P. P. Patel
Analyst

ANNEXURE B

ONLINE MONITORING REPORT

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007

Exceedance Summary Report

Device Name: Stack_3_AFBC_CPP **Org Name:** Gallantt Metal Ltd
Serial No: Ace 10000X 065 **State:** Gujarat
Manufacturing Id: ACE **District:** Kutch
Generated On: 24/4/2018 15:15:51 **Description:** Ace 10000X_Powerplant_SO2_NOX_PM

PM

| | | | | | |
|------------------|-----|-------|-----|-------|-------|
| Min : | 0 | Max : | 69 | Avg : | 36.44 |
| Count | 0 | 0 | 0 | 0 | 0 |
| Duration (mm:ss) | 0:0 | 0:0 | 0:0 | 0:0 | 0:0 |

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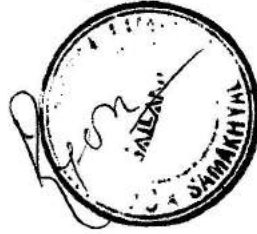
| | | | | | | |
|------------------|------|-------|------|-------|-------|------|
| Min : | 0 | Max : | 1509 | Avg : | 22.08 | |
| Count | 12 | 1 | 1 | 0 | 1 | 2 |
| Duration (mm:ss) | 60:0 | 5:0 | 5:0 | 0:0 | 5:0 | 10:0 |

NOx

| | | | | | |
|----------|---|-------|----|-------|-------|
| Min : | 0 | Max : | 39 | Avg : | 10.63 |
| Count | 0 | 0 | 0 | 0 | 0 |
| Duration | | | | | |



(mm:ss) 0:0 0:0 0:0 0:0 0:0 0:0



ANNEXURE C

DETAIL OF WATER CONSUMPTION AND APPROVED QUANTITY

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007

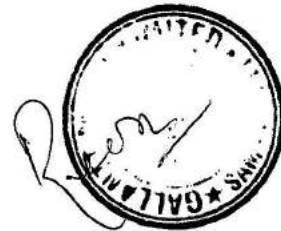
Water Consumption & Waste Generation Quantity

| Period | Water Consumption in Plant (KL) | Water Consumption in Domestic, Green Belt, Gardening and in Dust Suppression etc (KL) | Waste Water Generation (KL) |
|------------------------------|---------------------------------|---|-----------------------------|
| From October -17 to March-18 | 150937 | 55070 | 15565 |

Water quantity approved details

| PERMISSION DETAIL | QUANTITY APPROVED IN KLD |
|--|--------------------------|
| NOC NO. : FT-204/17333 VIDE DATED 27 JUNE 2005 CC&A NO:8228 VIDE DATED 06 OCT 2006 (EC NOT APPLICABLE) | 450 |
| EC NO: 13011/37/2007-IA.II(T) DATED 28.09.2007 | 363 |
| EC NO: 11011/231/2009-IA.II(I) DATED 08.06.2009 | 255 |
| EC NO J-11011/52/2013-IA II(I) DATED 19.05.16 | 300 |
| TOTAL | 1368 |

Note:- Quantity of Water Requirement of 363 M³/Day is only for 12MW CPP Plant (only for EC NO: J-13011/37/2007-IA.II(T)) whereas total quantity is given for whole plant in the above tables.



ANNEXURE D

REPORT OF TREATED EFFLUENT

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007



Royal

Environment Auditing & Consultancy Service

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

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

Date : 01/02/2018

Ref. No. : 790/01/2017-18

WASTE WATER SAMPLE ANALYSIS REPORT

Name of company : **Gallant Metal Limited**

Survey No. 175/1,
Near toll gate,
Village : Samakhyali,
Taluka : Bhachau,
Kutch, Gujarat.

