



Mangalore SEZ Limited

3rd Floor, MUDA Building, Ashoknagar,

Urwa Stores, Mangalore - 575 006

Phone: 0824-2452748 / 2452750

Fax: 0824-2452749

Website: www.mangaloresez.com

CIN: U45209KA2006PLC038590

16/6/2017

To,

Environmental Officer

KSPCB Mangalore,

Baikampady Industrial area

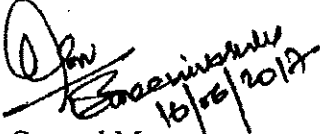
Mangalore-575011

Dear Sir,

Sub: Submission of Six monthly Compliance Report

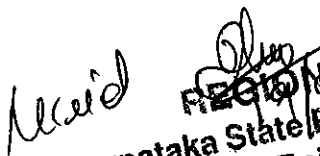
With reference to above subject, we hereby submit the six monthly Compliance reports of Mangalore SEZ & OMPL for the months up to May 2017.

Thanks & Regards


Sr. General Manager

Civil & Environment

MSEZL


REGIONAL OFFICE
Karnataka State Pollution Control Board
Plot No. 10 - B, Baikampady Industrial Area
MANGALORE - 575 011

Encl : Compliance Report

Copy to: MoEF Director, Bangalore

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16 June, 2017

MSEZL/MNG/EN/2016-17

To,

**The Director,
Southern Region, Regional Office,
Ministry of Environment and Forests,
Kendriya Sadan, 4th Floor, E&F Wings,
17th Main Road, 1st Block, Koramangala,
Bangalore - 560 034**

Sir,

Sub: Six monthly Compliance Report.

Ref:

1. Environmental Clearance No: 21-383/2007-IA-III, dated 3rd April 2008.
2. Amendment to Environmental Clearance for setting up of Phase-I of Special Economic Zone at Mangalore by M/s Mangalore SEZ Ltd - regarding No: 21-383/2007-IA-III dated 13th July, 2012.
3. Amendment to Environmental Clearance for setting up of Phase-I of Special Economic Zone at Mangalore by M/s Mangalore SEZ Ltd date 27 Aug 2014.
4. Amendment to Environmental Clearance for development of Multi Product Units as Mangalore SEZ dated 18 June 2015.

With reference to above, we would like to submit the compliance report as on date.

S. No.	A. SPECIFIC CONDITIONS	Compliance
(i)	No Objection Certificate from the Karnataka State Pollution Control Board shall be obtained before initiating the project.	Consent For Establishment from KSPCB obtained on 30 April 2008 and Extension of validity of Consent For Establishment obtained on 27 May 2013 and the copy was submitted to MoEF.
(ii)	The MSEZ project shall be restricted to the Phase-I of the project, proposed over 1,800 acres. The phase II of the project shall be considered by Ministry of Environment and Forests only after receipt of all requisite documents/information as laid down in the Environmental Impact Assessment Notification, 2006 and Coastal Regulation Zone Notification, 1991 as applicable.	Will be complied. MSEZL will approach MoEF with requisite documents as per EIA Notification, 2006 for Phase-2 expansions if taken in future.
(iii)	All development in the Coastal Regulation Zone area shall be in accordance with the Coastal Regulation Zone Notification, 1991. No destruction of mangroves shall be undertaken except while undertaking the permissible activities in the Coastal Regulation Zone-I areas.	Noted & will be complied.

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Reg. Office: Mangalore SEZ Ltd, Al-Latheef, 1st Floor, No.2, Union Street, Off. Infantry Road, Bangalore -560001

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S. No.	A. SPECIFIC CONDITIONS	Compliance
(iv)	The project proponent shall not take up any activity in 875 acres of Coastal Regulation Zone land, other than those permissible under the Coastal Regulation Zone Notification 1991 such as pipeline corridors, pipelines roads on stilts.	Noted & will be complied.
(v)	With regard to the containing the suspected contamination of the groundwater near Athurkodi area of Kuthethoor village, MRPL have given an undertaking vide their letter dated 19.3.2008 which is as follows:- a) Implementation of recommendation of NGPRI will be started by MRPL immediately after submission of their report. b) Depending upon the nature of their recommendations, we will make efforts to complete necessary actions within 6 months from the date of receipt of their report. c) In addition to above, a daily vigil is already in place to take samples from different places and to monitor any suspected oil leakage. This will continue till the problem is resolved. d) We are also in continuous contact with the residents in the surround areas with regard to any contamination. KSPCB and MRPL shall ensure that (a) to (d) above is implemented in a time bound manner and a monthly report on the progress of the activities provided to the Regional Office of this Ministry at Bangalore. For this purpose a separate budget would be allocated by MRPL.	This condition pertains to MRPL phase III expansion project. MRPL phase III expansion has been detached from MSEZ phase I project vide EC amendment dated 13th July 2012. MRPL shall be complying conditions relevant to them as part of their existing clearance.
(vi)	The project proponent shall obtain a report from the Wildlife Department with regard to existence of wildlife in the proposed site as claimed by the public before implementing the project.	Report from the Forest Department is obtained and submitted to the MoEF dated June 5, 2008.
(vii)	The R&R package shall be strictly in accordance with the laid down norms of the State Government.	The R&R Package is being implemented strictly as per Approved policy by State Government. In 1 st PDF 1223 families out of 1236, In 2 nd PDF 216 families out of 216, In 3 rd PDF 140 families out of 145 families & 16 shops has been compensated with R&R Packages. Totally 1613 families have vacated their houses and are rehabilitated.
(viii)	A marine Environment Impact Assessment and Risk Assessment along with the Disaster Management Plan shall be prepared for the outfall facilities proposed in the	NIO has carried out EIA, Risk Assessment, DMP and Bathymetry survey along with Marine Outfall pipeline



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S. No.	A. SPECIFIC CONDITIONS	Compliance
	Coastal Regulation Zone and the marine areas.	alignment. The detailed design report of the Marine Outfall facility is prepared by Master planning consultants of MSEZ under the guidance of Department of Oceanography, IIT Chennai. The design report was also vetted by NIO, Goa. The detailed project report of the facility is submitted to MoEF during November 2009. MSEZ has taken up the implementation of the above facility and completed the work by July 2014. MSEZ obtained consent for operation of treated waste water discharge line from KSPCB dated 9 Sep 2014, 8 Oct 2015 & 27 Aug 2016.
(ix)	Project proponent shall put up a dedicated website and a display panel to inform the public regarding the Ambient Air Quality along with SO ₂ NO _x and other parameters as prescribed as Central Pollution Control Board (CPCB).	MSEZL has dedicated website 'www.msezl.com', wherein Environment Monitoring Parameters are periodically uploaded and made available to the public. Installation of Continuous Ambient Air Quality Monitoring station is under progress and the work will be completed by end of June 2017. The locations of monitoring station are finalized in consultation with KSPCB.
(x)	The gaseous emissions (SO ₂ , NO _x , HC, VOC and Benzene) from various process units shall conform to the standards prescribed by the concerned State Pollution Control Board. All the measures detailed in the EMP and response to the Public Hearing shall be taken to control the point/stack and fugitive gaseous emissions from the proposed facilities, processes and storage units etc., for ensuring that the ambient air quality around the Refinery due to the expansion is maintained at the predicted 24 hourly average maximum concentration.	Noted. The existing units in MSEZ are complying the conditions and sending reports to KSPCB directly. MRPL phase III expansion has been detached From MSEZ phase I project vide EC amendment dated 13 th July 2012. MRPL shall be complying conditions relevant to them as part of their existing clearance.
(xi)	The emission levels of the other pollutants shall also remain within the permissible levels	Noted.
(xii)	The industrial units in the SEZ and the associated facilities shall be strictly in accordance with the norms laid down by the Karnataka State Government and CPCB.	Noted and will be adhered.
(xiii)	The project proponent shall ensure that the greenery of the area is maintained. Further, 33% of the project area shall be dedicated for green belt development of which at least 5% shall be for mangrove afforestation. The local Forest	Since inception MSEZL has completed Green Belt development in 207 acres by planting 93150 saplings out of 272 acres. During the year 2017-18, 30acres will be



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S. No.	A. SPECIFIC CONDITIONS	Compliance
	Department shall be associated for this purpose and requisite budget earmarked.	developed by planting 11830 saplings and remaining will be completed in the year 2018-19. Green Belt operation & maintenance is for 2-3 years & plants are maintained as per the good practises to ensure 100% survival. Slope stabilisation in about 18 acres with vetiver grass has been completed.
(xiv)	The project proponent shall ensure that the water requirement of the Mangalore city does not get affected due to the SEZ operation. Adequate provision shall be made in the reservoirs to provide for the water requirement of the cities.	Noted.
(xv)	The project proponent shall ensure that during construction and operation of the project the traffic in the city is not affected.	Noted and will be Complied.
(xvi)	All precautions of the highest standards shall be incorporated in the design of the project to ensure that there is no chance of emission/leakage of hazardous chemicals including Benzene. Detailed monitoring programme shall be designed and the information provided to the public through display and dedicated website by means of online monitoring.	Noted and will be complied.
(xvii)	Low Sulphur internal fuel oil and fuel gas shall be fired in process heaters and boilers.	Noted and will be complied.
(xviii)	Quarterly monitoring of fugitive emissions shall be carried out by Fugitive Emission Detectors (GMI Leak Surveyor). Guidelines of CPCB will be followed for monitoring fugitive emissions. For control of fugitive emissions, all unsaturated hydrocarbons shall be routed to the flare system. The flare system shall be designed for smokeless burning. Flare Gas Recovery System shall be installed for reduction of Hydrocarbon loss and emission of VOCs, NOx, N ₂ O, SOx & CO ₂ to the environment.	Noted and will be complied.
(xix)	Regular Ambient Air Quality Monitoring shall be carried out. The location and results of existing monitoring stations shall be reviewed in consultation with the concerned State Pollution Control Board based on the occurrence of maximum ground level concentration and downwind direction of wind. Additional Stations shall be set up, if required. It shall be ensured that at least one monitoring station is set up in up-wind & in down-wind direction along with those in other directions.	Ambient Air Quality Monitoring is being carried out regularly in five locations and the locations of monitoring are selected in consultation with KSPCB. The reports of monitored data attached as Annexure-I .



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S. No.	A. SPECIFIC CONDITIONS	Compliance
(xx)	On-line data for air emissions shall be transferred to the CPCB and SPCB regularly. The instruments used for ambient air quality monitoring shall be calibrated regularly. The monitoring protocol shall ensure continuous monitoring of all the parameters.	After complete installation of CAAQM stations the data will be transferred to CPCB/KSPCB regularly. Presently commissioning of CAAQMS work is under progress and will be completed by June 2017.
(xxi)	The practice of acoustic plant design shall be adopted to limit noise exposure for personnel to an 8 hr time weighted average of 90 dB (A).	Noted and will be complied.
(xxii)	All the pumps and other equipment's, where there is a likelihood of HC leakages, shall be provided with appropriate indicators and detectors. Provision for immediate isolation of such equipment, in case of a leakage shall also be made. The company shall adopt Leak Detection And Repair (LDAR) programme for quantification and control of fugitive emissions.	Noted and will be complied.
(xxiii)	The product loading gantry shall be connected to the product sphere in closed circuit through the vapour arm connected to the tanker. Data on fugitive emissions shall be regularly monitored and records shall be maintained	Noted and will be complied.
(xxiv)	The company shall ensure that no halogenated organic is sent to the flares. If any of the halogenated organic are present, then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction/recovery options. Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator.	Noted and will be complied.
(xxv)	The new standards/norms that are being proposed by the CPCB for Petrochemical Plants and Refineries shall be applicable for the proposed expansion unit. The company shall conform to the process vent standards for organic chemicals including non-VOCs and all possible VOCs i.e., TOCs standards and process vent standards for top priority chemicals. Regular monitoring will be carried out for VOC and HC and On-line monitors for VOC measurements may be installed.	Noted and will be complied.
(xxvi)	Regular monitoring of relevant parameters for the underground water in the surrounding areas shall be undertaken and the results shall be submitted to the relevant States Pollution Control Board.	Regular monitoring of ground water is being carried in 10 locations & the reports are attached as Annexure-I . The locations are finalized in consultation with KSPCB.



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S. No.	A. SPECIFIC CONDITIONS	Compliance
(xxvii)	Solid waste generated as Pretreater and Reformer Catalysts, Sulphur guard absorbent and Alumina Balls shall be disposed off as per the authorization from the State Pollution Control Board.	Noted and will be complied. During operation stage MSEZL will dispose the solid waste as per the directions of State Pollution Control Board.
(xxviii)	Oily sludge shall be sent to melting pit treatment for recovery of oil. The recovered oil shall be recycled into the refinery system. The residual sludge will be stored in HDPE lined pit for disposal after treatment. The sludge shall be incinerated in the premises only.	Noted and will be complied.
(xxix)	The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Noted and will be complied.
(xxx)	The Company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.	Noted and will be complied.
(xxxi)	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Complied and copy is submitted.
(xxxii)	The Company shall implement all the recommendations made in the Environmental Impact Assessment /EMP report and risk assessment report.	MSEZL has implemented most of the recommendations of EIA/EMP report and still some of the projects of MSEZL as per EIA/EMP recommendations are under way.
(xxxiii)	The company will undertake all relevant measures, as indicated during the Public Hearing for improving the Socio-economic conditions of the surrounding area.	MSEZL is undertaking all relevant measures for improving the Socio-economic condition of the surrounding area as indicated during the Public Hearing.
(xxxiv)	With regard to R&R colony the project proponent shall obtain all requisite clearances as prescribed by the concerned agencies.	The R&R Colonies are developed after obtaining the requisite clearances from the concerned Departments like MoEF, KSPCB, Mangalore Urban Development Authority etc.

S. No	B. GENERAL CONDITIONS	Compliance
(i)	The project authorities shall strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government.	Noted and will be complied.



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S. No	B. GENERAL CONDITIONS	Compliance
(ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	MSEZ obtained amendment to EC 1. Dated 13 July 2012 2. 27 Aug 2014, this involves widening of existing public road towards river side adjacent to MSEZ proposed pipeline cum road Corridor in Reach-II area. 3. 18 th June 2015 for development of Multi Product Units as Mangalore SEZ. Copy of amendments is submitted.
(iii)	At no time, the emissions shall be allowed to go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	Noted and will be complied.
(iv)	Adequate number of influent and effluent quality monitoring stations shall be set up in consultation with the SPCB. Regular monitoring shall be carried out for relevant parameters for both surface and ground water.	The treated effluent parameters are measured through online measuring instruments installed at outlet line of Marine outfall pump house for the parameters like pH, DO, COD, TSS, and Conductivity. Further Ground water and surface water monitoring is carried out in the surrounding areas regularly & the reports are attached as Annexure-I . The locations are finalized in consultation with KSPCB.
(v)	Industrial wastewater shall be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May 1993 and 31 st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.	Noted and will be complied.
(vi)	The overall noise levels in and around the plant area shall be limited within the prescribed standards (85dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75dBA (day time) and 70dBA (night time).	Noted and will be complied.
(vii)	The project authorities shall strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals	Noted and will be complied. MRPL phase III expansion has been detached From MSEZ phase I project vide



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S. No	B. GENERAL CONDITIONS	Compliance
	from Chief Controller of Explosives must be obtained before commission of the expansion project. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented.	EC amendment dated 13 th July 2012. MRPL shall be complying conditions relevant to them as part of their existing clearance.
(viii)	Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.	Noted and will be complied.
(ix)	The project authorities shall provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.	Noted and will be complied.
(x)	The stipulated conditions shall be monitored by the concerned Regional Office of this Ministry /Central Pollution Control Board/State Pollution Control Board. A six monthly compliance report and the monitored data shall be submitted to them regularly. It shall also be displayed on the Website of the Company.	Compliance report is being submitted to MoEF/KSPCB on regular basis for every six months along with Ambient Air Quality monitoring report, Noise monitoring report & Ground water monitoring report. Compliance report is also displayed in the Company website.
(xi)	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the 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://www.envfor.nic.in . This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the concerned Regional office of this Ministry.	The same was carried out and the information regarding this was submitted to Ministry and KSPCB.
(xii)	The date of Financial Closure and final approval of the project by the concerned authorities and the date of commencing the land development work as well as the commissioning of the project shall be informed to the Ministry and its Regional Office.	MSEZL has taken up the land development & infrastructure works from April 2011. MSEZL Board has approved the Business Plan for Infrastructure Development during Aug. 2012.
(xiii)	Proper Housekeeping and adequate occupational health programmes shall be taken up. Regular Occupational Health Surveillance Programme for the relevant diseases shall be carried out and the records shall be maintained properly for at least 30-40 years. Sufficient preventive	Noted and will be complied.



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S. No	B. GENERAL CONDITIONS	Compliance
	measures shall be adopted to avoid direct exposure to emission and other Hydrocarbons etc.	
(xiv)	A separate environment management cell with full fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a Senior Executive.	Sr. General Manager (Environment & Civil) & Environmental Engineer are in place to take care of Environmental issues. Horticulture Sr. Manager is appointed for development and maintenance of Green belt. The laboratory facilities will be set up before the Commission of the units taken up in MSEZ.

S. No	EC Amendment conditions dtd. 13 th July 2012	Compliance
(i)	Only the sector Specific shall be permitted in the SEZ & those units shall obtain separate Environmental Clearance as applicable.	MSEZL obtained amendment to EC for development of Multi Product units as Mangalore SEZ dated 18 th June 2015. Copy of the same is attached as Annexure-II .
(ii)	Proponent shall enhance the allocation for the CSR activities from 2.5 to 5 % of the total cost & item-wise details along with time bound action plan shall be prepared & submitted to the Ministry's Regional office at Bangalore. Implementation of such program shall be ensured accordingly in a time bound manner.	MSEZL has already taken up CSR activities and details of CSR activity is attached as Annexure- III .
(iii)	The green belt shall be 33% all along the periphery & width of the green belt shall be minimum 50 mts.	Noted and will be complied.



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S. No	EC Amendment conditions dtd. 27 th Sep 2014	Compliance
(i)	The project proponent while carrying out the road widening works towards river side should not cause any impact to the river water flow and should be clear of river water way.	Complied.
(ii)	The project proponent to take up the bank protection works like stone pitching etc to avoid soil erosion of the banks.	River bank protection works as directed by WRDO are carried out.
(iii)	The project proponent to take up all adequate measures to mitigate the dust pollution during the road widening works.	Noted and complied.
(iv)	The proponent shall not dump any construction wastes etc in the river portion.	Noted and complied.

With Regards

Sr. General Manager

Civil & Environment

Mangalore SEZ Ltd.

Encl.:

1. Monitoring reports for Air, Water & Noise Environment.
2. Environmental compliance report & Environmental Monitoring Reports from OMPL.

Copy to: Environmental Officer, Karnataka State Pollution Control Board, Mangalore.

ENVIRONMENTAL MONITORING REPORT
SPECIAL ECONOMIC ZONE LIMITED, MANGALORE

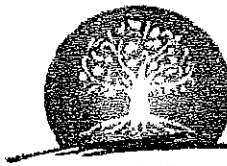


December - 2016

Prepared by:

ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO : 14001:2004 & OHSAS : 18001:2007 Certified Company
(Accredited by NABL, NABET, MoEF)



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Environmental Monitoring Report – Mangalore Special
Economic zone Limited, Mangalore.

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FIGURE

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ANNEXURE

Annexure -I	MoEF Certificate/NABL Certificate
Annexure -II	Sampling Location Map.



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

ENVIRONMENTAL MONITORING REPORT

1.0. Introduction:

Mangalore Special Economic Zone Limited is located 8 km aeriaily to North East of New Mangalore Port and is adjacent to the existing refinery of MRPL on its West. The Industrial estate of the District, namely Baikampady is located southwest of MSEZ. The Mangalore Airport is about 5 km South East of MSEZ.

1.1. Description of the Organization:

M/s. ABC Techno Labs India Private Limited, Chennai, an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company has been accredited by,

- National Accreditation Board for Education and Training (NABET), a division of Quality Council of India (QCI).
- Recognized under EP Act, 1986 by Ministry of Environment and Forest.
- National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the Department of Science & Technology, Government of India.

The certificate of authorization is enclosed in the Annexure-I.

We offer the following services,

- Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) for Infrastructure & Industrial Projects.
- Social Impact Assessment Studies including Rehabilitation & Resettlement
- Environmental Monitoring
- Environmental Audits
- Capacity Building for Environmental Management
- Solid Waste Management
- Effective Management of Resources and Wastes
- Risk Assessment & Management Studies



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

1.2. Scope of Work:

The scope of the work is to conduct Environmental monitoring at Special Economic Zone, Mangalore, following the guidelines and regulations of MoEF/CPCB standards. The scope of the work for the month of December 2016 is, to conduct ambient air quality monitoring at five locations. Sampling Locations are given in annexure - II.

2.0. Ambient Air Quality Monitoring Details:

Ambient air quality monitoring (AAQM) was carried out at five locations with due consideration to the meteorological conditions of the Project area. Ambient air quality monitoring was carried out at each location on 24 hourly basis on two consecutive days per month. The details of AAQ monitoring stations are given in Table 1.1.

Table - 1.1. Details of Ambient Air Monitoring Locations

STATION CODE	NAME OF THE LOCATIONS	GEOGRAPHICAL LOCATION
AAQ1	120 ML Water Reservoir	N-12°59'13.40" E-74°52'03.00"
AAQ2	MSEZ, Permude	N-12°59'54.00" E-74°52'53.60"
AAQ3	GSS3-10 ML Water Reservoir	N-12°58'57.70" E-74°51'30.10"
AAQ4	CETP Location	N-12°59'51.40" E-74°51'24.70"
AAQ5	Bajpe	N-12°58'32.80" E-74°52'10.40"

2.1.1. Method used for Air Quality Monitoring:

Respirable Dust Sampler and Fine Particulate Samplers were used for collecting Particulate Matter of size less than 10 μm (PM_{10}) and 2.5 μm ($\text{PM}_{2.5}$) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO_2 , NO_x Ammonia and Ozone (O_3). Organic vapour sampler was used to sample Hydrocarbon. Gas analyzer was used to estimate Carbon monoxide (CO) level in ambient air.



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

The Analytical techniques used for ambient air quality monitoring and its minimum detectable limit for each parameter is tabulated in Table 1.2.

Table - 1.2. Analytical Techniques Used for Ambient Air Quality Monitoring

2.1.2. Micro-Meteorology :

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM ₁₀	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
2	Particulate Matter PM _{2.5}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m ³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m ³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m ³
7	Ozone	KI Absorption and Colorimetric	5 µg/m ³
8	Benzene,	IS 5182: Pt 11: 2006	0.1 µg/m ³
9	Benzo[a]pyrene	IS 5182: Pt 12: 1991	0.1 ng/m ³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m ³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m ³

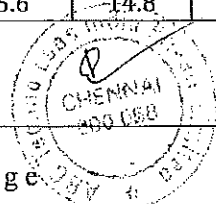
Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-12-2016 and 31-12-2016 at MSEZ is given in Table 1.3.



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-12-2016	20	33	24	94	5.6	14.8	West
02-12-2016	22	33	48	83	5.6	11.1	East Southeast
03-12-2016	24	32	43	89	7.4	14.8	East Southeast
04-12-2016	23	34	44	94	5.6	22.2	East Southeast
05-12-2016	23	33	42	89	5.6	16.7	West Northwest
06-12-2016	23	34	40	94	5.6	16.7	West
07-12-2016	21	34	22	94	5.6	24.1	East Southeast
08-12-2016	20	33	40	83	5.6	16.7	East Southeast
09-12-2016	22	32	42	94	5.6	16.7	West
10-12-2016	21	32	26	94	5.6	14.8	North Northwest
11-12-2016	18	32	27	94	3.7	14.8	West
12-12-2016	28	31	18	62	5.6	18.5	West
13-12-2016	22	28	59	94	5.6	13	East Southeast
14-12-2016	22	28	59	94	5.6	14.8	East Southeast
15-12-2016	22	33	35	94	3.7	16.7	East Southeast
16-12-2016	21	34	41	94	5.6	22.2	West Southwest
17-12-2016	21	34	41	94	5.6	22.2	5.6
18-12-2016	22	33	37	94	5.6	14.8	East
19-12-2016	21	33	31	94	5.6	14.8	East
20-12-2016	20	35	17	88	3.7	22.2	East
21-12-2016	21	34	28	89	5.6	16.7	East Southeast
22-12-2016	21	34	30	88	5.6	16.7	West
23-12-2016	20	33	36	89	3.7	18.5	West
24-12-2016	19	33	34	89	5.6	18.5	West Southwest
25-12-2016	20	32	44	94	5.6	16.7	West
26-12-2016	20	30	48	94	5.6	16.7	North
27-12-2016	20	34	25	94	5.6	18.5	East Southeast
28-12-2016	19	35	17	88	5.6	18.5	East
29-12-2016	20	35	22	88	5.6	18.5	East Southeast
30-12-2016	19	34	19	34	5.6	20.4	East Southeast
31-12-2016	20	33	32	88	5.6	14.8	East Southeast

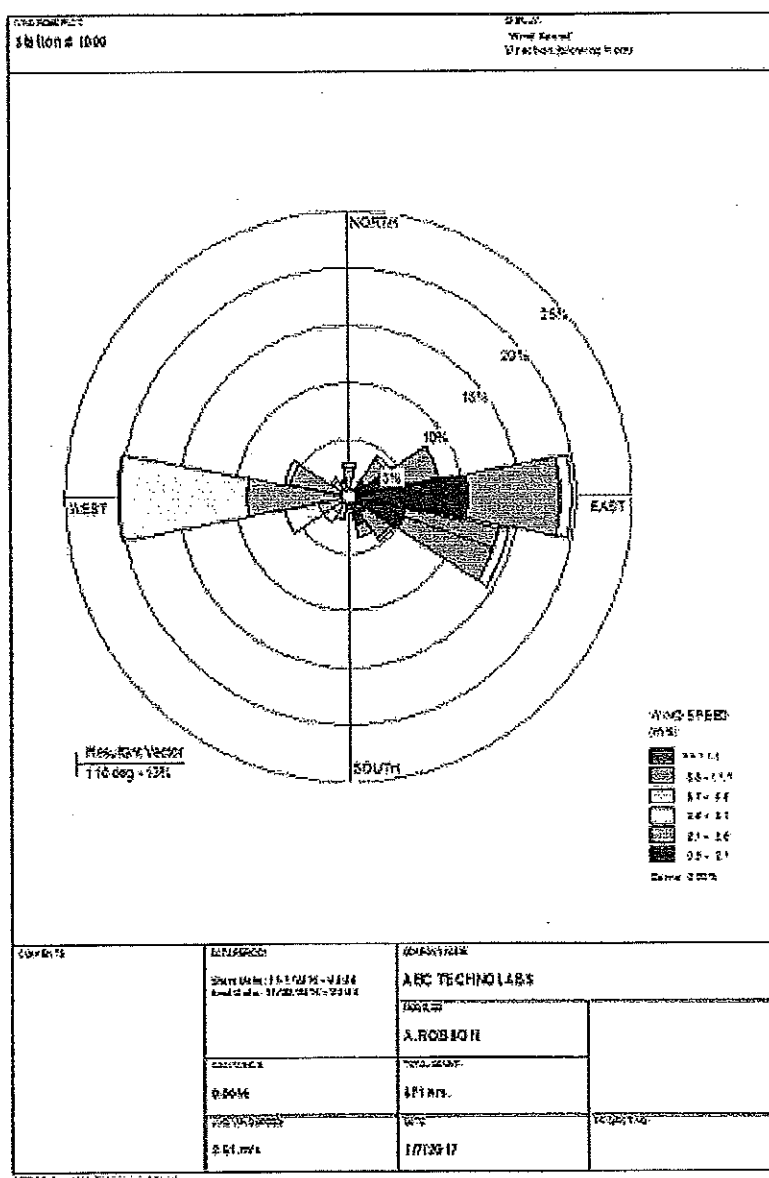




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2.1.3. Wind Rose:

The wind roses diagram for the month of **December 2016** at Mangalore SEZ is depicted in Figure 1.1.





Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

2.1.4. AMBIENT AIR QUALITY RESULTS:

The 24 hourly average results of Ambient Air Quality Monitoring of two consecutive days for the month of **December 2016** are presented in Table-1.4(a), 1.4 (b), 1.4(c), 1.4(d), 1.4(e) and 1.4(f). The obtained results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for “Industrial, Rural, Residential and other areas”.

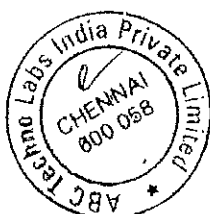
Table 1.4 (a)- AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/33/AS/281216/A 1802-1803
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-12-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	05-01-2017

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
1	CETP Location	2	26.8	57.1	7.15	14.6	BDL (<0.1)	BDL (<5)	14.2
2	MSEZ-GSS 3	2	30.5	64.6	9.14	21.1	BDL (<0.1)	BDL (<5)	14.7
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited.,

[Signature]
AUTHORIZED SIGNATORY

QUALITY MANAGER



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Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/33/AS/281216/A 1802-1803
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-12-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	05-01-2017

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.10
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.16
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited,

A. Shree Ching
AUTHORIZED SIGNATORY

QUALITY MANAGER





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Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/33/AS/281216/A 1804
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-12-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	05-01-2017

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NOx	Pb	NH ₃	O ₃
3	Baipe	2	20.2	46.2	5.25	13.1	BDL (<0.1)	BDL(<5)	12.6
Test Method			EPA-40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



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Table 1.4(d) - AMBIENT AIR QUALITY REPORT

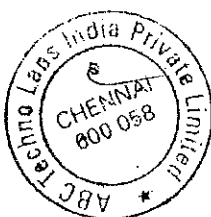
SAMPLE ID NO	ABC/MSEZ/33/AS/281216/A 1804
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	28-12-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	05-01-2017

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
3	Baipe	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



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Table 1.4(e) - AMBIENT AIR QUALITY REPORT

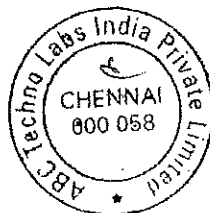
SAMPLE ID NO	ABC/MSEZ/33/AS/301216/A 1805-1806
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-12-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	05-01-2017

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
4	120 ML, Water Reservoir	2	22.4	49.6	8.15	15.2	BDL (<0.1)	BDL (<5)	13.5
5	MSEZ, Permude	2	18	43.7	BDL (<5)	11.6	BDL (<0.1)	BDL (<5)	11.7
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



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Table 1.4(f) - AMBIENT AIR QUALITY REPORT

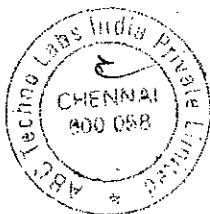
SAMPLE ID NO	ABC/MSEZ/33/AS/301216/A 1805-1806
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-12-2016 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	05-01-2017

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.12
5	MSEZ, Permude	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P.22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

.....END OF REPORT.....

For ABC Techno Labs India Private Limited.,



[Signature] 05/01/17
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ENVIRONMENTAL MONITORING REPORT
SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



January - 2017

Prepared by:

ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO : 14001:2004 & OHSAS : 18001:2007 Certified Company
(Accredited by NABL, NABET, MoEF)



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2.1.2	MICRO-METEOROLOGY	3
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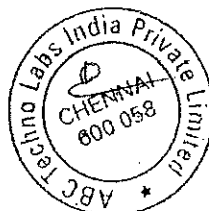
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FIGURE

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ANNEXURE

Annexure -I	MoEF Certificate/NABL Certificate
Annexure -II	Sampling Location Map.





Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

ENVIRONMENTAL MONITORING REPORT

1.0. Introduction:

Mangalore Special Economic Zone Limited is located 8 km aerially to North East of New Mangalore Port and is adjacent to the existing refinery of MRPL on its West. The Industrial estate of the District, namely Baikampady is located southwest of MSEZ. The Mangalore Airport is about 5 km South East of MSEZ.

1.1. Description of the Organization:

M/s. ABC Techno Labs India Private Limited, Chennai, an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company has been accredited by,

- National Accreditation Board for Education and Training (NABET), a division of Quality Council of India (QCI).
- Recognized under EP Act, 1986 by Ministry of Environment and Forest.
- National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the Department of Science & Technology, Government of India.

The certificate of authorization is enclosed in the Annexure-I.

We offer the following services,

- Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) for Infrastructure & Industrial Projects.
- Social Impact Assessment Studies including Rehabilitation & Resettlement
- Environmental Monitoring
- Environmental Audits
- Capacity Building for Environmental Management
- Solid Waste Management
- Effective Management of Resources and Wastes
- Risk Assessment & Management Studies



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1.2. Scope of Work:

The scope of the work is to conduct Environmental monitoring at Special Economic Zone, Mangalore, following the guidelines and regulations of MoEF/CPCB standards. The scope of the work for the month of January 2017 is, to conduct ambient air quality monitoring at five locations. Sampling Locations are given in annexure - II.

2.0. Ambient Air Quality Monitoring Details:

Ambient air quality monitoring (AAQM) was carried out at five locations with due consideration to the meteorological conditions of the Project area. Ambient air quality monitoring was carried out at each location on 24 hourly basis on two consecutive days per month. The details of AAQ monitoring stations are given in Table 1.1.

Table - 1.1. Details of Ambient Air Monitoring Locations

STATION CODE	NAME OF THE LOCATIONS	GEOGRAPHICAL LOCATION
AAQ1	120 ML Water Reservoir	N-12°59'13.40" E-74°52'03.00"
AAQ2	MSEZ, Permude	N-12°59'54.00" E-74°52'53.60"
AAQ3	GSS3-10 ML Water Reservoir	N-12°58'57.70" E-74°51'30.10"
AAQ4	CETP Location	N-12°59'51.40" E-74°51'24.70"
AAQ5	Bajpe	N-12°58'32.80" E-74°52'10.40"

2.1.1. Method used for Air Quality Monitoring:

Respirable Dust Sampler and Fine Particulate Samplers were used for collecting Particulate Matter of size less than 10 μm (PM_{10}) and 2.5 μm ($\text{PM}_{2.5}$) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO_2 , NO_x , Ammonia and Ozone (O_3). Organic vapour sampler was used to sample Hydrocarbon. Gas analyzer was used to estimate Carbon monoxide (CO) level in ambient air.



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

The Analytical techniques used for ambient air quality monitoring and its minimum detectable limit for each parameter is tabulated in Table 1.2.

Table - 1.2. Analytical Techniques Used for Ambient Air Quality Monitoring

2.1.2. Micro-Meteorology :

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM ₁₀	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
2	Particulate Matter PM _{2.5}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m ³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m ³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Nessler's Method	5 µg/m ³
7	Ozone	KI Absorption and Colorimetric	5 µg/m ³
8	Benzene,	IS 5182: Pt 11: 2006	0.1 µg/m ³
9	Benzo[a]pyrene	IS 5182: Pt 12: 1991	0.1 ng/m ³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m ³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m ³

Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-01-2017 and 31-01-2017 at MSEZ is given in Table 1.3.





Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-01-2017	20	33	25	94	5.6	14.8	East Southeast
02-01-2017	20	32	46	88	5.6	16.7	East Southeast
03-01-2017	20	34	21	88	5.6	16.7	East
04-01-2017	21	33	31	89	5.6	16.7	East Southeast
05-01-2017	20	34	31	94	5.6	18.5	East Southeast
06-01-2017	20	33	45	94	5.6	22.2	East & West
07-01-2017	21	31	40	94	5.6	20.4	East Northeast
08-01-2017	19	31	28	83	5.6	22.2	Northwest
09-01-2017	19	31	40	88	5.6	18.5	North Northeast
10-01-2017	19	32	28	83	5.6	14.8	Northwest
11-01-2017	19	32	30	83	5.6	18.5	North
12-01-2017	19	31	39	94	5.6	107	West
13-01-2017	20	32	24	83	3.7	14.8	North Northeast
14-01-2017	20	32	34	83	5.6	11.1	East
15-01-2017	21	33	24	88	5.6	14.8	West
16-01-2017	20	34	28	88	5.6	11.1	East Southeast
17-01-2017	19	34	22	82	5.6	18.5	East Southeast
18-01-2017	20	34	17	83	5.6	18.5	East Southeast
19-01-2017	19	33	18	83	7.4	22.2	East Southeast
20-01-2017	20	33	32	83	5.6	18.5	East Southeast
21-01-2017	21	36	28	78	5.6	18.5	West
22-01-2017	23	34	23	83	5.6	14.8	West
23-01-2017	21	36	13	88	5.6	11.1	East Southeast
24-01-2017	20	34	25	94	5.6	22.2	East Southeast
25-01-2017	18	22	18	83	5.6	14.8	East Southeast
26-01-2017	23	32	32	83	5.6	13	Southeast
27-01-2017	23	33	37	79	5.6	14.8	North
28-01-2017	22	34	40	89	5.6	16.7	West
29-01-2017	23	34	40	89	5.6	14.8	West Northwest
30-01-2017	23	35	38	89	3.7	20.4	Northeast
31-01-2017	24	33	47	94	5.6	22.2	West



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2.1.3. Wind Rose:

The wind roses diagram for the month of **January 2017** at Mangalore SEZ is depicted in Figure 1.1.

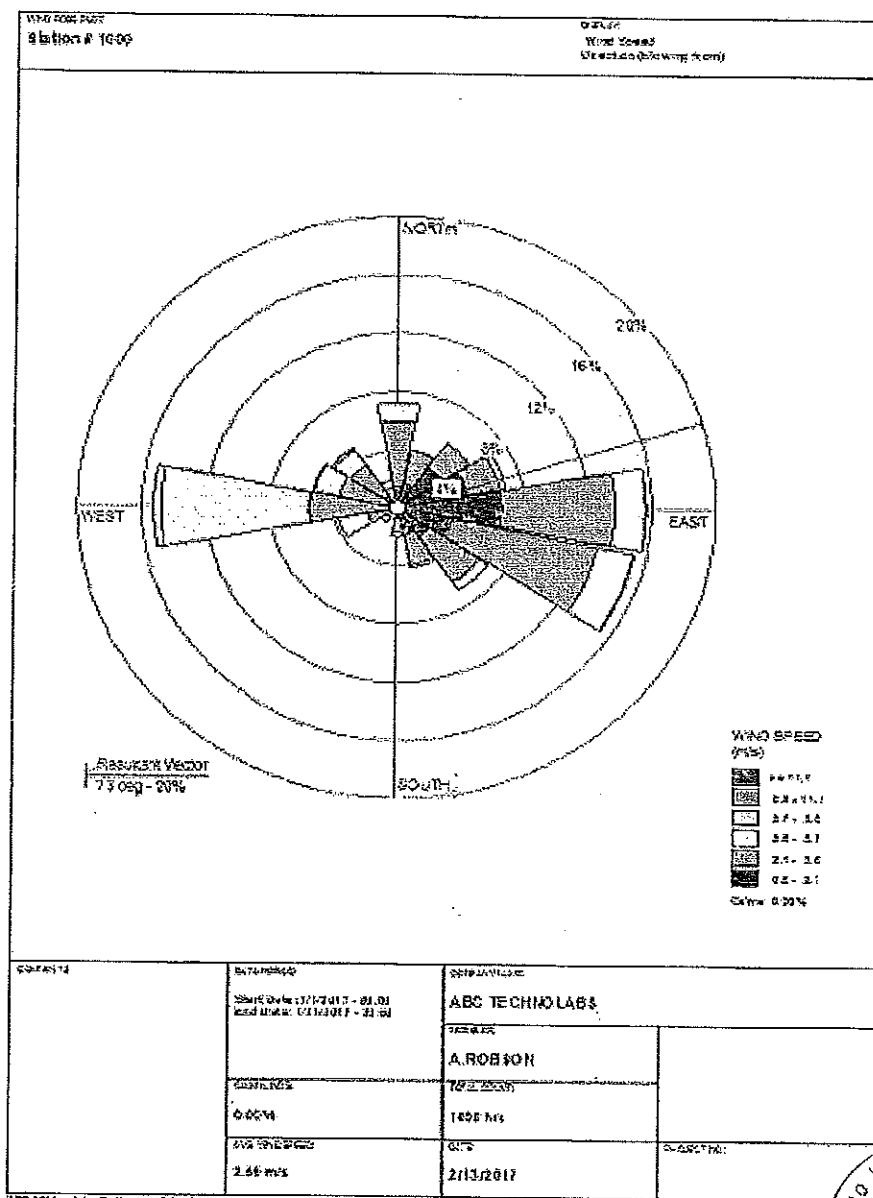
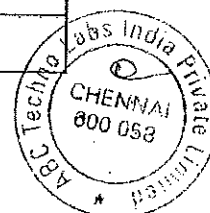


Figure 1.1. Wind Rose Diagram - January 2017





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2.1.4. AMBIENT AIR QUALITY RESULTS:

The 24 hourly average results of Ambient Air Quality Monitoring of two consecutive days for the month of **January 2017** are presented in Table-1.4(a), 1.4 (b), 1.4(c), 1.4(d), 1.4(e) and 1.4(f). The obtained results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for "Industrial, Rural, Residential and other areas".

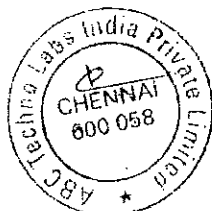
Table 1.4 (a)- AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/34/AS/300117/A 2139-2140
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-01-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-02-2017

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
1	CETP Location	2	27.1	60.2	6.94	15.8	BDL (<0.1)	BDL (<5)	13.6
2	MSEZ-GSS 3	2	32.2	66.4	8.51	19.6	BDL (<0.1)	BDL (<5)	15.4
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



For ABC Techno Labs India Private Limited.,

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Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(b) - AMBIENT AIR QUALITY REPORT

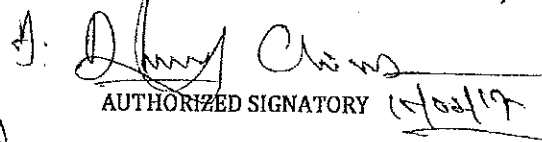
SAMPLE ID NO	ABC/MSEZ/34/AS/300117/A 2139-2140
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-01-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-02-2017

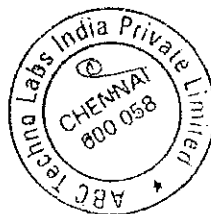
S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.11
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.14
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

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ABC Techno Labs



Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/34/AS/300117/A 2141
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-01-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-02-2017

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
3	Balpe	2	19.8	45.4	5.01	12.6	BDL (<0.1)	BDL(<5)	13
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

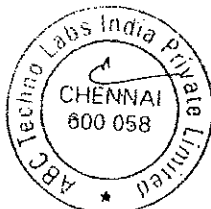
BDL- Below Detection Limit

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Table 1.4(d) - AMBIENT AIR QUALITY REPORT

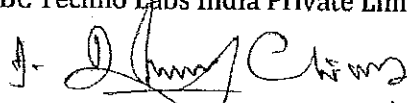
SAMPLE ID NO	ABC/MSEZ/34/AS/300117/A 2141
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	30-01-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-02-2017

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
3	Baipe	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

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Table 1.4(e) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/34/AS/310117/A 2142-2143
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	31-01-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-02-2017

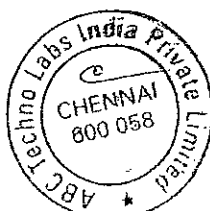
S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
4	120 ML, Water Reservoir	2	24.7	55.8	7.05	16.8	BDL (<0.1)	BDL (<5)	14.7
5	MSEZ, Permude	2	18.2	42.6	BDL (<5)	12.3	BDL (<0.1)	BDL (<5)	12.5
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

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Table 1.4(f) - AMBIENT AIR QUALITY REPORT

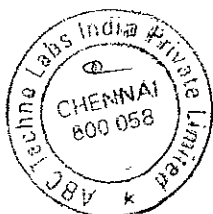
SAMPLE ID NO	ABC/MSEZ/34/AS/310117/A 2142-2143
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	31-01-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-02-2017

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.13
5	MSEZ, Permude	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

.....END OF REPORT.....

For ABC Techno Labs India Private Limited.,



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QUALITY MANAGER

ENVIRONMENTAL MONITORING REPORT
SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



FEBRUARY 2017

Prepared by:



ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO 14001:2004 & OHSAS : 18001:2007 Certified Company
(Accredited by NABL, NABET, MoEF)



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Environmental Monitoring Report – Mangalore Special
Economic zone Limited, Mangalore.

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4.1.2	WATER QUALITY RESULTS	13

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FIGURE

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ANNEXURE

Anneure -I	MoEF Certificate
Anneure -II	Sampling Location Map.



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ENVIRONMENTAL MONITORING REPORT

1.0. Introduction:

Mangalore Special Economic Zone Limited is located 8 km aeriaily to North East of New Mangalore Port and is adjacent to the existing refinery of MRPL on its West. The Industrial estate of the District, namely Baikampady is located southwest of MSEZ. The Mangalore Airport is about 5 km South East of MSEZ.

1.1. Description of the Organization:

M/s. ABC Techno Labs India Private Limited, Chennai, an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company has been accredited by,

- National Accreditation Board for Education and Training (NABET), a division of Quality Council of India (QCI).
- National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the Department of Science & Technology, Government of India.
- Recognized under EP Act, 1986 by Ministry of Environment and Forest.

The certificate of authorization is enclosed in the Annexure-I.

We offer the following services,

- Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) for Infrastructure & Industrial Projects.
- Social Impact Assessment Studies including Rehabilitation & Resettlement
- Environmental Monitoring
- Environmental Audits
- Capacity Building for Environmental Management
- Solid Waste Management
- Effective Management of Resources and Wastes
- Risk Assessment & Management Studies



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1.2. Scope of Work:

The scope of the work is to conduct Environmental monitoring at Special Economic Zone, Mangalore, following the guidelines and regulations of MoEF/CPCB standards. The scope of the work for the month of February 2017 is to conduct ambient air quality monitoring at five locations, Ground water quality monitoring at eight locations and noise level monitoring at two locations. Sampling Locations of each category is given in annexure - II.

2.0. Ambient Air Quality Monitoring Details:

Ambient air quality monitoring (AAQM) was carried out at five locations with due consideration to the meteorological conditions of the Project area. Ambient air quality monitoring was carried out at each location on 24 hourly basis on two consecutive days per month. Noise monitoring was carried out twice a week for two weeks with two days interval per week. The details of AAQ monitoring stations are given in Table 1.1.

Table - 1.1. Details of Ambient Air Monitoring Locations

STATION CODE	NAME OF THE LOCATIONS	GEOGRAPHICAL LOCATION
AAQ1	120 ML Water Reservoir	N-12°59'13.40" E-74°52'03.00"
AAQ2	MSEZ, Permude	N-12°59'54.00" E-74°52'53.60"
AAQ3	GSS3-10 ML Water Reservoir	N-12°58'57.70" E-74°51'30.10"
AAQ4	CETP Location	N-12°59'51.40" E-74°51'24.70"
AAQ5	Bajpe	N-12°58'32.80" E-74°52'10.40"

2.1.1. Method used for Air Quality Monitoring:

Respirable Dust Sampler and Fine Particulate Samplers were used for collecting Particulate Matter of size less than 10 μm (PM_{10}) and 2.5 μm ($\text{PM}_{2.5}$) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO_2 , NO_x Ammonia and Ozone (O_3). Organic vapour sampler



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was used to sample Hydrocarbon. Gas analyzer was used to estimate Carbon monoxide (CO) level in ambient air.

The Analytical techniques used for ambient air quality monitoring and its minimum detectable limit for each parameter is tabulated in Table 1.2.

Table - 1.2. Analytical Techniques Used for Ambient Air Quality Monitoring

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM ₁₀	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
2	Particulate Matter PM _{2.5}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m ³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m ³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Indophenol Method	5 µg/m ³
7	Ozone	KI Absorption and Colorimetric	5 µg/m ³
8	Benzene,	IS 5182: Pt 11: 2006	0.01 µg/m ³
9	Benzo[a]pyrene)	IS 5182: Pt 12: 1991	0.1 ng/m ³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m ³
11	Arsenic, Nickel	CPCB:NAAQMS/36/2012-213 ABCTL/SOP/A10 &12	1 ng/m ³

2.1.2. Micro-Meteorology:

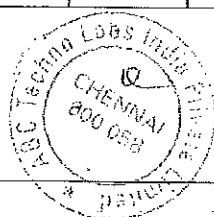
Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-02-2017 and 28-02-2017 at MSEZ is given in Table 1.3.

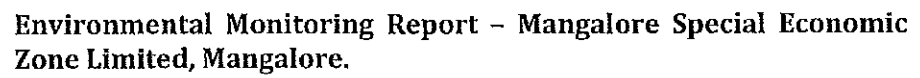


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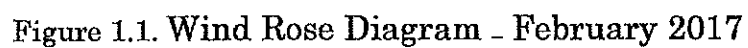
Table-1.3- Micro-Meteorology

DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-02-2017	23	33	42	94	5.6	22.2	East Southeast
02-02-2017	24	33	45	94	5.6	22.2	East
03-02-2017	23	34	25	89	5.6	18.5	East
04-02-2017	21	35	14	88	5.6	16.7	East
05-02-2017	21	33	38	33	3.7	18.5	East Southeast
06-02-2017	22	32	32	89	5.6	22.2	East
07-02-2017	21	32	44	88	5.6	20.4	North Northeast
08-02-2017	21	23	37	88	5.6	22.2	West
09-02-2017	22	33	42	88	3.7	22.2	North
10-02-2017	21	33	46	94	5.6	18.5	West
11-02-2017	23	32	44	89	5.6	18.5	West
12-02-2017	22	33	42	89	5.6	18.5	North
13-02-2017	22	35	13	94	3.7	16.7	East Southeast
14-02-2017	21	36	22	94	5.6	25.9	East Southeast
15-02-2017	23	37	14	83	5.6	30	East
16-02-2017	23	37	10	83	5.6	24	East Southeast
17-02-2017	20	36	13	83	3.7	22.2	East Southeast
18-02-2017	19	37	11	83	5.6	22.2	East
19-02-2017	20	34	53	89	5.6	18.5	West
20-02-2017	22	32	47	94	5.6	20.4	West
21-02-2017	23	32	43	94	3.7	22.2	West
22-02-2017	24	33	47	89	5.6	22.2	West Northwest
23-02-2017	22	33	50	89	5.6	26	West Southwest
24-02-2017	23	33	53	94	5.6	18.5	West
25-02-2017	24	34	47	89	3.7	22.2	East Southeast
26-02-2017	24	33	47	94	5.6	22.2	West
27-02-2017	24	36	26	89	5.6	18.5	West
28-02-2017	23	36	17	94	5.6	18.5	East





The wind roses diagram for the month of **February 2017** at Mangalore SEZ is depicted in Figure 1.1.





Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

2.1.4. AMBIENT AIR QUALITY RESULTS:

The 24 hourly average results of Ambient Air Quality Monitoring of two consecutive days for the month of **February 2017** are presented in Table-1.4(a), 1.4 (b), 1.4(c), 1.4(d), 1.4(e) and 1.4(f). The obtained results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for “Industrial, Rural, Residential and other areas”.

