

By Speed Post

No. J-13011/71/2007-IA.II(T)
Government of India
Ministry of Environment & Forests

Prayavaran Bhawan
CGO Complex, Lodi Road
New Delhi-110 003

Dated: 5th February, 2008

To

M/s Maruti Suzuki India Ltd.
Palam – Gurgaon Road,
Gurgaon- 122 015
Haryana.

Sub: 10x7 MW Gas turbine at Manesar, Gurgaon, Haryana by M/s Maruti Suzuki India Ltd - Environmental Clearance regarding.

The undersigned is directed to refer your communication no. MUL: PRDS: EM2:1654 dated 3rd Oct, 2007 on the subject mentioned above. Subsequent information furnished vide letter no. MSIL:PRDS:EM2:1707 dated 7.1.2008 has also been considered.

2. It is noted that the proposal is for grant of environmental clearance under the provisions of EIA Notification, 2006 for expansion of existing 16.2 MW power plant by adding 10x7 MW units. The power plant is captive power plant. The land requirement is 8500 m². The coordinates of the proposed project site are latitude 27⁰ 39' N to 28⁰ 32'N and Longitude 76⁰ 39' E to 77⁰ 20'E. Gas will be used as fuel, however, HSD will be used as standby fuel in emergency when gas is not available. Gas requirement will be 1580 m³/day. Water requirement will be 2451 KL/day, which will be sourced from bore well. The project was exempted from public hearing being located in a notified industrial estate. Cost of the project is Rs 389.00 crores, which includes Rs 42.5 crores for environmental protection measures.

3. The proposal has been considered and Ministry of Environment & Forests hereby accords environmental clearance to the said project under the provisions of Environment Impact Assessment Notification, 2006 subject to implementation of the following terms and conditions:-

- (i) No additional land shall be acquired in excess of 8500 m² for any utilities/ facilities relating to the proposed project.

- (ii) NOC from BARC shall be obtained prior to start of construction of the project due to the proximity of the project to BARC Observatory.
- (iii) Gas shall only be used as fuel, however, HSD may be used as standby fuel for not more than 30 days in a year when gas is not available. However, the 3 turbines scheduled to be installed during 2008 may be operated on HSD till January, 2009 when gas would become available. Thereafter, gas shall be used as fuel.
- (iv) Dry Low NOx burners shall be provided and it shall be ensured that NOx emissions from the stack is less than 100 ppm.
- (v) The height of the stack shall be as per the standards prescribed under the Environment (Protection) Act in this regard or 30 m, whichever is more with continuous online monitoring system. Exit velocity shall not be less than 29 m/s.
- (vi) Air cooled condensers shall be installed.
- (vii) Water requirement shall not exceed the 2451 KL/day and shall be met from existing bore wells. The necessary prior permission for drawl of requisite quantity of groundwater for the project as applicable shall be obtained from the Competent Authority.
- (viii) Treated effluents conforming to the prescribed standards shall be re-circulated and reused within the plant area. No effluents shall be discharged outside the plant boundary.
- (ix) Rainwater 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.
- (x) 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.
- (xi) A greenbelt shall be developed around the plant boundary with tree density of around 2500 trees per ha. The area under greenbelt shall be at least 1/3rd of the total area.
- (xii) First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.

- (xiii) 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 Chandigarh.
 - (xiv) 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 from the 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>.
 - (xv) A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.
 - (xvi) Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry, the Regional Office, and the CPCB/SPCB.
 - (xvii) Regional Office of the Ministry of Environment & Forests located at Chandigarh will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring
 - (xviii) 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 Ministry.
 - (xix) Full cooperation shall be extended to the Scientists/Officers from the Ministry/ Regional Office of the Ministry at Chandigarh /the CPCB/the SPCB who would be monitoring the compliance of environmental status.
4. The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.
5. The environmental clearance accorded shall be valid for a period of 5 years to start of production operation by the power plant.
6. 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.

7. The above stipulations shall be enforced along with others as under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, Hazardous Wastes (Management and Handling) Rules, 1989, the Public Liability Insurance Act, 1991 and rules there under.


(Dr. S.K. AGGARWAL)
Director

Copy to:-

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi - 110001.
2. The Secretary (Environment), Deptt. of Environment, Haryana Civil Secretariat, Government of Haryana, Chandigarh.
3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
4. The Chairman, Haryana State Pollution Control Board, C-11, Sector-6, Panchkula, Haryana - **with a request to display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's office for 30 days.**
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
6. The Chief Conservator of Forests, Northern Regional Office, Ministry of Environment & Forests, SCO 132-133, Sector 34-A, Chandigarh-160022.
7. The Director (EI), MOEF.
8. Guard file.
9. Monitoring file.


(Dr. S.K. AGGARWAL)
Director

MSIL:CUIP:ENV:17-18:068

13-Nov-2017

To
Ministry of Environment, Forest and Climate Change
Northern Regional Office
Bays No 24-25, Sector – 31 A,
Dakshin Marg
Chandigarh

Kind Attn: Dr. Ajay Mehrotra, Advisor/SG

Sub: Half yearly report for Compliance of Environmental Condition for Gas turbine,
Manesar (70 MW)

Ref: Environment Clearance Letter from Moef – No. J-13011/71/2007-IA-II (T), dated
05.02.2008.

Dear Sir,

Enclosed please find herewith the half yearly report for the environment clearance
issued for our Gas turbine.

Thanking You.

Yours Faithfully



Dr. Deepak Jain
General Manager (Environment Management)
Maruti Suzuki India Limited, Gurgaon.

CC: 1. Haryana State Pollution Control Board, Panchkula
2. Central Pollution Control Board, Lucknow

MARUTI SUZUKI INDIA LIMITED

Head Office:
Maruti Suzuki India Limited,
1, Nelson Mandela Road, Vasant Kunj,
New Delhi - 110070, India.
Tel: 011- 46781000, Fax: 011-46150275/46150276
E-mail id: contact@maruti.co.in, www.marutisuzuki.com

Gurgaon Plant:
Maruti Suzuki India Limited,
Old Palam Gurgaon Road,
Gurgaon - 122015, Haryana, India.
Tel: 0124-2346721, Fax: 0124-2341304

Manesar Plant:
Maruti Suzuki India Limited,
Plot no.1, Phase - 3A, IMT Manesar,
Gurgaon - 122051, Haryana, India.
Tel: 0124-4884000, Fax: 0124-4884199

S No	Clearance Conditions	Compliance Status
1	No additional land shall be acquired in excess of 8500 m ² for any utilities / facilities relating to the project.	The project is located within Maruti Suzuki India Limited premises at IMT Manesar and the power plant is set within 8500 sq.m area.
2	NOC from BARC shall be obtained prior to start of construction of the project due to the proximity of the project to BARC observatory.	NOC obtained from BARC is placed at Annexure-1.
3	Gas shall only be used as fuel, however, HSD may be used as standby fuel for not more than 30 days in a year when gas is not available. However, the 3 turbines scheduled to be installed during 2008 may be operated on HSD till January, 2009 when gas would become available. Thereafter, gas shall be used as fuel.	Natural gas supply has commenced at Manesar plant
4	Dry Low NO _x burners shall be provided and it shall be ensured that NO _x emission from the stack is less than 100 ppm.	NO _x emissions are less than 100 ppm. The stack monitoring report are placed at Annexure-2.
5	The height of the stack shall be as per the standards prescribed under the Environment (Protection) Act in this regard or 30 m, whichever is more with continuous online monitoring system. Exit velocity shall not be less than 29 m/s.	All the stacks of the installed Gas Turbines are of 30 mts height and Continuous online monitoring system installed.
6	Air cooled condensers shall be installed.	Air cooled condenser installed for the Gas Turbines
7	Water requirement shall not exceed the 2451 KL/day and shall be met from existing bore wells. The necessary prior permission for drawl of requisite quantity of groundwater for the project as applicable shall be obtained from the Competent Authority.	As air cooled condenser is installed for the Gas Turbines, the daily water requirement is very negligible and are met from the existing tube wells. Current water withdrawal is maintained within the quantity permitted by the Competent Authority.
8	Treated effluents conforming to the prescribed standards shall be recirculated and reused within the plant area. No effluents shall be discharged outside the plant boundary.	The treated effluents conform to the prescribed standards and are reused for the process requirements after recycling. Report is placed at Annexure-3.
9	Rainwater 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.	The location of the lagoon is attached in Annexure-4.
10	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.	Gas Turbines are provided with the acoustic enclosure to limit the noise level within 75 dBA at plant boundary. The persons working in high noise areas are provided with the personal protection devices.
11	A greenbelt shall be developed around the plant boundary with tree density of around 2500 trees per ha. The area under greenbelt shall be at least 1/3 rd of the total area.	Details of Green Belt are placed at Annex: 4
12	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	First aid and necessary sanitation arrangement has been made available for the drivers and other contract workers during construction phase.

13	Regular monitoring of the ambient 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 Chandigarh.	Ambient Air quality is being monitored quarterly at the locations fixed based on the modelling results from the PCRI and the reports are placed at Annexure-5.
14	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 from the 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 Forest at http://envfor.nic.in .	Notice was published in Amar Ujala (Hindi) and Tribune (English). Copy of the same is attached as Annexure - 6
15	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	A separate Environment Management Department has been set up.
16	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry, the Regional Office. And the CPCB/SPCB	Half yearly compliance report will be submitted to MoEFCC Regional office.
17	Regional office of the Ministry of Environment & forests located at Chandigarh will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring.	Complied
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 Ministry.	Funds for EMP have been included in the project cost itself. It is utilised for this purpose only.
19	Full cooperation shall be extended to the Scientist/Officers from the Ministry/ Regional Office of the Ministry at Chandigarh/the CPCB/THE SPCB who would be Monitoring the Compliance of Environmental status.	Full Cooperation will be extended to the officials from SPCB / CPCB and MoEFCC.

DATA SHEET

1.	Project Type	River Valley/Mining/Industry /Transportation Tourism/Thermal/Nuclear/Other (Specify)
2.	Name of the Project:	70 MW Gas turbine at Maruti Suzuki India Limited, Manesar, Haryana
3.	Clearance letter (s)/ O.M No. & dates:	No. J-13011/71/2007-IA.II(T) Dated: 5 th February, 2008
4.	Location: a) District (s) b) State (s) c) Latitudes/Longitudes	District: Gurgaon (South) State: Haryana Latitude: 27 ⁰ 39' N to 28 ⁰ 32'N Longitude: 76 ⁰ 39'E to 77 ⁰ 20'E
5.	a) Address of Correspondence (with Pin Code/ Tel No./Telex/Fax No./E mail address) b) Address of executive Project Engineer/ Manager (with Pin Code/ Tel No./Telex/Fax No./Email address)	Mr. Deepak Jain General Manager – Environment Management Maruti Suzuki India Limited Palam Gurgaon Road Gurgaon, Haryana Email: Deepak.Jain@maruti.co.in Phone 0124 – 2346721 ~ 30 Extn : 3583 Mr. Sanjay Baronia Assistant Vice President – EMU Maruti Suzuki India Limited Palam Gurgaon Road Gurgaon, Haryana Email: Sanjay.Baronia@maruti.co.in Phone 0124 – 2346721 ~ 30
6.	Salient Features: a) of the project b) of the environmental management plans	Salient Features of the project and Environmental Management Plant details is enclosed in Annexure A
7.	Break up of the project area: a) Submergence area : Forest & Non-forest b) Others	The project is located within MSIL premises in the Industrial Area.
8.	Break up of the project affected population with enumeration of those losing house /dwelling units only, agricultural land only both dwelling units and agricultural land and landless laborers/artisans. a) SC/ST/Adivasis	Not Applicable

	<p>b) Others (Please indicate whether these figure are based on any scientific and systematic survey carried out or only provisional figures. If a survey has been carried out, give details and year of survey)</p>	
9.	<p>Financial details:</p> <p>a) Project cost as originally planned and subsequent revised estimates and the year or price reference.</p> <p>b) Allocations made for environmental management plans with item wise and year wise break up.</p> <p>c) Benefit cost ratio/Internal Rate of Return and the year of assessment.</p> <p>d) Whether (c) includes the cost of environment management as shown in b) above.</p> <p>e) Actual expenditure incurred on the project so far.</p> <p>f) Actual expenditure incurred on the environmental management plans so far:</p>	<p>Rs. 389 Crores</p> <p>-</p> <p>-</p> <p>-</p> <p>Rs. 319 Crores</p> <p>Rs. 52.4 Crores</p>
10.	<p>Forest land requirement :</p> <p>a) The status of approval for diversion of forest land for non-forestry use.</p> <p>b) The status of clear felling.</p> <p>c) The status of compensatory afforestation of clear felling. If any.</p> <p>d) Comments on the viability & sustainability of compensatory afforestation programmes in the light of actual field experience so far.</p>	Not Applicable
11.	<p>The status of clear feeling in non-forest areas (such as submergence area of reservoir, approach road) if any, with quantitative information.</p>	Not Applicable
12.	<p>Status of construction.</p> <p>1. date of commencement (actual and/ or planned)</p> <p>2. Date of completion (actual and / or planned)</p>	<p>2X20MW GT are under operation.</p> <p>3X10 MW GT has been dismantled.</p>
13.	<p>Reasons for the delay if the project is yet to start:</p>	Not Applicable

SALIENT FEATURES OF PROJECT:

1. Name of the Project : Gas turbine at Maruti Suzuki India Limited, Manesar, Haryana
2. Capacity : 70 MW
3. Location : Maruti Suzuki India Limited, IMT Manesar.
4. Total project cost : Rs. 389 Crores
5. Land Area : 8500 sq m

ENVIRONMENTAL MANAGEMENT PLAN

Water Pollution control

- The Gas Turbine is air cooled hence the waste water generated shall be very minimum. Existing ETP will treat the effluent arising out of the plant operation and the treated waste water will be reused.

Air Pollution control:

- Stacks of the GT shall be maintained at 30m.
- NO_x emissions will be below 100ppm.
- SPM and SO₂ emissions will be very low as natural gas is a clean fuel and ultra low sulphur diesel will be used initially or in case of emergency operation. Later on after the availability of natural gas, SPM and SO₂ emissions will further go down

Noise Pollution Control

- The noise from Gas Turbines will be controlled by acoustic enclosures. The noise level at the periphery of factory/premises will not exceed the ambient noise level.

Ground Water

- Rain water harvesting lagoons have been constructed to take care of surface run off and recharge the aquifers.

Green belt development

- Adequate green area will be developed with local area species having capacities to reduce SPM and noise levels.



228

Fax

दूरभाष/Tel: 022 - 2550 5354
 फैक्स/Fax: 022 - 2550 5151
 022 - 2550 5353
 ई-मेल/e-mail: ndsharma@bara.gov.in



सत्यमेव जयते

भारत सरकार

GOVERNMENT OF INDIA

भाभा परमाणु अनुसंधान केंद्र

BHABHA ATOMIC RESEARCH CENTRE

सेंट्रल कॉम्प्लेक्स,
 ट्रॉम्बे, मुंबई - 400 085.
 Central Complex,
 Trombay,
 Mumbai - 400 085.

न. द. शर्मा
 नियंत्रक
 N. D. Sharma
 Controller

Ref: 14/8/91/Admn-I / 3281

April 16, 2008

Maruti Suzuki India Limited,
 Palam Gurgaon Road,
 Gurgaon, Haryana - 122 015

Kind Attn: Mr Vinay Varshney, Chief General Manager (Production Services)

Sub: NOC for Expansion of Power Plant at MSIL, IMT Manesar

Sir,

With reference to your letter MSIL-PRDS:EM2:1728 dated 15th February, 2008, we confirm that BARC has no objection in expansion of your power plant at IMT Manesar.

Thanking You,

Yours faithfully,

(N. D. Sharma)
 Controller

16/04/08

संचार अनुभाग / Communication Section
 फैक्स परिवार / Fax Transmission
 संदेश नं./ Message No. 6072
 दिनांक 29/5/08 यंत्र भेज दिया गया।
 Transmitted on at hrs.



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT
STACK EMISSION MONITORING

Lab. Ref.: PCRI: Air & Noise: 2017-2018 :0537
Date: 14.09.2017

A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-O-791
3.	Date of sampling	:	24.08.2017
4.	Source of emission	:	Gas Turbine-I
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	1.35 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	4.3 MW
11.	Load during sampling	:	3.5 MW
12.	Type of fuel used and consumption	:	1200 Nm ³ /Hour (Natural Gas)
13.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit
1.	Particulate Matter	mg/Nm ³	15	-
2.	Carbon Dioxide	%	9.2	-
3.	Carbon Monoxide	PPM	15	-
4.	Sulphur Dioxide	PPM	BDL	-
5.	Nitrogen Oxides	PPM	58	100
6.	Total Hydrocarbons (As HC)	PPM	39	-
7.	Flue Gas Temperature	°C	541	-
8.	Emission Rate	m ³ /Sec	17.4	-

BDL: Below Detectable Limit.

Byadav

(R S Yadav)

Dy. Manager (PCRI)

राजेन्द्र सिंह यादव/ R. S. Yadav

उप प्रबन्धक/ Dy Manager

Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान
Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB/MSR/ Haridwar/ Ranipur, Haridwar

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT
STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018 :0538

Date: 14.09.2017

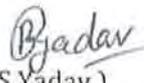
A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-O-791
3.	Date of sampling	:	24.08.2017
4.	Source of emission	:	Gas Turbine-II
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	1.35 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	4.3 MW
11.	Load during sampling	:	3.6 MW
12.	Type of fuel used and consumption	:	1200 Nm ³ /Hour (Natural Gas)
13.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit
1.	Particulate Matter	mg/Nm ³	12	-
2.	Carbon Dioxide	%	9.3	-
3.	Carbon Monoxide	PPM	11	-
4.	Sulphur Dioxide	PPM	BDL	-
5.	Nitrogen Oxides	PPM	52	100
6.	Total Hydrocarbons (As HC)	PPM	43	-
7.	Flue Gas Temperature	° C	525	-
8.	Emission Rate	m ³ /Sec	17.5	-

BDL: Below Detectable Limit.


(R S Yadav)
Dy. Manager (PCRI)
राजेश सिंह यादव/ R. S. Yadav
उप प्रबंधक/Dy Manager
Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
Ranipur, Haridwar, U.K.

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SP
Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



South Asia
ISO 9001-2008 OHSAS 18001-2007

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT
STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018 :0539

Date: 14.09.2017

A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-O-791
3.	Date of sampling	:	24.08.2017
4.	Source of emission	:	Gas Turbine-III
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	1.35 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	4.3 MW
11.	Load during sampling	:	3.4 MW
12.	Type of fuel used and consumption	:	1250 Nm ³ /Hour (Natural Gas)
13.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit
1.	Particulate Matter	mg/Nm ³	16	-
2.	Carbon Dioxide	%	9.8	-
3.	Carbon Monoxide	PPM	17	-
4.	Sulphur Dioxide	PPM	BDL	-
5.	Nitrogen Oxides	PPM	48	100
6.	Total Hydrocarbons (As HC)	PPM	47	-
7.	Flue Gas Temperature	°C	510	-
8.	Emission Rate	m ³ /Sec	17.7	-

BDL: Below Detectable Limit.

R S Yadav

(R S Yadav)

Dy. Manager (PCRI)

राजेश सिंह यादव/ R. S. Yadav

उप प्रबन्धक/ Dy Manager

Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान

PCRI, Ranipur, Haridwar, U.K.