Date of sampling : 22/01/2018

Source of Sample: Waste Water Treatment Plant (ETP Plant)

| Sr. No. | Parameters | Unit | GPCB Limits * | Waste Water (ETP Inlet) | Treated Water (ETP Outlet) |
|---------|------------------------|-------------|---------------|-------------------------|----------------------------|
| 1 | pH | pH Unit | 6.5 to 8.5 | 7.21 | 7.02 |
| 2 | Colour | Pt.co scale | 100 Units | 36 | 10 |
| 3 | Temp. | °C | 40 | 31 | 30 |
| 4 | Suspended Solids | Mg/Lit | 100 | 49 | 19 |
| 5 | Total Dissolved Solids | Mg/Lit | --- | 967 | 341 |
| 6 | Total Solids | Mg/Lit | --- | 894 | 375 |
| 7 | Oil & Grease | Mg/Lit | 10 | 2.1 | 0.67 |
| 8 | Sulphides | Mg/Lit | 2 | 1.9 | 0.49 |
| 9 | Phosphate | Mg/Lit | 5 | 6.4 | 1.87 |
| 10 | BOD | Mg/Lit | 30 | 69 | 18 |
| 11 | COD | Mg/Lit | 100 | 192 | 63 |
| 12 | Total Chromium (as Cr) | Mg/Lit | 0.2 | 0.87 | 0.019 |
| 13 | Hexavalent Cr | Mg/Lit | 0.1 | 0.64 | 0.024 |
| 14 | Copper | Mg/Lit | 1.0 | 0.76 | 0.69 |
| 15 | Total Iron (as Fe) | Mg/Lit | 1.0 | 3.1 | 0.53 |
| 16 | Zinc (as Zn) | Mg/Lit | 1.0 | 0.8 | NIL |

* GPCB Limits are only applicable to treated waste water (ETP Outlet)

Royal Environment Auditing & Consultancy Service



Analyst



ANNEXURE E

NOISE MONITORING ANALYSIS REPORT

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007



Royal

Environment Auditing & Consultancy Service

303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com
Date : 01/11/2017

Ref: No. : 766/10/2017-18

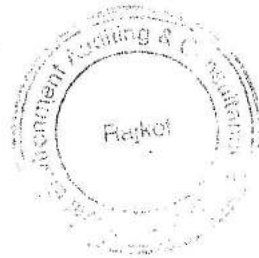
AMBIENT NOISE LEVEL MEASUREMENT

Name of company : **Gallantt Metal Limited**
Survey No. 175/1,
Near toll gate,
Village : Samakhyali,
Taluka : Bhachau,
Kutch, Gujarat.

| Sr. No. | Location of Sampling | Noise Level Avg. in dB (A) | |
|---------|---------------------------|--|--|
| | | 12-10-2017 Day Time 6.00 AM - 10.00 PM | 12-10-2017 Night Time 10.00 PM - 6.00 AM |
| | Date of sampling | | |
| | Time of sampling | | |
| | Permissible Limits | 75.0 | 70.0 |
| 01. | Near Main Gate | 57.2 | 54.3 |
| 02. | Rolling Mill Area | 64.7 | 61.2 |
| 03. | Induction Furnace | 68.1 | 64.8 |
| 04. | Reheating Furnace | 68.2 | 62.8 |
| 05. | Rotary Kiln | 64.7 | 62.1 |
| 06. | Power Plant | 62.1 | 57.8 |

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 : 16/09/2018

Royal Environment Auditing & Consultancy Service



P. Patel
Analyst





Royal

Environment Auditing & Consultancy Service

303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. : 787/01/2017-18

Date : 01/02/2018

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,
Near toll gate,
Village : Samakhyali,
Taluka : Bhachau,
Kutch, Gujarat.

| Sr. No. | Location of Sampling | Noise Level Avg. in dB (A) | |
|---------|----------------------|----------------------------|--------------------|
| | | 22-01-2018 | 22-01-2018 |
| | Date of sampling | Day Time | Night Time |
| | Time of sampling | 6.00 AM - 10.00 PM | 10.00 PM - 6.00 AM |
| | Permissible Limits | 75.0 | 70.0 |
| 01. | Near Main Gate | 58.3 | 53.7 |
| 02. | Rolling Mill Area | 62.8 | 60.2 |
| 03. | Induction Furnace | 69.4 | 62.4 |
| 04. | Reheating Furnace | 67.9 | 61.2 |
| 05. | Rotary Kiln | 69.7 | 63.7 |
| 06. | Power Plant | 64.2 | 59.8 |