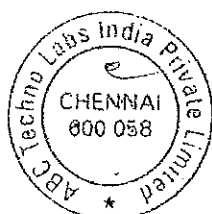
Table 1.4 (a)- AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/35/AS/210217/A 2292-2293
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	21-02-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	04-03-2017

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
1	CETP Location	2	25.1	56	7.78	16.7	BDL (<0.1)	BDL(<5)	14.1
2	MSEZ-GSS 3	2	28.4	63.7	8.51	19.1	BDL (<0.1)	BDL(<5)	14.8
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorpti on Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



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Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/35/AS/210217/A 2292-2293
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	21-02-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	04-03-2017

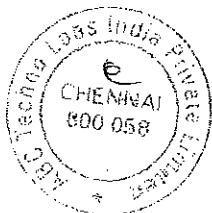
S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.15
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,

[Signature]
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Table 1.4(c) - AMBIENT AIR QUALITY REPORT

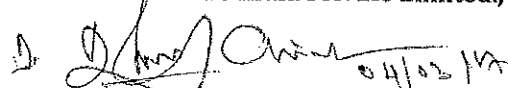
SAMPLE ID NO	ABC/MSEZ/35/AS/210217/A 2294
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	21-02-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	04-03-2017

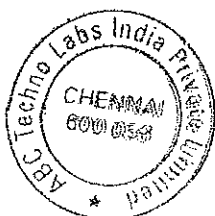
S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
3	Baipe	2	21.4	47.3	5.47	11.6	BDL (<0.1)	BDL (<5)	12.3
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited,


04/03/17
AUTHORIZED SIGNATORY



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Table 1.4(d) - AMBIENT AIR QUALITY REPORT

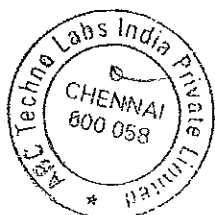
SAMPLE ID NO	ABC/MSEZ/35/AS/210217/A 2294
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	21-02-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	04-03-2017

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
3	Baipe	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



[Signature]
AUTHORIZED SIGNATORY 04/03/17

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Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

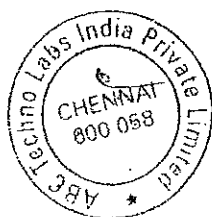
Table 1.4(e) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/35/AS/230217/A 2295-2296
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	23-02-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	04-03-2017

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
4	120 ML, Water Reservoir	2	24.7	58.2	7.05	15.7	BDL (<0.1)	BDL (<5)	13.2
5	MSEZ, Permude	2	19.4	41.8	5.13	11.1	BDL (<0.1)	BDL (<5)	11.8
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....



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QUALITY MANAGER



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Table 1.4(f) – AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/35/AS/230217/A 2295-2296
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	23-02-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	04-03-2017

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.10
5	MSEZ, Permude	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

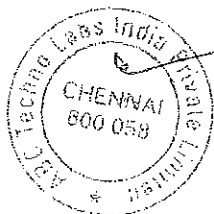
BDL- Below Detection Limit

.....END OF REPORT.....

For ABC Techno Labs India Private Limited.,


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Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

3.0. Noise Level Monitoring:

The noise monitoring has been conducted for determination of noise levels at two locations in the project area. The noise levels at each location were recorded for 24 hours for two non-consecutive days for two weeks. The environmental setting of each Noise monitoring locations is given in Table -1.5 and day and night equivalent Noise Levels are tabulated in Table 1.6.

Table 1.5- Details of Noise Monitoring Locations

Station Code	Name of the Station	Geographical Location
N1	CETP location	N-12°59'51.40" E-74°51'24.70"
N2	120 ML water reservoir	N-12°59'13.40" E-74°52'03.00"

Table 1.6 - Ambient Noise Monitoring Results

Station Code	Date of Survey	Location	Leq Day [dB(A)]	Leq Night [dB(A)]
N1	21/02/2017	CETP	52.8	43.5
N2	21/02/2017	120 ML	48.6	41.4
N1	24/02/2017	CETP	53.1	42.9
N2	24/02/2017	120 ML	49.1	42
N1	27/02/2017	CETP	52.4	43.1
N2	27/02/2017	120 ML	49.6	41.6
N1	01/03/2017	CETP	53.4	43.3
N2	01/03/2017	120 ML	50.2	42.7

AMBIENT NOISE STANDARDS

AMBIENT NOISE STANDARDS	Lday [dB(A)]	Lnight [dB(A)]
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

Note: Day Time is reckoned between 6.0 A.M and 10.0 P.M.

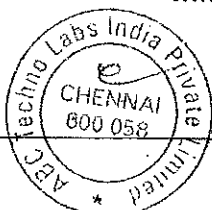
Night time is reckoned between 10.0 P.M to 6.0 A.M.

Leq [dB (A)] - Denotes the time weighted average of the level of sound in decibel on Scale A which is relatable to human hearing.

.....End of Report

For ABC Techno Labs India Private Limited.,

J. [Signature] 4/3/17
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4.0. Water Quality Monitoring

Water samples were collected at ten locations to establish baseline water quality in the study area. Water analysis was carried out for physical, chemical parameters as per the methods prescribed in IS and “Standard Methods for the Examination of Water and Wastewater (American Public Health Association)”.

4.1.1. Water Sampling Locations.

The details of the water sampling stations are presented in the Table 1.7

Table 1.7- Water Sampling Locations

Location Code	Date Sampled	Location	Type of water	Geographical Location
W1	24/02/2017	120 ML Water Storage	Ground water	N-12°58'57.70" E-74°51'30.10"
W2	24/02/2017	Permude Bajpe Village Boundary	Ground water	N-12°59'54.00" E-74°52'53.60"
W3	24/02/2017	Road Cum Pipeline Corridor -Kalavar	Ground water	N-12°58'45.10" E-74°51'16.40"
W4	24/02/2017	Oddidakale- Bajpe	Ground water	N-12°58'32.80" E-74°52'10.40"
W5	24/02/2017	Chandrasa Nagar	Ground water	N-12°58'44.90" E-74°51'16.50"
W6	24/02/2017	Permude	Ground water	N-12°59'12.50" E-74°52'34.30"
W7	24/02/2017	CETP Location	Ground water	N-12°59'51.40" E-74°51'24.70"
W8	24/02/2017	Shyanti Gudda-Bajpe	Ground water	N-12°59'54.00" E-74°52'53.40"

4.1.2. Water Quality Results

The physicochemical characteristics of water in the project area are presented in the Table 1.8(a) and Table 1.8(b) and are compared with the standards (IS 10500:2012) Indian Standards/Specifications for Drinking Water) reference values.



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

Table 1.8(a) - Ground water Quality Results

Sl. No	PARAMETERS	UNIT	LIMIT AS PER IS 10500 : 2012	W1	W2	W3	W4
1	Colour	Pt-Co	5	1	Nil	1	Nil
2	Odour	-	Unobjectionable	No Odour Observed	No Odour Observed	No Odour Observed	No Odour Observed
3	pH at 25°C	-	6.5-8.5	6.55	6.66	6.81	6.71
4	Electrical Conductivity,	µS/cm	Not Specified	210	82	452	96
5	Turbidity	NTU	1	BDL(<0.5)	0.7	0.9	BDL(<0.5)
6	Total Dissolved Solids	mg/l	500	115	45	257	52
7	Total Hardness as CaCO ₃	mg/l	200	70	23	110	25
8	Total Alkalinity as CaCO ₃	mg/l	200	70	30	168	32
9	Chloride as Cl	mg/l	250	26	10.5	54	11.3
10	Sulphate as SO ₄	mg/l	200	1	BDL(<1)	2	1
11	Fluoride as F	mg/l	1	0.30	0.1	0.20	0.20
12	Nitrate as NO ₃	mg/l	45	1.8	1	4	1.3
13	Silica as SiO ₂	mg/l	Not Specified	2.06	0.42	3.99	2.47
14	Copper as Cu	mg/l	0.05	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)
15	Zinc as Zn	mg/l	5	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
16	Manganese as Mn	mg/l	0.10	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)	BDL(<0.02)
17	Sodium as Na	mg/l	Not Specified	15	7	57	10
18	Potassium as K	mg/l	Not Specified	2	1.4	4.1	1.7
19	Calcium as Ca	mg/l	75	12.8	8	24	6
20	Magnesium as Mg	mg/l	30	9.7	2	12	2.3
21	Iron as Fe	mg/l	0.3	0.05	BDL(<0.05)	0.09	BDL(<0.05)
22	Lead as Pb	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
23	Mercury as Hg	mg/l	0.001	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)
24	Cadmium as Cd	mg/l	0.003	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)
25	Arsenic as As	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
26	Chromium as Cr ⁶⁺	mg/l	0.05	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
27	Volatile Organic Compounds	mg/l	Not Specified	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)

BDL-Below Detection Limit

.....End of Report.....

For ABC Techno Labs India Private Limited.,

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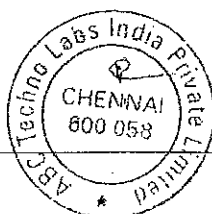
Table 1.8(b) - Ground water Quality Results

Sl. No	PARAMETERS	UNIT	LIMIT AS PER IS 10500 : 2012	W5	W6	W7	W8
1	Colour	Pt-Co	5	Nil	1	1	Nil
2	Odour	-	Unobjectionable	No Odour Observed	No Odour Observed	No Odour Observed	No Odour Observed
3	pH at 25°C	-	6.5-8.5	6.54	6.51	6.74	6.62
4	Electrical Conductivity,	µS/cm	Not Specified	270	120	207	212
5	Turbidity	NTU	1	BDL(<0.5)	0.8	0.9	1
6	Total Dissolved Solids	mg/l	500	145	63	114	120
7	Total Hardness as CaCO ₃	mg/l	200	88	29	53	60
8	Total Alkalinity as CaCO ₃	mg/l	200	79	38	60	74
9	Chloride as Cl	mg/l	250	33	14	31	23
10	Sulphate as SO ₄	mg/l	200	8	1	2.3	8
11	Fluoride as F	mg/l	1	0.32	0.28	0.20	0.30
12	Nitrate as NO ₃	mg/l	45	6.3	2.06	3.7	BDL(<1)
13	Silica as SiO ₂	mg/l	Not Specified	1.49	2.56	0.99	1.89
14	Copper as Cu	mg/l	0.05	BDL(<0.05)	BDL(<0.03)	BDL(<0.03)	BDL(<0.03)
15	Zinc as Zn	mg/l	5	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)	BDL(<0.005)
16	Manganese as Mn	mg/l	0.10	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)	BDL(<0.05)
17	Sodium as Na	mg/l	Not Specified	22	13	8	24
18	Potassium as K	mg/l	Not Specified	1.5	1.8	1.6	2.2
19	Calcium as Ca	mg/l	75	15	6.5	23	11
20	Magnesium as Mg	mg/l	30	12	3.1	8	7.7
21	Iron as Fe	mg/l	0.3	BDL(<0.05)	0.06	0.05	0.13
22	Lead as Pb	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
23	Mercury as Hg	mg/l	0.001	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)
24	Cadmium as Cd	mg/l	0.003	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)	BDL(<0.001)
25	Arsenic as As	mg/l	0.01	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
26	Chromium as Cr ⁶⁺	mg/l	0.05	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)
27	Volatile Organic Compounds	mg/l	Not Specified	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)	BDL(<0.01)

BDL-Below Detection Limit

.....End of Report.....

For ABC Techno Labs India Private Limited.,



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QUALITY MANAGER

FEBRUARY 2017

ENVIRONMENTAL MONITORING REPORT
SPECIAL ECONOMIC ZONE LIMITED, MANGALORE



MARCH - 2017

Prepared by:

ABC Techno Labs India Private Limited

An ISO : 9001:2008, ISO :14001:2004 & OHSAS : 18001:2007 Certified Company
(Accredited by NABL, NABET, MoEF)



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Environmental Monitoring Report – Mangalore Special
Economic zone Limited, Mangalore.

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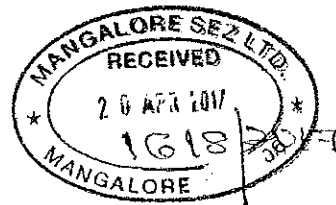
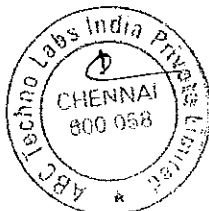
S.No.	TITLE	PAGE NO.
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1.2	TECHNIQUES USED FOR AMBIENT AIR QUALITY MONITORING	3
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FIGURE

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1.1	Wind Rose	5

ANNEXURE

Annexure –I	MoEF Certificate/NABL Certificate
Annexure –II	Sampling Location Map.





ENVIRONMENTAL MONITORING REPORT

1.0. Introduction:

Mangalore Special Economic Zone Limited is located 8 km aerially to North East of New Mangalore Port and is adjacent to the existing refinery of MRPL on its West. The Industrial estate of the District, namely Baikampady is located southwest of MSEZ. The Mangalore Airport is about 5 km South East of MSEZ.

1.1. Description of the Organization:

M/s. ABC Techno Labs India Private Limited, Chennai, an ISO 9001, ISO 14001 & OHSAS 18001 Certified Company has been accredited by,

- National Accreditation Board for Education and Training (NABET), a division of Quality Council of India (QCI).
- Recognized under EP Act, 1986 by Ministry of Environment and Forest.
- National Accreditation Board for Testing and Calibration Laboratories (NABL), an autonomous body under the Department of Science & Technology, Government of India.

The certificate of authorization is enclosed in the Annexure-I.

We offer the following services,

- Environmental Impact Assessment (EIA) & Environmental Management Plan (EMP) for Infrastructure & Industrial Projects.
- Social Impact Assessment Studies including Rehabilitation & Resettlement
- Environmental Monitoring
- Environmental Audits
- Capacity Building for Environmental Management
- Solid Waste Management
- Effective Management of Resources and Wastes
- Risk Assessment & Management Studies



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

1.2. Scope of Work:

The scope of the work is to conduct Environmental monitoring at Special Economic Zone, Mangalore, following the guidelines and regulations of MoEF/CPCB standards. The scope of the work for the month of March 2017 is, to conduct ambient air quality monitoring at five locations. Sampling Locations are given in annexure - II.

2.0. Ambient Air Quality Monitoring Details:

Ambient air quality monitoring (AAQM) was carried out at five locations with due consideration to the meteorological conditions of the Project area. Ambient air quality monitoring was carried out at each location on 24 hourly basis on two consecutive days per month. The details of AAQ monitoring stations are given in Table 1.1.

Table - 1.1. Details of Ambient Air Monitoring Locations

STATION CODE	NAME OF THE LOCATIONS	GEOGRAPHICAL LOCATION
AAQ1	120 ML Water Reservoir	N-12°59'13.40" E-74°52'03.00"
AAQ2	MSEZ, Permude	N-12°59'54.00" E-74°52'53.60"
AAQ3	GSS3-10 ML Water Reservoir	N-12°58'57.70" E-74°51'30.10"
AAQ4	CETP Location	N-12°59'51.40" E-74°51'24.70"
AAQ5	Bajpe	N-12°58'32.80" E-74°52'10.40"

2.1.1. Method used for Air Quality Monitoring:

Respirable Dust Sampler and Fine Particulate Samplers were used for collecting Particulate Matter of size less than 10 μm (PM_{10}) and 2.5 μm ($\text{PM}_{2.5}$) respectively. Gaseous Samplers were used for sampling gaseous pollutants such as SO_2 , NO_x Ammonia and Ozone (O_3). Organic vapour sampler was used to sample Hydrocarbon. Gas analyzer was used to estimate Carbon monoxide (CO) level in ambient air.



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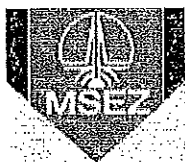
The Analytical techniques used for ambient air quality monitoring and its minimum detectable limit for each parameter is tabulated in Table 1.2.

Table - 1.2. Analytical Techniques Used for Ambient Air Quality Monitoring

2.1.2. Micro-Meteorology :

S.NO	PARAMETER	TECHNIQUE	MINIMUM DETECTABLE LIMIT
1	Particulate Matter PM ₁₀	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
2	Particulate Matter PM _{2.5}	Fine Particulate Sampler (Gravimetric method)	5.0 µg/m ³
3	Sulphur di Oxide	Modified West & Gaeke Method	5.0 µg/m ³
4	Nitrogen Oxide	Jacob and Hochheiser Method	5.0 µg/m ³
5	Carbon monoxide	Gas Analyser	0.1 ppm
6	Ammonia	Indophenol Method	5 µg/m ³
7	Ozone	KI Absorption and Colorimetric	5 µg/m ³
8	Benzene,	IS 5182: Pt 11: 2006	0.1 µg/m ³
9	Benzo[a]pyrene	IS 5182: Pt 12: 1991	0.1 ng/m ³
10	Lead,	IS 5182 P 22: 2004	0.1 µg/m ³
11	Arsenic, Nickel	IS 5182 P 22: 2004	1 ng/m ³

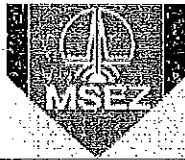
Wind Speed, Predominant Wind Direction, Temperature, Relative Humidity between 01-03-2017 and 31-03-2017 at MSEZ is given in Table 1.3.



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Table-1.3- Micro-Meteorology

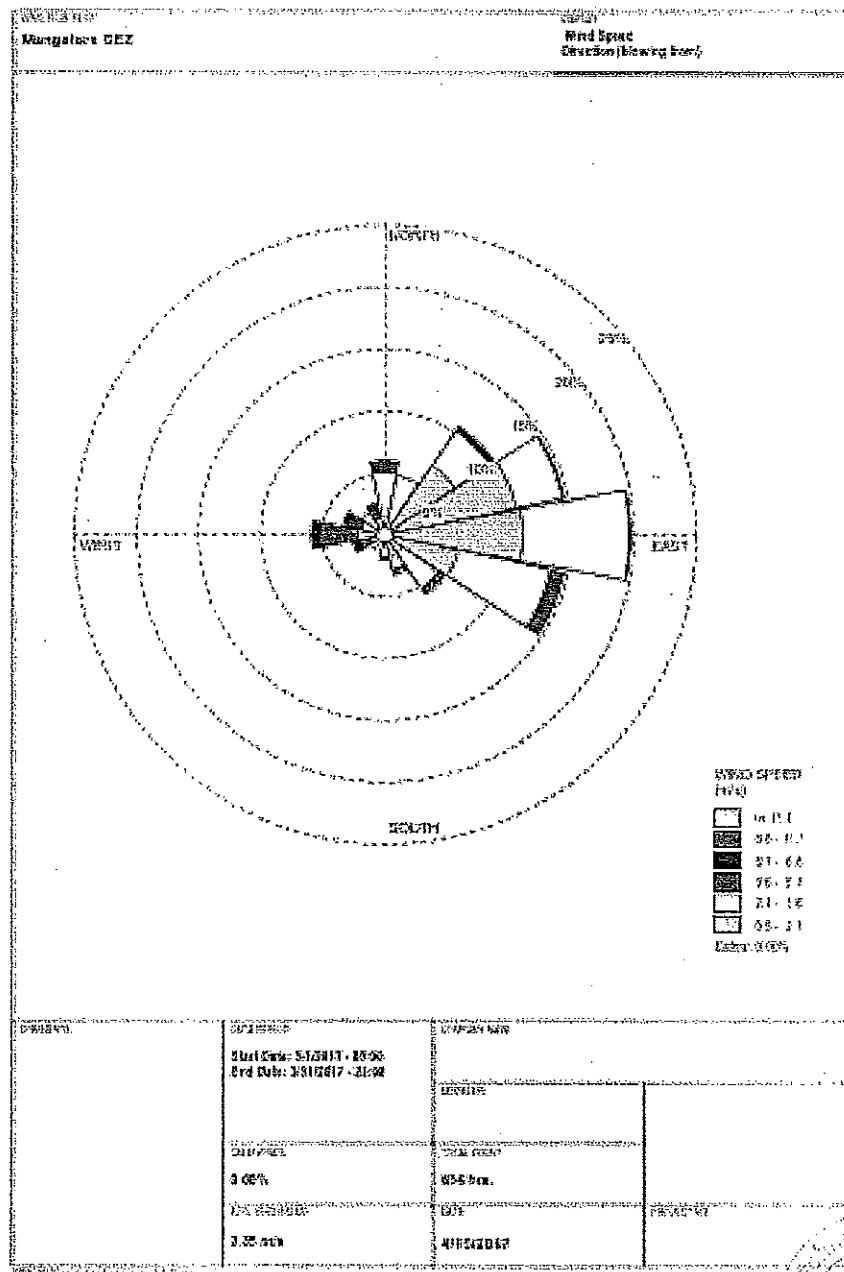
DATE	TEMPERATURE (°C)		RELATIVE HUMIDITY (%)		WIND SPEED (Km/hr)		PREDOMINANT WIND DIRECTION
	MIN	MAX	MIN	MAX	MIN	MAX	
01-03-2017	20	37	10	88	5.6	22.2	East Southeast
02-03-2017	20	34	27	83	5.6	18.5	West Northwest
03-03-2017	21	35	29	83	5.6	22.2	West Southwest
04-03-2017	23	34	38	94	5.6	18.5	East
05-03-2017	23	33	44	89	5.6	22.2	West
06-03-2017	23	33	42	83	5.6	18.5	West
07-03-2017	21	33	38	88	5.6	18.5	West Northwest
08-03-2017	22	33	30	83	5.6	18.5	West
09-03-2017	22	33	30	83	3.7	18.5	North Northeast
10-03-2017	23	33	25	89	5.6	22.2	West Northwest
11-03-2017	22	33	29	83	3.7	16.7	North
12-03-2017	22	33	29	33	5.6	24.1	North Northwest
13-03-2017	22	33	39	78	5.6	20.4	West
14-03-2017	23	34	40	83	5.6	22.2	East Northeast
15-03-2017	23	33	40	84	5.6	20.4	East Southeast
16-03-2017	24	31	50	84	5.6	20.4	North & Northeast
17-03-2017	23	33	37	89	5.6	22.2	East Northeast
18-03-2017	22	33	46	89	5.6	24.1	East Northeast
19-03-2017	23	33	46	89	5.6	22.2	West Southwest
20-03-2017	23	32	48	94	5.6	18.5	Northwest
21-03-2017	25	33	43	84	5.6	18.5	West Southwest
22-03-2017	23	34	50	89	5.6	22.2	East
23-03-2017	24	35	41	89	5.6	22.2	East Southeast
24-03-2017	21	24	34	89	5.6	24.1	East
25-03-2017	24	36	34	89	5.6	24.1	East Northeast
26-03-2017	25	34	41	89	5.6	18.5	East
27-03-2017	24	33	49	94	3.7	22.2	East Southeast
28-03-2017	25	34	43	94	5.6	20.4	East
29-03-2017	24	33	44	89	5.6	22.2	West
30-03-2017	24	33	47	89	5.6	18.5	East Southeast
31-03-2017	24	33	52	84	5.6	18.5	West



Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

2.1.3. Wind Rose:

The wind roses diagram for the month of March 2017 at Mangalore SEZ is depicted in Figure 1.1.





Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

2.1.4. AMBIENT AIR QUALITY RESULTS:

The 24 hourly average results of Ambient Air Quality Monitoring of two consecutive days for the month of **March 2017** are presented in Table-1.4(a), 1.4 (b), 1.4(c), 1.4(d), 1.4(e) and 1.4(f). The obtained results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for “Industrial, Rural, Residential and other areas”.

Table 1.4 (a)- AMBIENT AIR QUALITY REPORT

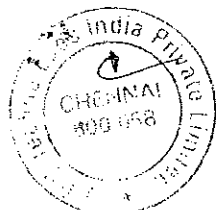
SAMPLE ID NO	ABC/MSEZ/36/AS/290317/A 2482-2483
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	29-03-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-04-2017

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
1	CETP Location	2	26.3	58.4	7.52	16.6	BDL (<0.1)	BDL (<5)	14.4
2	MSEZ-GSS 3	2	34.1	68.3	8.07	18.7	BDL (<0.1)	BDL (<5)	16.3
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochhelster	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,



[Signature]
14/04/17

AUTHORIZED SIGNATORY

QUALITY MANAGER



Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(b) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/36/AS/290317/A 2482-2483
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	29-03-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-04-2017

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic, ng/m ³	Nickel ng/m ³	
1	CETP Location	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.10
2	MSEZ-GSS 3	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.12
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

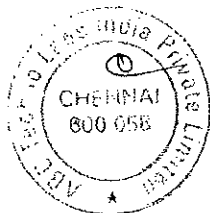
BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,


AUTHORIZED SIGNATORY 10/04/17

QUALITY MANAGER





Environmental Monitoring Report – Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(c) - AMBIENT AIR QUALITY REPORT

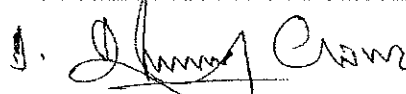
SAMPLE ID NO	ABC/MSEZ/36/AS/290317/A 2484
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	29-03-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-04-2017

S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
3	Baipe	2	21.6	47.6	5.11	13.2	BDL (<0.1)	BDL(<5)	13.8
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

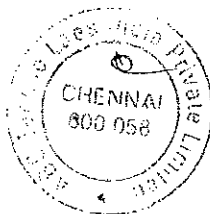
BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,


AUTHORIZED SIGNATORY

QUALITY MANAGER





Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(d) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/36/AS/290317/A 2484
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	29-03-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-04-2017

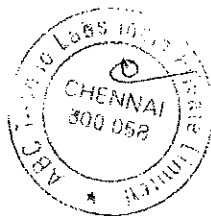
S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
3	Baipe	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,

[Signature]
AUTHORIZED SIGNATORY 10/04/17



QUALITY MANAGER



Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(e) - AMBIENT AIR QUALITY REPORT

SAMPLE ID NO	ABC/MSEZ/36/AS/310317/A 2485-2486
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	31-03-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-04-2017

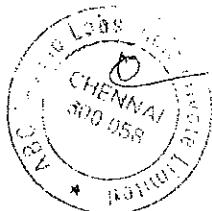
S.No	Location	Height GL(m)	Pollutant Concentration in $\mu\text{g}/\text{m}^3$						
			PM _{2.5}	PM ₁₀	SO ₂	NO _x	Pb	NH ₃	O ₃
4	120 ML, Water Reservoir	2	25.7	54.4	6.93	14.5	BDL (<0.1)	BDL (<5)	15.2
5	MSEZ, Permude	2	17	40.4	BDL (<5)	11.6	BDL (<0.1)	BDL (<5)	12.1
Test Method			EPA- 40 CFR Part 50	IS 5182 Pt.23 : 2006	West & Gaeke	Jacob & Hochheister	IS 5182 P 22	Nessler's Method	KI Absorption Method
CPCB STANDARDS									
Industrial /Residential / Rural and Other Area			60	100	80	80	1	400	100

BDL- Below Detection Limit

Contd.....