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPB/CPCB/Ranipur, Haridwar, U.K., Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT STACK EMISSION MONITORING

Lab. Ref.: PCRI: Air & Noise: 2017-2018 :0540
Date: 14.09.2017

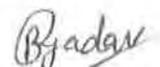
A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-0-791
3.	Date of sampling	:	25.08.2017
4.	Source of emission	:	Gas Turbine-VII
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	3.0 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	20.0 MW
11.	Load during sampling	:	15.0 MW
12.	Type of fuel used and consumption	:	6500 Nm ³ /Hour (Natural Gas)
13.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit
1.	Particulate Matter	mg/Nm ³	16	-
2.	Carbon Dioxide	%	9.4	-
3.	Carbon Monoxide	PPM	18	-
4.	Sulphur Dioxide	PPM	BDL	-
5.	Nitrogen Oxides	PPM	54	100
6.	Total Hydrocarbons (As HC)	PPM	51	-
7.	Flue Gas Temperature	°C	455	-
8.	Emission Rate	m ³ /Sec	88.2	-

BDL: Below Detectable Limit.


(R S Yadav)
Dy. Manager (PCRI)
राजेन्द्र सिंह यादव/ R. S. Yadav
उप प्रबन्धक/ Dy Manager
Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
BHEL, Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing Test reports, Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT
STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018 :0541
Date: 14.09.2017

A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-0-791
3.	Date of sampling	:	24.08.2017
4.	Source of emission	:	Gas Turbine-VIII
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	3.0 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	20.0 MW
11.	Load during sampling	:	16.0 MW
12.	Type of fuel used and consumption	:	6500 Nm ³ /Hour (Natural Gas)
13.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit
1.	Particulate Matter	mg/Nm ³	15	-
2.	Carbon Dioxide	%	9.4	-
3.	Carbon Monoxide	PPM	21	-
4.	Sulphur Dioxide	PPM	BDL	-
5.	Nitrogen Oxides	PPM	48	100
6.	Total Hydrocarbons (As HC)	PPM	45	-
7.	Flue Gas Temperature	°C	464	-
8.	Emission Rate	m ³ /Sec	89.4	-

BDL: Below Detectable Limit,

R S Yadav

(R S Yadav)

Dy. Manager (PCRI)

राजेन्द्र सिंह यादव/ R. S. Yadav

उप प्रबन्धक/ Dy Manager

Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान

BHEL Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCC and providing Test Reports, Environmental Impact Assessment, Environmental Audits reports

Remarks:- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड) -249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986; EIA Consultant by NABET, QCI)

TEST REPORT

Lab Reference No: TL170518 **Date:** 12.10.2017
Indentor : M/s Maruti Suzuki India Limited, Manesar Plant (Vehicle), Plot
No. 1, Phase 3 A, IMT, Manesar, Gurgaon (Haryana)
Customer's Ref. No.: MSIL:CUIP:ENV:17-18:045 Dated 09.08.2017
Work Order No.: 17.0135-O-791
Sample Collected by: PCRI Staff **Collection Date:** 25.08.2017
Sample/Job: ETP Outlet

PARAMETER	UNIT	OBTAINED VALUE	STANDARD LIMITS*
Ammonical Nitrogen (As N)	mg/L	ND	50
Arsenic (as As)	mg/L	ND	0.2
BOD ₃ at 27°C	mg/L	11	30
Cadmium (as Cd)	mg/L	ND	2.0
Chromium Hexavalent (as Cr ⁺⁶)	mg/L	ND	0.1
Chromium Total (as Cr)	mg/L	0.01	2.0
Colour	Hazen	<5	-
Copper (as Cu)	mg/L	0.01	3.0
COD	mg/L	32	250
Cyanide (as CN)	mg/L	ND	0.2
Dissolved Phosphates (as P)	mg/L	3.31	5.0
Fluoride (as F)	mg/L	0.77	2.0
Free Ammonia (as NH ₃)	mg/L	ND	5.0
Iron (as Fe)	mg/L	0.14	3.0
Lead (as Pb)	mg/L	0.02	0.1
Manganese (as Mn)	mg/L	0.02	2.0
Mercury (as Hg)	mg/L	ND	0.01
Nickel (as Ni)	mg/L	0.26	3.0
Nitrate (as NO ₃)	mg/L	1.2	10
Odour	-	Unobjectionable	-
Oil & Grease	mg/L	ND	10

Contd.. Page 2

Signature
12/10/17

- Remarks :-** (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate.



PCRI/051

प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड) -249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986; EIA Consultant by NABET, QCI)

TEST REPORT

-Page 2-

Lab Reference No: TL170518

Date: 12.10.2017

PARAMETER	UNIT	OBTAINED VALUE	STANDARD LIMITS*
pH	-	7.4	5.5 - 9.0
Phenols (as C ₆ H ₅ OH)	mg/L	ND	1.0
Selenium (as Se)	mg/L	ND	0.05
Sulphide (as S)	mg/L	ND	2.0
Temperature	°C	24.8	Shall not exceed 5°C above the receiving water temperature
Total Kjeldahl Nitrogen (as N)	mg/L	0.84	100
Total Residual Chlorine	mg/L	ND	1.0
Total Suspended Solids	mg/L	14	100
Vanadium (as V)	mg/L	ND	0.2
Zinc (as Zn)	mg/L	0.15	5.0

ND - Not Detectable

*(SCHEDULE VI OF EPA, 1993) FOR DISCHARGE INTO SURFACE WATER

S. Bhatnagar
7/12/10/17

(Dr. S. Bhatnagar)

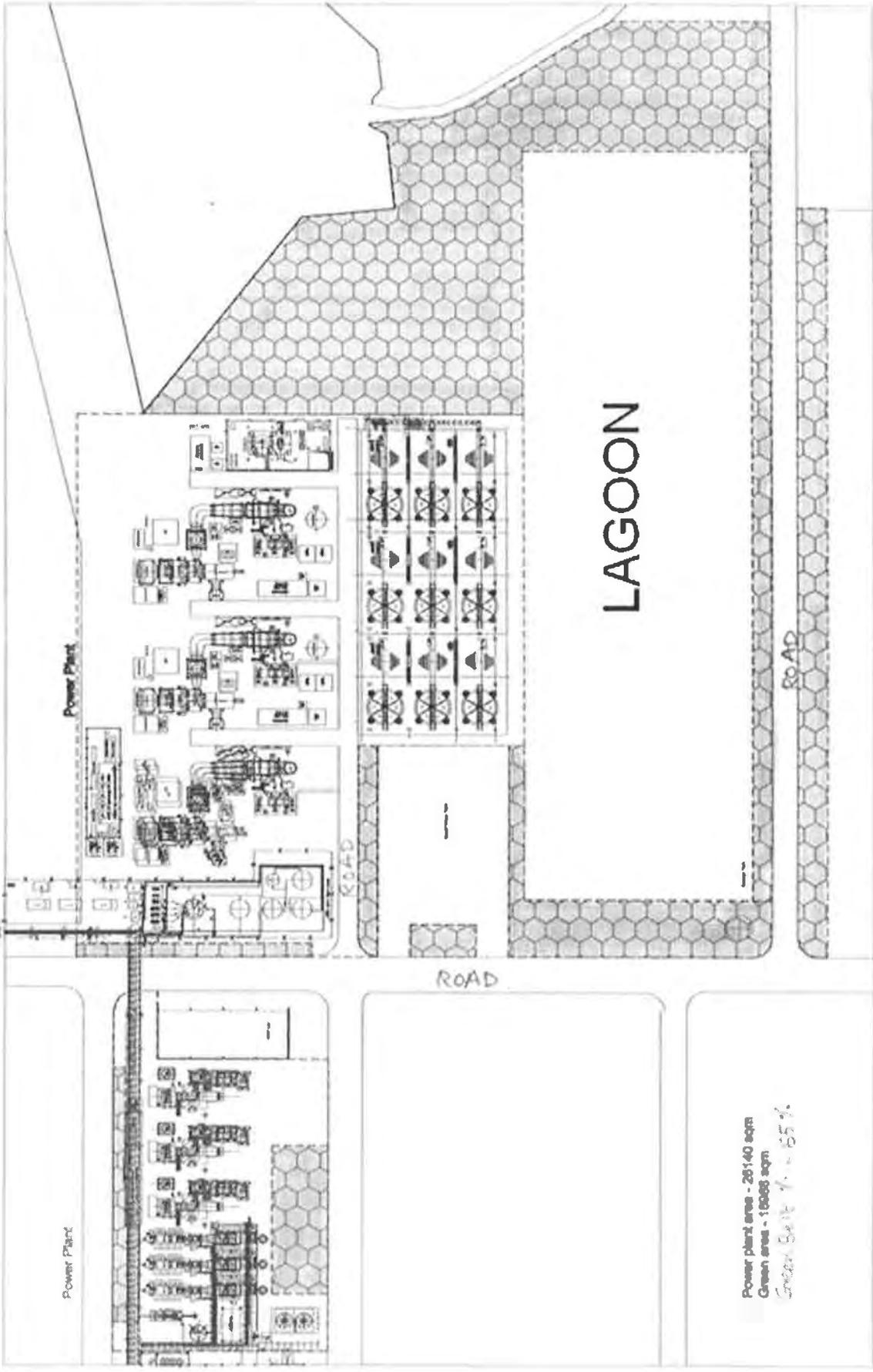
Sr. Dy. General Manager (PCRI)

डा. एस. भटनागर/ Dr. S. Bhatnagar
वरि. उप महाप्रबन्धक/ Sr. Dy. General Manager
Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
BHEL, Ranipur, Haridwar

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate.

QK

GREEN AREA AND RWTH



Power plant area - 26140 sqm
 Green area - 16000 sqm
 Green Belt % - 65%

Handwritten signature or initials



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT
AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018 :0533

Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-0-791
3.	Date of sampling	:	24.08.2017 to 25.08.2017
4.	Location of Sampling	:	A:Near Material Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified(Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	14	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	24	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	79	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	40	60
5.	Ozone (O ₃)	µg/m ³	107	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.2	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	10	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009.

R. S. Yadav
(R S Yadav)
Dy. Manager (PCRI)
राजेन्द्र सिंह यादव/R. S. Yadav
उप प्रबन्धक/Dy Manager
Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
BHEL, Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SP/CB and providing Test Reports, Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate



PCRI/051

प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT
AMBIENT AIR MONITORING

Lab. Ref.: PCRI: Air & Noise: 2017-2018 : 0534
Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-O-791
3.	Date of sampling	:	24.08.2017 to 25.08.2017
4.	Location of Sampling	:	B:Gate No. 1
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	12	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	22	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	77	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	41	60
5.	Ozone (O ₃)	µg/m ³	110	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.4	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

R. S. Yadav
(R S Yadav)
Dy. Manager (PCRI)

राजेश्वर सिंह यादव / R. S. Yadav
उप प्रबंधक / Dy Manager
Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPBMRP/1986/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58/59/60/61/62/63/64/65/66/67/68/69/70/71/72/73/74/75/76/77/78/79/80/81/82/83/84/85/86/87/88/89/90/91/92/93/94/95/96/97/98/99/100/101/102/103/104/105/106/107/108/109/110/111/112/113/114/115/116/117/118/119/120/121/122/123/124/125/126/127/128/129/130/131/132/133/134/135/136/137/138/139/140/141/142/143/144/145/146/147/148/149/150/151/152/153/154/155/156/157/158/159/160/161/162/163/164/165/166/167/168/169/170/171/172/173/174/175/176/177/178/179/180/181/182/183/184/185/186/187/188/189/190/191/192/193/194/195/196/197/198/199/200/201/202/203/204/205/206/207/208/209/210/211/212/213/214/215/216/217/218/219/220/221/222/223/224/225/226/227/228/229/230/231/232/233/234/235/236/237/238/239/240/241/242/243/244/245/246/247/248/249/250/251/252/253/254/255/256/257/258/259/260/261/262/263/264/265/266/267/268/269/270/271/272/273/274/275/276/277/278/279/280/281/282/283/284/285/286/287/288/289/290/291/292/293/294/295/296/297/298/299/300/301/302/303/304/305/306/307/308/309/310/311/312/313/314/315/316/317/318/319/320/321/322/323/324/325/326/327/328/329/330/331/332/333/334/335/336/337/338/339/340/341/342/343/344/345/346/347/348/349/350/351/352/353/354/355/356/357/358/359/360/361/362/363/364/365/366/367/368/369/370/371/372/373/374/375/376/377/378/379/380/381/382/383/384/385/386/387/388/389/390/391/392/393/394/395/396/397/398/399/400/401/402/403/404/405/406/407/408/409/410/411/412/413/414/415/416/417/418/419/420/421/422/423/424/425/426/427/428/429/430/431/432/433/434/435/436/437/438/439/440/441/442/443/444/445/446/447/448/449/450/451/452/453/454/455/456/457/458/459/460/461/462/463/464/465/466/467/468/469/470/471/472/473/474/475/476/477/478/479/480/481/482/483/484/485/486/487/488/489/490/491/492/493/494/495/496/497/498/499/500/501/502/503/504/505/506/507/508/509/510/511/512/513/514/515/516/517/518/519/520/521/522/523/524/525/526/527/528/529/530/531/532/533/534/535/536/537/538/539/540/541/542/543/544/545/546/547/548/549/550/551/552/553/554/555/556/557/558/559/560/561/562/563/564/565/566/567/568/569/570/571/572/573/574/575/576/577/578/579/580/581/582/583/584/585/586/587/588/589/590/591/592/593/594/595/596/597/598/599/600/601/602/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड) - 249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT
AMBIENT AIR MONITORING

Lab. Ref.: PCRI: Air & Noise: 2017-2018 :0535
Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-0-791
3.	Date of sampling	:	24.08.2017 to 25.08.2017
4.	Location of Sampling	:	C:SND Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	13	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	23	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	78	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	36	60
5.	Ozone (O ₃)	µg/m ³	109	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	1.85	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	11	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

R. S. Yadav

(R S Yadav)

Dy. Manager (PCRI)

रणेश सिंह यादव/ R. S. Yadav

एन डीएम/ Dy Manager

Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान
Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SP
Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate

[Signature]



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT
AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018:0536
Date: 14.09.2017

A. GENERAL INFORMATION:

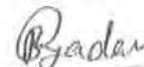
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-0-791
3.	Date of sampling	:	24.08.2017 to 25.08.2017
4.	Location of Sampling	:	D:Near Incinerator
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	14	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	25	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	76	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	41	60
5.	Ozone (O ₃)	µg/m ³	111	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.1	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009.


(R S Yadav)
Dy. Manager (PCRI)
राजेश सिंह यादव/ R. S. Yadav
उप प्रबन्धक/ Dy Manager
Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
Ranipur, Haridwar, U.K.

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB
Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate

TRIBUNE 22 - Feb - 2008

PUBLIC NOTICE

 **MARUTI SUZUKI**

Maruti Suzuki India Limited
11th Floor, Jeevan Prakash Building,
25 Kasturba Gandhi Marg, New Delhi - 110001.
Ph: 011-23316631, Fax: 011-23316754

Ministry of Environment and Forests has accorded environment clearance for the proposed expansion of thermal (captive) power plant at Maruti Suzuki India Limited, Manesar Plant. The copies of the clearance letters are available with the Haryana State Pollution Control Board and the same can also be seen on the website of Ministry of Environment & Forest at <http://envfor.nic.in>

Date: 22nd February, 2008. Maruti Suzuki India Limited

AMAR UJALA 22 Feb. 2008

सूचना

 **MARUTI SUZUKI**

Maruti Suzuki India Limited
11th Floor, Jeevan Prakash Building,
25 Kasturba Gandhi Marg, New Delhi - 110001.
Ph: 011-23316631, Fax: 011-23316754

पर्यावरण एवं वन मंत्रालय द्वारा मारुति सुजुकी इण्डिया लिमिटेड के मानेसर प्लांट में पावर प्लांट के विस्तार हेतु पर्यावरणीय अनुमोदन प्रदान कर दिया गया है। अनुमोदन पत्र की प्रतियां हरियाणा राज्य प्रदूषण नियंत्रण बोर्ड के पास उपलब्ध है। अनुमोदन पत्र को पर्यावरण एवं वन मंत्रालय की वेबसाइट <http://envfor.nic.in> पर भी देखा जा सकता है।

दिनांक: 22 फरवरी, 2008 मारुति सुजुकी इण्डिया लिमिटेड



SPEED POST

J 13012/06/2009-IA.II (T)

**Government of India
Ministry of Environment & Forests**



Ph: 011-2436 3973
e-mail:plahujarai@yahoo.com
Paryavaran Bhawan
CGO Complex, Lodi Road
New Delhi-110 003
Dated: June 3, 2011

To

M/s Maruti Suzuki India Ltd.
Gurgaon Plant
Palam Gurgaon Road
Gurgaon - 122 015
Haryana

***Sub: Expansion of 77.5 MW to 83.0 MW by addition of 6.0 MW
Gas Based Captive Power Plant at Gurgaon Plant, in
Haryana - reg. Environmental Clearance.***

Sir,

The undersigned is directed to refer to your letter no. MSIL:PDRS:EGM:10-11:0074, dated 18.01.2011 on the subject mentioned above seeking environmental clearance under the provisions of EIA Notification, 2006. The Ministry of Environment & Forests has examined the application.

2. It has been noted that the proposal is for expansion of existing 77.5 MW unit by addition of 6.0 MW Gas Based Captive Power Plant at Gurgaon, in Gurgaon Distt., in Haryana. The existing units are 3x20 MW Gas Turbines and 17.5 MW Steam Turbine. Land requirement will be 0.068 hectares, which is within the existing Maruti Plant which is an Industrial area. The co-ordinates of the site are at Latitude 28°29'32.09" N to 28°29'55.58"N and Longitude 77°03'37.43" E to 77°04'36.49"E. Fuel will be natural gas. Natural Gas requirement will be 0.0279 MMSCMD. Water requirement will be 0.002 MLD and will be met from the existing water supplied by Haryana Development Authority. There are no national parks, wildlife sanctuaries, heritage sites, tiger/biosphere reserves etc. within 10 km of the site. Cost of the project will be Rs 30.0 Crores.

3. The project has been considered in accordance with the provisions of the EIA notification issued by the Ministry of Environment & Forests vide S.O. 1533 (E), dated September 14, 2006. The proposal is a 'B' Category project. Due to location of project within 10 Km of inert-state boundary, Expert Appraisal Committee (Thermal) in the Ministry has appraised the project as per General Conditions of EIA Notification, 2006.

4. Based on the information submitted by you as at para no.2 above and others and presentation made by you before the Expert Appraisal Committee (Thermal) in the 22nd Meeting held during April 4-5, 2011, the Ministry of Environment and Forests hereby *accords environmental clearance* to the above project under the provisions of EIA notification dated September 14, 2006, subject to the compliance of the following Specific and General conditions:

A. Specific Conditions:

- i) In case fuel for running the power plant is proposed to be changed from natural gas to other fuel (liquid or solid) the project proponent shall apply for such a change in environmental clearance along with necessary documents as required under EIA notification, 2006 (and its amendments). In such a case the necessity for holding public hearing again or otherwise will be determined by the Ministry in consultation with the Expert Appraisal Committee (Thermal Power).
- ii) Mass Spectrometer based Helium detector to detect the gas leakage shall be installed.
- iii) Concentration for photochemical oxidants shall be monitored along with NO_x and permanent monitoring stations shall be installed at appropriate location in consultation with the Central / State pollution Control Board.
- iv) COC of 5.0 shall be adopted.
- v) No ground water shall be extracted for the project work at any stage.
- vi) It shall be ensured that the area drainage is not disturbed due to the proposed expansion.
- vii) The treated effluents conforming to the prescribed standards only shall be reused to the extent possible and excess discharged. Arrangements shall be made that effluents and storm water do not do not get mixed.
- viii) A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation. Continuous monitoring of effluent discharge shall be undertaken and it shall be ensured that when discharge enters the natural drain the temperature of effluent shall be at ambient.
- ix) Monitoring of ground and surface water quality (if any nearby) shall be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction

of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.