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 : 16/09/2018

Royal Environment Auditing & Consultancy Service



Pooja
Analyst



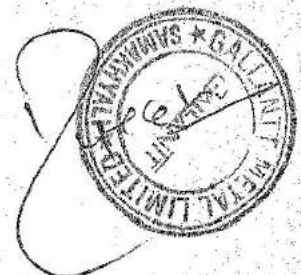
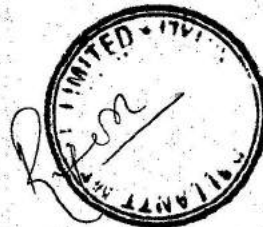
ANNEXURE F

ENVIRONMENT MANAGEMENT PLAN

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007

ENVIRONMENT MONITORING PLAN FOR AAQ

| LOCATION | AREA | PARAMETERS | FREQUENCY |
|------------|-------------------|---------------------------|--------------------|
| NE | NEAR MAIN GATE | PM2.5, PM10, SOX & NOX | TWICE IN A WEEK |
| SOUTH EAST | OFFICER COLONY | | |
| NORTH WEST | NEAR FURNACE AREA | | |
| NORTH WEST | BEHIND KILN 1 & 2 | | |



ANNEXURE G

AMBIENT AIR QUALITY ANALYSIS REPORT

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007



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

Date : 01/11/2017

Ref. No. : 764/10/2017-18

REPORT OF AMBIENT AIR QUALITY MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,
Near toll gate,
Village : Samakhiali,
Taluka : Bhachau,
Kutch, Gujarat.

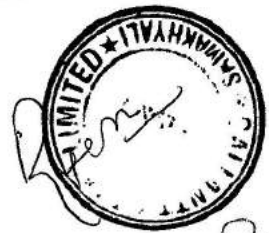
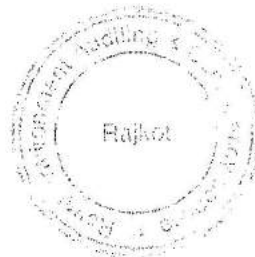
| Sr. No. | Particulars | Unit | Location No. 1 | Location No. 2 |
|---------|------------------------------------|--------------------|----------------|--------------------|
| 01. | Location of Sampling | --- | Officer Colony | Main Security Gate |
| 02. | Date of sampling | --- | 14-10-2017 | 14-10-2017 |
| 03. | Time of sampling | Hr | 8.20 | 8.40 |
| 04. | Duration of Sampling | Min. | 1440 | 1440 |
| 05. | Average Wind Speed | Km/Hr | 6 to 16 | 6 to 16 |
| 06. | Average flow rate during sampling | m ³ /Hr | 1.0 | 1.2 |
| 07. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 |
| 08. | Permissible Limits of PM 2.5 | µg/m ³ | 60 | 60 |
| 09. | Measured Concentration of PM 2.5 | µg/m ³ | 24 | 27 |
| 10. | Permissible Limits of PM 10 | µg/m ³ | 100 | 100 |
| 11. | Measured Concentration of PM 10 | µg/m ³ | 49 | 62 |
| 14. | Permissible Limits of SOx | µg/m ³ | 80 | 80 |
| 15. | Measured Concentration of SOx | µg/m ³ | 12.6 | 13.4 |
| 16. | Permissible Limits of NOx | µg/m ³ | 80 | 80 |
| 17. | Measured Concentration of NOx | µg/m ³ | 21.1 | 19.2 |

Instrument used : 1) Ecotech make (RDS), Model No. APM - 217 BL, Gaseous Sampling Kit No. AAS 190

2) Ecotech make 2 Nos. PM 2.5,

Calibration due on : 1) 05/05/2018

Royal Environment Auditing & Consultancy Service



Analyst



Royal

Environment Auditing & Consultancy Service

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

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

Date : 01/11/2017

Ref. No. : 765/10/2017-18

REPORT OF AMBIENT AIR QUALITY MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,

Near toll gate,

Village : Samakhyali,

Taluka : Bhachau,

Kutch, Gujarat.