For ABC Techno Labs India Private Limited.,


AUTHORIZED SIGNATORY



QUALITY MANAGER



Environmental Monitoring Report - Mangalore Special Economic Zone Limited, Mangalore.

Table 1.4(f) - AMBIENT AIR QUALITY REPORT

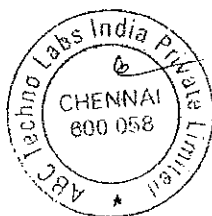
SAMPLE ID NO	ABC/MSEZ/36/AS/310317/A 2485-2486
SAMPLE DESCRIPTION	AMBIENT AIR QUALITY MONITORING.
SAMPLE DRAWN BY	ABC Techno Labs India Private Limited
NAME OF THE CLIENT	MANGALORE SPECIAL ECONOMIC ZONE LIMITED, MANGALORE
DATE SAMPLED	31-03-2017 (Monitoring duration 24hrs/day for 2 days)
REPORT DATE	10-04-2017

S.No	Location	Pollutant Concentration				CO, mg/m ³
		Benzene µg/m ³	Benzo[a]pyrene ng/m ³	Arsenic ng/m ³	Nickel ng/m ³	
4	120 ML, Water Reservoir	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	0.11
5	MSEZ, Permude	BDL (<0.01)	BDL (<0.1)	BDL (<1)	BDL (<1)	BDL(<0.1)
Test Method		IS 5182: Pt 11: 2006	IS 5182: Pt 12: 1991	IS 5182 P 22	IS 5182 P 22	Gas Analyser
CPCB STANDARDS						
Industrial /Residential / Rural and Other Area		5	1	6	20	2

BDL- Below Detection Limit

.....END OF REPORT.....

For ABC Techno Labs India Private Limited.,



[Signature]
AUTHORIZED SIGNATORY 05/04/17

QUALITY MANAGER



Environmental Monitoring Report – Mangalore Special Economic
Zone Limited, Mangalore.

ANNEXURE-I





NABL

National Accreditation Board for Testing and Calibration Laboratories

(An Autonomous Body under Department of Science & Technology, Govt. of India)

CERTIFICATE OF ACCREDITATION

ABC TECHNO LABS INDIA PRIVATE LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

No. 95, D/3, Industrial Estate, Ambattur, Chennai, Tamil Nadu

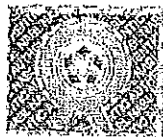
in the discipline of

CHEMICAL TESTING

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number T-1586

Issue Date 08/10/2015



Valid Until 07/10/2017

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

N. Venkateswaran
Program Manager

Anil Relia
Director

Prof. S. K. Joshi
Chairman



भारत का राजपत्र The Gazette of India

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 1573] नई दिल्ली, बुधवार, अगस्त 6, 2014/श्रावण 15, 1936
No.1573] NEW DELHI, WEDNESDAY, AUGUST 6, 2014/SHRAVANA 15, 1936

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 6 अगस्त, 2014

का.आ. 2003(अ).— केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियमावली, 1986 के नियम 10 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 की उप-धारा (1) के खंड (ख) और धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण और वन मंत्रालय की अधिसूचना संख्यांक का.आ.1174(अ), तारीख 18 जुलाई, 2007 में निम्नलिखित और संशोधन करती है, अर्थात् :—

2. उक्त अधिसूचना से उपाबद्ध सारणी में,

(क) क्रम संख्यांक 120 और उससे संबंधित प्रविष्टियों के पश्चात् निम्नलिखित क्रम संख्यांक और प्रविष्टियां अंतःस्थापित की जाएंगी अर्थात् :—

(1)	(2)	(3)	(4)
" 121	मैसर्स एबीसी टक्को लैब्स इंडिया प्राइवेट लिमिटेड, सं० 95-डी/3, इंडस्ट्रियल एस्टेट, अम्बतूर, चेन्नई - 600058 (तमिलनाडु)	(1) डॉ० जी सुंदर (2) श्री पी० सैथिल कुमार (3) श्री ए० रॉबसन चिन्नदुरै	06.08.2014 से 05.08.2019
122	मैसर्स एडवर्ड फुड रिसर्च एंड एनैलसिस सेन्टर, सुभाष नगर, पी०३ओ० नीलगंज बाजार, पी०एस० बारासात, जिला० नार्थ 24 पीजीएस, कोलकाता - 700121 (पश्चिम बंगाल)	(1) डॉ० देवोतम बनर्जी (2) श्री अलोके कुमार दत्ता (3) श्री सुरेश कुमार मंडल	06.08.2014 से 05.08.2019
123	मैसर्स कीवी ईको लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 19, एसवाई सं० 343, एलिप, इंडस्ट्रियल एस्टेट, गजुलरमरम गाँव, कुथुल्लपुर (एमडी), जिला रंगारेड्डी, (तेलंगाना)	(1) डॉ० रजनी कुमारी (2) श्री एन०पी० विश्वनाथ (3) डॉ० पी० सरिता	06.08.2014 से 05.08.2019
124	मैसर्स नवेगा इवायरो इंजीनियर्स एंड कन्सल्टेंट, रवि चैंबर्स, प्लॉट नं० 100/1, मकान सं० 1-96/100, कवुरि हिल्स, मधापुर, हैदराबाद - 500033 (तेलंगाना)	(1) श्री चेल्लि चिरंजीवी (2) श्री चलापथी कोदैअह गिरी (3) सुश्री अश्वनीदेवी कोमारी रेड्डी	06.08.2014 से 05.08.2019
125	मैसर्स कल्याणी लेबोरेटरीज प्राइवेट लिमिटेड, प्लॉट सं० 841 - ए, रसुलगढ़, भुवनेश्वर - 751010 (ओडिशा)	(1) डॉ० देबाशीष बिस्वाल (2) डॉ० रेखा नायक	06.08.2014 से

	(Telangana)	(3) Ms. Aswinidevi Kommireddy	
125	M/s. Kalyani Laboratories Private Limited, Plot No. 841-A, Rasulgarh Bhubaneswar-751010 (Odisha)	(1) Dr. Debasis Biswal (2) Dr. Rekha Nayak (3) Mr. Digambar Arukha	06.08.2014 to 05.08.2019
126	M/s. Bharuch Enviro Infrastructure Limited (BEIL), Analytical Research Laboratory, Plot No. 9701-16, GIDC, Ankleshwar, District-Bharuch - 393002 (Gujarat)	(1) Dr. Hitendra Kumar Jani (2) Mr. Narendra B. Patel (3) Mr. Dharmesh I. Patel	06.08.2014 to 05.08.2019. "

[F. No. Q.15018/23/2013-CPW]

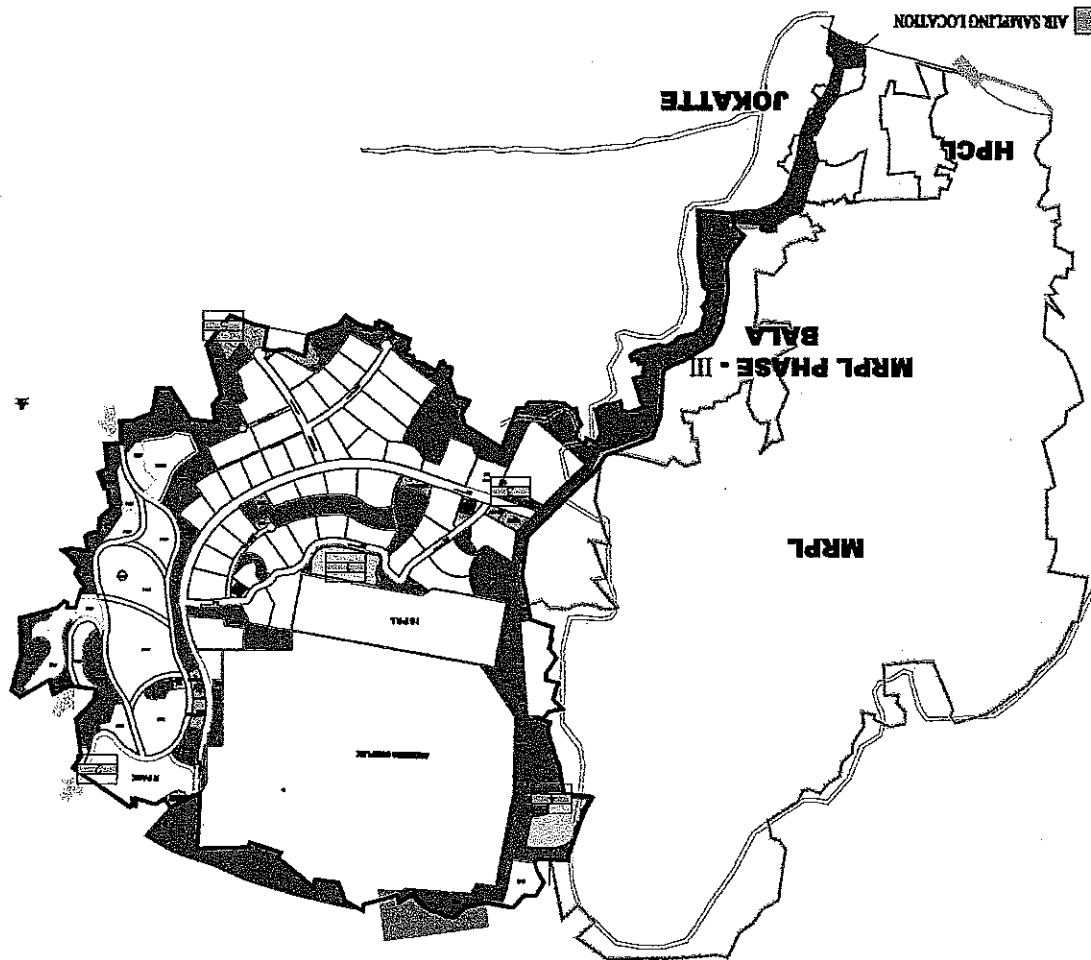
Dr. RASHID HASAN, Advisor

Note.—The principal notification was published in the Gazette of India, Extraordinary *vide* number S.O. 1174 (E), dated the 18th July, 2007 and subsequently amended *vide* notification numbers S.O. 1539 (E), dated the 13th September, 2007, S.O.1811(E), dated the 24th October, 2007, S.O.55(E), dated the 9th January, 2008, S.O.428(E), dated the 4th March, 2008, S.O.865(E) dated the 11th April, 2008, S.O.1894(E), dated the 31st July, 2008, S.O.2728(E), dated the 25th November, 2008, S.O.1356(E), dated the 27th May, 2009, S.O.1802(E), dated the 22nd July, 2009, S.O. 2399(E), dated the 18th September, 2009, S.O.3122(E), dated the 7th December, 2009, S.O.3123(E), dated the 7th December, 2009, No. S.O. 142(E), dated the 21st January, 2010, S.O.619(E), dated the 19th March, 2010, S.O.1662(E) dated the 13th July, 2010, S.O.2390(E), dated the 30th September, 2010, S.O.2904(E), dated the 8th December, 2010, S.O.181(E), dated the 28th January, 2011, S.O. 692(E), dated the 5th April, 2011, S.O.1537(E), dated the 6th July, 2011, S.O.1754(E), dated the 28th July, 2011, S.O. 2609 (E) dated the 22nd November, 2011, S.O.264 (E), dated the 13th February, 2012, S.O.1150(E), dated the 22nd May, 2012, S.O. 2039(E), dated the 5th September, 2012, S.O. 2802(E), dated the 27th November, 2012, S.O. 2850(E), dated the 7th December, 2012, S.O. 592 (E), dated the 8th March, 2013, S.O.945(E), dated the 8th April, 2013, S.O.2287(E), dated the 27th July, 2013, S.O.2288(E), dated the 27th July, 2013, S.O.3489(E) dated the 26th November, 2013, S.O.21(E), dated 3rd January, 2014, S.O.561(E), the 26th February, 2014, S.O.1205(E), dated the 5th May, 2014, S.O.1190(E), dated the 2nd May, 2014 and S.O.1680(E), dated the 2nd July, 2014.



ANNEXURE-II

MSEZ Phase I - ENVIRONMENT MONITORING LOCATIONS



Mangalore S R Z Ltd.
2nd Floor, MUDA Building
Uthara Kanya, Mangalore

F.No.21-383/2007-IA.III
Government of India
Ministry of Environment, Forest & Climate Change
(IA-III Section)

Indira Paryavaran Bhawan,
Jor Bagh Road
New Delhi - 110 003

Dated: 18th June, 2015

To
The Managing Director,
M/s Mangalore SEZ Ltd.,
No.16, Pranava Park, 3rd Floor,
Infantry Road, Bangalore - 560 001

Subject: Development of Multi Product Units as Mangalore SEZ is presently notified as Multi Product SEZ, Mangalore, Karnataka by M/s Mangalore SEZ Ltd. - Amendment to the Environmental Clearance dated 03.04.2008 - Reg.

Sir,

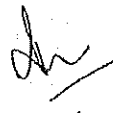
This has reference to your letter No. MSEZL/BG/06/EC/2014 dated 02.09.2014 and subsequent letter dated 12.11.2014 seeking amendment to the Environmental Clearance dated 03.04.2008.

2. M/s Mangalore SEZ Ltd. was accorded Environmental Clearance for the setting up of Phase-I of SEZ at Mangalore, Karnataka by the Ministry of Environment & Forest (MoEF) vide letter No. 21-383/2007-IA-III dated 03.04.2008. Two subsequent amendments were issued to the project vide even no. dated 13.07.2012 and 27.08.2014.

3. The Ministry of Environment, Forest & Climate Change has considered the application. It is noted that the present proposal is for amendment to the Environmental Clearance dated 03.04.2008 for setting up of Multi-Product Units along with Downstream Petroleum/Petrochemical units.

4. The project was examined by the Expert Appraisal Committee (EAC) in its 141st meeting held on 26th - 28th November, 2014. The project proponent informed that:

- i. The EAC in its meeting held in October, 2014 suggested to the Ministry to examine whether amendment to the EC can be considered after 5 years from the date of clearance.
- ii. The project has been commenced based on the clearance within 5 years from the date of issue.
- iii. The Olefin complex which was permitted in original clearance was shelved and clearance obtained for downstream/ petrochemical units on 13th July, 2012. Present proposal is for allowing Multi Product Units along with Petrochemical and Downstream Petrochemicals as MSEZ is currently notified as Multi Product SEZ by Ministry of Commerce & Industry (MoCI).



- iv. The total estimated pollution load will not increase beyond the earlier levels, however, the individual units proposed to come up within the SEZ will obtain separate EC.

5. EAC sought additional information such as comparative statement on the possible pollutants from the proposed activity with the already approved/operational components and compliance of conditions of the granted EC.

6. The proposal was again considered by the Expert Appraisal Committee (EAC), in its 146th meeting held on 9th – 11th March, 2015. The project proponent informed that:

- i. The Project Proponent (PP) has appointed M/s Hubert Enviro Care systems Pvt. Ltd., with NABET certificate No.NABET/ EIA/ 1013/ 041 to carry out the assessment of the list and limits of the pollutants from the various proposed Multi Product Units in MSEZ.
- ii. Based on the study by M/s Huber Enviro Care Systems, MSEZL has submitted the list and limits of possible pollutants from the Proposed Multi Product Units and six monthly statements related to compliances to EC conditions to Ministry vide MSEZL letter dated 21st January 2015.
- iii. Assessment of pollution loads from the proposed Multi Product Units were made for the following scenarios and a comparison with approved pollution loads was done
 - a. Scenario-1: considering 90% Petrochemical industries & 10% Downstream industries
 - b. Scenario-2: considering 70% Petrochemical & 30% Downstream industries
 - c. Scenario-3: considering 45% Petrochemical & 55% Downstream industries
- iv. The objective of the study is to determine the locations for maximum ground level concentrations (GLC) for various air pollutants which could potentially be generated from the proposed various industrial units in the Mangalore Special Economic Zone (MSEZ) through air dispersion modelling technique.
- v. The Air quality modelling for predicting GLC of various pollutants like SPM, SO₂ and NO_x was computed using AERMOD Modelling software system and AERMET software.
- vi. AERMOD Software Version 7.5.0 was used for air dispersion modelling and is applicable to a wide range of buoyant or neutrally buoyant emissions up to a range of 50 km. In addition to more straight forward cases, AERMOD is also suitable for complex terrain and urban dispersion scenarios.
- vii. The earlier approved MSEZ Phase-I project consists of three major units namely MRPL Phase-III refinery, Aromatic Complex and Olefin complex. Instead of olefin complex, Multiproduct industries are proposed which are considered as 3 scenarios mainly of Naphtha fuel consumption, LNG fuel consumption and Mix of Naphtha & LNG mixed fuel consumption respectively.

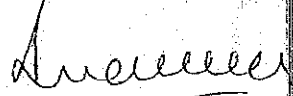
viii. Forecast from different scenarios of proposed Multi Product units is expected to be within the approved Environment Pollution loads of Olefin Complex.

7. The EAC, after deliberation, recommended the project for granting amendment to the Environmental Clearance dated 03.04.2008 for setting up of Multi-Product Units along with Downstream Petroleum/Petrochemical units. The Ministry of Environment, Forest & Climate Change hereby accords amendment to the Environmental Clearance dated 03.04.2008 for setting up of Multi-Product Units along with Downstream Petroleum/Petrochemical units, under the provisions of the EIA Notification, 2006 and amendments thereto and Circulars issued thereon and stipulates the following conditions:

- (i) The individual industries shall obtain prior Environmental Clearance as required under EIA Notification, 2006. The Project Proponent shall only allow the projects that have obtained the requisite Environmental Clearance.

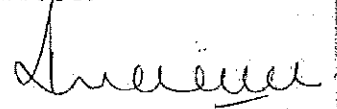
8. All the conditions stipulated in the Environmental Clearance vide letter no. 21-383/2007-IA-III dated 03.04.2008 and subsequent amendments vide letter even no. dated 13.07.2012 and 27.08.2014, shall remain unchanged.

Yours faithfully,


(Dr. Ranjini Warriar)
Director

Copy to:

- (1) The Secretary, Department of Environment, Government of Karnataka, Bangalore.
- (2) The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 110 032.
- (3) The Member Secretary, Karnataka State Pollution Control Board, "Parisara Bhavan, 4th & 5th Floor, # 49, Church Street, Bangalore-560 001.
- (4) Additional Principal CCF (C), Ministry of Environment, Forests and Climate Change, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F Wing, 17th Main Road, Koramangala II Block, Bangalore - 560034.
- (5) IA - Division, Monitoring Cell, MOEF, New Delhi - 110003.
- (6) Guard file.


(Dr. Ranjini Warriar)
Director

Item wise Details of CSR Activities and Proposed time bound Action Plan												
5% of Approved MSEZL Phase I project Cost (Rs 1527.5 Crores)- Rs 76.375 Crores												
S. No.	Description	Proposed CSR Expenses	Amount ind. In Project Cost	Expenses till Oct 2012-Feb 2014	Expenses till Feb March-2015	Expenses till March 2015-April-2016	Total expense till Date	Balance	2016-17	2017-18	2018-19	2019-2020
1	Water Supply Facilities											
a	RCC Over Head water tanks including main supply pipeline in Permude, Bajpe & Kulai Villages & 48 Acre,Drain work b/w HPCL colony & ODC road	2.00	1.00	0.99	0.145	0.110	2.10	0.000	-	-	-	-
b	Drinking Water facilities for neighboring Villages,6 acres & 9.58 Acres R&R Colony	1.50	2.20	0.26	0.04	0.00	1.50	0.00	-	-	-	-
c	Provision of Bore wells in Permude & Bajpe Villages	0.70		0.00	0.530	0.000	0.70	0.00	-	-	-	-
2	Sanitation facilities											
a	Development of Under Ground Drainage	4.09	4.09	1.08	0.00	0.13	3.81	0.28	0.21	0.060	0.010	-
b	Skid mounted STPs for Kulai & Bajpe Villages	0.60	0.60	0.00	0.235	0.077	0.48	0.12	0.07	0.05	-	-
3	Community facilities											
a	Creation of self employment facilities by provision of suitable shops in Kulai & Permude villages	0.11	0.11	0.00	0.00	0.00	0.11	0.00	-	-	-	-
b	Sponsoring of Community facilities including Primary Health Centre, Play ground, Primary School, Post Office, gravity yard, compound wall, temple,Drain work near Bajana mandir,jokatte, road repair near swayamlingeshwara temple bajpe etc etc	4.00	4.00	3.85	0.150	0.000	4.00	0.00	-	-	-	-
c	Any Miscellaneous Development works to Local communities	0.50	0.50	0.00	0.500	0.000	0.50	0.00	-	-	-	-
4	Educational Sponsorship											
a	Up gradation of Skills & Technical training facilities for local youth.	6.00	6.00	0.00	0.260	0.002	5.79	0.21	0.10	0.11	-	-
							0.00					
5	Bypass Road for connectivity between Surakhal to Bajpe for Public use.	36.98	36.98	7.26	0.00	0.00	25.10	11.88	4.00	4.00	3.88	-
6	Events Sponsorship											
a	Improvement of facilities for various Religious places for local communities and sponsoring traditional ceremonies of local communities.	2.00	1.37	0.00	0.530	0.000	1.90	0.10	0.05	0.05	-	-
b	Sponsoring of various local events in the major Educational Institutions, Cultural functions, Traditional events, Medical camps, Distribution of Plantations etc in nearby schools & Villages in and around Mangalore.	2.00	0.95	0.00	0.903	0.129	1.98	0.02	0.00	0.02	-	-
7	Sponsoring education and cultural activities to local fisherman Community	2.97	2.93	1.36	0.40	0.21	3.24	-0.27	0.00	0.00		
							0.00					
8	Development roads in surrounding villages & Panchayat roads in Kattel, Permude & Kuthethoor Villages and villages enroute River water Pipeline	12.93	2.79	9.54	0.402	0.085	12.82	0.11	0.11	-	-	-
Total		76.38	63.52	24.34	4.10	0.745	64.04	12.45	4.54	4.29	3.89	0.00



ओएनजीसी मंगलूर पेट्रोकेमिकल्स लिमिटेड

ONGC Mangalore Petrochemicals Limited

(a Subsidiary of Mangalore Refinery and Petrochemicals Ltd.)

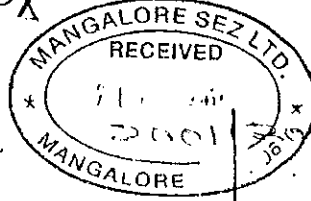
Address: Mangalore Petrochemicals Limited, Mangalore - 575 001, Karnataka, India.
Phone: 0824 2224000 Fax: 0824 2524000 Website: www.ompl.co.in

Ref.: OMPL/MoEF/SP/2017-18/

Date: 18.05.2017

To:

The Head- Technical
MSEZL, Mangalore



Dear Sir,

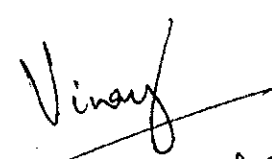
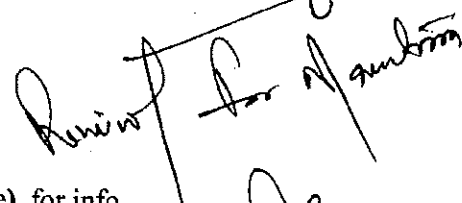
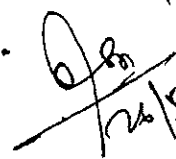
Sub: Submission of Half Yearly Compliance Reports of OMPL under Environmental Clearance for Phase-I, MSEZ project, (Including Aromatic Complex) for the period from October, 2016 to March, 2017

With reference to the above, please find enclosed herewith, Half Yearly Compliance Reports of OMPL, for compilation at your end and submission to the concerned Authority under intimation to our office.

Thanking You,


Shivaprakash
Manager (Env)

Cc:- 1. CEO, OMPL, for info.
2. Chief (Utilities & Infrastructure), for info.