- x) A well designed rainwater harvesting shall be put in place. Central Groundwater Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting technology within **a period of three months** from the date issue of clearance and details shall be furnished. Status of implementation shall be submitted to the Regional Office of the Ministry.
- xi) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires especially during summer season. Measures taken with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.
- xii) Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA at 1m from the source of noise. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy/less noisy areas.
- xiii) NO_x emission from each Gas Turbine shall not exceed 50 ppm.
- xiv) Stacks of 70 m shall be provided with continuous online monitoring equipments. Exit velocity of flue gases shall not be less than 22 m/sec.
- xv) Regular monitoring of ground level concentration of SO₂, NO_x, RSPM (PM₁₀ & PM_{2.5}) etc. shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.
- xvi) An amount of Rs 0.12 Crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs 0.024 Crores per annum till the life of the plant shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be **submitted within one month** along with road map for implementation.
- xvii) CSR scheme shall be identified based on need based assessment in and around the villages within 5 km of the site and in constant

consultation with the village Panchayat and the District Administration. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. As part of CSR vocational training programme for possible self employment and jobs shall be imparted to identify villagers free of cost.

- xviii) It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time.
- xix) Green Belt consisting of 3 tiers of plantations around the plant with adequate tree density not less than 2500 per ha and survival rate not less than 80 % shall be developed. The green belt developed shall not be less than 33% of the total area.

B. General Conditions:

- i) Storage facilities for auxiliary liquid fuel such as LDO and/ HFO/LSHS (if any) shall be made in the plant area in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.
- ii) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
- iii) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- iv) 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 from the date of this clearance 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>.
- v) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, received while processing the

proposal. The clearance letter shall also be put on the website of the Company by the proponent.

- vi) An Environmental Cell shall be created at the project site itself and shall be headed by an officer of appropriate seniority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the organization.
- vii) The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB.
- viii) The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well by e-mail) to the respective Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB.
- ix) **The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.**
- x) Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. **Criteria pollutants levels including NO_x (from stack & ambient air) shall be displayed at the main gate of the power plant and in public domain.**
- xi) 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 should be reported to the Ministry.

xii) The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.

xiii) Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry at Bangalore / CPCB/ SPCB who would be monitoring the compliance of environmental status.

4. The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.

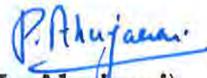
5. The environmental clearance accorded **shall be valid for a period of five years** to start operations by the power plant.

6. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

7. In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.

8. The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous Wastes (Management and Handling) Rules, 2008 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.

Yours faithfully,


(Dr. P.L. Ahujara)
Scientist 'F'

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Secretary (Environment), Forests and Environment Department Government of Maharashtra.
3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.

4. The Chairman, Haryana Pollution Control Board, .C-11, Sector-6, Panchkulla.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi- 110032.
6. The Chief Conservator of Forests (C), Regional Office (NZ), Ministry of Environment & Forests, Sector -31A, Dakshin Marg, Chandigarh - 160 030.
7. The District Collector, Gurgaon District, Govt. of Haryana.
8. The Director (EI), MOEF.
9. Guard file.
10. Monitoring file.


(Dr. P.L. Ahujarai)
Scientist 'F'

MSIL:CUIP:ENV:17-18:067

13-Nov-2017

To
Ministry of Environment, Forest and Climate Change,
Northern Regional Office
Bays No 24-25, Sector – 31 A,
Dakshin Marg
Chandigarh

Kind Attn: Dr. Ajay Mehrotra, Advisor/SG

Sub: Half yearly report for Compliance of Expansion of 77.5 MW to 83.5 MW by addition of 6.0 MW Gas Based Captive Power Plant at Gurgaon Plant, Haryana by M/s Maruti Suzuki India Ltd.

Ref: Environment Clearance Letter from MoEF – J-13012/06/2009-IA-II(T) dated :03-June-2011

Dear Sir,

Enclosed please find herewith the half yearly compliance report for the environment clearance.

Thanking You.

Yours Faithfully



Dr. Deepak Jain
General Manager (Environment Management)
Maruti Suzuki India Limited, Gurgaon.

CC: 1. Haryana State Pollution Control Board, Panchkula
2. Central Pollution Control Board, Lucknow

MARUTI SUZUKI INDIA LIMITED

Head Office:
Maruti Suzuki India Limited,
1, Nelson Mandela Road, Vasant Kunj,
New Delhi - 110070, India.
Tel: 011- 46781000, Fax: 011-46150275/46150276
E-mail id: contact@maruti.co.in, www.marutisuzuki.com

Gurgaon Plant:
Maruti Suzuki India Limited,
Old Palam Gurgaon Road,
Gurgaon - 122015, Haryana, India
Tel: 0124-2346721, Fax: 0124-2341304

Manesar Plant:
Maruti Suzuki India Limited,
Plot no.1, Phase - 3A, IMT Manesar,
Gurgaon - 122051, Haryana, India.
Tel: 0124-4884000, Fax: 0124-4884199

MARUTI SUZUKI INDIA LIMITED, GURGAON, HARYANA

Ref : Environment clearance letter from MOEF - No. J-13012/06/2009-IA-II (T) dated :03-June-2011

S. No	Stipulated Condition in Environment Clearance	Compliance status
i	In case fuel for running the power plant is proposed to be changed from natural gas to other fuel (liquid or solid) the project proponent shall apply for such a change in environmental clearance along with necessary documents as required under EIA notification, 2006 (and its amendments). In such a case the necessity for holding public hearing again or otherwise will be determined by the Ministry in consultation with the Expert Appraisal Committee (Thermal Power).	Natural Gas is used as primary fuel. HSD is used as pilot fuel and standby fuel.
ii	Mass Spectrometer based Helium detector to detect the gas leakage shall be installed.	Installed
iii	Concentration for photochemical oxidants shall be monitored along with NO _x and permanent monitoring stations shall be installed at appropriate location in consultation with the Central / State pollution Control Board.	Permanent monitoring stations installed.
iv	COC of 5.0 shall be adopted	Closed cycle air cooled cooling towers are used.
v	No ground water shall be extracted for the project work at any stage.	Canal water supply is used for the proposed project
vi	It shall be ensured that the area drainage is not disturbed due to the proposed expansion.	Maruti Suzuki India Ltd is located in the industrial area and the proposed thermal power plant is located in this premises and area drainage has not been disturbed
vii	The treated effluents conforming to the prescribed standards only shall be reused to the extent possible and excess discharged. Arrangements shall be made that effluents and storm water do not get mixed.	There is no effluent generation as closed cycle air cooled cooling tower is used.
viii	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt / plantation. Continuous monitoring of effluent discharge shall be undertaken and it shall be ensured that when discharge enters the natural drain the temperature of effluent shall be at ambient.	Sewage treatment plant is already installed. The treated sewage is recycled for manufacturing process and horticulture.
ix	Monitoring of ground and surface water quality (if any nearby) shall be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.	There is no surface water source. Ground water quality is monitored annually and report is attached at Annex - 1
x	A well designed rainwater harvesting shall be put in place. Central Groundwater Authority/ Board shall be consulted for finalization or appropriate rainwater harvesting technology within a period of three month from the date issue of clearance and details shall be furnished. Status of implementation shall be submitted to the Regional Office of the Ministry.	Rain water harvesting structures are already constructed in premises.
xi	Adequate safety measures shall be provided in the plant area to check / minimize spontaneous fires especially during summer season. Measures taken with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry	Safety measures provided in the EIA report shall be implemented.
xii	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA at 1m from the source of noise. For people working in the high noise area, requisite personal protective equipment like earplugs/ ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy / less noisy areas.	Noise level is monitored in the area. Reports are attached in Annex - 2. PPE like earplug / ear muffs are provided to person working in high noise area. Periodic audiometric records of persons working in area are maintained.
xiii	NO _x emission from each Gas Turbine shall not exceed 50 ppm.	Complied. Reports are attached in Annex - 3.
xiv	Stacks of 70 m shall be provided with continuous online monitoring equipments. Exit velocity of flue gases shall not be less than 22 m/sec.	70 m Chimney installed with continuous online monitoring equipments.
xv	Regular monitoring of ground level concentration of SO ₂ , No _x , RSPM (PM10 & PM2.5) etc. shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. the location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the regional Office of this Ministry. The data shall also be put on the website of the company.	Ambient air quality are monitored quarterly and reports are placed at Annex - 4.

MARUTI SUZUKI INDIA LIMITED, GURGAON, HARYANA

Ref : Environment clearance letter from MOEF - No. J-13012/06/2009-IA-II (T) dated :03-June-2011

S. No	Stipulated Condition in Environment Clearance	Compliance status
xvi	An amount of Rs 0.12 Crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs 0.024 Crores per annum till the life of the plant shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.	Complied. Detailed report placed at Annex - 5.
xvii	CSR scheme shall be identified based on need based assessment in and around the village within 5 km of the site and in constant consultation with the village Panchayat and the District Administration. As part of CSR prior identification of local employable youth and eventual employment in project after imparting relevant training shall be also undertaken. As part of CSR vocational training programme for possible self employment and jobs shall be imparted to identify villagers free of cost.	
xviii	It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time.	
xix	Green Belt consisting of 3 tiers of plantations around the plant with adequate tree density not less than 2500 per ha and survival rate not less than 80% shall be developed. The green belt developed shall not be less than 33% of the total area.	Green belt of MSIL is placed at Annex - 6.
General Condition in Environment Clearance		
i	Storage facilities for auxiliary liquid fuel such as LDO and/ HFO/ LSHS (if any) shall be made in the plant area in consultation with Department of Explosives, Nagpur. Sulphur content in liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	For stand by fuel, existing HSD storage tanks 300 KL x 2 Nos is utilized. License is available for these storage tanks
ii	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Are provided during construction phase
iii	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	No construction labour stayed at the site during construction.
iv	The project proponent shall advertise in at least two local newspapers widely circulated in region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance 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 .	Advertised in two local newspapers. Copy of the notice attached herewith at Annex - 7.
v	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal corporation, urban local body and the Local NGO, if any, from whom suggestions/ representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Not applicable
vi	An Environmental Cell shall be created at the project site itself and shall be headed by an officer of appropriate seniority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the organization.	A separate Environment Management department has been created.
vii	The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB.	Provided.
viii	The project proponent shall also submit six monthly reports on the status of the stipulated EC conditions including results of monitored data (both in hard copies as well by e-mail) to the respective Regional Office of MOEF, the respective Zonal OFFICE of CPCB and the SPCB	

MARUTI SUZUKI INDIA LIMITED, GURGAON, HARYANA

Ref : Environment clearance letter from MOEF - No. J-13012/06/2009-IA-II (T) dated :03-June-2011

S. No	Stipulated Condition in Environment Clearance	Compliance status
ix	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and forests.	Six monthly compliance report is submitted in June and December every year
x	Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. Criteria pollutants levels including NO _x (from stack & ambient air) shall be displayed at the main gate of the power plant and in public domain.	Provided
xi	Separate funds shall be allocated for implementation or environmental protection measures measured along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measured shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	Funds allocated for environment protection measures are not diverted
xii	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Maruti Suzuki India Ltd is located in the industrial area and the proposed thermal power plant is located inside the premises. No Land development is required. Plant has been commissioned.
xiii	Full cooperation shall be extended to the Scientists/Officers from the Ministry/ Regional Office of the Ministry at Bangalore / CPCB / SPCB who would be monitoring the compliance of environmental status.	Full co-operation will be extended to the officers from MoEFCC/CPCB/SPCB



DATA SHEET

1.	Project Type	River Valley/Mining/Industry /Refinery/Transportation Tourism /Thermal / Nuclear/Construction Projects
2.	Name of the Project:	Expansion of captive thermal power plant from 77.5 MW to 83.5 MW at Maruti Suzuki India Limited, Gurgaon
3.	Clearance letter (s)/ O.M No. & dates:	J-13012/06/2009-IA.II(T) dated 03.06.2011
4.	Location: a) District (s) b) State (s) c) Latitudes/Longitudes	District: Gurgaon State: Haryana Latitude: 28°29'42.9"N Longitude: 77°04'28.9"E
5.	Address for correspondence: a) Address for Correspondence b) Address of executive Project Incharge	Mr Deepak Jain General Manager – Environment Management Maruti Suzuki India Limited Palam Gurgaon Road Gurgaon, Haryana Email: Deepak.Jain@maruti.co.in Phone 0124 – 2346721 ~ 30 Extn : 3583 Mr. Sanjay Baronia Assistant Vice President – EMU Maruti Suzuki India Limited Palam Gurgaon Road Gurgaon, Haryana Email: Sanjay.Baronia@maruti.co.in Phone 0124 – 2346721 ~ 30
6.	Salient Features: a) of the project b) of the environmental management plans	Salient Features of the project and Environmental Management Plant details is enclosed in Annexure A
7.	Break up of the project area: a) Submergence area : Forest & Non-forest b) Others	Not Applicable The project will be located within MSIL premises in the industrial area.
8.	Break up of the project affected population with enumeration of those losing house /dwelling units only, agricultural land only both dwelling units and agricultural land and landless laborers/artisans. a) SC/ST/Adivasis	Not Applicable

	<p>b) Others (Please indicate whether these figures are based on any scientific and systematic survey carried out or only provisional figures. If a survey has been carried out, give details and year of survey)</p>	
9.	<p>Financial details:</p> <p>a) Project cost as originally planned and subsequent revised estimates and the year or price reference.</p> <p>b) Allocations made for environmental management plans with item wise and year wise break up.</p> <p>c) Benefit cost ratio/Internal Rate of Return and the year of assessment.</p> <p>d) Whether (c) includes the cost of environment management as shown in b) above.</p> <p>e) Actual expenditure incurred on the project so far.</p> <p>f) Actual expenditure incurred on the environmental management plans so far:</p>	<p>Original: 30 Cr.</p> <p>Included above</p> <p>-</p> <p>-</p> <p>-</p> <p>Rs. 6.67 Cr.</p>
10.	<p>Forest land requirement :</p> <p>a) The status of approval for diversion of forest land for non-forestry use.</p> <p>b) The status of clear felling.</p> <p>c) The status of compensatory afforestation of clear felling. If any.</p> <p>d) Comments on the viability & sustainability of compensatory afforestation programmes in the light of actual field experience so far.</p>	Not Applicable
11.	<p>The status of clear feeling in non-forest areas (such as submergence area of reservoir, approach road) if any, with quantitative information.</p>	Not Applicable
12.	<p>Status of construction.</p> <p>a) date of commencement (actual and/ or planned)</p> <p>b) Date of completion (actual and / or planned)</p>	<p>Jun' 11</p> <p>Jan' 13</p>
13.	<p>Reasons for the delay if the project is yet to start:</p>	Not Applicable

SALIENT FEATURES OF PROJECT:

- | | | |
|------------------------|---|--|
| 1. Name of the Project | : | Gas Engine at Maruti Suzuki India Limited,
Gurgaon, Haryana |
| 2. Capacity | : | 6 MW |
| 3. Location | : | Maruti Suzuki India Limited, Gurgaon. |
| 4. Total project cost | : | Rs. 30 Crores |
| 5. Land Area | : | 680 sq m |

ENVIRONMENTAL MANAGEMENT PLAN

Water Pollution control

- The Gas Engine is air cooled hence the waste water generated shall be very minimum. Existing ETP will treat the effluent arising out of the plant operation and the treated waste water will be reused.

Air Pollution control:

- Stack of the Gas Engine shall be maintained at 70m.
- The NO_x emissions will be below 50 ppm.

Noise Pollution Control

- The noise from Gas Engine will be controlled by acoustic enclosures. The noise level at the periphery of factory/premises will not exceed the ambient noise level.

Ground Water

- Rain water harvesting lagoons have been constructed to take care of surface run off and recharge the aquifers.

Green belt development

- Adequate green area with local area species having capacities to reduce SPM and noise levels.



PCRI/051

प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड) -249403
POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED**RANIPUR, HARIDWAR (U.K.) - 249 403**

(Approved Lab under Environment (Protection) Act, 1986; EIA Consultant by NABET, QCI)

TEST REPORT

Lab Reference No: TL170515 **Date:** 12.10.2017
Indentor : M/s Maruti Suzuki India Limited, Palam-Gurgaon Road, Gurgaon
- 122015, Haryana
Customer's Ref. No.: MSIL:CUIP:ENV:17-18:045 Dated 09.08.2017
Work Order No.: 17-0135-O-791
Sample Collected by: PCRI Staff **Collection Date:** 23.08.2017
Sample/Job: Tubewell Water Sample

PARAMETER	UNIT	OBTAINED VALUE	STANDARD LIMITS (IS 10500:2012)	
			Acceptable	Permissible
Alkalinity	mg/L	124	200	600
Aluminium (as Al)	mg/L	0.06	0.03	0.2
Ammonia (as Total Ammonia - N)	mg/L	ND	0.5	NR
Anionic Detergents (as MBAS)	mg/L	ND	0.2	1.0
Arsenic (as As)	mg/L	ND	0.01	0.05
Barium (as Ba)	mg/L	ND	0.7	NR
Boron (as B)	mg/L	ND	0.5	1.0
Cadmium (as Cd)	mg/L	ND	0.003	NR
Calcium (as Ca)	mg/L	64.1	75	200
Chloride (as Cl)	mg/L	14	250	1000
Chloramines (as Cl ₂)	mg/L	ND	4.0	NR
Chromium Total (as Cr)	mg/L	ND	0.05	NR
Colour	Hazen	<5	5	15
Copper (as Cu)	mg/L	0.01	0.05	1.5
Cyanide (as CN)	mg/L	ND	0.05	NR
E. coli	MPN/100 mL	Absent	Absent	NR
Fecal Coliform	MPN/100 mL	Absent	Absent	NR
Fluoride (as F)	mg/L	0.34	1.0	1.5
Hardness (as CaCO ₃)	mg/L	200	200	600
Iron (as Fe)	mg/L	0.13	0.3	NR
Lead (as Pb)	mg/L	0.01	0.01	NR

Contd.. Page 2

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.

(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.

(3) Samples will be disposed off after one month from the date of issue of Test Certificate.

Signature
12/10/17

Signature



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड) -249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986; EIA Consultant by NABET, QCI)

TEST REPORT

-Page 2-

Lab Reference No:

TL170515

Date: 12.10.2017

PARAMETER	UNIT	OBTAINED VALUE	STANDARD LIMITS (IS 10500:2012)	
			Acceptable	Permissible
Magnesium (as Mg)	mg/L	9.7	30	100
Manganese (as Mn)	mg/L	0.01	0.1	0.3
Mercury (as Hg)	mg/L	ND	0.001	NR
Mineral Oil	mg/L	ND	0.5	NR
Molybdenum (as Mo)	mg/L	ND	0.07	NR
Nickel (as Ni)	mg/L	ND	0.02	NR
Nitrate (as NO ₃)	mg/L	0.34	45	NR
Odour	-	Agreeable	Agreeable	NR
PAH	mg/L	ND	0.0001	NR
Polychlorinated biphenyls (PCBs)	mg/L	ND	0.0005	NR
Pesticides	µg/L	ND	0.01 to 190	NR
pH	-	7.6	6.5-8.5	NR
Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	ND	0.001	0.002
Selenium (as Se)	mg/L	ND	0.01	NR
Silver (as Ag)	mg/L	ND	0.1	NR
Sulphate (as SO ₄)	mg/L	28.65	200	400
Sulphide (as S)	mg/L	ND	0.05	NR
Taste	-	Agreeable	Agreeable	NR
Total Collform	MPN/100 mL	Absent	Absent	NR
Total Dissolved Solids	mg/L	280	500	2000
Total Residual Chlorine	mg/L	ND	0.2	1.0
Trihalo Methane	mg/L	ND	0.06 to 0.2	NR
Turbidity	NTU	5.29	1	5
Zinc (as Zn)	mg/L	0.02	5	15

ND - Not Detectable

NR - No Relaxation

(Signature)
(Dr. S. Bhatnagar) 12/10/17

Sr. Dy. General Manager (PCRI)

डा. एस. बटनगार / Dr. S. Bhatnagar

Sr. Dy. General Manager

- Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of this certificate.