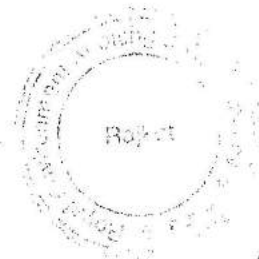
| Sr. No. | Particulars | Unit | Location No. 3 | Location No. 4 |
|---------|------------------------------------|--------------------|-----------------|------------------|
| 01. | Location of Sampling | --- | B/h. Kiln 1 & 2 | Nr. Furnace Area |
| 02. | Date of sampling | --- | 14-10-2017 | 14-10-2017 |
| 03. | Time of sampling | Hr | 8.55 | 9.10 |
| 04. | Duration of Sampling | Min. | 1440 | 1440 |
| 05. | Average Wind Speed | Km/Hr | 6 to 16 | 6 to 16 |
| 06. | Average flow rate during sampling | m ³ /Hr | 1.3 | 1.4 |
| 07. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 |
| 08. | Permissible Limits of PM 2.5 | µg/m ³ | 60 | 60 |
| 09. | Measured Concentration of PM 2.5 | µg/m ³ | 23 | 26 |
| 10. | Permissible Limits of PM 10 | µg/m ³ | 100 | 100 |
| 11. | Measured Concentration of PM 10 | µg/m ³ | 47 | 51 |
| 14. | Permissible Limits of SOx | µg/m ³ | 80 | 80 |
| 15. | Measured Concentration of SOx | µg/m ³ | 16.7 | 18.5 |
| 16. | Permissible Limits of NOx | µg/m ³ | 80 | 80 |
| 17. | Measured Concentration of NOx | µg/m ³ | 19.4 | 21.0 |

Instrument used : 1) Ecotech make (RDS), Model No. APM - 217 BL, Gaseous Sampling Kit No. AAS 190

2) Ecotech make 2 Nos. PM 2.5 ,

Calibration due on : 1) 05/05/2018

Royal Environment Auditing & Consultancy Service



P. P. P. P.
Analyst



Royal

Environment Auditing & Consultancy Service

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

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

Ref. No. : 785/01/2017-18

Date : 01/02/2018

REPORT OF AMBIENT AIR QUALITY MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,
Near toll gate,
Village : Samakhyali,
Taluka : Bhachau,
Kutch, Gujarat.

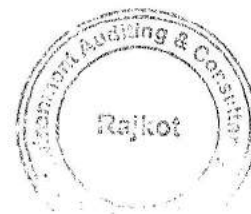
| Sr. No. | Particulars | Unit | Location No. 1 | Location No. 2 |
|---------|---|--------------------|----------------|--------------------|
| 01. | Location of Sampling | --- | Officer Colony | Main Security Gate |
| 02. | Date of sampling | --- | 20-01-2018 | 20-01-2018 |
| 03. | Time of sampling | Hr | 7.50 | 8.00 |
| 04. | Duration of Sampling | Min. | 1440 | 1440 |
| 05. | Average Wind Speed | Km/Hr | 5 to 15 | 5 to 15 |
| 06. | Average flow rate during sampling | m ³ /Hr | 1.1 | 1.3 |
| 07. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 |
| 08. | Permissible Limits of PM 2.5 | µg/m ³ | 60 | 60 |
| 09. | Measured Concentration of PM 2.5 | µg/m ³ | 26 | 28 |
| 10. | Permissible Limits of PM 10 | µg/m ³ | 100 | 100 |
| 11. | Measured Concentration of PM 10 | µg/m ³ | 52 | 58 |
| 14. | Permissible Limits of SO _x | µg/m ³ | 80 | 80 |
| 15. | Measured Concentration of SO _x | µg/m ³ | 10.8 | 12.4 |
| 16. | Permissible Limits of NO _x | µg/m ³ | 80 | 80 |
| 17. | Measured Concentration of NO _x | µg/m ³ | 20.7 | 18.1 |

Instrument used : 1) Ecotech make (RDS), Model No. APM - 217 BL, Gaseous Sampling Kit No. AAS 190

2) Ecotech make 2 Nos. PM 2.5 ,

Calibration due on : 1) 05/05/2018

Royal Environment Auditing & Consultancy Service



Jecro
Analyst



Royal

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303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. : 786/01/2017-18

Date : 01/02/2018

REPORT OF AMBIENT AIR QUALITY MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,
Near toll gate,
Village : Samakhali,
Taluka : Bhachau,
Kutch, Gujarat.