Compliance to Environmental Clearance

issued by MoEF vide letter No. 21-383/2007-IA-III dated 3rd April, 2008

Sl. No.	Consent Condition	Compliance
2	The Mangalore Special Economic Zone (MSEZ) Phase-I involves a) MRPL Phase-III Refinery b) Aromatic Complex and e) Olefin Complex are proposed to be developed by the anchor promoter of MSEZ i.e M/s ONGC-MRPL in the already acquired land of about 1800 acres. The proposed MSEZ is planned adjacent to the existing MRPL refinery complex on north & eastern sides and proposed to connect NMPT with a dedicated 70/100 meter wide road-cum-pipeline (total approx. 15 km long) corridor for movement of cargo, crude and products between New Mangalore Port and MSEZ. The proposed layout has one main entry from the proposed Mangalore MSEZ corridor connected to the existing New Mangalore Port & National Highway (NH-17). The primary, Secondary and Tertiary roads are planned to give access to the Industries falling in the MSEZ Phase-I. Industrial Zones for locating the olefin complex, aromatic complex, D/S Petrochemicals, ISPRCL underground crude oil storage and land for MRPL Phase-III Refinery are effectively placed in the central and southwest part of the proposed MSEZ premises. Further, the SEZ will have necessary road alignment between NMPT, SEZ and network of roads within, including service roads for inspection of pipelines on elevated corridors. The pipelines shall be built at elevated corridor locations. Pipelines will be laid on sleepers and pipe racks with sufficient ground clearance. The preferred corridor alignment avoids Coastal Regulation Zone -I & II portion along the Gurupur River and it will have elevated roadway over structures (railways / minor bridges) and reinforced earth walls. However the corridor passes over CRZ-III zone along the banks of the Kudumbur rivulet (South of ELF gas) in the form of a bridge. The proposed Industrial units in MSEZ phase -1	Info.
II	To meet the objective of producing paraxylene, aromatic complex has been considered. To maximize paraxylene, broad cut heavy naptha streams are selected as feedstock to NHT/CCR. Aromatics precursors to new reformer include constituents that produce toluene, C8-aromatics mix & C9+ aromatics. Whereas a xylene isomerization unit has been considered to convert other C8 - aromatics into paraxylene, a transalkylation & disproportionation (TADP) unit has also been included to convert toluene & C9+ aromatics into C8-aromatics mix. simulated moving bed adsorption for paraxylene recovery (PAREX) has been incorporated.	Info.
1	NHT/CCR : 0.95 MMTPA	Complied
2	Isomerization Unit (ISOMER) : 3.16 MMTPA	Complied
3	Transalkylation & Disproportionation Unit (TADP) :1.71 MMTPA	Complied
4	Paraxylene Recovery (PXREC) :4.07 MMTPA	Complied
5	Xylene Fractionation Unit : 4.64 MMTPA	Complied
6	Aromatics Extraction Unit : 0.79 MMTPA	Complied
7	Benzene Toluene Fractionation Unit : 2.2 MMTPA	Complied
8	Captive Power Plant (CPP) : 60 MW	Please note that normal requirement will be in the range of 50- 55 MW, but Gas Turbine is more prone to Maintenance requirements & hence to ensure continuous supply of power to the plant, installed capacity is 72 MW
3. A Specific Conditions:-		



1	No objection Certificate from the Karnataka State Pollution Control Board shall be obtained before initiating the project	Please note that MZEZ has obtained Consent for Establishment (CFE) from the Karnataka State Pollution Control Board (KSPCB) letter No. CFE-CELL/MSEZ/EIA-574/08/20 dated 30th April, 2008 And OMPL on its part has obtained CFE from the KSPCB, vide letter No. PCB/559/CFE/08/252 dated 12th August, 2008 & Extension of validity of CFE vide letter No. PCB/HPI/245/2013-14/1002 dated 5th October, 2013 upto 10.8.2014 from KSPCB, Bangalore
2	The MSEZ project shall be restricted to the Phase -I of the project, proposed over 1,800 acres. The phase-II of the project shall be considered by Ministry of Environment & Forests only after receipt of all requisite documents\ information as laid down in the Environment Impact Assessment Notification, 2006 and Coastal Regulation Zone Notification, 1991 as applicable	NA
3	All development in the Coastal Regulation Zone area shall be in accordance with coastal regulation zone notification, 1991. No destruction of mangroves shall be undertaken except while undertaking the permissible activities in the coastal regulation zone-I areas	NA
4	The project proponent shall not take up any activity in 875 acres of coastal regulation zone land, other than those permissible under the coastal regulation zone notification 1991 such as pipeline corridors, pipelines roads on stilts	NA
5	With regard to the containing the suspected contamination of the groundwater near Athurkodi area of Kuthethoor village, MRPL has given an undertaking vide letter dated 19.3.2008 which is as follows:-	NA
6	The project proponent shall obtain a report from the wildlife department with regard to existence of wildlife in the proposed site as claimed by the public before implementing the project	Please note report from Wildlife Department was submitted to the MoEF by MSEZ
7	The R & R package shall be strictly in accordance with the laid down norms of the state Government	NA. However, OMPL has recruited around 300 displaced people and provided employments, till date (30.11.2015)
8	A marine Environment Impact Assessment and Risk Assessment along with the Disaster Management Plan shall be prepared for the outfall facilities proposed in the Coastal Regulation Zone and the marine areas	NA
9	Project proponent shall put up a dedicated website and a display panel to inform the public regarding the Ambient Air Quality along with SO ₂ , NO _x and other parameters as prescribed by central Pollution Control Board (CPCB)	OMPL has a dedicated website 'www.ompl.co.in', wherein Environment Monitoring Parameters are uploaded and made available to the public
10	The gaseous emissions (SO ₂ , NO _x , HC, VOC and Benzene) from various process units shall conform to the standards prescribed by the concerned State Pollution Control Board. All the measures detailed in the EMP and response to the Public Hearing shall be taken to control the point / stack and fugitive gaseous emissions from the proposed facilities, processes and storage units etc, for ensuring that the ambient air quality around the Refinery due to the expansion is maintained at the predicted 24 hourly average maximum concentration	Please note as required in CFE, online Monitoring Instruments of relevant parameters are installed for stacks and the readings are made available at DCS, for continuous monitoring. Corrective action will be taken for any deviation, however, plant will be run as per Standard Operating Process (SOP), prepared considering, Standards prescribed by the Regulatory Body. Further Online detectors are available for HC, benzene, and to take up 'Containment work' and 'Repair work' on detection of leak, on priority basis.
11	The emission levels of the other pollutants shall also remain within the permissible levels	Please note apart from the relevant parameters as from SI. No. '10', online instruments such as for CO & SPM are also installed to stacks, so as to ensure pollutants within the permissible limits
12	The industrial units in the SEZ and the associated facilities shall be strictly in accordance with the norms laid down by the Karnataka State Government and CPCB	Agreed

13	The project proponent shall ensure that the greenery of the area is maintained. Further, 33 % of the project area shall be dedicated for green belt development of which atleast 5 % shall be for mangrove afforestation. The local Forest Department shall be associated for this purpose and requisite budget earmarked	Please note that OMPL has reserved 145.86 Acres for Green Belt Development which comes to around 33% of total land area of Aromatic complex. Please note, Green Belt area is earmarked in the plant layout. Forest Dept. is lined up for this purpose. The species selected for Green Belt are having good amount of 'Crown Width' as recommended in EIA by NEERI, that was subsequently approved by MoEF while giving Environment Clearance. Budget earmarked is about RS 5 crores. Development & Maintenance phase of GBD is approximately 3 years. And, OMPL has floated tender and is in the process of finalizing GBD activity, following discussion with Forest Officer. Some of the species recommended in NEERI are, <i>Acacia ferruginea</i> DC (Mimosaceae), <i>Acacia nilotica</i>* (Mimosaceae), <i>Ailanthus excelsa</i>* (Simaroubiaceae), <i>Albizia amara</i> (Mimosaceae) <i>Albizia labbeck</i>* (Mimosaceae), <i>Albizia doratissima</i> (Mimosaceae), <i>Alstonia scholaris</i>* (Apocynaceae) <i>Annogeissus latifolia</i> (Combretaceae), <i>Artocarpus integrifolia</i> (Moraceae), <i>Artocarpus lacucha</i> (Moraceae), <i>Azadirachta indica</i> (Meliaceae), <i>Bauhinia malabarica</i> (Fabaceae), <i>Bauhinia racemosa</i>* (Caesalpiniaceae), <i>Butea monosperma</i> (Fabaceae), <i>Caesalpinia pulcherrima</i>* (Caesalpiniaceae), <i>Calophyllum tomentosum</i>, <i>Cane</i> sp. (Palmae), <i>Canna orientalis</i> (Cannaceae), <i>Cassia fistula</i> (Caesalpiniaceae), <i>Cassia siamea</i> (Caesalpiniaceae), <i>Casuarina equisetifolia</i>
14	The project proponent shall ensure that the water requirement of the Mangalore city does not get affected due to the SEZ operation. Adequate provision shall be made in the reservoirs to provide for the water requirement of the cities	Please note, OMPL, on its part has taken up following measures to conserve water. 1. UF RO plant is specifically incorporated to recycle ~ 70% of treated water. 2. The complex Cooling Tower system is designed to use STP water, as make up from MSEZ, apart from the river water. 3. Chemical Treatment Program with Modern Technology has been institutionalised to save water in Cooling Tower Plant 4. Condensate Recovery unit is being installed to conserve water and resources such as chemicals 5. OMPL has under taken rain water harvesting measures for its buildings 6. Further, treated CRWS will be explored for usage into CT system Please note, the plant started its operation in the month of Oct, 14.
15	The project proponent shall ensure that during construction and operation of the project the traffic in the city is not affected	Please note OMPL site is at a distance of ~ 15 KM from the Highway. Hence inconvenience to traffic movement in the city doesn't arise

16	All precautions of the highest standards shall be incorporated in the design of the project to ensure that there is no chance of emission/leakage of hazardous chemicals including Benzene. Detailed monitoring programme shall be designed and the information provided to the public through display and dedicated website by means of online monitoring	Please note following measures are taken to have a check on Emission/ leakage as, <i>*All heaters are installed with LOW NOx Burners</i> <i>*Heaters stacks are fitted with following Online analyzers</i> Carbon monoxide. Sulphur Dioxide Nitrogen Oxides Suspended Particulate matters (SPM) <i>*Benzene Tanks – Internal Floating Roof Tank with Nitrogen Blanket</i> <i>*Paraffinic Raffinate (Volatile material) designed with Vapor recovery unit to recover vapor</i> <i>*Dispersion Model Analysis was done by Bell Energy India and following Online detectors are being installed</i> Benzene Detectors 27 H2S Detector 21 Hydrocarbon Detectors 193 Hydrogen Detectors 68 Fire Detectors (In case of Fire) 26 <i>*Sample Points are closed system to stop local venting and draining</i> <i>*Hydrocarbons drains are connected to closed Blow down system to recover hydrocarbon.</i> <i>* OMPL has a dedicated website 'www.ompl.co.in', wherein Environment Monitoring Parameters are periodically uploaded and available to the public</i>
17	Low sulphur internal fuel oil and fuel gas shall be fired in process heaters and boilers	OMPL has gone for Low Sulphur fuels with 'S' specification for both LSHS, HSD & FG fuels. HSD with Euro-III specification i.e 50 ppm is being used in Gas Turbine Generators of Captive Power Plant as against design of 0.25 wt % 'S'. Please note 'SO₂' emission from EIA report for the project is estimated as 13.68 TPD. Avg SO_x emission per day is ~ 3.5 <u>Kg/day</u>
18	Quarterly monitoring of fugitive emissions shall be carried out by Fugitive Emission Detectors (GMI) leak Surveyor. Guidelines of CPCB will be followed for monitoring fugitive emissions. For control of fugitive emissions, all unsaturated hydrocarbons shall be routed to the flare system. The flare system shall be designed for smokeless burning. Flare gas recovery system shall be installed for reduction of Hydrocarbon loss and emission of VOCs, NO _x , N ₂ O, SO _x & CO ₂ to the environment	Please note Quarterly monitoring of fugitive emissions will be done after commissioning & stabilization of the plant. However, Dispersion Model Analysis was done by Bell Energy India and following Online detectors are installed Benzene Detectors 27 Hydrocarbon Detectors 193 <i>*Flare system is designed for smokeless burning by M/s AirOil</i>
19	Regular Ambient Air Quality Monitoring shall be carried out. The Location and results of existing monitoring stations shall be reviewed in consultation with the concerned State Pollution Control Board based on the occurrence of maximum ground level concentration and downwind direction of wind. Additional stations shall be set up, if required. It shall be ensured that at least one monitoring station is set up in up-wind & in Down - wind direction along with those in other directions	AAQM monitoring is carried out as per NAAQM rules, 2009 at 5 locations (since Jan, 2015), at a frequency of weekly twice, at a location, all the year round and Monitoring is done for all parameters as per the rules, as suggested by KSPCB & Monthly Reports are submitted to KSPCB. The values are found to be within the NAAQM Norms.
20	on-line data for air emissions shall be transferred to the CPCB and SPCB regularly. The Instruments used for ambient air quality monitoring shall be calibrated regularly. The monitoring protocol shall ensure continuous monitoring of all the parameters	The emissions values are continuously measured & monitored to ensure, well within the limits set by the Regulatory Body. OMPL has dedicated Instrumentation Team and will establish calibration of Instruments

21	The practise of acoustic plant design shall be adopted to limit noise exposure for personnel to an 8 hour time weighted average of 90 db(A)	<i>Please note, as a first step, identified the sources of noise & then taken up Attenuation measures, at the design stage</i> <i>Sources: Pumps, Compressors & Turbines.</i> <i>Attenuation measures: It is ensured at design stage that Noise level at a distance of 1 mt from the equipment is < 90 db (A) & at plant boundry, it is less than 75 dB in daytime & 70 dB in night time as per the Legal requirement.</i>
22	All the pumps and other equipments, where there is a likihood of HC leakages, shall be provided with appropriate indicators and detectors. Provision for immediate isolation of such equipment, in case of a leakage shall also be made. The company shall adopt leak detection and repair (LDAR) programme for quantification and control of fugitive emissions	<i>Please note OMPL, as a first step in leak prevention, hired Bell Energy India, who carried out Dispersion Model Analysis and recommended following Online detectors which are installed at site such as,</i> <i>Benzene Detectors 27 nos</i> <i>Hydrocarbon Detectors 193 nos</i> <i>* Incase of leak, the first step is to contain the leak & simultaneously leak arresting work is carried out</i> <i>* We are evaluating the process of Instituting LDAR program</i>
23	The product loading gantry shall be connected to the product sphere in closed circuit through the vapor arm connected to the tanker. Data on fugitive emissions shall be regularly monitored and records shall be maintained	NA
24	The company shall ensure that no halogenated organic is sent to the flares. If any of the halogenated organic are present, then the respective streams may be incinerated, If there are no technically feasible or economically viable reduction / recovery options. Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator	<i>Halogenated organic is used only for chloride dispersion on platinum catalyst and consumed. Halogenated compound is not sent to Flare Stack Chimney. Used catalyst will be disposed to KSPCB authorised recyclers</i>
25	The new standards/ norms that are being proposed by the CPCB for Petrochemical Plants and Refineries shall be applicable for the proposed expansion unit. The company shall conform to the process vent standards for organic chemicals including non-VOCs and all possible VOCs i.e TOCs standards and process vent standards for top priority chemicals. Regular monitoring will be carried out for VOC and HC and on line monitors for VOC measurements may be installed	<i>The new standards/ norms that are being proposed by the CPCB for Petrochemical Plants and Refineries are complied.</i> <i>1. Online Monitoring system is provided to heater stacks</i> <i>2. Online Detectors of HC, Benzene are installed, to check any fugitive emissions</i> <i>3. The process vents are connected to flares through safety pop-up valves</i> <i>4.HC sampling points closed loop systems</i> <i>5. Storage of HC is in Floating roof tanks (as applicable) with double mechanical seals and Nitrogen blanketing</i>
26	Regular monitoring of relevant parameters for the under ground water in the surrounding areas shall be undertaken and the results shall be submitted to the relevant States Pollution Control Board	<i>Please note Regular monitoring of groundwater is carried out at four locations (since Jan, 2015) surrounding the plant as advised by KSPCB & the reports are submitted to KSPCB. The frequency of sampling is once in a month, all the year round, at a location & compared with WHO Drinking Water Standards/ IS 10500 Norms. The values are found to be within Drinking water standards/ Norms.</i>
27	Solid Waste generated as pretreater and Reformer catalysts, Sulphur guard absorbent and alumina Balls shall be disposed off as per the authorization from the State Pollution Control Board	<i>Please note that the Industry has in place proper Solid Waste handling system to collect, treat and dispose off all solid waste generated from the process including Hazardous wastes and the basic Engineering by KSPCB approved consultant M/s Ramky Enviro Engineers India Ltd, Hyderabad. Please note OMPL has obtained 'Authorization under Handling Hazardous Wastes' and will be disposed accordingly. Temporary Waste Storage facility is constructed of about ~ 2000 m2 area with impervious surface, closed shed and leachate collection (for any washings) & transfer (to ETP) system</i>

28	Oily sludge shall be sent to melting pit treatment for recovery of oil. The recovered oil shall be recycled into the refinery system. The residual sludge will be stored in HDPE lined pit for disposal after treatment. The sludge shall be incinerated in the premises only	No oily sludge is handled in OMPL
29	The company shall strictly follow all the recommendations mentioned in the charter on Corporate Responsibility for Environmental Protection (CREP)	Please refer compliance details for CREP enclosed herewith (ref.: Annexure- 1)
30	The company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water	Rain water harvesting system is implemented for rooftop buildings. During initial project stage, all surface rain water was collected into open wells and the same was utilised for construction purpose
31	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act	Complied and is ongoing process
32	The company shall implement all the recommendations made in the Environmental Impact Assessment / EMP report and risk assessment report	Complied
33	The company will undertake all relevant measures, as indicated during the Public Hearing for improving the socio-economic conditions of the surrounding area	Complied
34	With regard to R & R colony the project proponent shall obtain all requisite clearances as prescribed by the concerned agencies	NA
B General Conditions :		
1	The project authorities shall strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government	KSPCB stipulations will be adhered to
2	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests	Agreed
3	At no time, the emissions shall be allowed to go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved	Agreed
4	Adequate number of influent and effluent quality monitoring stations shall be set up in consultation with the SPCB. Regular monitoring shall be carried out for relevant parameters for both surface and ground water	Influent parameters & Effluent parameters will be measured through online measuring instruments installed at Inlet & outlet of ETP. They include TOC, pH, COD, Oil, DO, Phenol, Benzene. Further regular Surface & Ground water is being monitored as advised by KSPCB. The Ground Water is monitored once in month, at four locations, for all the year round and compared with WHO Drinking Water Standards.
5	Industrial Waste water shall be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose	Industrial Waste Water is collected in Slop Tank and then initially treated in ETP plant to bring down Aromatics to < 20 ppm & Benzene to < 10 ppm, through Distillation & Adsorption methodology. It is treated in ETP comprising of Physical, Chemical, Biological & Tertiary Treatment Section. About 70 % of treated water will be recycled & the remaining, after ensuring Conformance to MINAS standards, will be disposed to sea through MSEZ CETP collection & Disposal system. From the 70 % recycle stream partly will be taken up as make up water for Cooling Tower applications & the remaining will be utilised in Green Belt Development.

6	The overall noise levels in and around the plant area shall be limited within the prescribed standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA rules, 1989 viz. 75 dBA (Day time) and 70 dBA (night time)	<u>Sources:</u> Pumps, Compressors & Turbines. <u>Attenuation measures:</u> It is ensured at design stage that Noise level at a distance of 1 mt from the equipment is < 90 db (A) by providing acoustic hoods, silencers, enclosures etc. as appropriate & at plant boundary is less than 75 dB in daytime & 70 dB in night time as per the Legal requirement
7	The project authorities shall strictly comply with the provisions made in manufacture, storage and import of Hazardous chemicals rules 1989 as amended in 2000 for handling of hazardous chemicals etc.. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the expansion project. Requisite On-site and Off - site Disaster Management Plans will be prepared and implemented	Please note that necessary license/ clearance from statutory agencies have been taken such as Approval from Petroleum and Explosives Safety Organization, dated 16th June 2011, Clearance from Department of Factories of Karnataka, dated 19th June 2010. Requisite On-site and Off - site Disaster Management Plans will be adhered to as per Factories Act
8	Authorization from the State Pollution Control Board must be obtained for collections/ treatment/ storage/ disposal of Hazardous wastes	Please note OMPL has obtained 'Authorization under Handling Hazardous Wastes' and will be disposed accordingly
9	The project authorities shall provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes	Agreed. Further the Amount spent/budgeted on Environment Management requirement is RS 182 crores
10	The stipulated conditions shall be monitored by the concerned Regional office of this Ministry / Central Pollution Control Board / State Pollution Control Board. A six monthly compliance report and the monitored data shall be submitted to them regularly. It shall also be displayed on the website of the company	Please note biannually compliance report is submitted on regular basis through MSEZ. The Environment monitored data are being uploaded in the OMPL website
11	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at website of the MoEF at http://www.envfor.nic.in . This should be advertised within seven days from the date of issue of clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the concerned Regional office of this Ministry	Please note, the same was ensured by MSEZ
12	The date of Financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work as well as the commissioning of the project shall be informed to the Ministry and its Regional Office	NA
13	Proper House keeping and adequate occupational health programmes shall be taken up. Regular Occupational Health Surveillance Programme for the relevant diseases shall be carried out and the records shall be maintained properly for atleast 30-40 years. Sufficient preventive measures shall be adopted to avoid direct exposure to emission and other hydrocarbons etc..	Agreed
14	A separate environment management cell with full fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a Senior Executive	Complied
15	The Ministry may revoke or suspend the clearance, if implementation of any of the above condition is not satisfactory	info.

16	The Ministry reserves the right to stipulate additional conditions if found necessary. The company shall implement these conditions in a time bound manner	info.
17	The above conditions will be enforced, inter - alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air Act, 1981, The Environment Act, 1986, The Public Liability Insurance Act, 1991, Hazardous Waste Rules 1989 and Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 along with their Amendments and Rules	info.

Compliance to Charter on Corporate Responsibility for Environmental Protection (CREP)

Sl. No.	Conditions	Compliance
1	Adoption of state-of-art technology State of Art technology will be adopted for both process technology as well sound engineering practices required for control of emission, at the stage of design itself in case of new plants	Please note Process technology is licensed from renowned expert in the field: UOP, America for NHT platforming units, High severity Cyclomax CCR unit for catalyst regeneration, Energy efficient column design for Xylene & BTX units, ISOMER & TADP units for getting high yield of paraxylene per unit of Naptha processed & an efficient, selective PAREX process for paraxylene recovery to get high purity product are considered in the design stage. Also Low NOx burner design for heaters, Low sulphur fuel including provision for usage of Natural Gas are considered.
2	Management of storm water For the storm water generated from process area and tank farm area during initial hours of rain. An arrangement will be made for collection and oil separation including further treatment as required. Such arrangement will include provision for buffer tank (holding tank) and monitoring of effluent quality. This will be accomplished by June 2003.	Please note OMPL has commissioned 2 numbers of collection tanks: one at ISBL area with capacity of 12,000 m ³ & the other at OSBL area with 6000 m ³ capacity for collection of initial hours of rain from process area & tank farm area respectively. This is then treated in ETP with an treatment capacity of 150 m ³ /hr. The treatment section includes Physical treatment, chemical, Biological & Tertiary treatment sections
3	Effective detoxification and waste water treatment scheme In order to control high COD and persistent organic pollution including toxic constituents, the industry will select appropriate unit operations for pre-treatment of effluent within inside battery limit (ISBL) before sending to the biological treatment system(BTS) for better functioning of ETPs. Action plan for the same will be submitted within 6 months and implemented within one year (March,2004)	OMPL has installed Effluent Pre-Treatment Plant at a cost of RS 11.39 crores. The units consists of Distillation column & carbon adsorption beds to remove CODs, so that effluent entering BTS will be having Max. upto 20 ppm of aromatics
4	Control of emission from combustion The industry will submit an action plan within six months for improving thermal efficiency and control of Nox	OMPL has installed Low Nox burners for its heaters & flue gas is let out just above H2SO4 dew point after heating the incoming fuel, air or Steam production in HRSG as the case may be, for improving thermal inspection
5	Proper functioning of point source emission control systems The industry will make efforts for proper operation of pollution control system (mostly scrubbers) and attainment of desired efficiency within six months. The will include backup of power supply to the control equipment and arrangement for frequent sampling and analysis of all critical pollution in the tail gases	N/A
6	Leak detection and repair (LDAR) programme As a good operating, the Industry will adopt periodically leak detection and repair (LDAR) programme to check fugitive emissions within six months. The frequency of the programme will be proportionate to the risk potential of carrying fluid. Based on leak detection as per LDAR programme, action will be taken to eliminate fugitive emissions, this will be a continuous activity.	LDAR program is ongoing process since July, 2016. Please note OMPL as first step in leak prevention, hired Bell Energy India, who carried out Dispersion Model Analysis and recommended following Online detectors which are already installed at site such as, Benzene Detectors 27 nos, Hydrocarbon Detectors 193 nos
7	Handling of halogenated organics The industry will submit an action plan within 6 months to ensure that no halogenated organics is sent to the flares in order to avoid formation of persistent organic pollutants. All HAPs had halogenated organics will be routed to the incineration system having end-on pollution control facility.	Halogenated organic is used only for chloride dispersion on platinum catalyst and consumed. Used catalyst will be disposed to KSPCB authorised recyclers
8	Control of fugitive emissions of carcinogenic compounds Fugitive emission of carcinogenic compounds (e.g Benzene) will be controlled by closed vapor collection and recovery system. Measures will be taken to monitor health of the workers	Please note double mechanical seal is provided for the purpose & periodical health check up is being carried out as per the legal requirement through Occupational Health Centre, stagewise
9	Management of solid waste Proper facilities will be provided for handling and storage of hazardous waste with manifest system in case transported to other places. For incinerable waste, properly designed incinerator will be installed within the premises or as a common facility. The non-incinerable hazardous waste should be disposed of in a secure-land fill.	OMPL has installed Solid Waste Management facility at an estimated cost of RS 3.73 crore for handling and storage of hazardous waste until disposal & manifest system will be followed during disposal of Hazardous Wastes. Temporary Waste Storage facility is constructed of about ~ 2000 m ² area with impervious surface, closed shed and leachate collection (for any washings) & transfer (to ETP) system

10	Proper operation of Incinerator Industry will check the design and will adopt sound engineering practices for proper operation of incinerators. Continuous monitoring will be done for operational parameters and specific parameters in tail gas to ensure the efficient functioning. This will be implemented within 3 months.	NA
11	Optimising the Inventory of hazardous chemicals Efforts will be made to optimize the inventory, particularly of hazardous chemicals. Such information will be made available to the Regulatory Agencies (SBCBs) Inspector of Factory & District Collector	Agreed. Further Petroleum & Explosives Safety Organization (PESO) approvals are being taken for bulk storage of Hazardous chemicals (Petroleum) wherein requirements of the MSIHC Rules, 1989 is considered
12	Self-regulation by industry through monitoring and environmental auditing Industry will go for self-assessment and regulation by conducting environmental auditing regularly, besides having regular monitoring of pollutants in air emission, liquid effluent and receiving environment.	Environment Monitoring is ongoing process
13	Organizational restructuring and accreditation of environmental manager of industry. For self-evaluation, organizational restructuring will be done and the environmental manager of the industry will be accredited to bring professionalism in environmental management.	Agreed



ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery & Petrochemicals Ltd.)