(Signature)



प्रदूषण नियन्त्रण अनुसंधान संस्थान

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT EQUIPMENT NOISE MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018:0517-0521
Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Gurgaon, Haryana
2.	Work Order No.	:	17-0135-0-791
3.	Date of sampling	:	22.08.2017
4.	Equipment Name	:	Natural Gas DG : 6.0 MW (D.O.C. : 2012) (WARTSILA FINLAND)
5.	Instrument used	:	Precision Sound Level Meter (Cygnet)
6.	Noise Measurement Condition	:	Noise Level Measurement (Instantaneous)
7.	Measurement carried out by	:	PCRI, B.H.E.L., Ranipur, Haridwar-Uttarakhand

B. RESULTS OF DG NOISE MEASUREMENT:

Sr. No.	Location	Noise Level Leq. dB (A)	Requirement (As per MOEF/CPCB)
1.	When DG Set was kept 'OFF'		-
1.a	Background noise level, near DG acoustic enclosure	67.2	-
2.	When DG Set was in operation on load		-
2.a	Inside DG Acoustic room		-
2.a.i	At 0.5 m, distance away from engine of DG set	103.1	-
2.b	Outside DG acoustic room		-
2.b.i	At 0.5 m, distance from main gate of DG room	74.6	75 dB (A)
3.	Insertion Loss at 0.5 mtr	28.5	-
4.	Ambient Noise Level		-
4.1	Near Main Gate	66.8	-

R S Yadav

(R S Yadav)

Dy. Manager (PCRI)

राजीव सिंह यादव/ R. S. Yadav

उप प्रबंधक/ Dy Manager

Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान

BHEL, Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing test reports.
Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing
(3) Samples will be disposed off after one month from the date of issue of Test Certificate

[Signature]



प्रदूषण नियन्त्रण अनुसंधान संस्थान
 भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403
POLLUTION CONTROL RESEARCH INSTITUTE
 (A Govt. of India - UNDP / UNIDO Project)
 BHARAT HEAVY ELECTRICALS LIMITED
 RANIPUR, HARIDWAR (U.K.) - 249 403



ISO 9001:2009, OHSAS 18001:2007

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT
STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018:0516

Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of plant	: M/s Maruti Suzuki India Ltd., Gurgaon (Haryana)
2.	Work Order No.	: 17-0135-0-791
3.	Date of sampling	: 22.08.2017
4.	Source of emission	: Natural Gas DG : 6.0 MW (D.O.C. : 2012) (WARTSILA FINLAND)
5.	Material of construction of stack	: Mild Steel
6.	Stack height	: 70 m
7.	Stack Internal Diameter	: 1.114 m
8.	Location of sampling point	: Stack
9.	Method of sampling	: Emission Regulations Part - III, IS: 11255 , FID, NDIR and Electro-Chemical Sensors
10.	Capacity	: 6.0 MW
11.	Load	: 5.1 MW
12.	Fuel Consumption rate	: 1250 SCM/Hr (Natural Gas)
13.	Air Pollution Control Equipment Installed	: Silencer
14.	Sample collection by	: PCRI, B.H.E.L., Ranipur, Haridwar-Uttarakhand

B. RESULTS OF FLUE GAS EMISSION MONITORING :

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit
1.	NO _x (as NO ₂) at 15% O ₂ (Dry Basis)	ppm	46	50
2.	Non Methane Hydrocarbons (NMHC as C) at 15% O ₂	mg/Nm ³	85	100
3.	Particulate Matter (at 15% O ₂)	mg/Nm ³	56	75
4.	Carbon Monoxide (CO) at 15% O ₂	mg/Nm ³	115	150
5.	Flue Gas Temperature	° C	396	-
6.	Emission Rate	m ³ /Sec	10.3	-

RS Yadav

(R S Yadav)

Dy. Manager (PCRI)

रजनेश सिंह यादव / R. S. Yadav

Dy. Manager / Dy. Manager
 Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान
 BHEL, Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and provide test reports
 Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate

RS



प्रदूषण नियन्त्रण अनुसंधान संस्थान

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.: PCRI: Air & Noise: 2017-2018: 0509

Date: 14.09.2017

A. GENERAL INFORMATION:

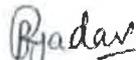
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Gurgaon, Haryana
2.	Work Order No.	:	17-0135-O-791
3.	Date of sampling	:	21.08.2017 to 22.08.2017
4.	Location of Sampling	:	A-Machine Shop/2
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS & PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-Uttarakhand

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	12	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	24	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	73	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	36	60
5.	Ozone (O ₃)	µg/m ³	95	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	1.95	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (Bz.P)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	8	20
13.	Non-Methane Hydrocarbons	ppm	6	-

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009


(R S Yadav)

Dy. Manager (PCRI)

राजेश्वर सिंह यादव / R. S. Yadav

उप प्रबन्धक / Dy. Manager

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & Pollution Control Research Institute
Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान -
BHEL, Ranipur, Haridwar



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018: 0510

Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Gurgaon, Haryana
2.	Work Order No.	:	17-0135-O-791
3.	Date of sampling	:	21.08.2017 to 22.08.2017
4.	Location of Sampling	:	B-Sewage Treatment Plant
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS & PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-Uttrakhand

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	14	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	26	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	76	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	39	60
5.	Ozone (O ₃)	µg/m ³	98	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	1.95	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (B _a P)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	10	20
13.	Non-Methane Hydrocarbons	ppm	8	-

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

R. S. Yadav

(R S Yadav)

Dy. Manager (PCRI)

राजेन्द्र सिंह यादव/ R. S. Yadav

उप-प्रबंधक/ Dy. Manager
Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान

BHEL, Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing test reports, Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate

[Signature]



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403
POLLUTION CONTROL RESEARCH INSTITUTE
(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT
AMBIENT AIR MONITORING

Lab. Ref.: PCRI: Air & Noise: 2017-2018: 0511

Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Gurgaon, Haryana
2.	Work Order No.	:	17-0135-0-791
3.	Date of sampling	:	21.08.2017 to 22.08.2017
4.	Location of Sampling	:	C-DM Water Plant
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS & PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-Uttarakhand

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	13	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	27	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	74	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	36	60
5.	Ozone (O ₃)	µg/m ³	102	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	1.88	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (B _a P)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	11	20
13.	Non-Methane Hydrocarbons	ppm	9	-

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

(R S Yadav)

Dy. Manager (PCRI)
राजेश्वर सिंह यादव/ R. S. Yadav
उप प्रबंधक/ Dy Manager

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018:0512

Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Gurgaon, Haryana
2.	Work Order No.	:	17-0135-O-791
3.	Date of sampling	:	21.08.2017 to 22.08.2017
4.	Location of Sampling	:	D-Near STP Outlet
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS & PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-Uttarakhand

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	11	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	24	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	71	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	35	60
5.	Ozone (O ₃)	µg/m ³	101	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	1.98	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20
13.	Non-Methane Hydrocarbons	ppm	9	-

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

(R S Yadav)

Dy. Manager (PCRI)

राजेश सिंह यादव/ R. S. Yadav

एन डी एच ई लिमिटेड/ Dy. Manager

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SP
Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate

Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
BHEL, Ranipur, Haridwar

A brief report on the CSR (2016-17) by Maruti Suzuki in Gurgaon

A. Community Development

1. School Infrastructure Up gradation
2. Learning Level Improvement activities
3. Sanitation awareness Campaigns (Employee Volunteering)

B. Skill Development

1. Vocational Training in Industrial Training Institutes
2. Automobile Skill Enhancement center in ITI Gurgaon

C. Road Safety

1. Skill Development of drivers
2. Road Safety Awareness
3. City Specific Road Safety Project

School Infrastructure Upgradation:

Total schools upgraded by 31st March 2017 in Gurgaon are 6 Government schools.

Schools Upgraded in 2016 -17 are:

1. Government Middle School, Chauma
2. Government Primary School, Carterpuri
3. Government Senior Secondary School Carterpuri
4. Government Senior Secondary School Sarhaul
5. Government Senior Secondary School Dundaheda
6. Government High School Molaheda

In 2015-16, 617 students were enrolled in Government Primary school Carterpuri and 300 students were enrolled in Government Middle school Chauma, 1335 students were enrolled in government Senior Secondary School Carterpuri, 2138 students were enrolled in government Senior Secondary School Sarhaul, 2339 students were enrolled in government Senior Secondary School Dundaheda and 1987 students were enrolled in government High School Molaheda.

Key activities undertaken during the 2016-17 were:

S.No.	Activities	Details of work
1	Construction of Toilet blocks	One toilet block for girls was constructed at GMS Chauma
2	Opening new windows and ventilators	Opened new windows and ventilators in the classrooms
3	Provided furniture	Provided 25 black boards, 138 chairs, 80 tables and 7 almirahs in six schools
4	Building repair and white washing	Building repair and white wash work has been completed in GSSS Sarhaul
5	Toilet renovation work	Eight toilet blocks in four schools have been renovated in Gurgaon

School infrastructure up-gradation of Government Senior Secondary School, Sarhaul and Government High School, Molaheda was completed in 2013-14. Government Senior Secondary School, Dundaheda and Government Senior Secondary School, Carterpuri were undertaken in 2015-16. The enrollment in these schools in 2015-16 was following:

Sr. No.	School Name	Enrollment
1	Govt. Senior Secondary School, Sarhaul	2138
2	Govt. Senior Secondary School, Dundaheda	2339
3	Govt. Senior Secondary School, Carterpuri	1335
4	Govt. High School, Molahera	1987
5	Govt. Primary School, Carterpuri	617
6	Govt. Middle School, Chauma	300
Total		8716

As part of ongoing activities under school upgradation project, in 2016-17 the Company has also provided:

1. A regular gardener in two schools for maintaining green areas of the schools.
2. Regular full time sweepers in all 4 schools to clean school toilets.

The implementations of all projects are undertaken in partnership with school authorities & Government education department officials along with guidance of Senior Management of Maruti Suzuki India Limited.

Skill Development:

Maruti Suzuki is supporting 151 ITIs in 27 states of India. In Gurgaon 2 Government ITI are adopted. The focus in these ITI are on four broad developmental areas which are:

- Faculty development
- Student development
- Infrastructure development
- Industry connect

The students were trained on 5S, Safety, advanced automobile, personality development & Interview skills, etc. Faculties were imparted Tier -1 and Tier -2 trainings which aim at behavioral skills, motivational skills, PDCA & Problem Solving, Team work etc.

The Company's experience of upgrading ITI has opened various avenues of improvement in quality of vocational training, introduced industrial culture, have re-enforced positivity, openness and exposed the institutes to new technology. The company has also started specialized training programme and country's first Auto Body Repair and Auto Body Paint courses under its state-of-the-art facilities provided in its Automobile Skill Enhancement Centers (ASEC). ASEC has also been setup in Gurgaon ITI. Apart from these courses the Company offers on job training for the students in its dealer workshops which are spread across the nation. The Company aims to equip these centers for offering relevant skills to the students and make them job ready.

Road Safety

Maruti Suzuki runs nationwide road safety campaigns with a focus on imparting driver skills, creating awareness about road signs, traffic rules, behavioral aspects and health.

- The Company has two driver education centers inside Gurgaon and Manesar facility which trains commercial vehicle drivers on safe driving and create awareness among the drivers.
- Two events were conducted inside Gurgaon manufacturing plant facility for the awareness on truck drivers. The event is called as Jagriti and it covered over 4500 truck drivers in Gurgaon. The drivers are also felicitated with various awards, provided health check-ups, HIV/AIDS awareness etc.
- Deployed 100 Traffic Marshals in Gurgaon in partnership with Gurgaon Traffic Police for smooth and safe traffic movement under city specific road safety project
- In Gurgaon, annual Road safety awareness week is organized every year in various schools of Gurgaon to spread road safety message through street plays, competitions, quizzes, etc.

In 2016-17, the Company has spent Rs. 30,000,000 (approx) to undertake Gurgaon CSR activities.



TIMES OF INDIA

PUBLIC NOTICE

Maruti Suzuki India Limited,
Regd. Office: 1, Nelson Mandela Road,
Vasant Kunj, New Delhi-110070.

Ministry of Environment and Forests has accorded environment clearance for the proposed expansion of thermal (captive) power plant at Maruti Suzuki India Limited, Gurgaon Plant. The copies of the clearance letters are available with the Haryana State Pollution Control board and the same can also be seen on the website of Ministry of Environment & Forest at <http://envfor.nic.in>.

Date: 10th June, 2011.

Maruti Suzuki India Limited

AMAR UJALA

सूचना

Maruti Suzuki India Limited,
Regd. Office: 1, Nelson Mandela Road,
Vasant Kunj, New Delhi-110070.

पर्यावरण एवं वन मंत्रालय द्वारा मारुति सुजुकी इंडिया लिमिटेड के गुड़गांव प्लांट में पावर प्लांट के विस्तार हेतु पर्यावरणीय अनुमोदन प्रदान कर दिया गया है। अनुमोदन पत्र की प्रतियां हरियाणा राज्य प्रदूषण नियंत्रण बोर्ड के पास उपलब्ध है। अनुमोदन पत्र को पर्यावरण एवं वन मंत्रालय की वेबसाइट <http://envfor.nic.in> पर भी देखा जा सकता है।

दिनांक: 10 जून, 2011

मारुति सुजुकी इंडिया लिमिटेड

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY HARYANA
Bay No. 55-58, Prayatan Bhawan, Sector-2, PANCHKULA.

No. SEIAA/HR/2012 237 A

Dated: 30-8-12

To

M/S Maruti Suzuki India Limited,
Regd. Office: Plot No. 1, Nelson Mandela Road,
Vasant Kunj, New Delhi- 110070

**Subject: Environmental Clearance for 57 MW Captive Power Plant
(expansion) at Maruti Suzuki India Limited, Manesar, Gurgaon.**

Dear Sir,

This has reference to your application no. PRDS-EGM-10-11 dated 8.10.2010 addressed to MS, SEIAA and received on 12.10.2010 and subsequent letter dated 3.03.2011 seeking prior environmental clearance for the above project under the EIA Notification, 2006. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification, 2006 on the basis of the mandatory documents enclosed with the application viz., Form-1 pre-feasibility project report, proposed TOR and the additional clarifications furnished in response to the observations of the State Expert Appraisal Committee (SEAC) constituted by MOEF, GOI vide their Notification 21.4.2008/23.3.2012 in its meetings held on 10.12.2010 & 28.06.2012.

[2] It is inter-alia noted that the project is for setting up of 57 MW natural Gas based power project under expansion at Maruti Suzuki India Limited, Manesar, Gurgaon. The existing capacity of captive power plant is 86.2 MW which is based on natural gas and the MOEF, GOI vide letter dated 05-02-2008 has accorded environmental clearance to the project. The power plant is proposed to convert to combined cycle power plant with the addition of 37 MW steam

turbine and it is also proposed to add a gas turbine of 20 MW and after expansion the total capacity of the power plant will be 143.2 MW. It has also been proposed to use HSD as standby fuel. The project proponent intimated that the GAIL has given assurance for supply of 7500 cubic of natural gas through pipeline for the proposed project. The GT stack height will be 30 mtrs. It was noticed that project is covered under item no.1 (d) of EIA notification dated 14.9.06 and SEAC has appraised this project as category B-I project. The TOR's were approved on 10.12.10. The public hearing in this case is not required as the project is located in an Industrial Area. The project proponent on the basis on approved TOR's submitted EIA/EMP on 28-02-2011.

[3] The State Expert Appraisal Committee, Haryana after due consideration of the relevant documents submitted by the project proponent and additional clarification furnished in response to its observations have recommended the grant of environmental clearance for the project mentioned above subject to compliance with the stipulated conditions. Accordingly, the State Environment Impact Assessment Authority in its meeting held on 29.8.2012 decided to agree with the recommendation of SEAC and to accord necessary environmental clearance for the project under Category 1(d) of EIA Notification 2006 subject to the strict compliance with the specific and general conditions mentioned below:-

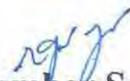
- i) No additional land shall be acquired.
- ii) NOC from BARC shall be obtained prior to start of construction of the project due to the proximity of the project to BARC Observatory.
- iii) Gas shall only be used as fuel, however, HSD may be used as standby fuel for not more than 30 days in a year when gas is not available.

- iv) Dry Low NOx burners shall be provided and it shall be ensured that NOx emissions from the stack is less than 100 ppm.
- v) The height of the stack shall be as per the standards prescribed under the Environment (Protection) Act in this regard or 30 m, which ever is more with continuous online monitoring system. Exit velocity shall not be less than 29 m/s.
- vi) Air cooled condensers shall be installed.
- vii) Water should be conserved, treated, reused and recycled in order to minimize water consumption. The necessary prior permission for withdrawal of requisite quantity of groundwater for the project as applicable shall be obtained from the Competent Authority before the start of expansion.
- viii) Treated effluents conforming to the prescribed standards shall be re-circulated and reused within the plant area. No effluents shall be discharged outside the plant boundary.
- ix) Rainwater 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 and a copy of the same shall be submitted within three months to the SEIAA. Care shall be taken to avoid contamination of ground water through RWH pit.
- x) Leq of Noise level shall be limited to 75 dBA and regular maintenance of equipments shall be undertaken. For people working in high noise areas, personal protection devices shall be provided.
- xi) A greenbelt shall be developed around the plant boundary with tree density of around 2500 trees per ha. The area under greenbelt shall be atleast $1/3^{\text{rd}}$ of the total area.
- xii) First aid and sanitation arrangements shall be made for the drivers and other regular or contract workers during construction phase.

- xiii) Regular monitoring of the ambient air quality shall be carried out in and around the power plant and records shall be maintained. The location of monitoring stations and frequency of monitoring shall be decided in consultation with the Haryana State Pollution Control Board. Periodic reports shall be submitted to the Regional Office of the Ministry at Chandigarh.
- xiv) The project proponent shall advertise in atleast 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 from the 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 and on project proponent's website.
- xv) A separate environment management cell with qualified staff shall be set up for the implementation of the stipulated environmental safeguards.
- xvi) Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to the SEIAA/ Regional Office, MOEF, Chandigarh and HSPCB.
- xvii) Regional Office of the Ministry of Environment & Forests located at Chandigarh will monitor the implementation of the stipulated conditions. A complete set of documents including Environment Impact Assessment Report and Environment Management Plan alongwith the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring.
- xviii) Separate funds shall be allocated for implementation of environmental protection measures alongwith 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 purposed and year-wise expenditure shall be reported to the SEIAA, Panchkula and Regional Office, MoEF, Chandigarh.
- xix) Full cooperation shall be extended to the Scientists/Officers from the Regional Office of the Ministry at Chandigarh/HSPCB who would be monitoring the compliance of environmental status.