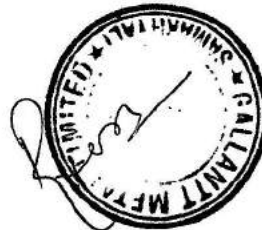
| Sr. No. | Particulars | Unit | Location No. 3 | Location No. 4 |
|---------|------------------------------------|--------------------|-----------------|------------------|
| 01. | Location of Sampling | --- | B/h. Kiln 1 & 2 | Nr. Furnace Area |
| 02. | Date of sampling | --- | 22-01-2018 | 22-01-2018 |
| 03. | Time of sampling | Hr | 7.45 | 7.55 |
| 04. | Duration of Sampling | Min. | 1440 | 1440 |
| 05. | Average Wind Speed | Km/Hr | 5 to 12 | 5 to 12 |
| 06. | Average flow rate during sampling | m ³ /Hr | 1.2 | 1.0 |
| 07. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 |
| 08. | Permissible Limits of PM 2.5 | µg/m ³ | 60 | 60 |
| 09. | Measured Concentration of PM 2.5 | µg/m ³ | 21 | 24 |
| 10. | Permissible Limits of PM 10 | µg/m ³ | 100 | 100 |
| 11. | Measured Concentration of PM 10 | µg/m ³ | 44 | 48 |
| 14. | Permissible Limits of SOx | µg/m ³ | 80 | 80 |
| 15. | Measured Concentration of SOx | µg/m ³ | 8.2 | 9.5 |
| 16. | Permissible Limits of NOx | µg/m ³ | 80 | 80 |
| 17. | Measured Concentration of NOx | µg/m ³ | 12.7 | 13.8 |

Instrument used : 1) Ecotech make (RDS), Model No. APM - 217 BL, Gaseous Sampling Kit No. AAS 190

2) Ecotech make 2 Nos. PM 2.5 ,

Calibration due on : 1) 05/05/2018

Royal Environment Auditing & Consultancy Service



P.EMAJ
Analyst

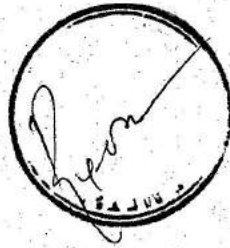
ANNEXURE H
NEWS PAPER CLIPPINGS
COPY

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007

PUBLIC NOTICE**Environmental Clearance of proposed Coal based Captive Power Plant**

The main object of this advertisement is to inform the public that the ministry of Environment & Forests, Government of India has accorded Environment Clearance for our proposed Coal based Captive Power Plant for the 12 MW Coal based Power Plant at Survey No. 175/1, Vill. Samakhiyali, Ta. Bhachau, Dist, Kutch. This Environmental Clearance has been given vide letter No. j-13011/37/2007-IA.II (T) dated 28th September, 2007 and copy of clearance letter is available with the Gujarat Pollution Control Board, Gandhinagar and also at web site of the Ministry of Environment & Forests at <http://envfor.nic.in>

Gallantt Metal Ltd, 175/1, Vill. Samakhiyali, Ta, Bhachau, Kutch (Gujarat)



પબ્લિક નોટિસ

કોલસા આધારિત કેપ્ટીવ પાવર પ્લાન્ટનું પર્યાવરણીય કિલચરન્સ આથી જાણ કરવામાં આવે છે કે ભારત સરકારના પર્યાવરણ અને વન મંત્રાલય, નવી દિલ્હી તરફથી પ્રસ્તાવિત કોલસા આધારિત કેપ્ટીવ પાવર પ્લાન્ટ જે સર્વે નં. ૧૭૫/૧, ગામ: સામખિયાળી, તા. ભચાઉ, જી. કચ્છ ખેલ છે. તેને તારીખ ૨૮ સપ્ટેમ્બર, ૨૦૦૭ના પત્ર નં. J-૧૩૦૧૧/૩૭.૨૦૦૭-IA. II (T) દ્વારા પર્યાવરણીય કિલચરન્સ આપેલ છે. જે પત્રની નકલ ગુજરાત પ્રદૂષણ નિયંત્રણ બોર્ડ, ગાંધીનગર તેમજ પર્યાવરણ અને વન મંત્રાલયની વેબ સાઈટ <http://envfor.nic.in> પર જોઈ શકાશે.