Mangalore Special Economic Zone, Permude, Mangaluru - 574 509

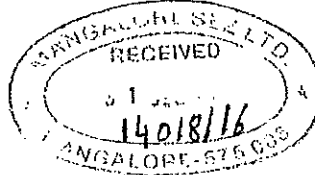
CIN : U40107KA2006PLC041258 Website : www.ompl.co.in

Phone : +91-824 2881518 Fax +91-824 2881539

REF: OMPL/PCB/SP/2016-17/

Date: 15/12/2016

To:
The Environmental Officer
Regional Office
KSPCB
Baikampady, Mangalore-11



Vinay Kumar
Chase / Discus for any variance
Q/A
21/12/16

Dear Sir,

Sub: Submission of Environmental Monitoring Report for the Month of November 2016,
Production Report for November, 2016 & Returns Regarding Water Consumed for the
Month of November 2016

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, Production Reports & Returns Regarding Water Consumed in the Month of November 2016 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Stack Monitoring Report as Annexure-D
5. Treated Effluent Analysis Report - E
6. Returns Regarding Water Consumed, for the Month of November 2016, as Annexure-F
7. Production Report as Annexure-G

Thanking You,

(only)
Sirno MP3
Case no 1

Shivaprakash
Manager (Env)

CC: Member Secretary, KSPCB, Bangalore

CC: Head (Technical), MSEZ

CC: CEO, OMPL for info

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL East Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of November-2016
(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/11/

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		2/11/2016	3/11/2016	7/11/2016	8/11/2016	14/11/2016	15/11/2016	21/11/2016	22/11/2016
	CODE	8614	8685	8927	8981	9150	9281	9527	9705
	LIMITS								
PM ₁₀ (µg/m ³)	100	55	67	60	58	68	65	62	56
PM _{2.5} (µg/m ³)	60	14	21	18	15	18	20	16	14
SO ₂ (µg/m ³)	80	2.16	2.51	2.77	2.38	3.00	2.67	2.36	2.29
NO ₂ (µg/m ³)	80	3.76	3.38	3.54	3.67	3.11	3.72	3.37	3.47
CO (mg/m ³)	4	0.76	0.81	0.80	0.74	0.82	0.80	0.77	0.77
O ₃ (µg/m ³)	180	0.83	0.94	0.94	0.86	0.94	0.95	0.81	0.82


Authorized Signatory

Test Report

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		2/11/2016	3/11/2016	7/11/2016	8/11/2016	14/11/2016	15/11/2016	21/11/2016	22/11/2016
	CODE	8614	8685	8927	8981	9150	9281	9527	9705
	LIMITS								
NH ₃ (µg/m ³)	400	1.84	1.28	1.48	1.59	1.74	1.38	1.38	1.83
Lead (µg/m ³)	1	0.013	0.004	0.009	0.008	0.004	0.004	0.010	0.018
Arsenic (ng/m ³)	6	0.84	0.62	1.20	0.67	0.94	BDL	0.73	1.70
Nickel (ng/m ³)	20	1.14	1.65	1.01	0.11	1.91	2.16	1.86	1.24
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Shantigudda
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of November-2016
(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/11/

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		2/11/2016	3/11/2016	7/11/2016	8/11/2016	14/11/2016	15/11/2016	21/11/2016	22/11/2016
	CODE	8613	8684	8926	8980	9149	9280	9526	9704
	LIMITS								
PM ₁₀ (µg/m ³)	100	64	56	59	68	62	59	66	58
PM _{2.5} (µg/m ³)	60	19	15	16	21	16	15	18	16
SO ₂ (µg/m ³)	80	2.44	2.67	2.85	2.54	2.65	2.47	2.41	2.35
NO ₂ (µg/m ³)	80	3.48	3.91	3.66	3.10	3.48	3.76	3.47	3.81
CO (mg/m ³)	4	0.82	0.77	0.75	0.82	0.74	0.72	0.79	0.78
O ₃ (µg/m ³)	180	0.91	0.89	0.81	0.91	0.80	0.81	0.76	0.86

Authorized Signatory

Test Report

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		2/11/2016	3/11/2016	7/11/2016	8/11/2016	14/11/2016	15/11/2016	21/11/2016	22/11/2016
	CODE	8613	8684	8926	8980	9149	9280	9526	9704
	LIMITS								
NH ₃ (µg/m ³)	400	1.45	1.57	1.35	1.16	1.39	1.81	1.92	1.63
Lead (µg/m ³)	1	0.013	0.005	BDL	0.005	0.003	0.004	0.013	0.011
Arsenic (ng/m ³)	6	1.72	BDL	1.75	0.50	1.50	BDL	1.75	0.48
Nickel (ng/m ³)	20	1.42	1.50	BDL	0.50	BDL	1.25	2.01	1.72
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Tenka- Ekkar
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore – 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler – APM 550
Respirable Dust Sampler – 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of November-2016
6. Sample Number : (Monitored for 24 hours)
EHSRDC/OMPL/A/16/11/

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		4/11/2016	5/11/2016	9/11/2016	10/11/2016	16/11/2016	17/11/2016	23/11/2016	24/11/2016
	CODE	8781	8831	8982	9015	9295	9357	9713	9715
	LIMITS								
PM ₁₀ (µg/m ³)	100	54	66	65	65	57	62	60	65
PM _{2.5} (µg/m ³)	60	14	20	20	19	14	17	16	20
SO ₂ (µg/m ³)	80	2.28	2.45	2.69	2.55	2.78	2.18	2.65	2.44
NO ₂ (µg/m ³)	80	3.10	3.67	3.86	3.95	3.25	3.44	3.86	3.56
CO (mg/m ³)	4	0.74	0.81	0.78	0.83	0.78	0.84	0.81	0.75
O ₃ (µg/m ³)	180	0.87	0.90	0.84	0.91	0.80	0.92	0.95	0.89


Authorized Signatory

Test Report

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		4/11/2016	5/11/2016	9/11/2016	10/11/2016	16/11/2016	17/11/2016	23/11/2016	24/11/2016
	CODE	8781	8831	8982	9015	9295	9357	9713	9715
	LIMITS								
NH ₃ (µg/m ³)	400	1.65	1.94	1.74	1.76	1.47	1.67	1.27	1.75
Lead (µg/m ³)	1	0.003	0.006	0.003	0.004	0.004	0.004	0.156	0.003
Arsenic (ng/m ³)	6	1.96	0.94	BDL	1.47	1.12	BDL	1.96	0.50
Nickel (ng/m ³)	20	1.70	1.17	2.25	BDL	BDL	1.40	0.39	1.01
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : Permude
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of November-2016
(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/11/

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		4/11/2016	5/11/2016	10/11/2016	11/11/2016	17/11/2016	18/11/2016	24/11/2016	25/11/2016
	CODE LIMITS	8780	8830	9014	9051	9356	9368	9714	9752
PM ₁₀ ($\mu\text{g}/\text{m}^3$)	100	61	57	57	60	64	54	58	61
PM _{2.5} ($\mu\text{g}/\text{m}^3$)	60	17	15	14	17	19	14	14	18
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	2.39	2.86	2.82	2.75	2.29	2.57	2.72	2.41
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.75	3.49	3.32	3.77	3.62	3.48	3.42	3.57
CO (mg/m^3)	4	0.75	0.79	0.077	0.79	0.75	0.81	0.78	0.79
O ₃ ($\mu\text{g}/\text{m}^3$)	180	0.84	0.91	0.86	0.88	0.83	0.95	0.85	0.86


Authorized Signatory

Test Report

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		4/11/2016	5/11/2016	10/11/2016	11/11/2016	17/11/2016	18/11/2016	24/11/2016	25/11/2016
	CODE	8780	8830	9014	9051	9356	9368	9714	9752
	LIMITS								
NH ₃ (µg/m ³)	400	1.33	1.47	1.21	1.54	1.56	1.71	1.49	1.65
Lead (µg/m ³)	1	0.010	0.005	0.050	0.002	0.004	0.019	0.004	0.0017
Arsenic (ng/m ³)	6	0.72	1.73	BDL	1.72	1.00	BDL	1.24	BDL
Nickel (ng/m ³)	20	1.69	1.47	1.30	1.75	0.75	0.75	1.64	0.99
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF AMBIENT AIR QUALITY

1. Name of the location : OMPL West Side
2. Name of the industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509
3. Sample Collected By : M/s. Environmental Health & Safety Research and
Development Centre, Bangalore - 560 010.
4. Particulars of Sample Collected : Ambient Air collected through
Fine Particulate Sampler - APM 550
Respirable Dust Sampler - 460NL,
CO & O₃ Analyzers.
5. Date of Collection : For the Month of November-2016
(Monitored for 24 hours)
6. Sample Number : EHSRDC/OMPL/A/16/11/

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		2/11/2016	3/11/2016	7/11/2016	8/11/2016	14/11/2016	15/11/2016	21/11/2016	22/11/2016
	CODE LIMITS	8612	8683	8925	8979	9148	9279	9525	9703
PM ₁₀ ($\mu\text{g}/\text{m}^3$)	100	61	58	63	56	56	61	69	60
PM _{2.5} ($\mu\text{g}/\text{m}^3$)	60	18	16	17	14	15	18	21	18
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	2.82	2.57	2.26	2.76	2.92	2.35	2.29	2.04
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.63	3.52	3.81	3.44	3.70	3.54	3.76	3.30
CO (mg/m^3)	4	0.74	0.82	0.78	0.84	0.75	0.82	0.82	0.81
O ₃ ($\mu\text{g}/\text{m}^3$)	180	0.85	0.90	0.84	0.93	0.81	0.90	0.92	0.92


Authorized Signatory

Test Report

PARAMETERS	DATE	WK 90		WK 91		WK 92		WK 93	
		2/11/2016	3/11/2016	7/11/2016	8/11/2016	14/11/2016	15/11/2016	21/11/2016	22/11/2016
	CODE	8612	8683	8925	8979	9148	9279	9525	9703
	LIMITS								
NH ₃ (µg/m ³)	400	1.59	1.76	1.66	1.98	1.78	1.56	1.85	1.50
Lead (µg/m ³)	1	0.012	0.011	0.015	0.041	0.014	0.055	0.051	0.011
Arsenic (ng/m ³)	6	1.72	0.73	0.88	BDL	0.98	BDL	BDL	0.74
Nickel (ng/m ³)	20	1.91	1.54	1.09	0.60	1.40	1.95	BDL	2.91
Benzene (µg/m ³)	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
B(a)P (ng/m ³)	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detectable Limit.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW1: Narayana Guru Community Hall, Permude
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited.,
Mangalore Special Economic Zone, Permude,
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/W/16/11/9282
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	TEST METHODS	Std. IS 10500:2012 (Second Revision)		CODE
				DL	PL	
						GW1
						9282
1.	pH	--	4500H ⁺ B	6.5-8.5		8.53
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.11
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	820.0
7.	Total Hardness	mg/L	2340 C	200	600	32.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	6.4
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.9
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	3.08
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.009
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.06
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	185.27
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.16
15.	Alkalinity	mg/L	2320 B	200	600	120.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit

INFERENCE	As per IS 10500:2012(Second Revision), Report Status:- The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
------------------	---

End of Report

[Signature]
Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW2: Gagnet Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited,
Mangalore Special Economic Zone, Permude,
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/W/16/11/9283
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	TEST METHODS	Std. IS 10500:2012 (Second Revision)		CODE
				DL	PL	
1.	pH	--	4500H ⁺ B	6.5-8.5		GW2 9283
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	6.76 <1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.99
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	88.0
7.	Total Hardness	mg/L	2340 C	200	600	13.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	3.6
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	0.97
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	2.56
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.11
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	23.65
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.29
15.	Alkalinity	mg/L	2320 B	200	600	22.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW1: Tenka-Ekkar
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited.,
Mangalore Special Economic Zone, Permude,
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/W/16/11/9284
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	TEST METHODS	Std. IS 10500:2012 (Second Revision)		CODE
				DL	PL	
1.	pH	--	4500H ⁺ B	6.5-8.5		OW1 9284
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	8.26 <1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.20
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	64.0
7.	Total Hardness	mg/L	2340 C	200	600	14.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	4.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	0.97
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	0.97
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.06
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	5.92
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.16
15.	Alkalinity	mg/L	2320 B	200	600	22.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE As per IS 10500:2012(Second Revision),
Report Status:-The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Shanthiguda Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited.,
Mangalore Special Economic Zone, Permude,
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/W/16/11/9285
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	TEST METHODS	Std. IS 10500:2012 (Second Revision)		CODE
				DL	PL	
1.	pH	--	4500H ⁺ B	6.5-8.5		OW2 9285
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	8.43
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		<1
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Unobjectionable
5.	Turbidity	NTU	2130 B	1	5	Agreeable
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	1.08
7.	Total Hardness	mg/L	2340 C	200	600	1298.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	16.0
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.2
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	1.94
11.	Fluoride as F	mg/L	4500F D	1	1.5	4.36
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		BDL
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	1.08
14.	Iron as Fe	mg/L	3500-Fe B	0.3		382.37
15.	Alkalinity	mg/L	2320 B	200	600	0.14
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		192.0
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		BDL
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status:-The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW1: Near Flare Area, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited.,
Mangalore Special Economic Zone, Permude,
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : Surface outlet water, Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/W/16/11/9286
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	TEST METHODS	Std. IS 10500:2012 (Second Revision)		CODE
				DL	PL	
1.	pH	--	4500H ⁺ B	6.5-8.5		SW1 9286
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	7.43 <1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.53
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	99.0
7.	Total Hardness	mg/L	2340 C	200	600	26.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	5.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	3.15
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	17.55
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.12
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.35
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	106.43
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.16
15.	Alkalinity	mg/L	2320 B	200	600	28.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL-Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status:-The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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***End of Report**


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : SW2 : Near Central Ware House, OMPL
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited.,
Mangalore Special Economic Zone, Permude,
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : Surface inlet water, Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/W/16/11/9287
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	TEST METHODS	Std. IS 10500:2012 (Second Revision)		CODE
				DL	PL	SW2
						9287
1.	pH	--	4500H+ B	6.5-8.5		7.81
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.33
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	201.0
7.	Total Hardness	mg/L	2340 C	200	600	42.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	12.8
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	2.43
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	17.10
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.22
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		2.60
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	22.17
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.10
15.	Alkalinity	mg/L	2320 B	200	600	42.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW3: L&T New Labor Colony
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited.,
Mangalore Special Economic Zone, Permude,
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development Centre,
Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : Bore well water ,Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/W/16/11/9288
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	TEST METHODS	Std. IS 10500:2012 (Second Revision)		CODE
				DL	PL	GW3
1.	pH	--	4500H ⁺ B	6.5-8.5		6.70
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.12
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	90.0
7.	Total Hardness	mg/L	2340 C	200	600	14.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	4.0
9.	Magnesium as Mg	mg/L	3500-Mg B	30	100	0.97
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	2.41
11.	Fluoride as F	mg/L	4500F D	1	1.5	0.68
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.64
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	19.21
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.22
15.	Alkalinity	mg/L	2320 B	200	600	21.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision),
	Report Status:-The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
End of Report	


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : OW3: Permude Village
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited.,
Mangalore Special Economic Zone, Permude,
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : Open well water, Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/W/16/11/9289
8. Protocol : APHA, 22nd Edition/ IS: Standard

Sl.No	PARAMETERS	UNIT	TEST METHODS	Std. IS 10500:2012 (Second Revision)		CODE
				DL	PL	OW3
						9289
1.	pH	--	4500H* B	6.5-8.5		6.96
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	<1
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	1.14
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	321.0
7.	Total Hardness	mg/L	2340 C	200	600	14.0
8.	Calcium as Ca.	mg/L	3500-Ca	75	200	3.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	1.45
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	3.08
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E	45		1.64
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	113.33
14.	Iron as Fe	mg/L	3500-Fe B	0.3		0.12
15.	Alkalinity	mg/L	2320 B	200	600	20.0
16.	Chromium Hexavalent	mg/L	3500 Cr B	---		BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE	As per IS 10500:2012(Second Revision), Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF FRESH WATER QUALITY

1. Name of the Location : GW4: OMPL (Near ETP)
2. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited.,
Mangalore Special Economic Zone, Permude,
Mangalore-574509.
3. Sample Collected By : M/s. Environmental Health and Safety Research and Development
Centre, Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : Bore well water, Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/W/16/11/9290
8. Protocol : APHA, 22nd Edition/IS: Standard

Sl.No	PARAMETERS	UNIT	TEST METHODS	Std. IS 10500:2012 (Second Revision)		CODE
				DL	PL	GW4 9290
					6.5-8.5	7.12
1.	pH	--	4500H+ B			<1
2.	Colour	Hazen	IS 3025(Part-4):1983	5	15	Unobjectionable
3.	Odour	--	IS 3025(Part-5):1983	Unobjectionable		Unobjectionable
4.	Taste	--	IS 3025(Part-8):1984	Agreeable		Agreeable
5.	Turbidity	NTU	2130 B	1	5	0.80
6.	Total Dissolved Solids	mg/L	2540 C	500	2000	95.0
7.	Total Hardness	mg/L	2340 C	200	600	16.0
8.	Calcium as Ca	mg/L	3500-Ca	75	200	3.2
9.	Magnesium as Mg	mg/L	3500 Mg B	30	100	1.94
10.	Sulphate as SO ₄	mg/L	4500-SO ₄ ²⁻	200	400	2.56
11.	Fluoride as F	mg/L	4500F D	1	1.5	BDL
12.	Nitrate as NO ₃	mg/L	4500-NO ₃ E		45	1.39
13.	Chloride as Cl	mg/L	4500-Cl B	250	1000	17.73
14.	Iron as Fe	mg/L	3500-Fe B		0.3	0.17
15.	Alkalinity	mg/L	2320 B	200	600	28.0
16.	Chromium Hexavalent	mg/L	3500 Cr B		---	BDL
17.	E-Coli	CFU/100ml	IS15185:2002	Absent		Absent
18.	Total Coliform	CFU/100ml	IS15185:2002	Absent		Absent

Note:- BDL- Below Detectable Limit, DL - Desirable Limit, PL - Permissible Limit.

INFERENCE

As per IS 10500:2012(Second Revision),
Report Status: - The measured values for the above parameters for those standards
have been specified were observed to be within the said standard.

End of Report

Authorized Signatory

Test Report

AMBIENT NOISE LEVEL MONITORING REPORT

1. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited,
Mangalore Spécial Economic Zone,
Permude.Mangalore-574509.
2. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
3. Date of Collection : 21.11.2016
4. Particulars of Sample Collected : Ambient Noise Level collected through
Sound Level Meter C-390
5. Date of Sample Receipt : 25.11.2016
6. Sample Number : EHSRDC/OMPL/N/16/11/ 9709-9712
7. Method Adopted : Instrument Method

Code No	Sample Location	Parameters		Std.
		Day Time Leq dB(A)	Night Time Leq dB(A)	
9709	OMPL East Side Boundary	63.85	54.6	75.0 dB(A) Day
9710	OMPL West Side Boundary	63.9	56.8	70.0 dB(A) Night
9711	OMPL North Side Boundary	63.4	51.4	
9712	OMPL South Side Boundary	61.8	53.9	

Note :

- Day Time is reckoned between 6 A.M and 10 P.M
- Night Time is reckoned between 10 P.M and 6 A.M
- L_{eq} It is energy mean of the noise level over a specified period.
- *dB (A) L_{eq} denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
- "A", in dB (A) L_{eq} , denotes the frequency weighting in the measurement of noise and corresponds to Frequency response characteristics of the human ear.

End of Report

Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Utility Boiler
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 21.11.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 24.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9528
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	21.11.2016
Ambient Temperature (°C)	30
Stack Temperature (°C)	125
Velocity (m/s)	7.05
Diameter (m)	2.74
Cross Sectional Area in meter square (m²)	5.89
Quantity of flue gas discharged into atmosphere (Nm³/h)	113903.21

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/ Nm³	16.60	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm³	16.34	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm³	14.55	850
Carbon Monoxide	EPA method (10)	mg/ Nm³	63.0	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : CPP (GTG + HRSG) -2
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 21.11.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 24.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9529
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	21.11.2016
Ambient Temperature (°C)	35
Stack Temperature (°C)	165
Velocity (m/s)	7.73
Diameter (m)	2.8
Cross Sectional Area in meter square (m ²)	6.154
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	120557.84

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	24.19	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	8.65	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	7.40	850
Carbon Monoxide	EPA method (10)	mg/Nm ³	78.21	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : NHT Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 21.11.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 24.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9530
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	21.11.2016
Ambient Temperature (°C)	34
Stack Temperature (°C)	242
Velocity (m/s)	5.50
Diameter (m)	1.94
Cross Sectional Area in meter square (m ²)	2.954
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	34889.32

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	3.25	5
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	11.60	250
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	7.09	50
Carbon Monoxide	EPA method (10)	mg/Nm ³	83.25	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
------------------	--

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : ISOMER Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 22.11.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 24.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9531
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	22.11.2016
Ambient Temperature (°C)	32
Stack Temperature (°C)	152
Velocity (m/s)	7.28
Diameter (m)	2.3
Cross Sectional Area in meter square (m ²)	4.153
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	78179.84

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	4.25	5
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	16.11	250
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	12.80	50
Carbon Monoxide	EPA Method (10)	mg/Nm ³	62.14	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
------------------	--

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Tatory charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.T
4. Date of Collection : 22.11.2016
5. Particulars of Sample Collected : Emissions from stack collected through
Stack Sampler VSS1
6. Date of Sample Receipt : 24.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9532
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	22.11.2016
Ambient Temperature (°C)	32
Stack Temperature (°C)	210
Velocity (m/s)	7.05
Diameter (m)	1.75
Cross Sectional Area in meter square (m ²)	2.404
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	38527.93

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	3.67	5
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	16.82	250
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	15.09	50
Carbon Monoxide	EPA method (10)	mg/Nm ³	72.15	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
------------------	--

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Plat former Charge Heater
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 22.11.2016
5. Particulars of Sample Collected : Emissions from stack collected through
Stack Sampler VSS1
6. Date of Sample Receipt : 24.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9533
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	22.11.2016
Ambient Temperature (°C)	34
Stack Temperature (°C)	352
Velocity (m/s)	10.45
Diameter (m)	4.10
Cross Sectional Area in meter square (m ²)	13.196
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	243985.39

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	4.26	5
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	13.40	250
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	12.80	50
Carbon Monoxide	EPA method (10)	mg/Nm ³	92.30	100

INFERENCE	As per KSPCB Standards, Report Status: - The measured value for above parameters is within the standard.
------------------	--

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : CPP (GTG + HRSG) -1
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 22.11.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 24.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9534
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	22.11.2016
Ambient Temperature (°C)	32
Stack Temperature (°C)	152
Velocity (m/s)	5.44
Diameter (m)	2.8
Cross Sectional Area in meter square (m²)	6.154
Quantity of flue gas discharged into atmosphere (Nm³/h)	86614.88

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm³	16.52	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm³	13.69	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm³	7.68	850
Carbon Monoxide	EPA method (10)	mg/Nm³	64.23	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
------------------	---

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Xylene Column Reboiler Heater Part -A
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 23.11.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 25.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9706
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	23.11.2016
Ambient Temperature (°C)	32
Stack Temperature (°C)	188
Velocity (m/s)	7.81
Diameter (m)	3.69
Cross Sectional Area in meter square (m²)	10.689
Quantity of flue gas discharged into atmosphere (Nm³/h)	198814.31

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm³	9.77	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm³	17.40	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm³	14.40	850
Carbon Monoxide	EPA method (10)	mg/Nm³	71.30	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : Xylene Column Reboiler Heater Part- B
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 23.11.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 25.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9707
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	23.11.2016
Ambient Temperature (°C)	30
Stack Temperature (°C)	183
Velocity (m/s)	6.72
Diameter (m)	3.69
Cross Sectional Area in meter square (m²)	10.689
Quantity of flue gas discharged into atmosphere (Nm³/h)	171984.41

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm³	9.98	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm³	12.70	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm³	11.64	850
Carbon Monoxide	EPA method (10)	mg/Nm³	73.65	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT FOR SOURCE EMISSION

1. Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
2. Stack ID : BTF(Benzene Toluene fractionation Column Reboiler
Heater)
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 23.11.2016
5. Particulars of Sample : Emissions from stack collected through
Collected Stack Sampler VSS1
6. Date of Sample Receipt : 25.11.2016
7. Sample Number : EHSRDC/OMPL/S/16/11/9708
8. Report to be Sent : 28.11.2016
9. Page No : 1 of 1

GENERAL DETAILS

Date of Monitoring	23.11.2016
Ambient Temperature (°C)	30
Stack Temperature (°C)	181
Velocity (m/s)	6.40
Diameter (m)	3.29
Cross Sectional Area in meter square (m ²)	8.497
Quantity of flue gas discharged into atmosphere (Nm ³ /h)	130788.13

RESULTS

Parameters	Protocol	Unit	Result	Standard
Particulate Matter	IS: 11255(P1)	mg/Nm ³	25.26	50
Nitrogen Dioxide	IS: 11255 (P7)	mg/ Nm ³	14.64	350
Sulphur Dioxide	IS: 11255, (P2)	mg/ Nm ³	8.57	850
Carbon Monoxide	EPA method (10)	mg/Nm ³	69.25	150

INFERENCE	As per KSPCB Standards, Report Status: - The measured values for above parameters are within the standard.
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End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF EFFLUENT QUALITY

1. Name of the Location : Guard Pond Pump Discharge
2. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 16.11.2016
5. Particulars of Sample Collected : ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6. Date of Sample Receipt : 18.11.2016
7. Sample Number : EHSRDC/OMPL/ WW/16/11/9291
8. Analysis started on : 21.11.2016
9. Analysis Completed on : 21.11.2016
10. Page No. : 01 of 2
11. Report to be Sent : 21.11.2016
12. Protocol : APHA, 22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	6.65	6.0-8.5
2.	Colour*	IS 3025(Part-4) :1983	Hazen	<1	All efforts should be made to remove colour and unpleasant odour as far as practicable.
3.	Odour*	IS 3025(Part-5) :1983	--	Unobjectionable	
4.	Temperature	APHA 2550 B	°C	25	Shall not exceed 5°C above the receiving water temperature.
5.	Particle Size of suspended solids*	-	-	Passes	(a) Settleable solids Max. 850 microns
6.	B.O.D (3 days in 27°C)	5210 B	mg/L	8.0	15
7.	C.O.D	5220 B	mg/L	22.4	125
8.	Total Suspended Solids	2540 D	mg/L	8.0	20
9.	Phosphate as PO ₄	4500- P D	mg/L	0.33	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	22.4	40
11.	Oil & Grease	5520 B	mg/L	BDL	5
12.	Total residual chlorine	APHA 4500- Cl	mg/L	BDL	1
13.	Free ammonia*	IS 3025 (Part 34)	mg/L	0.41	5


Authorized Signatory

Test Report

Sample Number: EHSRDC/OMPL/ WW/16/11/9291

Page No: 02 of 02

14.	Ammonical Nitrogen	4500- NH ₃ ,B,C	mg/L	1.12	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	0.1
16.	Sulphide	IS 3025 (Part 29): 1986	mg/L	BDL	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	1.17	1.5
18.	Nitrate as NO ₃	IS 3025(Part 34) :1988	mg/L	6.85	20
19.	Iron as Fe	IS 3025(Part 53):2003	mg/L	1.00	3
20.	Mercury as Hg*	IS 3025(Part-48):1994	mg/L	BDL	0.01
21.	Lead as Pb*	IS 3025(Part 47):1994	mg/L	0.003	2
22.	Cadmium as Cd*	IS 3025(Part 41):1992	mg/L	BDL	0.1
23.	Selenium as Se*	IS 3025(Part 56):2003	mg/L	BDL	0.05
24.	Arsenic as As*	IS 3025(Part 37):1988	mg/L	0.002	0.2
25.	Zinc as Zn*	IS 3025(Part 49):1994	mg/L	0.055	5
26.	Copper as Cu*	IS 3025(Part-42):1992	mg/L	0.007	1
27.	Manganese as Mn*	3111 B	mg/L	0.108	2
28.	Vanadium*	3500 -V	mg/L	0.002	0.1
29.	Nickel as Ni*	IS13428:2005 (Annex L)	mg/L	0.028	1
30.	Total Chromium*	IS 13428:2005(Annex J)	mg/L	0.007	2
31.	Benzene*	APHA 6200 B	mg/L	BDL	0.1
32.	Benzo (a) pyrene*	APHA 6440	µg/l	BDL	0.2
33.	Bioassay*	IS 6582	% survivality	100%	90% survival of fish after 96 hrs, in100% effluent
34.	Phenolic compounds	IS 3025 (part 43):1992	mg/L	BDL	0.35
35.	Cyanide	IS 3025 (Part 27):1986	mg/L	BDL	0.2

*are not accredited by NABL. Note: BDL: Below Detectable Limit.