- xx) The project proponent shall take adequate preparation for fire and other kind of disaster including chemical disaster. On-site and Off-site emergency plan should be rehearsed through regular mock drills.
 - xxi) The project Proponent shall initiate a long term study through a reputed institution to assess the cumulative impact of the power plants on the AAQ of the area. The study shall in particular assess the impact of emission of the gas power plant on the chemistry of upper atmosphere and the impact on radiation budget. It shall be ensured that the study takes into account the worst seasonal atmospheric conditions.
 - xxii) The Project Proponent shall ensure that all possible hazards due to the power plant are contained within the plant premises.
 - xxiii) An Environmental Cell shall be created at the project site itself and shall be headed by qualified officer, who is well versed with the environmental aspects of gas based power plant. It shall be ensured that the Head of the Cell shall directly report to the Head of the Organization.
 - xxiv) The project Proponent shall also submit the detailed data of last one year during which the HSD was used as standby fuel in the existing captive power plant.
 - xxv) These conditions of expansion project are in addition to conditions imposed by MoEF in original project.
 - xxvi) Standards for discharge of environmental pollutants as enshrined in various schedules of rule 3 of environment protection rule 1986 shall be complied with.
 - xxvii) Harnessing solar power within the premises of the plants particularly ~~and~~ at available roof tops shall be made and the status of implementation shall be submitted every six months to the SEIAA/MoEF, GoI.
4. The SEIAA reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the SEIAA.
 5. The environmental clearance accorded shall be valid for a period of 5 years to start of production operation by the power plant.
 6. In case of any deviation or alteration in the project proposed from that submitted to the SEIAA for clearance, a fresh reference shall be made to the SEIAA to assess the adequacy of the condition (s) imposed and to incorporate additional environmental protection measures required, if any.

7. The above stipulations shall be enforced alongwith others as under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1986, The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, Hazardous Waste (Management and Handling) Rules, 1989, the Public Liability Insurance Act, 1991 and rules there under.
8. The project proponent shall put in place Corporate Environment Policy as mentioned in MoEF, GoI OM No. J-11013/41/2006-IA II (I) dated 26.4.2012


**Member Secretary,
 State Level Environment Impact
 Assessment Authority, Haryana, Panchkula.**

Endst. No. SEIAA/HR/2011


 Dated:.....

A copy of the above is forwarded to the following:

1. The Additional Director (IA Division), MOEF, GOI, CGO Complex, Lodi Road, New Delhi.
2. The Regional office, Ministry of Environment & Forests, Govt. of India, Sector 31, Chandigarh.
3. The Chairman, Haryana State Pollution Control Board, Pkl.


**Member Secretary,
 State Level Environment Impact
 Assessment Authority, Haryana, Panchkula.**

MSIL:CUIP:ENV:17-18:065

13-Nov-2017

To
Ministry of Environment, Forest and Climate Change
Northern Regional Office
Bays No 24-25, Sector – 31 A,
Dakshin Marg
Chandigarh

Kind Attn: Kind Attn: Dr. Ajay Mehrotra, Advisor/SG

Sub: Half yearly report for Compliance of Environmental Condition for Gas turbine,
Manesar (57 MW)

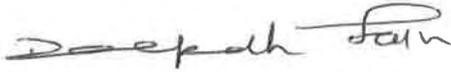
Ref: Environment Clearance Letter from MoEF – No. SEIAA/HR/2012/237A, dated
30.08.2012.

Dear Sir,

Enclosed please find herewith the half yearly report for the environment clearance issued for our Gas turbine.

Thanking You.

Yours Faithfully



Dr. Deepak Jain
General Manager (Environment Management)
Maruti Suzuki India Limited, Gurgaon.

CC: 1. Haryana State Pollution Control Board, Panchkula
2. State Environment Impact Assessment Authority, Haryana

MARUTI SUZUKI INDIA LIMITED

Head Office:
Maruti Suzuki India Limited,
1, Nelson Mandela Road, Vasant Kunj,
New Delhi - 110070, India.
Tel: 011- 46781000, Fax: 011-46150275/46150276
E-mail id: contact@maruti.co.in, www.marutisuzuki.com

Gurgaon Plant:
Maruti Suzuki India Limited,
Old Palam Gurgaon Road,
Gurgaon - 122015, Haryana, India.
Tel: 0124-2346721, Fax: 0124-2341304

Manesar Plant:
Maruti Suzuki India Limited,
Plot no.1, Phase - 3A, IMT Manesar,
Gurgaon - 122051, Haryana, India
Tel: 0124-4884000, Fax: 0124-4884199

S No	Clearance Conditions	Compliance Status
1	No additional land shall be acquired.	The project will be located within Maruti Suzuki India Limited premises at IMT Manesar and the power plant will be set within 9440 sq.m area.
2	NOC from BARC shall be obtained prior to start of construction of the project due to the proximity of the project to BARC observatory.	NOC obtained from BARC is placed at Annexure-1.
3	Gas shall only be used as fuel, however, HSD may be used as standby fuel for not more than 30 days in a year when gas is not available.	Natural gas supply has commenced at Manesar plant
4	Dry Low NO _x burners shall be provided and it shall be ensured that NO _x emission from the stack is less than 100 ppm.	NO _x emissions are less than 100 ppm. The stack monitoring report are placed at Annexure-2.
5	The height of the stack shall be as per the standards prescribed under the Environment (Protection) Act in this regard or 30 m, whichever is more with continuous online monitoring system. Exit velocity shall not be less than 29 m/s.	All the stacks of the installed Gas Turbines are of 30 mts height and Continuous online monitoring system installed.
6	Air cooled condensers shall be installed.	Air cooled condenser installed for the Gas Turbines
7	Water should be conserved, treated, reused and recycled in order to minimize water consumption. The necessary prior permission for withdrawal of requisite quantity of groundwater for the project as applicable shall be obtained from the Competent Authority before the start of expansion.	As air cooled condenser is installed for the Gas Turbines, the daily water requirement is very negligible and are met from the existing tube wells. Current water withdrawal is maintained within the quantity permitted by the Competent Authority.
8	Treated effluents conforming to the prescribed standards shall be recirculated and reused within the plant area, No effluents shall be discharged outside the plant boundary.	The treated effluents conform to the prescribed standards and are reused for the process requirements after recycling. Report is placed at Annexure-3.
9	Rainwater 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 and a copy of the same shall be submitted within three months to the SEIAA. Care shall be taken to avoid contamination of ground water through RWH pit.	The location of the lagoon is attached in Annexure-4.
10	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 shall be provided.	Gas Turbines are provided with the acoustic enclosure to limit the noise level within 75 dBA at plant boundary. The persons working in high noise areas are provided with the personal protection devices.
11	A greenbelt shall be developed around the plant boundary with tree density of around 2500 trees per ha. The area under greenbelt shall be at least 1/3 rd of the total area.	Details of Green Belt are placed at Annex: 4
12	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	First aid and necessary sanitation arrangement has been made available for the drivers and other contract workers during construction phase.

13	Regular monitoring of the ambient 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 Chandigarh.	Ambient Air quality is being monitored quarterly at the locations fixed based on the modelling results from the PCRI and the reports are placed at Annexure-5.
14	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 from the 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 and on project proponent's website.	Notice was published in Amar Ujala (Hindi) and Times of India (English). Copy of the same is attached as Annexure - 6.
15	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	A separate Environment Management Department has been set up.
16	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to the SEIAA/Regional Office, MOEF, Chandigarh and HSPCB.	Half yearly compliance report will be submitted to MoEFCC Regional office.
17	Regional office of the Ministry of Environment & forests located at Chandigarh will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring.	Complied
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 SEIAA, Panchkula and Regional Office, MoEF, Chandigarh.	Funds for EMP have been included in the project cost itself. It shall be utilised for this purpose only.
19	Full cooperation shall be extended to the Scientist/Officers from the Ministry/ Regional Office of the Ministry at Chandigarh/the CPCB/THE SPCB who would be Monitoring the Compliance of Environmental status.	Full Cooperation will be extended to the officials from SPCB / CPCB and MoEFCC.

Conditions imposed by MoEFCC for expansion project in addition to conditions in original project		
20	The project proponent shall take adequate preparation for fire and other kind of disaster including chemical disaster. On-site and Off-site emergency plan should be rehearsed through regular mock drills.	Complied.
21	The project proponent shall initiate a long term study through a reputed institution to assess the cumulative impact of the power plants on the AAQ of the area. The study shall in particular assess the impact of emission of the gas power plant on the chemistry of upper atmosphere and the impact on radiation budget. It shall be ensured that the study takes into account the worst seasonal atmospheric conditions.	The study report is placed at Annexure-7.
22	The project proponent shall ensure that all possible hazards due to the power plant are contained within the plant premises.	Completed.
23	An Environment Cell shall be created at the project site itself and shall be headed by qualified officer, who is well versed with the environmental aspects of gas based power plant. It shall be ensured that the Head of the Cell shall directly report to the Head of the Organization.	A separate Environment Management Department has been set up.
24	The project proponent shall also submit the detailed data of last one year during which the HSD was used as standby fuel in the existing captive power plant.	119 KL HSD was used in existing captive power plants in 2017-18 (till Sep.)
25	These conditions of expansion project are in addition to conditions imposed by MoEF in original project.	Noted.
26	Standards for discharge of environmental pollutants as enshrined in various schedules of rule 3 of environment protection rule 1986 shall be complied with.	Complied
27	Harnessing solar power within the premises of the plants particularly at available roof tops shall be made and the status of implementation shall be submitted every six months to the SEIAA/MoEF, Gol.	Completed.

Northern Regional Office
Ministry of Environment & Forests
Chandigarh
DATA SHEET

1.	Project Type	River Valley/ Mining / Industry /Refinery/Transportation/Tourisms/Thermal /Nuclear/Other(Specify)
2.	Name of the Project:	57 MW Captive Power Plant (expansion) at Maruti Suzuki India Limited, Manesar, Gurgaon, Haryana
3.	Clearance letter (s)/O.M No. & dates:	No. SEIAA/HR/2012/237A dated 30-8-2012
4.	Location: a) District (s) b) State (s) c) Latitudes/longitudes	Gurgaon Haryana Latitude : 28° 22' 08" N Longitude : 76° 52' 45" E
5.	Address for correspondence: a) Address for Correspondence b) Address of executive Project Incharge	Mr. Deepak Jain General Manager – Environment Management Maruti Suzuki India Limited Palam Gurgaon Road Gurgaon, Haryana Email: Deepak.Jain@maruti.co.in Phone 0124 – 2346721 ~ 30 Extn : 3583 Mr. Sanjay Baronia Assistant Vice President – EMU Maruti Suzuki India Limited Palam Gurgaon Road Gurgaon, Haryana Email: Sanjay.Baronia@maruti.co.in Phone 0124 – 2346721 ~ 30
6.	Salient features: a) Of the project b) Of the environmental management plans	Salient features of the project and Environment Management plan details is enclosed in Annexure -A
7.	Break up of the project area: a) Submergence area: Forest & Non- forest. b) Others	Not Applicable The project will be located within MSIL premises in the industrial area
8.	Break up of project affected population with enumeration of those losing houses /dwelling units and agricultural land only both dwelling units and agricultural land and landless labourers/artisans. a) SC/ST/Adivasis b) Others (Please Indicate whether these figures are based on any scientific and systematic survey carried out only provisional figures. If a survey has been carried out , give details and year of survey)	Not Applicable

<p>9. Financial details:</p> <p>a) Project cost as originally planned and subsequent revised estimates and the year of price reference.</p> <p>b) Allocations made for environmental management plans with item wise and year wise breakup.</p> <p>c) Benefit cost ratio /internal Rate of Return and the year of assessment.</p> <p>d) Whether (c) includes the cost of environmental management as shown in b) above.</p> <p>e) Actual expenditure incurred on the project so far.</p> <p>f) Actual expenditure incurred on the environment management plans so far.</p>		<p>Project Cost: Rs. 314 Crores</p> <p>Rs. 3.7 Crores</p> <p>-</p> <p>-</p> <p>Rs. 324 Crores (approx.)</p> <p>Rs. 4.2 Crores</p>
<p>10. Forest land requirement :</p> <p>a) The status of approval for diversion of forest land for non- forestry use.</p> <p>b) The status of clear felling.</p> <p>c) The status of compensatory afforestation if any.</p> <p>d) Comments on the viability & sustainability of compensatory afforestation program in the light of actual field experience so far.</p>		<p>Not Applicable</p>
<p>11. The Status of clear felling in the non-forest areas (Such as submergence area of non reservoir, approach road) if any, with quantitative information.</p>		<p>Not Applicable</p>
<p>12. Status of Construction:</p> <p>a) Date of Commencement (actual and /or planned)</p> <p>b) Date of completion (actual and /or planned)</p>		<p>20 MW & 37 MW are in operation.</p>
<p>13. Reasons for the delay if the project is yet to start:</p>		<p>Not applicable</p>

SALIENT FEATURES OF PROJECT:

1. Name of the Project : Gas turbine at Maruti Suzuki India Limited, Manesar, Haryana
2. Capacity : 57 MW
3. Location : Maruti Suzuki India Limited, IMT Manesar.
4. Total project cost : Rs. 314 Crores
5. Land Area : 9440 sq m

ENVIRONMENTAL MANAGEMENT PLAN

Water Pollution control

- The Gas Turbine is air cooled hence the waste water generated shall be very minimum. Existing ETP will treat the effluent arising out of the plant operation and the treated waste water will be reused.

Air Pollution control:

- Stacks of the GT shall be maintained at 30m.
- NOX emissions will be below 100ppm.
- SPM and SO₂ emissions will be very low as natural gas is a clean fuel and ultra low sulphur diesel will be used initially or in case of emergency operation. Later on after the availability of natural gas, SPM and SO₂ emissions will further go down

Noise Pollution Control

- The noise from Gas Turbines will be controlled by acoustic enclosures. The noise level at the periphery of factory/premises will not exceed the ambient noise level.

Ground Water

- Rain water harvesting lagoons have been constructed to take care of surface run off and recharge the aquifers.

Green belt development

- Adequate green area will be developed with local area species having capacities to reduce SPM and noise levels.



दूरभाष/Tel: 022 - 2550 5354
फैक्स/Fax: 022 - 2550 8161
022 - 2550 5353
ई-मेल/e-mail: ndsharma@bera.gov.in



सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA

भाभा परमाणु अनुसंधान केंद्र
BHABHA ATOMIC RESEARCH CENTRE

सेंट्रल कॉम्प्लेक्स,
ट्रॉम्बे, मुंबई - 400 085.
Central Complex,
Trombay,
Mumbai - 400 085.

न. ड. शर्मा
नियंत्रक
N. D. Sharma
Controller

Ref: 14/8/91/Admn-I / 328

April 16, 2008

Maruti Suzuki India Limited,
Palam Gurgaon Road,
Gurgaon, Haryana - 122 015

Kind Attn: Mr Vinay Varshney, Chief General Manager (Production Services)

Sub: NOC for Expansion of Power Plant at MSIL, IMT Manesar

Sir,

With reference to your letter MSIL:PRDS:EM2:1728 dated 18th February, 2008, we confirm that BARC has no objection in expansion of your power plant at IMT Manesar.

Thanking You,

Yours faithfully,

(N. D. Sharma)
Controller

16/04/08

संचार अनुभाग / Communication Section

फैक्स परिपत्र / Fax Transmission

दिनांक 29/5/08

6072

Transmitted on..... at..... hrs.



PCRI/051

प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



ISO 9001:2008 OHSAS 18001:2007

TEST REPORT
STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018 :0542
Date: 14.09.2017

A.GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-0-791
3.	Date of sampling	:	24.08.2017
4.	Source of emission	:	Gas Turbine-IX
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	3.0 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	20.0 MW
11.	Load during sampling	:	16.0 MW
12.	Type of fuel used and consumption	:	5500 Nm ³ /Hour (Natural Gas)
13.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit
1.	Particulate Matter	mg/Nm ³	17	-
2.	Carbon Dioxide	%	9.2	-
3.	Carbon Monoxide	PPM	17	-
4.	Sulphur Dioxide	PPM	BDL	-
5.	Nitrogen Oxides	PPM	49	100
6.	Total Hydrocarbons (As HC)	PPM	44	-
7.	Flue Gas Temperature	°C	457	-
8.	Emission Rate	m ³ /Sec	88.3	-

BDL: Below Detectable Limit,

(Signature)

(R S Yadav)

Dy. Manager (PCRI)

राजेन्द्र सिंह यादव/ R. S. Yadav

उप प्रबन्धक/ Dy Manager

Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान

PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & State Pollution Control Boards.
Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate

(Signature)



PCRI/051

प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड) -249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986; EIA Consultant by NABET, QCI)

TEST REPORT

Lab Reference No: TL170518 **Date:** 12.10.2017
Indentor : M/s Maruti Suzuki India Limited, Manesar Plant (Vehicle), Plot
 No. 1, Phase 3 A, IMT, Manesar, Gurgaon (Haryana)
Customer's Ref. No.: MSIL:CUIP:ENV:17-18:045 Dated 09.08.2017
Work Order No.: 17.0135-O-791
Sample Collected by: **PCRI Staff** **Collection Date:** 25.08.2017
Sample/Job: ETP Outlet

PARAMETER	UNIT	OBTAINED VALUE	STANDARD LIMITS*
Ammonical Nitrogen (As N)	mg/L	ND	50
Arsenic (as As)	mg/L	ND	0.2
BOD ₃ at 27°C	mg/L	11	30
Cadmium (as Cd)	mg/L	ND	2.0
Chromium Hexavalent (as Cr ⁺⁶)	mg/L	ND	0.1
Chromium Total (as Cr)	mg/L	0.01	2.0
Colour	Hazen	<5	-
Copper (as Cu)	mg/L	0.01	3.0
COD	mg/L	32	250
Cyanide (as CN)	mg/L	ND	0.2
Dissolved Phosphates (as P)	mg/L	3.31	5.0
Fluoride (as F)	mg/L	0.77	2.0
Free Ammonia (as NH ₃)	mg/L	ND	5.0
Iron (as Fe)	mg/L	0.14	3.0
Lead (as Pb)	mg/L	0.02	0.1
Manganese (as Mn)	mg/L	0.02	2.0
Mercury (as Hg)	mg/L	ND	0.01
Nickel (as Ni)	mg/L	0.26	3.0
Nitrate (as NO ₃)	mg/L	1.2	10
Odour	-	Unobjectionable	-
Oil & Grease	mg/L	ND	10

Contd.. Page 2

Signature
12/10/17

- Remarks :-** (1) This report refers only to the particular sample/job submitted for testing.
 (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 (3) Samples will be disposed off after one month from the date of issue of Test Certificate.