ગેલન્ટ મેટલ લિમિટેડ

૧૭૫/૧, ગામ: સામખિયાળી, તા. ભચાઉ, જી. કચ્છ (ગુજરાત)

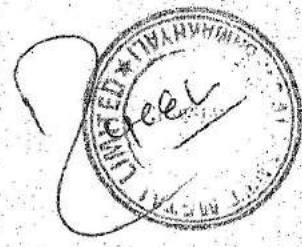
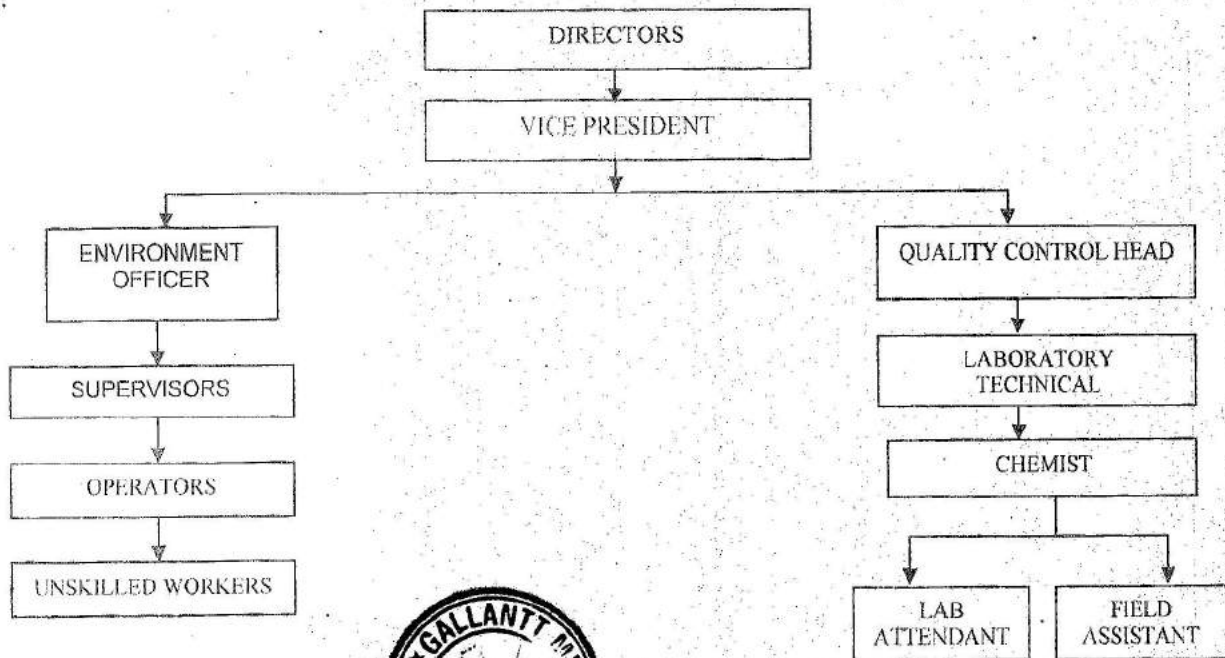


ANNEXURE I

ORGANISATIONAL CHART FOR FLOW OF ENVIRONMENT ISSUES

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007

ORGANISATIONAL CHART FOR ENVIRONMENT MONITORING SYSTEM



ANNEXURE J

DETAIL OF YEARWISE EXPENSES INCURRED WITH REGARD TO POLLUTION CONTROL MEASURES

MOEF letter No:- J-13011/37/2007-IA.II(T) Dated 28th September,2007

Detail of yearwise incurred with regard to Pollution Control Measures

Amount in Lacs

| Year | Capital Expenses (Material Cost Only) | Recurring Expenses (Material Cost Only) |
|-------------------------------|---------------------------------------|---|
| 2011-12(April-11 to March-12) | 139.670 | 14.570 |
| 2012-13(April-11 to March-12) | 89.980 | 15.230 |
| 2013-14(April-11 to March-12) | 155.030 | 16.700 |
| 2014-15(April-11 to March-12) | 102.280 | 13.530 |
| Total | 486.960 | 60.030 |