INFERENCE	As per Tolerance limit, Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
------------------	--

End of Report


Authorized Signatory

Test Report

ANALYSIS REPORT OF EFFLUENT QUALITY

1. Name of the Location : Guard Pond Pump Discharge
2. Name of the Project : M/s. ONGC Mangalore Petrochemicals Limited
Mangalore Spécial Economic Zone, Permude
Mangalore-574509.
3. Sample Collected by : M/s. Environmental Health and Safety Research &
Development Centre, Bangalore - 560 010.
4. Date of Collection : 28.11.2016
5. Particulars of Sample Collected : ETP Guard Pond Discharge Treated Effluent, Grab Sampling
6. Date of Sample Receipt : 30.11.2016
7. Sample Number : EHSRDC/OMPL/ WW/16/11/9922
8. Analysis started on : 30.11.2016
9. Analysis Completed on : 02.12.2016
10. Page No. : 01 of 2
11. Report to be Sent : 02.12.2016
12. Protocol : APHA, 22nd Edition/IS Method

Sl.No	Parameters	Test Methods	Unit	Result	Tolerance limit
1.	pH	IS 3025(Part-11) :1983	-	7.12	6.0-8.5
2.	Colour*	IS 3025(Part-4) :1983	Hazen	<1	All efforts should be made to remove colour and unpleasant odour as for as practicable.
3.	Odour*	IS 3025(Part-5) :1983	--	Unobjectionable	
4.	Temperature	APHA 2550 B	°C	25	Shall not exceed 5°C above the receiving water temperature.
5.	Particle Size of suspended solids*	-	-	Passes	(a)Settleable solids Max.850 microns
6.	B.O.D (3 days in 27°C)	5210 B	mg/L	9.0	15
7.	C.O.D	5220 B	mg/L	16.0	125
8.	Total Suspended Solids	2540 D	mg/L	18.0	20
9.	Phosphate as PO ₄	4500- PD	mg/L	0.82	3
10.	Total Kjeldahl Nitrogen	4500- Norg B	mg/L	38.08	40
11.	Oil & Grease	5520 B	mg/L	BDL	5
12.	Total residual chlorine	APHA 4500- Cl	mg/L	BDL	1
13.	Free ammonia*	IS 3025 (Part 34)	mg/L	BDL	5


Authorized Signatory

Test Report

Sample Number: EHSRDC/OMPL/ WW/16/11/9922

Page No: 02 of 02

14.	Ammonical Nitrogen	4500- NH ₃ ,B,C	mg/L	2.80	15
15.	Hexavalent Chromium	3500- Cr B	mg/L	BDL	0.1
16.	Sulphide	IS 3025 (Part 29): 1986	mg/L	BDL	1.0
17.	Fluoride as F	IS 3025(Part 60): 2008	mg/L	0.24	1.5
18.	Nitrate as NO ₃	IS 3025(Part 34): 1988	mg/L	5.7	20
19.	Iron as Fe	IS 3025(Part 53): 2003	mg/L	1.28	3
20.	Mercury as Hg*	IS 3025(Part-48): 1994	mg/L	BDL	0.01
21.	Lead as Pb*	IS 3025(Part 47): 1994	mg/L	0.37	2
22.	Cadmium as Cd*	IS 3025(Part 41): 1992	mg/L	0.004	0.1
23.	Selenium as Se*	IS 3025(Part 56): 2003	mg/L	BDL	0.05
24.	Arsenic as As*	IS 3025(Part 37): 1988	mg/L	BDL	0.2
25.	Zinc as Zn*	IS 3025(Part 49): 1994	mg/L	0.062	5
26.	Copper as Cu*	IS 3025(Part-42): 1992	mg/L	0.028	1
27.	Manganese as Mn*	3111 B	mg/L	BDL	2
28.	Vanadium*	3500 -V	mg/L	BDL	0.1
29.	Nickel as Ni*	IS 13428:2005 (Annex L)	mg/L	0.017	1
30.	Total Chromium*	IS 13428:2005(Annex J)	mg/L	BDL	2
31.	Benzene*	APHA 6200 B	mg/L	BDL	0.1
32.	Benzo (a) pyrene*	APHA 6440	µg/l	BDL	0.2
33.	Bioassay*	IS 6582	% survivality	100%	90% survival of fish after 96 hrs, in 100% effluent
34.	Phenolic compounds	IS 3025 (part 43): 1992	mg/L	BDL	0.35
35.	Cyanide	IS 3025 (Part 27): 1986	mg/L	BDL	0.2

*are not accredited by NABL. Note: BDL: Below Detectable Limit.

INFERENCE	As per Tolerance limit, Report Status: - The measured values for the above parameters for those standards have been specified were observed to be within the said standard.
------------------	--

End of Report


Authorized Signatory

ANNEXURE - F

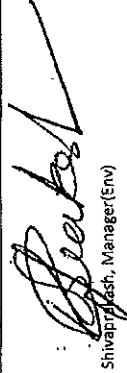
Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of November, 2016

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals, Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed	0	72436	72436			
	Cooling Water						
	Boiler Feed Water	0	77522	77522			
	Fire Water	0	18873	18873			
	Domestic purpose Drinking Water & Sanitation Processing whereby water gets polluted and the pollutants are easily bio-degradable	0	2629	2629			
	Service Water		4956	4956			Subtracting total flow from BPW, CT & Drinking water consumption
Total Consumption				176416			

Signature of the Consumer

Name

Address



Shivaprasad, Manager (Env)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

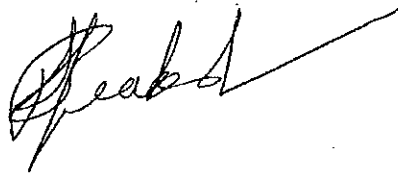
ANNEXURE - G

ONGC Mangalore Petrochemicals Limited

Production Details for November- 2016

Net Naptha Processed -1,33,644 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	75,112
2	Benzene (Co product)	19,565





ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery & Petrochemicals Ltd.)

Mangalore Special Economic Zone, Permude, Mangaluru - 574 509

CIN : U40107KA2006PLC041258 Website : www.ompl.co.in

Phone : +91-824 2881518 Fax +91-824 2881539

REF: OMPL/PCB/SP/2016-17/

Date: 15/1/2017

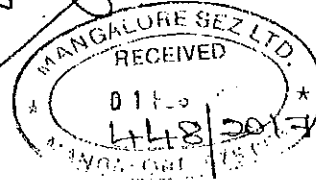
To:

The Environmental Officer

Regional Office

KSPCB

Baikampady, Mangalore-11



Dear Sir,

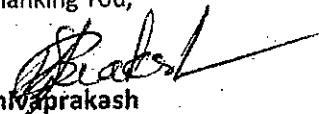
Sub: Submission of Environmental Monitoring Report for the Month of December 2016,
Production Report for December, 2016 & Returns Regarding Water Consumed for the
Month of December 2016

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, Production Reports & Returns Regarding Water Consumed in the Month of December 2016 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Stack Monitoring Report as Annexure-D
5. Treated Effluent Analysis Report – E
6. Returns Regarding Water Consumed, for the Month of December 2016, as Annexure-F
7. Production Report as Annexure-G
8. Form-10 – Manifest for Hazardous Waste as Annexure-H

Thanking You,


Shivaprakash
Manager (Env)

CC: Member Secretary, KSPCB, Bangalore

CC: Head (Technical), MSEZ

CC: CEO, OMPL for info.

Hubert Enviro Care Systems (P) Ltd.

C-45, Industrial Estate, Baikampady, Mangalore, Karnataka - 575011.
Ph: 0824 - 2408111, Email: kro@hecs.in, Website: www.hecs.in

H.O.: # 18, 92nd Street, Ashok Nagar, Chennai - 600 083.
Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in



ANNEXURE - A

Laboratory Services Division

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 07/01/2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL - East side

Report No: HECS/A/001/070117

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF DECEMBER 2016

Dec '16 - Week		49 th Week		50 th Week		51 st Week		52 nd Week	
Parameters	NAAQS	03-12-16	06-12-16	10-12-16	13-12-16	17-12-16	20-12-16	24-12-16	27-12-16
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	18.6	19.4	22.2	19.6	21.3	22.4	20.4	20.7
PM 10 ($\mu\text{g}/\text{m}^3$)	100	59.3	58.7	60.2	61.4	59.1	62.3	58.3	61.5
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	6.2	6.9	7.1	6.8	6.7	6.3	6.5	6.9
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.5	3.6	3.4	3.7	3.4	3.6	3.4	3.5
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P - Benzo- α -pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



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**Laboratory Services Division**

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Shantigudda

Report Date: 07/01/2017

Report No: HECS/A/002/070117

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF DECEMBER 2016

Dec '16 - Week		49 th Week		50 th Week		51 st Week		52 nd Week	
Parameters	NAAQS	03-12-16	06-12-16	10-12-16	13-12-16	17-12-16	20-12-16	24-12-16	27-12-16
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	19.2	19.3	21.4	20.4	22.3	21.9	20.6	21.4
PM 10 ($\mu\text{g}/\text{m}^3$)	100	56.8	58.6	63.5	64.1	58.7	58.5	58.6	60.6
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	5.9	5.7	6.5	6.4	5.9	6.6	5.9	5.7
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.3	3.4	3.5	3.4	3.6	3.7	3.3	3.5
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P - Benzo- α -pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

*****End of Report*****



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Hubert Enviro Care Systems (P) Ltd.

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**Laboratory Services Division**

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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Tenka Ekkar
Report Date: 07/01/2017
Report No: HECS/A/003/070117

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF DECEMBER 2016

Dec '16 - Week		49 th Week		50 th Week		51 st Week		52 nd Week	
Parameters	NAAQS	03-12-16	06-12-16	10-12-16	13-12-16	17-12-16	20-12-16	24-12-16	27-12-16
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	17.9	18.2	22.3	19.9	21.4	22.6	19.8	20.4
PM 10 ($\mu\text{g}/\text{m}^3$)	100	60.4	59.5	60.4	60.7	59.5	60.4	59.4	60.5
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	6.5	7.0	7.2	7.1	6.8	6.9	6.1	6.3
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.8	3.7	3.2	3.4	3.5	3.6	3.6	3.4
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Monoxide; B(a)P - Benzo - α - pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

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Laboratory Services Division

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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Premude Village

Report Date: 07/01/2017

Report No: HECS/A/004/070117

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF DECEMBER 2016

Dec '16 - Week		49 th Week		50 th Week		51 st Week		52 nd Week	
Parameters	NAAQS	03-12-16	06-12-16	10-12-16	13-12-16	17-12-16	20-12-16	24-12-16	27-12-16
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	19.5	19.7	21.5	22.1	21.6	22.7	21.2	21.4
PM 10 ($\mu\text{g}/\text{m}^3$)	100	60.3	60.4	61.4	61.6	59.6	60.4	57.1	56.9
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	5.9	5.7	6.4	6.4	6.3	6.5	6.8	6.6
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.5	3.4	3.6	3.4	3.6	3.5	3.1	3.2
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM2.5-Particulate matter size less than 2.5 Micron, PM10-Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P- Benzo- α -pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

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Certificate No. T-3180

Laboratory Services Division

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ISO 9001, 14001 & OHSAS 18001 Certified.

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL - West Side

Report Date: 07/01/2017

Report No: HECS/A/005/070117

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF DECEMBER 2016

Dec '16 - Week		49 th Week		50 th Week		51 st Week		52 nd Week	
Parameters	NAAQS	03-12-16	06-12-16	10-12-16	13-12-16	17-12-16	20-12-16	24-12-16	27-12-16
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	18.9	18.6	19.3	19.1	22.4	22.3	20.1	20.2
PM 10 ($\mu\text{g}/\text{m}^3$)	100	59.7	59.1	60.5	60.6	59.2	59.1	54.6	54.7
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	6.1	6.3	6.2	6.2	6.5	6.4	6.1	6.2
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.2	3.4	3.2	3.2	3.6	3.2	3.7	3.5
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P - Benzo- α -pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

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ANNEXURE B

Hubert Enviro Care Systems (P) Ltd.C-45, Industrial Estate, Baikampady, Mangalore, Karnataka - 575011.
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Certificate No. T-3180

Laboratory Services DivisionAccredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.**TEST REPORT**

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/006/301216
 Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
 Sample Description : GW1 - Ground Water collected from Narayana Guru Community Hall, Permude
 Date of Collection : 28/12/2016
 Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.84	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	86.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	16.83	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	88.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	8.91	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	10.69	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	124.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	18.00	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	0.31	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.96	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note: BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
 MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

 Verified By


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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/007/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : GW2 - Ground Water collected from Gagnet Labor Colony
Date of Collection : 28/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	6.71	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	26.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	5.61	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	38.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	6.93	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.92	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	52.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	5.42	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.42	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; ml-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

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1. The report in full or part shall not be used for any promotional or publicity purpose without written consent by HECS organization. 2. Samples are not drawn by HECS unless or otherwise mentioned. 3. Unless specifically requested by customer the test items will not be retained more than 15 days from the date of issue of test report. 4. Under no circumstances lab accepts any liability or loss / damage caused by use or misuse of test report after invoicing or issue of test report. 5. The test results relate only to the test items. 6. Not under scope of accreditation.

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/009/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : Ground Water collected from L&T New Labor Colony
Date of Collection : 28/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW3

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	8.12	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	88.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	16.83	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	90.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	9.90	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	11.18	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	129.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	18.81	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.51	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/010/301216
 Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
 Sample Description : Ground Water collected Near OMPL - ETP
 Date of Collection : 28/12/2016
 Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW4

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.62	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	60.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	16.03	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	62.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	13.86	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.86	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	103.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	14.71	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.71	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter; MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/011/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : OW1- Open Water collected from TenkaEkkar
Date of Collection : 28/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.54	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	76.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	12.82	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	92.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	10.89	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	10.70	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	110.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.98	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.40	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note: BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/012/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : OW2 - Open Water collected from Shantigudda Village
Date of Collection : 28/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.12	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	30.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.01	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	18.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	15.84	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.43	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	57.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.62	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.21	45 max
15.	Iron as Fe	IS 3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS 3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/013/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : OW3 - Open Water collected from Premude Village
Date of Collection : 28/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW3

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	6.64	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	34.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.01	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	20.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	14.85	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	3.41	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	58.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.15	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.36	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/014/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : SW1 - Surface Water collected Near OMPL - Flare Area
Date of Collection : 28/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF SURFACE WATER MONITORING, SW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.69	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	2	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	197	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	56.1	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	108.45	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	15.48	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	10.45	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	248	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	76.4	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	0.31	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.01	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.17	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100ml	Absent	Not Detectable

Note:- BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per liter; NA-Not Available

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/015/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : SW2 - Surface Water collected Near OMPL - Near Central Warehouse
Date of Collection : 28/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF SURFACE WATER MONITORING, SW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	6.64	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	2.1	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	86	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	18	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	34	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	81.2	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	11.24	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	128	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	74.57	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.85	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.1	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per liter

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

Verified By



Authorized Signatory

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ANNEXURE - C

Hubert Enviro Care Systems (P) Ltd.

C-45, Industrial Estate, Baikampady, Mangalore, Karnataka - 575011.
Ph: 0824 - 2408111, Email: kro@hecs.in, Website: www.hecs.in

H.O.: # 18, 92nd Street, Ashok Nagar, Chennai - 600 083.
Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in



Certificate No. T-3180

Laboratory Services Division

Accredited by NABL in the fields of Chemical
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TEST REPORT

Page No: 1 of 1

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 07/01/2017
Address of the Industry: Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Noise Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL

Report No: HECS/N/001/070117

TEST RESULTS OF NOISE MONITORING FOR THE MONTH OF DECEMBER 2016

S.No.	Sampling Location	MoEF requirements in dB		Avg. Noise level in dB	
		Day	Night	Day	Night
1.	OMPL-North	75	70	62.5	58.4
2.	OMPL-South			61.4	59.5
3.	OMPL-East			60.7	60.1
4.	OMPL-West			64.2	63.9

Note: dB: Decibel

CONCLUSION: All the parameters meet MoEF Standards



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Laboratory Services Division

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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Address : Mangalore SEZ, Premuda Village, Mangalore - 574509
Sample Description : Manual Monitoring of Stack Emission
Sample Drawn By : Hubert Envirocare Systems Private Limited

Page Number : 1 of 1
Report No: J 30122016
Report Date: 30/12/2016

Date of Sampling	Test Method	PM		SO _x		NO _x		CO	
		IS 11255 Pt 1 1985 Reaffirmed 2003		IS 11255 Part 2 1985		IS 11255 Part 7:2005		IS 13270:2006 Reaffirmed 2003	
		Result (mg/Nm ³)	Standard (mg/Nm ³)	Result (mg/Nm ³)	Standard (mg/Nm ³)	Result (mg/Nm ³)	Standard (mg/Nm ³)	Result (mg/Nm ³)	Standard (mg/Nm ³)
27-12-2016	NHT Charge Heater	03	05	BDL	50	43	250	0.7	100
26-12-2016	Isomer Charge Heater	02	05	BDL	50	67	250	0.4	100
27-12-2016	CPP (GTG & HRSG)-2	28	50	43	850	52	350	0.9	150
26-12-2016	CPP-Utility Boiler	26	50	13	850	14	350	1.2	150
29-12-2016	Platformer Unit Charge Heater	03	05	BDL	50	14	250	0.4	100
28-12-2016	Tatory Charge Heater	3.5	5	07	50	41	250	0.3	100
28-12-2016	Xylene Column Reboiler Heater (part A)	4	50	08	850	54	350	1.1	150
28-12-2016	Xylene Column Reboiler Heater (part B)	04	50	09	850	29	350	0.9	150
27-12-2016	BTf(Toulene Column Reboiler heater)	2.5	50	46	850	42	350	0.6	150

Note: NA - Not Applicable; BDL - Below Detectable Limit; D.L Detectable Limit;
SPM-Suspended Particulate Matter; SO₂ - Sulphur dioxide; NO_x - Oxides of Nitrogen; CO-Carbon monoxide;
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS

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ANNEXURE-B

Hubert Enviro Care Systems (P) Ltd.C-45, Industrial Estate, Baikampady, Mangalore, Karnataka - 575011.
Ph: 0824 - 2408111, Email: kro@hecs.in, Website: www.hecs.inH.O.: # 18, 92nd Street, Ashok Nagar, Chennai - 600 083.
Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in

Certificate No. T-3180

Laboratory Services DivisionAccredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.**TEST REPORT**

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/017/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 28/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

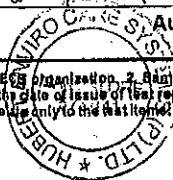
TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4)1983 (Reaff 2006)	Hazen Units	2.0	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006	-	Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn.. 2012	mg/L	6.0	100
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	7.54	6.0-8.5
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	29.0	Shall not exceed 5 degree Centigrade above the receiving water temperature
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	5
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26)1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	1
8.	Ammonical Nitrogen as N	IS 3025 Part (34)1988	mg/L	10.6	50
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34)1988	mg/L	16.32	100
10.	Free Ammonia as NH ₃	IS:3025 (Part34)1998 Reaff. 2003	mg/L	BDL(DL 0.02)	5
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44)1993 (Reaff 2009)	mg/L	6.0	30
12.	COD as O ₂	IS 3025 Part (58)2006	mg/L	40.0	125
13.	Lead as Pb	IS:3025 (Pt 47)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	0.1
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	2.0
16.	Copper as Cu	IS:3025:5,(Pt 42)1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
17.	Zinc as Zn	IS:3025 (Part49)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	5.0
18.	Nickel as Ni	IS:3025 (Part54)2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
19.	Fluoride as F ⁻	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29)1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	2.0
21.	Particle Size of Suspended solids	APHA 22nd Edition	-	Passed through 850 micron	850 micron
22.	Arsenic as As	IS:3025 (Part37)1988(Reaff 2009)	mg/L	BDL(DL 0.005)	0.2

Verified By

Authorized Signatory

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Laboratory Services Division

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/017/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 28/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
23.	Mercury as Hg	IS:3025 (Part48)1994 RA 1999	mg/L	BDL(DL 0.001)	0.01
24.	Cadmium as Cd	IS:3025 (Part41)1991	mg/L	BDL(DL 0.01)	0.1
25.	Selenium as Se	IS:3025 (Part56)2003	mg/L	BDL(DL 0.005)	0.05
26.	Cyanide as CN	IS:3025 (Part27)1986 Reaff. 2009	mg/L	BDL(DL 0.01)	0.2
27.	Phenolic Compounds as C ₆ H ₅ OH	IS 3025 Part (43)1992, RA 2009	mg/L	BDL(DL 0.001)	0.35
28.	Total Iron as Fe	IS 3025(Pt 53):2003(Reaff 2009)	mg/L	0.22	3
29.	Manganese	IS:3025:(Pt-59):2006	mg/L	BDL(DL 0.01)	2
30.	Total Phosphorous as P	IS 3025(Pt 31):1988(Reaff 2009)	mg/L	BDL(DL 0.01)	3
31.	Nitrate	IS 3025 (Pt 34):1988 (Reaff 2009)	mg/L	BDL(DL 1)	20
32.	Vanadium as V	IS:3025 (Part56)2003	mg/L	BDL(DL 0.01)	0.1
33.	Benzo(a)pyrene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.2
34.	Benzene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.1
35.	Bioassay Test	IS 6582(Part 2):2001	Tf	9:1	90% survival of fish after 96 hrs in 100% effluent

Note:-BDL - Below Detection Limit; D.L- Detection Limit; mg/L - Milligrams per liter

CONCLUSION: ETP OUTLET EFFULENT WATER AS ABOVE PARAMETERS ARE WITHIN STANDARDS

End of Report

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/021/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 13/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4)1983 (Reaff 2006)	Hazen Units	2.0	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006	-	Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn.. 2012	mg/L	5.0	100
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	7.1	6.0-8.5
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	28.0	Shall not exceed 5 degree Centigrade above the receiving water temperature
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	5
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26)1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	1
8.	Ammonical Nitrogen as N	IS 3025 Part (34)1988	mg/L	11.4	50
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34)1988	mg/L	18.14	100
10.	Free Ammonia as NH ₃	IS:3025 (Part34)1998 Reaff. 2003	mg/L	BDL(DL 0.02)	5
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44)1993 (Reaff 2009)	mg/L	5.0	30
12.	COD as O ₂	IS 3025 Part (58)2006	mg/L	39	125
13.	Lead as Pb	IS:3025 (Pt 47)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	0.1
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	2.0
16.	Copper as Cu	IS:3025:5,(Pt 42)1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
17.	Zinc as Zn	IS:3025 (Part49)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	5.0
18.	Nickel as Ni	IS:3025 (Part54)2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
19.	Fluoride as F-	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29)1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	2.0
21.	Particle Size of Suspended solids	APHA 22nd Edition	-	Passed through 850 micron	850 micron
22.	Arsenic as As	IS:3025 (Part37)1988(Reaff 2009)	mg/L	BDL(DL 0.005)	0.2

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/021/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 20/01/2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 13/12/2016
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
23.	Mercury as Hg	IS:3025 (Part48)1994 RA 1999	mg/L	BDL(DL 0.001)	0.01
24.	Cadmium as Cd	IS:3025 (Part41)1991	mg/L	BDL(DL 0.01)	0.1
25.	Selenium as Se	IS:3025 (Part56)2003	mg/L	BDL(DL 0.005)	0.05
26.	Cyanide as CN	IS:3025 (Part27)1986 Reaff. 2009	mg/L	BDL(DL 0.01)	0.2
27.	Phenolic Compounds as C ₆ H ₅ OH	IS 3025 Part (43)1992, RA 2009	mg/L	BDL(DL 0.001)	0.35
28.	Total Iron as Fe	IS 3025(Pt 53):2003(Reaff 2009)	mg/L	0.24	3
29.	Manganese	IS:3025:(Pt-59):2006	mg/L	BDL(DL 0.01)	2
30.	Total Phosphorous as P	IS 3025(Pt 31):1988(Reaff 2009)	mg/L	BDL(DL 0.01)	3
31.	Nitrate	IS 3025 (Pt 34):1988 (Reaff 2009)	mg/L	BDL(DL 1)	20
32.	Vanadium as V	IS:3025 (Part56)2003	mg/L	BDL(DL 0.01)	0.1
33.	Benzo(a)pyrene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.2
34.	Benzene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.1
35.	Bioassay Test	IS 6582(Part 2):2001	Tf	9:1	90% survival of fish after 96 hrs in 100% effluent.