Signature



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड) - 249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986; EIA Consultant by NABET, QCI)

TEST REPORT

-Page 2-

Lab Reference No: TL170518

Date: 12.10.2017

PARAMETER	UNIT	OBTAINED VALUE	STANDARD LIMITS*
pH	-	7.4	5.5 - 9.0
Phenols (as C ₆ H ₅ OH)	mg/L	ND	1.0
Selenium (as Se)	mg/L	ND	0.05
Sulphide (as S)	mg/L	ND	2.0
Temperature	°C	24.8	Shall not exceed 5°C above the receiving water temperature
Total Kjeldahl Nitrogen (as N)	mg/L	0.84	100
Total Residual Chlorine	mg/L	ND	1.0
Total Suspended Solids	mg/L	14	100
Vanadium (as V)	mg/L	ND	0.2
Zinc (as Zn)	mg/L	0.15	5.0

ND - Not Detectable

*(SCHEDULE VI OF EPA, 1993) FOR DISCHARGE INTO SURFACE WATER

S. Bhatnagar
7/10/17

(Dr. S. Bhatnagar)

Sr. Dy. General Manager (PCRI)

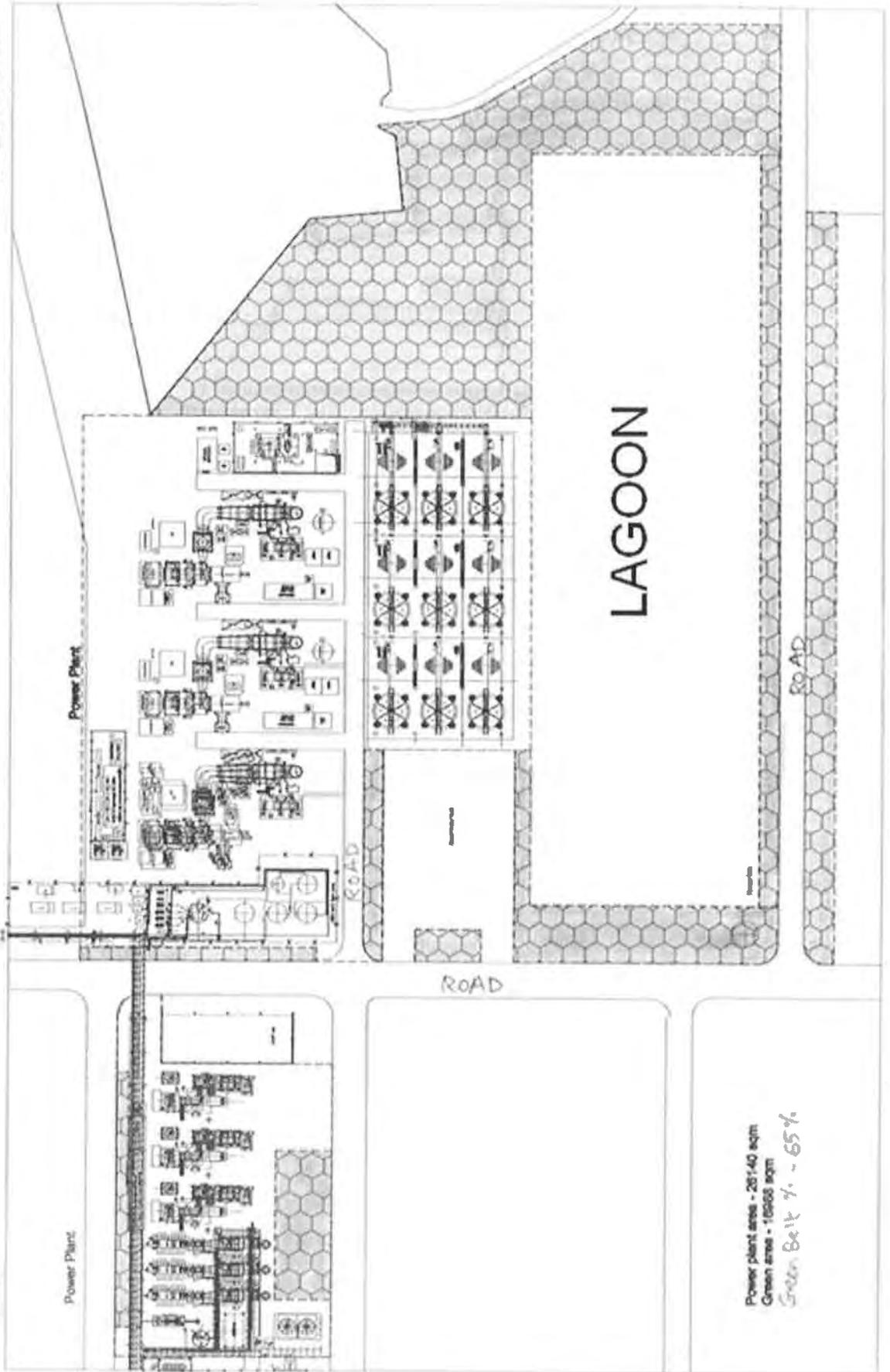
डा. एस. भटनागर/ Dr. S. Bhatnagar
वरि. उप महाप्रबन्धक/Sr. Dy. General Manager
Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
BHEL, Ranipur, Haridwar

- Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate.

GREEN AREA AND RWH



NORTH



Handwritten signature



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT
AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018 :0533

Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-O-791
3.	Date of sampling	:	24.08.2017 to 25.08.2017
4.	Location of Sampling	:	A:Near Material Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified(Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	14	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	24	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	79	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	40	60
5.	Ozone (O ₃)	µg/m ³	107	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.2	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (Ba _a P)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	10	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009.

R. S. Yadav
(R S Yadav)
Dy. Manager (PCRI)
राजेन्द्र सिंह यादव/ R. S. Yadav
उप प्रबन्धक/ Dy Manager
Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
BHEL, Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing Test Reports, Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT
AMBIENT AIR MONITORING

Lab. Ref.: PCRI: Air & Noise: 2017-2018 : 0535
Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-O-791
3.	Date of sampling	:	24.08.2017 to 25.08.2017
4.	Location of Sampling	:	C:SND Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	13	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	23	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	78	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	36	60
5.	Ozone (O ₃)	µg/m ³	109	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	1.85	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	11	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

R. S. Yadav

(R S Yadav)

Dy. Manager (PCRI)

राजेश सिंह यादव/ R. S. Yadav

उप प्रबन्धक/ Dy Manager

Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SP/08/2001/18001-2007
Environmental Impact Assessment, Environmental Audits reports.

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate

[Signature]



प्रदूषण नियन्त्रण अनुसंधान संस्थान

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2017-2018:0536
Date: 14.09.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	17-0135-0-791
3.	Date of sampling	:	24.08.2017 to 25.08.2017
4.	Location of Sampling	:	D:Near Incinerator
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	14	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	25	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	76	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	41	60
5.	Ozone (O ₃)	µg/m ³	111	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.1	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009.

R. S. Yadav

(R S Yadav)

Dy. Manager (PCRI)

राजेश सिंह यादव/ R. S. Yadav
उप प्रबन्धक/ Dy Manager

Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
Ranipur, Haridwar, Uttarakhand.

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB
Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate

[Signature]

Times of India

MARUTI SUZUKI
Way of LRI

PUBLIC NOTICE
MARUTI SUZUKI INDIA LIMITED
Regd. Office: 1 Nelson Mandela Road,
Vasant Kunj, New Delhi - 110070

SEIAA Haryana has accorded environment clearance for the proposed expansion of thermal (captive) power plant at Maruti Suzuki India Limited, Manesar Plant. The copies of the clearance letters are available with the Haryana State Pollution Control Board and the same can also be seen on the MSIL website <http://www.marutisuzuki.com/ec.html>

Date : 27 September 2012 Maruti Suzuki India Limited

Amal Ujala

MARUTI SUZUKI
Way of LRI

सूचना
MARUTI SUZUKI INDIA LIMITED
Regd. Office: 1 Nelson Mandela Road,
Vasant Kunj, New Delhi - 110070

SEIAA हरियाणा द्वारा मारुति सुजुकी इंडिया लिमिटेड के मनेसार प्लांट में पॉवर प्लांट के विस्तार हेतु पर्यावरणीय अनुमोदन प्रदान कर दिया गया है, अनुमोदन पत्र की प्रतियां हरियाणा रक्षा प्रदूषण नियंत्रण बोर्ड के पास उपलब्ध हैं, अनुमोदन पत्र को मारुति सुजुकी इंडिया लिमिटेड की वेबसाइट www.marutisuzuki.com/ec.html पर भी देखा जा सकता है

दिनांक : 27 सितम्बर 2012 मारुति सुजुकी इंडिया लिमिटेड

**Long term study
to
Assess
The Cumulative Impact
of
the Power Plant (57 MW)
on
Ambient Air Quality (AAQ)**

Project Proponent

MARUTI  SUZUKI

Way of Life!

Maruti Suzuki India Ltd.

Institute :



**Pollution Control Research Institute,
BHEL, Ranipur, Haridwar - 249 403
Uttarakhand**

[Handwritten signature]

1	INTRODUCTION	1
	1.1 Background	1
	1.2 Objective of AAQ study	1
2	CONTENT OF THE STUDY	1
	2.1 Ambient Air Quality – Annexure A	1
	2.2 Upper Atmosphere Chemistry	2
	2.3 Radiation Budget	2
3	MEASURES RESULTS AND GRAPHS	3
	3.1 Ambient Air Monitoring	3
	3.2 SO ₂	5
	3.3 NO ₂	5
	3.4 Ozone (O ₃)	6
	3.5 PM _{2.5}	6
	3.6 PM ₁₀	7
4	CONCLUSION	8



ACKNOWLEDGEMENT

The Institute, Pollution Control Research Institute, Bharat Heavy Electricals Limited, Haridwar convey their deep sense of gratitude and appreciation to the officials of Maruti Suzuki India Limited (MSIL) for the valuable guidance and unstinted co-operation continuously extended to them for carrying out this assignment. Valuable assistance from officials of MSIL in providing relevant data and support have contributed immensely towards the smooth progress of study and have added value to this entire exercise, culminating in the preparation of this report.

We wish to thank officials of MSIL at Gurgaon for the courtesy and help extended to our team from time to time during their work for smooth conduct of this assignment.



Background

In the year 2012, State Environment Impact Assessment Authority accorded Environment Clearance for the expansion of captive power plant at Maruti Suzuki India Limited, Manesar.

In the Condition no. 21 of the said clearance, the SEIAA has asked to initiate a long term study through a reputed institution to assess the impact of the power plant on the AAQ of the area, on the chemistry of upper atmosphere and radiation budget.

MSIL has engaged Pollution Control Research Institute (BHEL) to conduct the study on the AAQ of the plant.

Objective

The objective of this study is to conduct a long term study to assess the impact of power plant on the AAQ of the area, on the upper chemistry of upper atmosphere and radiation budget.

Power Plant Emissions

The flue gases from Power Project will be discharged through stack of 30 m height. The data has been monitored since from the inception of the project and shall be continued on regular intervals. The major pollutant in the flue gas are PM, SO₂, NO_x, and Ozone.

Content of the study – Impact of power plant operation on the following:

a) Ambient Air Quality – The AAQ standard as per National Ambient Air Quality Standard (NAAQS) prescribed under Environment Protection Rule are attached as Annexure A. The parameters are:

1. Sulphur Dioxide (SO₂)
2. Nitrogen Dioxide (NO₂)
3. Particulate Matter (PM₁₀)
4. Particulate Matter (PM_{2.5})



5. Ozone (O_3)
6. Lead (Pb)
7. Carbon Monoxide (CO)
8. Ammonia (NH_3)
9. Benzene (C_6H_6)
10. Benzo(a) Pyrene (BaP)
11. Arsenic (As)
12. Nickel (Ni)

So it is proposed to measure the parameters quarterly to include all seasons at well distributed four locations around power plant.

b) **Upper Atmosphere Chemistry** – The atmospheric chemistry studies the chemical composition of the natural atmosphere, the way gases, liquids, and solids in the atmosphere interact with each other and with the earth's surface and associated biota, and how human activities may be changing the chemical and physical characteristics of the atmosphere.

Certain man made gases interacting with each other and formed environmental pollutants in the upper atmosphere. These gases are mainly:

1. Oxides of Sulphur (SO_x)
2. Ozone (O_3)
3. Oxides of Nitrogen (NO_x)

Thus it is proposed to measure the trend of the above parameters for studying the impact on the chemistry of upper atmosphere in long term study due to gas emission.

c) **Radiation Budget** - The Earth can be considered as a physical system with an energy budget. The shortwave radiation net flow of energy into Earth and the longwave radiation out to Space determine the Earth's radiation budget.



There are various parameters which are affecting the earth's radiation budget. Particulate matter and SO₂ is the major contributor for affecting Sun radiation on earth.

Particulate matter (PM) – are tiny pieces of solid or liquid matter associated with the Earth's atmosphere. They are suspended in the atmosphere as atmospheric aerosol. The aerosol effect consists of any change to the earth's radiative budget due to the modification of clouds by atmospheric aerosols, and consists of several distinct effects.

Sulphur Dioxide (SO₂) - Sulphur dioxide is a major air pollutant and has significant impacts upon human health. Sulphur dioxide emissions are a precursor to acid rain and atmospheric particulates. It can be reduced by using Diesel of low Sulphur content or Natural Gas for running the gas turbines.

Thus it is proposed to measure the above parameters for long term study on the impact on radiation budget.

Measures results and graphs – The study commenced from April 2013 onwards. The Results are attached as below:

AMBIENT AIR MONITORING DATA 1st Qrt									
	S.No	Location	Starting Date	End Date	SO ₂	NO _x	Ozone	PM _{2.5}	PM ₁₀
2013-14	1	Site A	26.06.2013	27.06.2013	5	22	105	26	65
	2	Site B	26.06.2013	27.06.2013	4	20	110	26	58
	3	Site C	26.06.2013	27.06.2013	BDL	19	100	22	58
	4	Site D	26.06.2013	27.06.2013	BDL	18	105	23	51
2014-15	5	Site A	29.05.2014	30.05.2014	6	21	106	29	67
	6	Site B	29.05.2014	30.05.2014	5	22	109	27	61
	7	Site C	29.05.2014	30.05.2014	6	23	100	22	24
	8	Site D	29.05.2014	30.05.2014	6	21	105	26	55
2015-16	9	Site A	28.06.2015	29.06.2015	6	20	48	22	39
	10	Site B	28.06.2015	29.06.2015	5	22	60	26	40
	11	Site C	28.06.2015	29.06.2015	5	17	46	23	36
	12	Site D	28.06.2015	29.06.2015	7	23	67	23	45
2016-17	13	Site A	02.06.2016	03.06.2016	14	24	118	42	76
	14	Site B	02.06.2016	03.06.2016	11	24	115	45	75
	15	Site C	02.06.2016	03.06.2016	12	21	111	39	72
	16	Site D	02.06.2016	03.06.2016	14	23	120	43	75

AMBIENT AIR MONITORING DATA IIInd Qrt									
	S.No	Location	Starting Date	End Date	SO ₂	NO _x	Ozone	PM _{2.5}	PM ₁₀
2013-	1	Site A	26.08.2013	27.08.2013	6	25	110	27	68



14	2	Site B	26.08.2013	27.08.2013	4	23	108	26	65
	3	Site C	26.08.2013	27.08.2013	BDL	20	103	23	62
	4	Site D	26.08.2013	27.08.2013	BDL	19	107	25	55
2014-15	5	Site A	12.09.2014	13.09.2014	6	20	115	30	69
	6	Site B	12.09.2014	13.09.2014	6	23	110	28	64
	7	Site C	12.09.2014	13.09.2014	7	22	108	31	67
	8	Site D	12.09.2014	13.09.2014	6	23	105	27	65
2015-16	9	Site A	25.08.2015	26.08.2015	23	57	37	29	64
	10	Site B	25.08.2015	26.08.2015	28	42	82	31	72
	11	Site C	25.08.2015	26.08.2015	37	55	42	23	58
	12	Site D	26.08.2015	27.08.2015	29	43	66	31	47
2016-17	13	Site A	03.09.2016	04.09.2016	14	24	118	42	76
	14	Site B	03.09.2016	04.09.2016	12	23	112	44	76
	15	Site C	03.09.2016	04.09.2016	13	24	116	38	77
	16	Site D	03.09.2016	04.09.2016	15	26	113	40	74

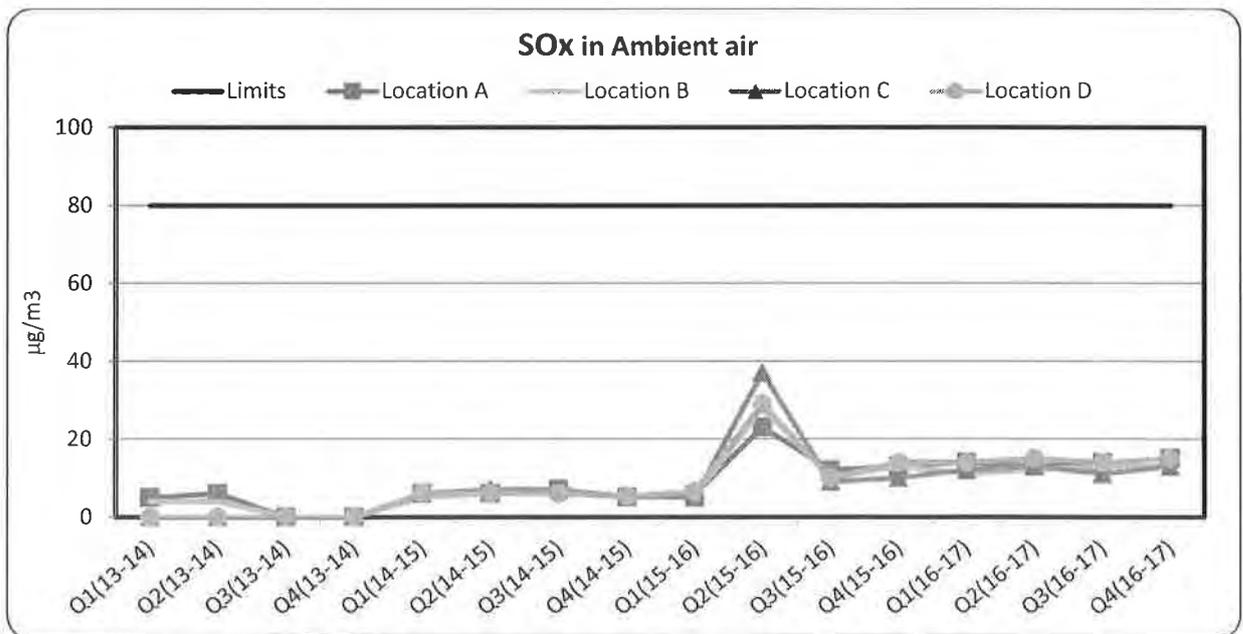
AMBIENT AIR MONITORING DATA IIIrd Qrt									
	S.No	Location	Starting Date	End Date	S ₀₂	NO _x	Ozone	PM _{2.5}	PM ₁₀
2013-14	1	Site A	08.10.2013	09.10.2013	BDL	17	70	20	34
	2	Site B	08.10.2013	09.10.2013	BDL	19	65	23	37
	3	Site C	08.10.2013	09.10.2013	BDL	16	60	20	35
	4	Site D	08.10.2013	09.10.2013	BDL	22	75	24	40
2014-15	5	Site A	10.12.2014	11.12.2014	7	21	110	32	70
	6	Site B	10.12.2014	11.12.2014	6	22	113	29	67
	7	Site C	10.12.2014	11.12.2014	7	20	111	32	68
	8	Site D	10.12.2014	11.12.2014	6	22	115	29	67
2015-16	9	Site A	24.12.2015	25.12.2015	12	23	135	46	81
	10	Site B	24.12.2015	25.12.2015	10	21	117	51	82
	11	Site C	24.12.2015	25.12.2015	9	19	110	33	67
	12	Site D	24.12.2015	25.12.2015	10	22	125	46	75
2016-17	13	Site A	18.11.2016	19.11.2016	14	26	120	42	86
	14	Site B	18.11.2016	19.11.2016	13	24	116	41	80
	15	Site C	18.11.2016	19.11.2016	11	23	113	41	79
	16	Site D	18.11.2016	19.11.2016	14	26	116	42	78

AMBIENT AIR MONITORING DATA IVth Qrt									
	S.No	Location	Starting Date	End Date	S ₀₂	NO _x	Ozone	PM _{2.5}	PM ₁₀
2013-14	1	Site A	10.02.2014	11.02.2014	BDL	16	50	21	36
	2	Site B	10.02.2014	11.02.2014	BDL	15	45	17	32
	3	Site C	10.02.2014	11.02.2014	BDL	18	55	22	36
	4	Site D	10.02.2014	11.02.2014	BDL	23	75	23	39

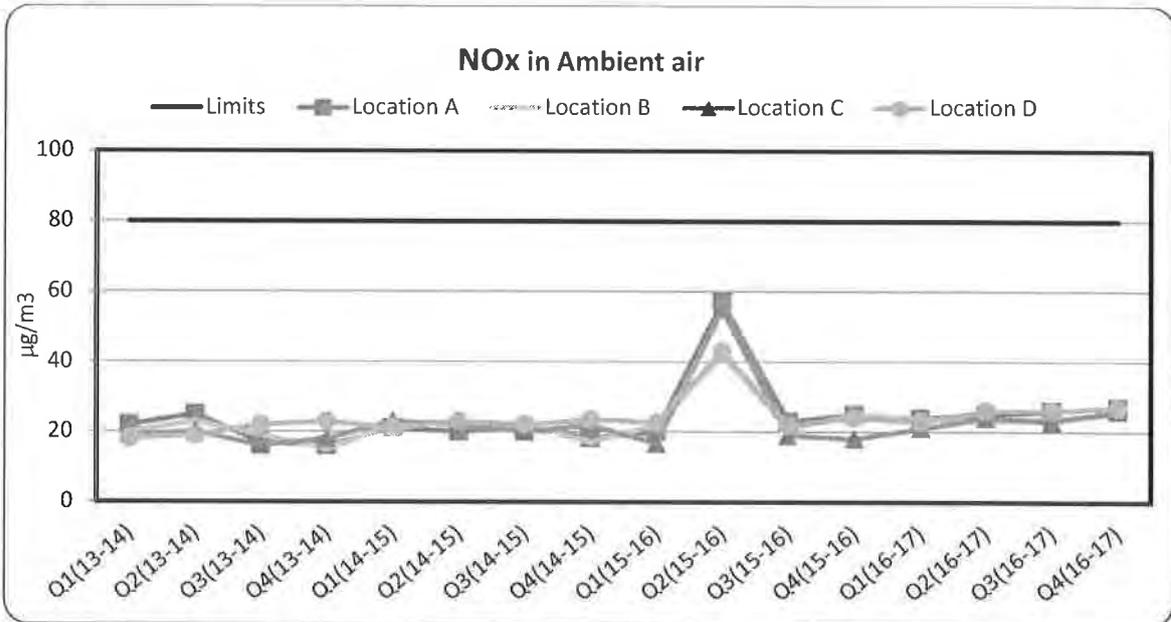
2014-15	5	Site A	30.03.2015	31.03.2015	5	18	42	24	40
	6	Site B	30.03.2015	31.03.2015	5	17	38	22	36
	7	Site C	30.03.2015	31.03.2015	5	22	51	25	42
	8	Site D	30.03.2015	31.03.2015	5	24	61	25	43
2015-16	9	Site A	17.02.2016	18.02.2016	13	25	137	44	80
	10	Site B	17.02.2016	18.02.2016	13	25	120	47	79
	11	Site C	17.02.2016	18.02.2016	10	18	112	35	68
	12	Site D	17.02.2016	18.02.2016	14	24	128	48	76
2016-17	13	Site A	03.02.2017	04.02.2017	15	27	118	45	88
	14	Site B	03.02.2017	04.02.2017	13	25	115	44	83
	15	Site C	03.02.2017	04.02.2017	13	26	114	42	82
	16	Site D	03.02.2017	04.02.2017	15	27	114	43	81

The obtained values are compared with the standard prescribed by Central Pollution Control Board (CPCB)/ MoEFCC. The interpretation of these data is as follows:

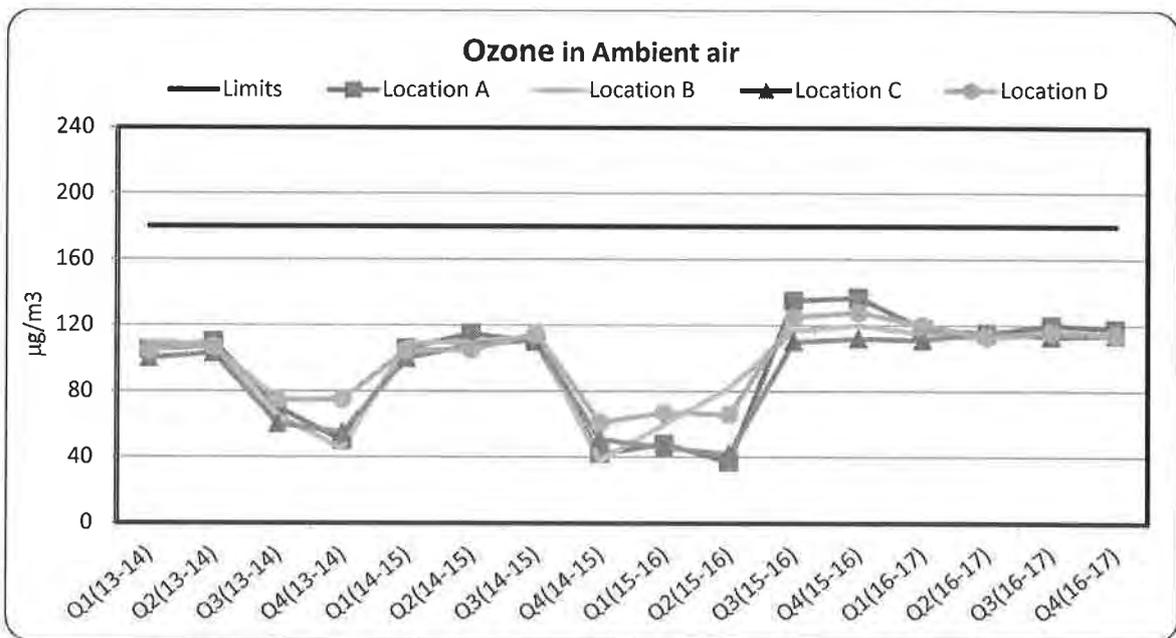
Sulphur Dioxide (SO₂): 24 hourly monitoring concentrations at various locations varied between 0 to 37 µg/m³. It reflects that their no increase in pollution load in AAQ of the area.



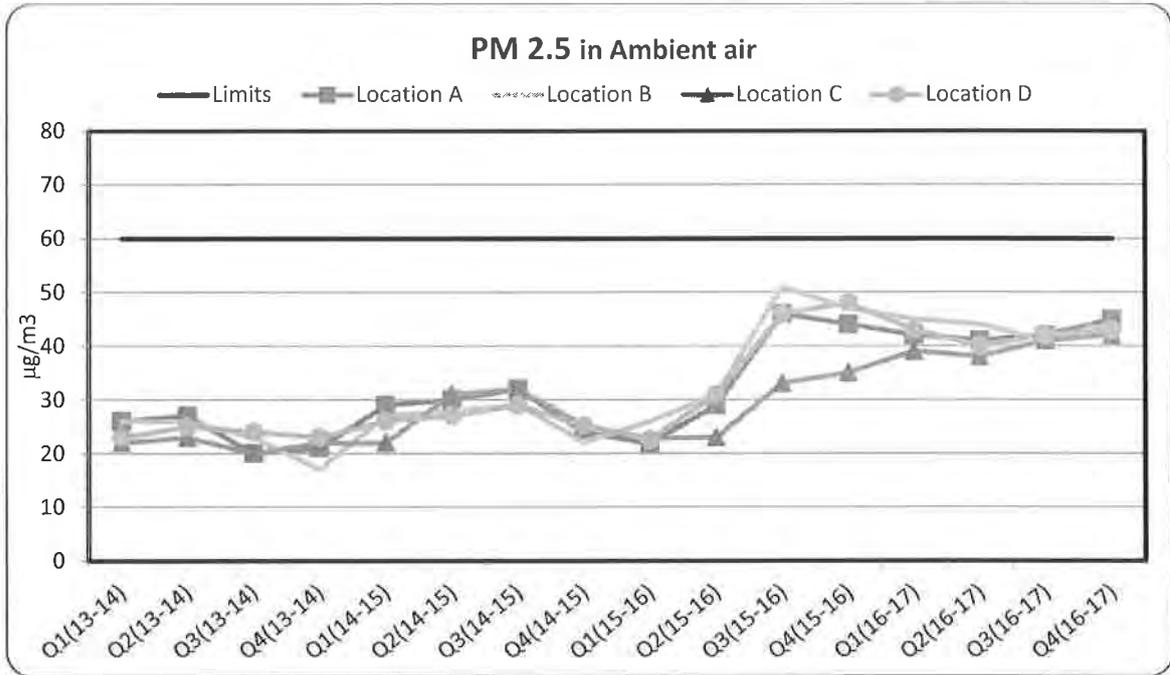
Nitrogen Oxide (NO_x): 24 hourly monitoring concentrations at various locations varied between 15 to 57 µg/m³. It reflects that their no increase in pollution load in AAQ of the area.



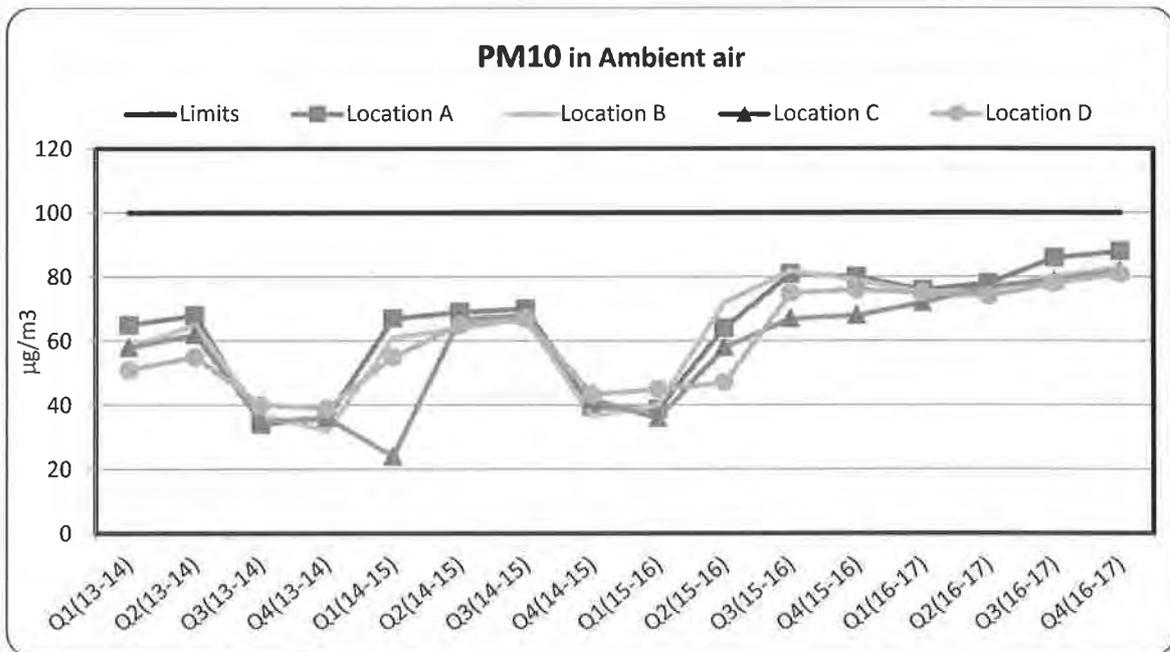
Ozone(O₃): The concentrations are various locations varied between 37 to 137 µg/m³. The study reflects that the effect on surrounding area due to the power plant emission is negligible.



PM_(2.5): 24 hourly monitoring concentrations at various locations varied between 17 to 51 µg/m³. It shows that the increase of pollution load is negligible in AAQ of the area.



PM₁₀: 24 hourly monitoring concentrations at various locations varied between 24 to 88 µg/m³. It shows that the increase of pollution load is negligible in AAQ of the area.



Conclusion:

The total concentrations are compared with National Ambient Air Quality Standards as notified by Central Pollution Control Board. It is concluded that there is no appreciable increase in the concentration of criterion pollutant namely Particulate matter, SO_x, NO_x and Ozone, so there is negligible impact on AAQ, chemistry of upper atmosphere and radiation budget.



NATIONAL AMBIENT AIR QUALITY STANDARDS (2009)

Pollutants	Time Weighted Average	Concentration in Ambient Air		Methods of Measurement
		Industrial, Residential, Rural and other Areas	Ecologically Sensitive Area (Notified by Central Government)	
Sulphur Dioxide (SO ₂), µg/m ³	Annual * 24 Hours **	50 80	20 80	-Improved West and Gaeke Method -Ultraviolet Fluorescence
Nitrogen Dioxide (NO ₂), µg/m ³	Annual * 24 Hours **	40 80	30 80	-Jacob & Hochheiser modified (NaOH-NaAsO ₂) Method -Gas Phase Chemiluminescence
Particulate Matter (Size less than 10µm) or PM ₁₀ , µg/m ³	Annual * 24 Hours **	60 100	60 100	-Gravimetric -TEOM -Beta attenuation
Particulate Matter (Size less than 2.5µm) or PM _{2.5} , µg/m ³	Annual * 24 Hours **	40 60	40 60	-Gravimetric -TEOM -Beta attenuation
Ozone (O ₃) µg/m ³	8 Hours * 1 Hour **	100 180	100 180	-UV Photometric -Chemiluminescence -Chemical Method
Lead (Pb) µg/m ³	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper -ED-XRF using Teflon filter
Carbon Monoxide(CO), mg/m ³	8 Hours ** 1 Hour **	02 04	02 04	-Non dispersive Infrared (NDIR) Spectroscopy
Ammonia (NH ₃), µg/m ³	Annual * 24 Hours **	100 400	100 400	-Chemiluminescence -Indophenol blue method
Benzene (C ₆ H ₆), µg/m ³	Annual *	05	05	-Gas Chromatography (GC) based continuous analyzer -Adsorption and desorption followed by GC analysis
Benzo(a)Pyrene (BaP) Particulate phase only, ng/m ³	Annual *	01	01	-Solvent extraction followed by HPLC/GC analysis
Arsenic (As), ng/m ³	Annual *	06	06	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper
Nickel (Ni), ng/m ³	Annual *	20	20	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper

* Annual Arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

NOTE: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigations.



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:0182

Date: 13.06.2016

A. GENERAL INFORMATION:

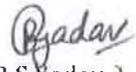
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	02.06.2016 to 03.06.2016
4.	Location of Sampling	:	A:Near Material Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	14	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	24	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	76	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	42	60
5.	Ozone (O ₃)	µg/m ³	118	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.2	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	13	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009


(R S Yadav)
Sr. Engineer (PCRI)
कॉन्ट्रोल रिसर्च इंस्टीट्यूट
प्रदूषण नियन्त्रण अनुसंधान संस्थान
Pollution Control Research Institute
BHEL, REEP, HARIDWAR

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing Test reports, Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

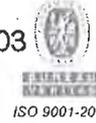
POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:0183

Date: 13.06.2016

A. GENERAL INFORMATION:

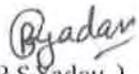
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	02.06.2016 to 03.06.2016
4.	Location of Sampling	:	B:Gate No. 1
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	11	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	24	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	75	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	45	60
5.	Ozone (O ₃)	µg/m ³	115	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.6	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	14	20

BDL: Below Detectable Limit,

****:** National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009


(R S Yadav)
Sr. Engineer (PCRI)

राजेन्द्र सिंह यादव / Rajendra Singh Yadav
पॉल्यूशन नियंत्रण संस्थान
प्रदूषण नियंत्रण अनुसंधान संस्थान
Pollution Control Research Institute
BHEL, HEP, HARIDWAR

Services Offered: Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing Test reports, Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



ISO 9001-2008 OHSAS 18001-2007



South Asia

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:0184

Date: 13.06.2016

A. GENERAL INFORMATION:

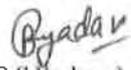
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	02.06.2016 to 03.06.2016
4.	Location of Sampling	:	C:SND Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS, and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	12	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	21	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	72	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	39	60
5.	Ozone (O ₃)	µg/m ³	111	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	1.8	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009


(R S Yadav)
Sr. Engineer (PCRI)

संजय सिंह यादव/Rajendra Singh Yadav
ज्यो. अभियंता/Sr. Engineer
प्रदूषण नियन्त्रण अनुसंधान संस्थान
Pollution Control Research Institute
BHEL, HEEP, HARIDWAR

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing Test reports, Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate





प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT
AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017 :0185
Date: 13.06.2016

A. GENERAL INFORMATION:

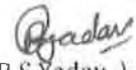
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	02.06.2016 to 03.06.2016
4.	Location of Sampling	:	D:Near Incinerator
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	14	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	23	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	75	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	43	60
5.	Ozone (O ₃)	µg/m ³	120	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.1	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	13	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009


(R S Yadav)
Sr.Engineer (PCRI)

रजिस्टर्ड रिजल्टिंग एंगीनियर (R S) Yadav
प्रदूषण नियन्त्रण अनुसंधान संस्थान
Pollution Control Research Institute
BHEL, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing Test reports, Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:0640

Date: 14.09.2016

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-O-791
3.	Date of sampling	:	03.09.2016 to 04.09.2016
4.	Location of Sampling	:	A:Near Material Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	13	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	25	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	78	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	41	60
5.	Ozone (O ₃)	µg/m ³	115	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.1	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

(R S Yadav)

Dy. Manager (PCRI)

राजेन्द्र सिंह यादव / Rajendra Singh Yadav
उप प्रबन्धक / Dy. Manager

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SHREYA, JIETA, and other reports, Environmental Impact Assessment, Environmental Audits reports

Pollution Control Research Institute
BHEL, HARIDWAR

Remarks:- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:0641

Date: 14.09.2016

A. GENERAL INFORMATION:

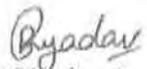
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-O-791
3.	Date of sampling	:	03.09.2016 to 04.09.2016
4.	Location of Sampling	:	B:Gate No. 1
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	12	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	23	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	76	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	44	60
5.	Ozone (O ₃)	µg/m ³	112	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.3	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	13	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009


(R S Yadav)
Dy. Manager (PCRI)
राजेन्द्र सिंह यादव / Rajendra Singh Yadav
उप प्रबंधक / Dy. Manager
Pollution Control Research Institute
BHEL, HARIDWAR

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB & Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:0642

Date: 14.09.2016

A. GENERAL INFORMATION:

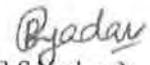
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-O-791
3.	Date of sampling	:	03.09.2016 to 04.09.2016
4.	Location of Sampling	:	C:SND Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS, and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	13	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	24	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	77	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	38	60
5.	Ozone (O ₃)	µg/m ³	116	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	1.9	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	10	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009


(R S Yadav)

Dy. Manager (PCRI)

राजेश सिंह यादव / Rajendra Singh Yadav

उप प्रबंधक / Dy. Manager

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPQR and Environmental Impact Assessment, Environmental Audits reports.

Pollution Control Research Institute

BHEL, HARIDWAR

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017 :0643

Date: 14.09.2016

A. GENERAL INFORMATION:

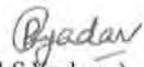
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	03.09.2016 to 04.09.2016
4.	Location of Sampling	:	D:Near Incinerator
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	15	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	26	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	74	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	40	60
5.	Ozone (O ₃)	µg/m ³	113	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.0	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	14	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009


(R S Yadav)
Dy. Manager (PCRI)
राजेंद्र सिंह यादव / Rajendra Singh Yadav
उप प्रबंधक / Dy. Manager
Pollution Control Research Institute
BHEL, HARIDWAR

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB & Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



PCRI/051

प्रदूषण नियन्त्रण अनुसंधान संस्थान

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403



POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

ISO 9001-2008 OHSAS 18001-2007

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:1309

Date: 05.12.2016

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-O-791
3.	Date of sampling	:	18.11.2016 to 19.11.2016
4.	Location of Sampling	:	A:Near Material Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	14	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	26	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	86	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	42	60
5.	Ozone (O ₃)	µg/m ³	120	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.2	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	11	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

R. S. Yadav

(R S Yadav)

Dy. Manager (PCRI)

राजेन्द्र सिंह यादव/R. S. Yadav

उप प्रबंधक/Dy. Manager

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing test reports, Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate

Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान
BHEL, Ranipur, Haridwar



PCRI/051

प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403

South Asia
ISO 9001-2008 OHSAS 18001-2007

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT**AMBIENT AIR MONITORING**

Lab. Ref.:PCRI: Air & Noise:2016-2017:1310

Date: 05.12.2016

A. GENERAL INFORMATION:

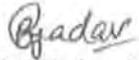
1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	18.11.2016 to 19.11.2016
4.	Location of Sampling	:	B:Gate No. 1
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	13	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	24	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	80	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	41	60
5.	Ozone (O ₃)	µg/m ³	116	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.4	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20

BDL: Below Detectable Limit,

**: National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009


(R. S. Yadav)
Dy. Manager (PCRI)
संयोजक विद्युत/ R. S. Yadav
अधीक्षक/ Dy. Manager

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of 1986, Environmental Impact Assessment, Environmental Audits reports, Pollution Control Research Institute, प्रदूषण नियन्त्रण अनुसंधान संस्थान, BHEL, Ranipur, Haridwar

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate



PCRI/051

प्रदूषण नियन्त्रण अनुसंधान संस्थान

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड) - 249403



POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

ISO 9001-2008

South Asia

ISO 9001-2008 OHSAS 18001-2007

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.: PCRI: Air & Noise: 2016-2017: 1311

Date: 05.12.2016

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	18.11.2016 to 19.11.2016
4.	Location of Sampling	:	C:SND Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS, and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	11	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	23	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	79	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	41	60
5.	Ozone (O ₃)	µg/m ³	113	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.1	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20

BDL: Below Detectable Limit,

**: National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

(R S Yadav)

Dy. Manager (PCRI)

राजेश सिंह यादव / R. S. Yadav

उप प्रबंधक / Dy. Manager

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
 (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 (3) Samples will be disposed off after one month from the date of issue of Test Certificate

Pollution Control Research Institute
 प्रदूषण नियन्त्रण अनुसंधान संस्थान
 BHEL, Ranipur, Haridwar



PCRI/051

प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403



POLLUTION CONTROL RESEARCH INSTITUTE

South Asia
ISO 9001-2008 OHSAS 18001-2007

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT**AMBIENT AIR MONITORING**

Lab. Ref.:PCRI: Air & Noise:2016-2017 :1312

Date: 05.12.2016

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	18.11.2016 to 19.11.2016
4.	Location of Sampling	:	D:Near Incinerator
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	14	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	26	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	78	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	42	60
5.	Ozone (O ₃)	µg/m ³	116	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.2	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	13	20

BDL: Below Detectable Limit,

**: National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009.

(R S Yadav)

Dy. Manager (PCRI)

रजिस्टर्ड निदेशक/R. S. Yadav

उप प्रबंधक/Dy. Manager

Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान

BHEL, Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of (C.P.B) & Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403
POLLUTION CONTROL RESEARCH INSTITUTE
(A Govt. of India - UNDP / UNIDO Project)
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (U.K.) - 249 403



(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:2221
Date: 20.02.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-O-791
3.	Date of sampling	:	03.02.2017 to 04.02.2017
4.	Location of Sampling	:	A:Near Material Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	15	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	27	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	88	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	45	60
5.	Ozone (O ₃)	µg/m ³	118	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.3	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

(R S Yadav)

Dy. Manager (PCRI)

राजेश सिंह यादव/ R. S. Yadav

सह प्रबंधक/ Dy. Manager

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing test reports, Environmental Impact Assessment, Environmental Audits reports

Pollution Control Research Institute

प्रदूषण नियन्त्रण अनुसंधान संस्थान

BHEL Ranipur Haridwar

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate



प्रदूषण नियन्त्रण अनुसंधान संस्थान

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



South Asia

ISO 9001-2008 OHSAS 18001-2007

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:2222

Date: 20.02.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	03.02.2017 to 04.02.2017
4.	Location of Sampling	:	B:Gate No. 1
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	13	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	25	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	83	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	44	60
5.	Ozone (O ₃)	µg/m ³	115	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.2	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	12	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

R. S. Yadav

(R S Yadav)

Dy. Manager (PCRI)

उप-प्रबंधक (प्रदूषण नियंत्रण) / R. S. Yadav

उप-प्रबंधक / Dy. Manager

Pollution Control Research Institute

प्रदूषण नियंत्रण अनुसंधान संस्थान

BHEL, Ranipur, Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing Test reports
Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate

[Signature]



प्रदूषण नियन्त्रण अनुसंधान संस्थान

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403



South Asia

ISO 9001-2008 OHSAS 18001-2007

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017:2223

Date: 20.02.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-0-791
3.	Date of sampling	:	03.02.2017 to 04.02.2017
4.	Location of Sampling	:	C:SND Gate
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9) , APHA-819, AAS, and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	13	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	26	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	82	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	42	60
5.	Ozone (O ₃)	µg/m ³	114	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.3	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	11	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

(R S Yadav)

Dy. Manager (PCRI)

अधीक्षक निरिक्षक/ R. S. Yadav

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing test reports, Environmental Impact Assessment, Environmental Audits reports

Remarks :- (1) This report refers only to the particular sample/job submitted for testing.
(2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
(3) Samples will be disposed off after one month from the date of issue of Test Certificate

अधीक्षक निरिक्षक/ R. S. Yadav
Pollution Control Research Institute
प्रदूषण नियन्त्रण अनुसंधान संस्थान

BHEL, Ranipur, Haridwar



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार (उत्तराखण्ड)-249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP / UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.) - 249 403

(Approved Lab under Environment (Protection) Act, 1986: EIA Consultancy by NABET, QCI)



South Asia

ISO 9001-2008 OHSAS 18001-2007

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2016-2017 :2224

Date: 20.02.2017

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/s Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	16-0053-O-791
3.	Date of sampling	:	18.11.2016 to 19.11.2016
4.	Location of Sampling	:	D:Near Incinerator
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182(Part-9), APHA-819, AAS and PM2.5 Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Sulphur Dioxide (SO ₂)	µg/m ³	15	80
2.	Nitrogen Dioxide (NO ₂)	µg/m ³	27	80
3.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	81	100
4.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	43	60
5.	Ozone (O ₃)	µg/m ³	114	180
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Carbon Monoxide (CO)	mg/m ³	2.2	4
8.	Ammonia (NH ₃)	µg/m ³	BDL	400
9.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
10.	Benzo(a)pyrene (BaP)	ng/m ³	BDL	1
11.	Arsenic (As)	ng/m ³	BDL	6
12.	Nickel (Ni)	ng/m ³	13	20

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009.

(R S Yadav)

Dy. Manager (PCRI)

प्रदूषण नियंत्रण संस्थान/ R. S. Yadav

प्रदूषण नियंत्रण संस्थान/ Dy. Manager

Pollution Control Research Institute

प्रदूषण नियंत्रण अनुसंधान संस्थान

BHEL Ranipur Haridwar

Services Offered : Monitoring of Air, Water, Noise & Solid Waste as per requirement of EP Act of CPCB & SPCB and providing test reports, Environmental Impact Assessment, Environmental Audits reports

- Remarks :-
- (1) This report refers only to the particular sample/job submitted for testing.
 - (2) This report is not to be reproduced wholly or partly and can not be used as an evidence in the court of law and should not be used in any advertising media without our special permission in writing.
 - (3) Samples will be disposed off after one month from the date of issue of Test Certificate

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY HARYANA
Bay No. 55-58, Prayatan Bhawan, Sector-2, PANCHKULA.

No. SEIAA/HR/2014/453

Dated: 14.03.2014.

To

M/S Maruti Suzuki India Ltd.
 C/o EGM Department, Palam Gurgaon Road
 Gurgaon, Haryana 122015

Subject: Environment Clearance for expansion of captive Power Plant by 13.5 MW at Maruti Suzuki India Ltd. at Plot no. 1, Sector-33B-33C, IMT, Rohtak.

Dear Sir,

This has reference to your application no. MSIL:PRDS:EGM:11-12:011 dated 25.04.2011 addressed to IA Division Thermal Power Plant and transferred to MS, SEIAA on 16.05.2012 and subsequent letters dated 23-07-2012, 24.08.2012, 12.11.2013, 06.01.2014 seeking prior environmental clearance for the above project under the EIA Notification, 2006. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification, 2006 on the basis of the mandatory documents enclosed with the application viz., Form-1 pre-feasibility report, EIA/EMP on the basis of approved TOR and the additional clarifications furnished in response to the observations of the State Expert Appraisal Committee (SEAC) constituted by MOEF, GOI vide their Notification 21.4.2008/23.3.2012 in its meetings held on 28.06.2012, 29.09.2012, 25.06.2013, 06.08.2013, 16.12.2013 and 08.01.2014.

[2] It is inter-alia noted that the project is for the project is for expansion of captive power plant from 4.8 MW capacity to total capacity of 13.5 MW based on ultra low sulphur HSD at Plot no. 1, Sector-33B-33C, IMT, Rohtak on plot area of 6000 sqmt which is available within the proposed R&D centre of Maruti Suzuki India Ltd. at IMT Rohtak. The fuel requirement is 400 Lt /hr and project proponent shall provide 200 KL HSD tank for storage of fuel. The requisite clearance from Petroleum and Explosives Safety Organization (PESO) for HSD shall be taken. The project proponent has proposed to develop 30% of plant area as green belt. Acoustic noise curtain shall be provided to reduce noise pollution. The stack height shall be 30 mtrs. The system is based on air cooled technology and closed circuit air cool condenser will be used. The water requirement shall be 2 KLD which will be met from HSIIDC.

[3] It was noticed that project is covered under item no.1 (d) of EIA notification dated 14.9.06 and SEAC has appraised this project as category B-I project. The TOR's were approved on 28.06.2012. The public hearing in this case was exempted as the proposed project is located in Notified Industrial Estate. The project proponent on the basis on approved TOR's submitted EIA/EMP on 12.11.2013.

[4] The State Expert Appraisal Committee, Haryana after due consideration of the relevant documents submitted by the project proponent and additional clarification furnished in response to its observations have recommended the grant of environmental clearance for the project mentioned above subject to compliance with the stipulated conditions. Accordingly, the State Environment Impact Assessment Authority in its 67th meeting held on 28.02.2014 decided to accord necessary environmental clearance for the project under Category 1(d) of EIA Notification 2006 subject to the strict compliance with the specific and general conditions mentioned below:-

SPECIFIC CONDITIONS:-

- [1] The proposed project shall be set up on plot area of 6000 sqmt within the proposed R&D centre of Maruti Suzuki India Ltd. at IMT Rohtak
- [2] Ultra low sulphur HSD shall only be used as fuel.
- [3] The project proponent shall appoint well qualified fire supervisor.
- [4] Dry Low NO_x burners shall be provided and it shall be ensured that NO_x emissions from the stack are less than 100 ppm.
- [5] The height of the stack shall be as per the standards prescribed under the Environment (Protection) Act in this regard or 30 m, whichever is more with continuous online monitoring system. Exit velocity shall not be less than 29 m/s.
- [6] Air cooled condensers shall be installed.
- [7] The drinking water requirement during construction and operation phase shall be met by HSIIDC Supply.
- [8] Rainwater 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 the SEIAA.
- [9] Leg 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.
- [10] The project proponent shall develop 3 meter wide green belt as buffer zone around the plant boundary as sound barrier. The area under greenbelt shall be at least 30% of the total area.
- [11] First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
- [12] The project proponent shall take adequate preparation for fire and other kinds of disaster including chemical disaster. On-site, off-site emergency plan should be prepared and rehearsed in regular mock drills.
- [13] The project Proponent shall initiate a long term study through a reputed institution to assess the cumulative impact of the power plants on the AAQ of the area. The study shall in particular assess the impact of emission of the HSD based power

plant on the chemistry of upper atmosphere and on concentration of PM_{10} , $PM_{2.5}$. It shall be ensured that the worst seasonal atmospheric conditions are taken into account in the above said study.

- [14] The Project Proponent shall ensure that all possible hazards due to the power plant are contained within the plant premises.
- [15] The project proponent shall use only treated water for cooling system.

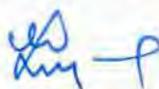
General Conditions:

- [i] The Project Proponent shall ensure the commitments made in Form-1, EIA/EMP and other documents submitted to the SEIAA for the protection of environment and proposed environmental safeguards are complied with in letter and spirit. In case of contradiction between two or more documents on any point, the most environmentally friendly commitment on the point shall be taken as commitment by project proponent.
- [ii] The project proponent shall set up continuous online AAQ monitoring system (supervisory control & data acquisition) in the project area to monitor the parameters viz $PM_{2.5}$, PM_{10} , NO_x , SO_x and CO. The project proponent shall ensure that the values of these parameters are within the prescribed limits of CPCB/HSPCB. .
- [iii] The Project proponent should inform the public that the project has been accorded Environment Clearance by the SEIAA and copies of the clearance letter are available with the Haryana State Pollution Control Board & SEIAA. This should be advertised within 7 days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region and the copy of the same should be forwarded to SEIAA Haryana. A copy of Environment Clearance conditions shall also be put on project proponent's web site for public awareness.
- [iv] The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the northern Regional Office of MoEF, the respective Zonal Office of CPCB, HSPCB and SEIAA Haryana.
- [v] Regional Office of the Ministry of Environment & Forests located at Chandigarh will monitor the implementation of the stipulated conditions. A complete set of documents including Environment Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring.
- [vi] 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 SEIAA, Panchkula.

- [vii] Full cooperation shall be extended to the Scientists/Officers from the Regional Office of the Ministry at Chandigarh/HSPCB who would be monitoring the compliance of environmental status.
- [viii] An Environmental Cell shall be created at the project site itself and shall be headed by qualified officer, who is well versed with the environmental aspects of gas based power plant. It shall be ensured that the Head of the Cell shall directly report to the Head of the Organization.
- [ix] The project proponent shall display Material Safety Data Sheet (MSDS) of fuel in big fonts at suitable locations within project site. One copy of MSDS shall be supplied to DC Rohtak also.
- [x] Standards for discharge of environmental pollutants as enshrined in various schedules of rule 3 of environment protection rule 1986 shall be complied with.
- [xi] The SEIAA, Haryana reserves the right to add additional safeguard measures subsequently, if found necessary. Environmental Clearance granted will be revoked if it is found that false information has been given for getting approval of this project. SEIAA reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of SEIAA/MoEF.
- [xii] The environmental clearance accorded shall be valid for a period of 5 years to start of production operation by the power plant.
- [xiii] In case of any deviation or alteration in the project proposed from that submitted to the SEIAA for clearance, a fresh reference shall be made to the SEIAA to assess the adequacy of the condition (s) imposed and to incorporate additional environmental protection measures required, if any.
- [xiv] The above stipulations shall be enforced along with others as under the Water Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1986, The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, Hazardous Waste (Management and Handling) Rules, 1989, the Public Liability Insurance Act, 1991 and rules there under.
- [xv] The project proponent shall put in place Corporate Environment Policy as mentioned in MoEF, GoI OM No. J-11013/41/2006-IA II (I) dated 26.4.2012 within 3 months period. Latest Corporate Environment Policy should be submitted to SEIAA within 3 months of issuance of this letter.
- [xvi] The Project proponent shall not violate any judicial orders/pronouncements issued by any Court/Tribunal.

- [xvii] Any appeal against the this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
- [xviii] The fund ear-marked for environment protection measures should be kept in separate account and should not be diverted for other purposes and year wise expenditure shall be reported to the SEIAA/RO MoEF, GoI under rules prescribed for Environment Audit.
- [xix] The project proponent shall seek fresh Environmental clearance if at any stage there is change in the planning of the proposed project.
- [xx] The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM_{2.5}, PM₁₀, SO_x NO_x, Ozone, Lead, CO, Benzene, Ammonia, Benzopyrine, arsenic and Nickel. (Ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
- [xxi] The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the HSPCB Panchkula as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of the EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.
- [xxii] The project proponent shall conduct environment audit at every three months interval and thereafter corrected measures shall be taken without any delay. Details of environmental audit and corrective measures shall be submitted in the monitoring report.



**Member Secretary,
State Level Environment Impact
Assessment Authority, Haryana, Panchkula.**

Endst. No. SEIAA/HR/2014

Dated:..... 

A copy of the above is forwarded to the following:

1. The Additional Director (IA Division), MOEF, GOI, CGO Complex, Lodi Road, New Delhi.
2. The Regional office, Ministry of Environment & Forests, Govt. of India, Sector 31, Chandigarh.
3. The Chairman, Haryana State Pollution Control Board, Pkl.


**Member Secretary,
State Level Environment Impact
Assessment Authority, Haryana, Panchkula.**

MSIL:CUIP:ENV:17-18:071

13-Nov-2017

To
Ministry of Environment, Forest and Climate Change,
Northern Regional Office
Bays No 24-25, Sector – 31 A,
Dakshin Marg
Chandigarh

Kind Attn: Dr. Ajay Mehrotra, Advisor

Sub: Half yearly report for Compliance of Expansion by 13.5 MW Captive Power Plant at Maruti Suzuki India Ltd. At Plot No. 1, Sector 33B-33C, IMT, Rohtak

Ref: 1. Environment Clearance Letter from MoEF - No .SEIAA/HR/2014/453 dated 14.03.2014
2. MoEFCC letter No. J-13012/36/2012/-IA-II (T) dated 17th March 2015
3. MSIL Letter No. MSIL:CUIM:16-17:015 dated 20-May-2016
4. SEIAA Memo No. SEIAA/HR/2016/585 dated 29-07-2016

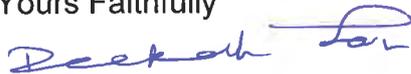
Dear Sir,

MoEFCC has issued a clarification vide letter no. J-13012/36/2012/-IA-II (T) dated 17th March 2015, that Environment Clearance is not required for Diesel Generating Sets (captive not supplying power to grid). So the Environment Clearance is not required for the proposed 13.5 MW captive power plant expansion.

Now SEIAA, Haryana has clarified that "submission of Six Monthly Compliance Report is now not required as the activity is not covered under Thermal Power Plant category of EIA notification as per clarification rendered by MoEF&CC, GOI vide office memorandum 17.03.2015".

Thanking You.

Yours Faithfully



Dr. Deepak Jain
General Manager (Environment Management)
Maruti Suzuki India Limited, Gurgaon

CC: 1. Haryana State Pollution Control Board, Panchkula
2. Central Pollution Control Board, Lucknow
3. State Environment Impact Assessment Authority, Haryana

MARUTI SUZUKI INDIA LIMITED

Head Office:
Maruti Suzuki India Limited,
1, Nelson Mandela Road, Vasant Kunj,
New Delhi - 110070, India.
Tel: 011- 46781000, Fax: 011-46150275/46150276
E-mail id: contact@maruti.co.in, www.marutisuzuki.com

Gurgaon Plant:
Maruti Suzuki India Limited,
Old Palam Gurgaon Road,
Gurgaon - 122015, Haryana, India.
Tel: 0124-2346721, Fax: 0124-2341304

Manesar Plant:
Maruti Suzuki India Limited,
Plot no.1, Phase - 3A, IMT Manesar,
Gurgaon - 122051, Haryana, India.
Tel: 0124-4884000, Fax: 0124-4884199

**State Environment Impact Assessment Authority, Haryana,
Bays No.55-58, Prayatan Bhawan, Sector-2 Panchkula.**

Telephone No. 0172-2565232

Memo No: SEIAA/HR/2016/585

Date: 29-07-2016

To,

Maruti Suzuki India Limited,
Plot No. 1, Sector 33B-33C,
IMT, Rohtak

Subject: Half yearly Report for Compliance of Expansion by 13.5 MW Captive Power Plant by M/S Maruti Suzuki India Ltd at Plot No. 1, sector 33B-33C, IMT, Rohtak.

Sir,

Reference is invited to your letter no. MSIL:CUIM:ENV:16-17:016 dated 20.05.2016. The Environment Clearance to Project Proponent was granted by SEIAA vide letter no. SEIAA/HR/2014/453 dated 14.03.2014.

It is informed that submission of Six Monthly Compliance Report is now not required as the activity is not covered under Thermal Power Plant category of EIA notification as per clarification rendered by MOEF & CC, GOI vide office memorandum 17.03.2015.


Member Secretary
SEIAA, Haryana