Note:-BDL - Below Detection Limit; D.L- Detection Limit; mg/L - Milligrams per liter

CONCLUSION: ETP OUTLET EFFLUENT WATER AS ABOVE PARAMETERS ARE WITHIN STANDARDS

End of Report

Verified By



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ANNEXURE-1

Form-1 (Rule 4)

Returns Regarding Water Consumed during the Month of December, 2018

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permuda, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed	0	80161	80161			
	Cooling Water						
	Boiler Feed Water	0	77832	77832			
	Fire Water	0	21722	21722			
	Domestic purpose						
	Drinking Water & Sanitation	0	2825	2825			
	Processing whereby water gets polluted and the pollutants are easily bio-degradable.						
	Service Water						Subtracting total flow from BFW, CT & Drinking water consumption
Total Consumption			4132	4132		186672	

Signature of the Consumer

Name

Address


Shiva Prakash, Manager(Env)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permuda, Mangalore -574 509

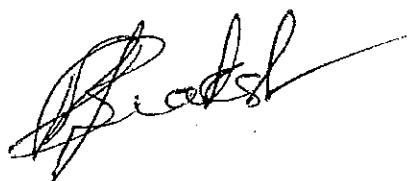
ANNEXURE - G

ONGC Mangalore Petrochemicals Limited

Production Details for December- 2016

Net Naptha Processed -1,25,849 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	69,505
2	Benzene (Co product)	18,197

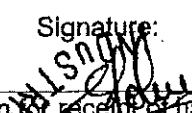
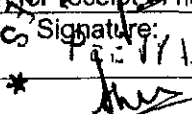


ANNEXURE - 17

FORM 10

[See rule 19 (1)]

MANIFEST FOR HAZARDOUS AND OTHER WASTE

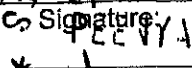
	Sender's name and mailing address (including Phone No. and e-mail)	: ONGC Mangalore Petrochemicals Limited Mangalore SEZ Unit, Permude Village Mangalore - 574 509 0824-2881518
2.	Sender's authorisation No.	: PCB/HWM/SEO/H.D. Reg. No.70422/2014-15/1636
3.	Manifest Document No	: OMPL/HW/002
4.	Transporter's name and address (including Phone No. and e-mail)	: M/s Jonas Petro Products Pvt. Ltd. D. No. 6-64/1, Plot No. 277 Baikampady Industrial Area New Mangalore - 575011 Mob: 9980195708
5.	Type of vehicle	: (Truck/Tanker/Special Vehicle)
6.	Transporter's registration No	: 37569/12-13/841
7.	Vehicle registration No.	: KA19 AB 5458
8.	Receiver's name and mailing address (including Phone No. and e-mail)	: M/s Arun Industries Lubricating Oil Refineries B-643 rd Stage Peenya Industrial Area, Bangalore Karnataka, India. PIN- 560058 080-41170031
9.	Receiver's authorisation No.	: PCB/HWM/SEO/H.D. Reg No 93464/2015-2016/11658
10.	Waste description:	: Used Oil in MS / Carboys container
11.	Total quantity No. of Containers	: 5.0.....kL 31 Nos MS drum & 19 Nos Carboys
12.	Physical form	: (Solid/Semi Solid/Sludge/Oily/Tarry/Slurry/Liquid)
13.	Special handling instructions and additional information	: -
14.	Sender's Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised, packed, marked, and labelled, and are in all respects in proper conditions for transport by road according to applicable national government regulations.
	Name and stamp: Signature: 	Month Day Year 1 0 1 5 2 0 1 6
15.	Transporter acknowledgement of receipt of hazardous waste Name and stamp: Signature: 	Month Day Year 1 0 1 5 2 0 1 6
16.	Receiver's certification for receipt of hazardous and other waste Name and stamp: Signature: 	Month Day Year 1 0 1 7 2 0 1 6

BANGALORE

FORM 10

[See rule 19 (1)]

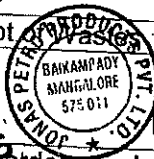
MANIFEST FOR HAZARDOUS AND OTHER WASTE

	Sender's name and mailing address (including Phone No. and e-mail)	: ONGC Mangalore Petrochemicals Limited Mangalore SEZ Unit, Permude Village Mangalore - 574 509 0824-2881518
2.	Sender's authorisation No.	: PCB/HWM/SEO/H.D. Reg. No.70422/2014-15/1636
3.	Manifest Document No	: OMPL/HW/003
4.	Transporter's name and address (including Phone No. and e-mail)	: M/s Jonas Petro Products Pvt. Ltd. D. No. 6-64/1, Plot No. 277 Baikampady Industrial Area New Mangalore - 575011 Mob: 9980195708
5.	Type of vehicle	: (Truck/Tanker/Special Vehicle)
6.	Transporter's registration No	: 37569/12-13/841
7.	Vehicle registration No.	: KA01 AD 0196
8.	Receiver's name and mailing address (including Phone No. and e-mail)	: M/s Arun Industries Lubricating Oil Refineries B-643 rd Stage Peenya Industrial Area, Bangalore Karnataka, India. PIN- 560058 080-41170031
9.	Receiver's authorisation No.	: PCB/HWM/SEO/H.D. Reg No: 93464/2015-16/1655
10.	Waste description:	: Used Oil in MS / Carboys container
11.	Total quantity No. of Containers	: 7.4.....kL 45 Nos MS drum & 28 Nos Carboys
12.	Physical form	: (Solid/Semi Solid/Sludge/Oily/Tarry/Slurry/Liquid)
13.	Special handling instructions and additional information	: -
14.	Sender's Certificate	: I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised, packed, marked, and labelled, and are in all respects in proper conditions for transport by road according to applicable national government regulations.
	Name and stamp: Signature: 	Month Day Year 1 0 1 5 2 0 1 6
15.	Transporter acknowledgement of receipt Name and stamp: Signature: 	Month Day Year 1 0 1 5 2 0 1 6
16.	Receiver's certification for receipt of hazardous and other waste Name and stamp: Signature: 	Month Day Year 1 0 1 7 2 0 1 6

* BANGALORE *

FORM 10
[See rule 19 (1)]
MANIFEST FOR HAZARDOUS AND OTHER WASTE

1.	Sender's name and mailing address (including Phone No. and e-mail)	: ONGC Mangalore Petrochemicals Limited Mangalore SEZ Unit, Permude Village Mangalore - 574 509 0824-2881518
2.	Sender's authorisation No.	: PCB/HWM/SEO/H.D. Reg. No.70422/2014-15/1636
3.	Manifest Document No	: OMPL/HW/001
4.	Transporter's name and address (including Phone No. and e-mail)	: M/s Jonas Petro Products Pvt. Ltd. D. No. 6-64/1, Plot No. 277 Baikampady Industrial Area New Mangalore - 575011 Mob: 9980195708
5.	Type of vehicle	: (Truck/Tanker/Special Vehicle)
6.	Transporter's registration No	: 37569/12-13/841
7.	Vehicle registration No.	: KA19 A 4446
8.	Receiver's name and mailing address (including Phone No. and e-mail)	: M/s Arun Industries Lubricating Oil Refineries B-643 rd Stage Peenya Industrial Area, Bangalore Karnataka, India. PIN- 560058 080-41170031
9.	Receiver's authorisation No.	: PCB/HWM/SEO/H.D. Reg No. 93464/2015-16/H655
10.	Waste description:	: Used Oil in MS / Carboys container
11.	Total quantity No. of Containers	: 6.6.....kL 57 Nos MS drum & 7 Nos Carboys
12.	Physical form	: (Solid/Semi Solid/Sludge/Oily/Tarry/Slurry/Liquid)
13.	Special handling instructions and additional information	: -
14.	Sender's Certificate I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised, packed, marked, and labelled, and are in all respects in proper conditions for transport by road according to applicable national government regulations. Name and stamp: Signature: <i>[Signature]</i> Month Day Year 1 0 1 5 2 0 1 6	
15.	Transporter acknowledgement of receipt Name and stamp: Signature: <i>[Signature]</i> Month Day Year 1 0 1 5 2 0 1 6	
16.	Receiver's certification for receipt of hazardous and other waste Name and stamp: Signature: <i>[Signature]</i> Month Day Year 1 0 1 7 2 0 1 6	



[Handwritten signatures and stamps]
BANGALORE



ओएनजीसी मंगलूर पेट्रोकेमिकल्स लिमिटेड

(मंगलूर रिफाइनरी एंड पेट्रोकेमिकल्स लिमिटेड की सहायक कंपनी)

ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery and Petrochemicals Ltd.)

एम्प्लोईड, पेट्रो, मंगलूर MSEZ, Perumbe, Mangaluru - 574 509 CIN: U40107KA2006PLC041258

दूरभाष Landline:- 0824-2872000, फ़ैक्स Fax:- 0824-2872005, Website: www.ompl.co.in

REF: OMPL/PCB/SP/2016-17/

Date: 15/2/2017

To:

The Environmental Officer
Regional Office
KSPCB
Baikampady, Mangalore-11

Dear Sir,

Sub: Submission of Environmental Monitoring Report for the Month of January 2017,
Production Report for January, 2017 & Returns Regarding Water Consumed for the
Month of January 2017

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, Production Reports & Returns Regarding Water Consumed in the Month of January 2017 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Treated Effluent Analysis Report – D
5. Returns Regarding Water Consumed, for the Month of January 2017, as Annexure-E
6. Production Report as Annexure-F

Thanking You,


Shivaprakash
Manager (Env)

CC: Member Secretary, KSPCB, Bangalore
CC: Head (Technical), MSEZ
CC: GM – PP&U, OMPL for info
CC: CEO, OMPL for info

ANNEXURE - A

Hubert Enviro Care Systems (P) Ltd.

C-45, Industrial Estate, Baikampady, Mangalore, Karnataka - 575011.
Ph: 0824 - 2408111, Email: kro@hecs.in, Website: www.hecs.in

H.O.: # 18, 92nd Street, Ashok Nagar, Chennai - 600 083.
Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in



Laboratory Services Division

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL - East side

Report Date: 04/02/2017

Report No: HECS/A/001/040217

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF JANUARY 2017

Jan'17 - Week		1st Week		2nd Week		3rd Week		4th Week		Average
Parameters	NAAQS	02-01-17	06-01-17	09-01-17	13-01-17	17-01-17	20-01-17	24-01-17	27-01-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	17.6	18.0	22.8	20.9	22.8	23.5	26.4	22.1	21.76
PM 10 ($\mu\text{g}/\text{m}^3$)	100	57.0	59.1	61.0	58.2	56.9	63.0	59.0	61.0	59.4
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	5.1	5.5	5.2	5.3	5.7	5.4	5.5	5.6	5.41
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.4	3.6	3.5	3.8	3.6	3.8	3.5	3.7	3.61
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM2.5-Particulate matter size less than 2.5 Micron, PM10-Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P- Benzo - α -pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



[Signature]
Authorized signatory

1. The report in full or part shall not be used for any promotional or publicity purpose without written consent by HECS organization. 2. Samples are not drawn by HECS unless or otherwise mentioned. 3. Unless specifically requested by customer the test items will not be retained more than 15 days from the date of issue of test report. 4. Under no circumstances lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issue of test report. 5. The test results relate only to the test items. 6. # not under scope of accreditation.

Hubert Enviro Care Systems (P) Ltd.

C-45, Industrial Estate, Baikampady, Mangalore, Karnataka - 575011.
Ph: 0824 - 2408111, Email: kro@hecs.in, Website: www.hecs.in

H.O.: # 18, 92nd Street, Ashok Nagar, Chennai - 600 083.
Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in

**Laboratory Services Division**

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore – 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Shantigudda

Report Date: 04/02/2017

Report No: HECS/A/002/040217

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF JANUARY 2017

Jan'17 - Week		1st Week		2nd Week		3 rd Week		4 th Week		Average
Parameters	NAAQS	02-01-17	06-01-17	09-01-17	Average	17-01-17	20-01-17	24-01-17	27-01-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	21.0	21.4	22.2	21.76	20.0	22.6	22.1	20.1	21.39
PM 10 ($\mu\text{g}/\text{m}^3$)	100	59.1	60.0	60.5	59.4	59.8	60.3	59.8	62.6	60.18
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	5.2	5.1	5.3	5.41	5.3	5.7	5.1	5.1	5.27
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.4	3.5	3.7	3.61	3.5	3.6	3.4	3.6	3.53
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P - Benzo - α -pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

*****End of Report *****



Authorized signatory

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**Laboratory Services Division**

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 04/02/2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Tenka Ekkar

Report No: HECS/A/003/040217

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF JANUARY 2017

Jan'17 - Week		1st Week		2nd Week		3rd Week		4th Week		Average
Parameters	NAAQS	02-01-17	05-01-17	09-01-17	13-01-17	17-01-17	20-01-17	24-01-17	27-01-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	19.7	20.5	20.5	21.7	22.3	23.8	22.6	22.3	21.67
PM 10 ($\mu\text{g}/\text{m}^3$)	100	61.8	60.7	63.2	59.4	59.1	58.9	60.9	62.4	60.8
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	5.4	5.6	5.5	5.5	5.3	5.5	5.1	5.2	5.38
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.7	3.5	3.5	3.6	3.6	3.8	3.9	3.7	3.66
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P - Benzo - α -pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

*****End of Report*****



[Signature]
Authorized signatory

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**Laboratory Services Division**

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 04/02/2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore – 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Premude Village

Report No: HECS/A/004/040217

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF JANUARY 2017

Jan'17 - Week		1st Week		2nd Week		3 rd Week		4 th Week		Average
Parameters	NAAQS	02-01-17	06-01-17	09-01-17	13-01-17	17-01-17	20-01-17	24-01-17	27-01-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	20.8	21.4	22.6	20.2	19.8	20.9	23.2	22.4	21.41
PM 10 ($\mu\text{g}/\text{m}^3$)	100	58.6	61.5	59.8	62.8	61.4	62.1	59.7	59.1	60.62
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	5.1	5.0	5.8	5.3	5.2	5.5	5.6	5.4	5.36
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.8	3.7	3.8	3.1	3.2	3.1	2.9	3.6	3.4
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5}-Particulate matter size less than 2.5 Micron, PM₁₀-Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P- Benzo- α -pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 04/02/2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL - West Side

Report No: HECS/A/005/040217

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF JANUARY 2017

Jan'17 - Week		1st Week		2nd Week		3 rd Week		4 th Week		Average
Parameters	NAAQS	02-01-17	06-01-17	09-01-17	13-01-17	17-01-17	20-01-17	24-01-17	27-01-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	20.4	20.3	21.6	21.5	21.2	22.9	22.4	22.6	21.61
PM 10 ($\mu\text{g}/\text{m}^3$)	100	61.5	61.3	62.6	62.7	61.8	62.1	56.8	57.1	60.73
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	5.4	5.5	5.6	5.5	5.6	5.7	5.1	5.2	5.45
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.5	3.7	3.6	3.5	3.8	3.6	3.9	3.1	3.58
CO (mg/m^3)	2.0	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ - Sulphur dioxide; NO₂ - Nitrogen-dioxide; CO - Carbon Mono Oxide; B(a)P - Benzo - α -pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

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ANNEXURE - 12

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Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in**Laboratory Services Division**Accredited by NABL in the fields of Chemical
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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/GW/006/040217
 Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
 Sample Description : GW1 - Ground Water collected from Narayana Guru Community Hall, Permude
 Date of Collection : 18/01/2017
 Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.61	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.3	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	34.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	9.6	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	88.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	8.12	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	3.2	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	120.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	10.1	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	0.33	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	6.8	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
 MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/GW/007/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : GW2 - Ground Water collected from Gagtel Labor Colony
Date of Collection : 18/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	6.58	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.2	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	35.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.6	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	36.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	13.9	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.77	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	89	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	5.20	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.37	45 max
15.	Iron as Fe	IS 3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS 3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS 1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS 1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/GW/009/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : Ground Water collected from L&T New Labor Colony
Date of Collection : 18/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW3

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.94	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.3	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	6.8	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	14.9	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	56.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	19.8	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.6	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	125.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	9.1	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.35	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:- BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/GW/010/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : Ground Water collected Near OMPL - ETP
Date of Collection : 18/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW4

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.58	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	57.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	13.23	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	47.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	19.0	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.26	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	121.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	7.01	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.98	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/OW/011/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : OW1- Open Water collected from TenkaEkkar
Date of Collection : 18/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.32	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.02	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	49.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	9.4	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	51.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	10.1	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.2	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	81.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.76	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.28	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:- BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/OW/012/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : OW2 - Open Water collected from Shantigudda Village
Date of Collection : 18/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.34	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	1.89	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	31.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	7.00	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	61.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	11.2	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.22	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	72.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.31	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.10	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

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**Laboratory Services Division**

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/OW/013/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : OW3 - Open Water collected from Premude Village
Date of Collection : 18/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW3

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.01	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.1	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	24.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	7.00	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	18.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	12.0	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.7	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	44.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	2.3	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	3.2	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:- BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/SW/014/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : SW1 - Surface Water collected Near OMPL - Flare Area
Date of Collection : 18/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF SURFACE WATER MONITORING, SW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.42	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	2	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	191	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	54.1	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	108.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	14.8	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	9.12	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	256	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	77.4	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	0.30	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.08	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.15	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-NephelometricTurbidity Unit; mg/L - Milligrams per liter; NA-Not Available

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/SW/015/301216
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : SW2 - Surface Water collected Near OMPL - Near Central Warehouse
Date of Collection : 18/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF SURFACE WATER MONITORING, SW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	6.86	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	2.2	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	83	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	17	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	36	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	78.3	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	10.6	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	164	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	71.22	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.61	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.17	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per liter

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

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ANNEXURE - D

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/WW/017/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 10/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4):1983 (Reaff 2006)	Hazen Units	2.0	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006	-	Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn.. 2012	mg/L	12.0	
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	6.52	100
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	27.0	6.0-8.5
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	Shall not exceed 5 degree Centigrade above the receiving water temperature
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26)1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	5
8.	Ammonical Nitrogen as N	IS 3025 Part (34)1988	mg/L	9.2	1
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34)1988	mg/L	19.7	50
10.	Free Ammonia as NH ₃	IS:3025 (Part34)1998 Reaff. 2003	mg/L	BDL(DL 0.02)	100
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44)1993 (Reaff 2009)	mg/L	8.0	5
12.	COD as O ₂	IS 3025 Part (58)2006	mg/L	52.0	30
13.	Lead as Pb	IS:3025 (Pt 47)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	125
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	0.1
16.	Copper as Cu	IS:3025:5,(Pt 42)1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	2.0
17.	Zinc as Zn	IS:3025 (Part49)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	1.0
18.	Nickel as Ni	IS:3025 (Part54)2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	5.0
19.	Fluoride as F-	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29)1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	1.0
21.	Particle Size of Suspended solids	APHA 22nd Edition	-	Passed through 850 micron	2.0
22.	Arsenic as As	IS:3025 (Part37)1988(Reaff 2009)	mg/L	BDL(DL 0.005)	850 micron

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/WW/017/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 10/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
23.	Mercury as Hg	IS:3025 (Part48)1994 RA 1999	mg/L	BDL(DL 0.001)	0.01
24.	Cadmium as Cd	IS:3025 (Part41)1991	mg/L	BDL(DL 0.01)	0.1
25.	Selenium as Se	IS:3025 (Part56)2003	mg/L	BDL(DL 0.005)	0.05
26.	Cyanide as CN	IS:3025 (Part27)1986 Reaff. 2009	mg/L	BDL(DL 0.01)	0.2
27.	Phenolic Compounds as C6H5OH	IS 3025 Part (43)1992, RA 2009	mg/L	BDL(DL 0.001)	0.35
28.	Total Iron as Fe	IS 3025(Pt 53):2003(Reaff 2009)	mg/L	0.20	3
29.	Manganese	IS:3025:(Pt-59):2006	mg/L	BDL(DL 0.01)	2
30.	Total Phosphorous as P	IS 3025(Pt 31):1988(Reaff 2009)	mg/L	BDL(DL 0.01)	3
31.	Nitrate	IS 3025 (Pt 34):1988 (Reaff 2009)	mg/L	BDL(DL 1)	20
32.	Vanadium as V	IS:3025 (Part56)2003	mg/L	BDL(DL 0.01)	0.1
33.	Benzo(a)pyrene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.2
34.	Benzene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.1
35.	Bioassay Test	IS 6582(Part 2):2001	Tf.	9:1	90% survival of fish after 96 hrs in 100% effluent

Note:-BDL - Below Detection Limit; D.L- Detection Limit; mg/L - Milligrams per liter

CONCLUSION: ETP OUTLET EFFULENT WATER AS ABOVE PARAMETERS ARE WITHIN STANDARDS

End of Report

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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/WW/021/040217
 Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
 Sample Description : Guard Pond Pump Discharge (ETP Effluent)
 Date of Collection : 18/01/2017
 Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4):1983 (Reaff 2006)	Hazen Units	2.0	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006	-	Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn., 2012	mg/L	9.0	100
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	7.3	6.0-8.5
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	27.0	Shall not exceed 5 degree Centigrade above the receiving water temperature
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	5
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26)1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	1
8.	Ammonical Nitrogen as N	IS 3025 Part (34)1988	mg/L	10.1	50
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34)1988	mg/L	21.0	100
10.	Free Ammonia as NH ₃	IS:3025 (Part34)1998 Reaff. 2003	mg/L	BDL(DL 0.02)	5
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44)1993 (Reaff 2009)	mg/L	8.0	30
12.	COD as O ₂	IS 3025 Part (58)2006	mg/L	51	125
13.	Lead as Pb	IS:3025 (Pt 47)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	0.1
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	2.0
16.	Copper as Cu	IS:3025:5,(Pt 42)1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
17.	Zinc as Zn	IS:3025 (Part49)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	5.0
18.	Nickel as Ni	IS:3025 (Part54)2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
19.	Fluoride as F ⁻	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29)1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	2.0
21.	Particle Size of Suspended Solids	APHA 22nd Edition		Passed through 850 micron	850 micron
22.	Arsenic as As	IS:3025 (Part37)1988(Reaff 2009)	mg/L	BDL(DL 0.005)	0.2

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/WW/021/040217
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04/02/2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 18/01/2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
23.	Mercury as Hg	IS:3025 (Part48)1994 RA 1999	mg/L	BDL(DL 0.001)	0.01
24.	Cadmium as Cd	IS:3025 (Part41)1991	mg/L	BDL(DL 0.01)	0.1
25.	Selenium as Se	IS:3025 (Part56)2003	mg/L	BDL(DL 0.005)	0.05
26.	Cyanide as CN	IS:3025 (Part27)1986 Reaff. 2009	mg/L	BDL(DL 0.01)	0.2
27.	Phenolic Compounds as C ₆ H ₅ OH	IS 3025 Part (43)1992;RA 2009	mg/L	BDL(DL 0.001)	0.35
28.	Total Iron as Fe	IS 3025(Pt 53):2003(Reaff 2009)	mg/L	0.22	3
29.	Manganese	IS:3025:(Pt-59):2006	mg/L	BDL(DL 0.01)	2
30.	Total Phosphorous as P	IS 3025(Pt 31):1988(Reaff 2009)	mg/L	BDL(DL 0.01)	3
31.	Nitrate	IS 3025 (Pt 34):1988 (Reaff 2009)	mg/L	BDL(DL 1)	20
32.	Vanadium as V	IS:3025 (Part56)2003	mg/L	BDL(DL 0.01)	0.1
33.	Benzo(a)pyrene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.2
34.	Benzene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.1
35.	Bioassay Test	IS 6582(Part 2):2001	Tf	9:1	90% survival of fish after 96 hrs in 100% effluent

Note:-BDL - Below Detection Limit; D.L- Detection Limit; mg/L - Milligrams per liter

CONCLUSION: ETP OUTLET EFFLUENT WATER AS ABOVE PARAMETERS ARE WITHIN STANDARDS.

End of Report

S. S. S. S.
Verified By



AL
Authorized Signatory

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ANNEXURE -E

Form-1 (Rule 4)

Returns Regarding Water Consumed during the Month of January, 2017

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Pernurde, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed	0	79078	79078			
	Cooling Water						
	Boiler Feed Water	0	78844	78844			
	Fire Water	0	17321	17321			
	Domestic purpose	0	3621	3621			
	Drinking Water & Sanitation						
	Processing whereby water gets polluted and the pollutants are easily bio-degradable						
	Service Water		6390	5390			Subtracting total flow from BFW, CT & Drinking water consumption
Total Consumption				185254			

Signature of the Consumer

Name

Address

Shivaprakash
Shivaprakash, Manager(Env)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Pernurde, Mangalore -574 509

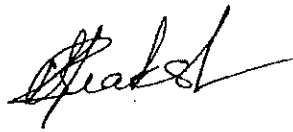
ANNEXURE - F

ONGC Mangalore Petrochemicals Limited

Production Details for January- 2017

Net Naptha Processed -1,31,923 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	56,068.97
2	Benzene (Co product)	20,348.80





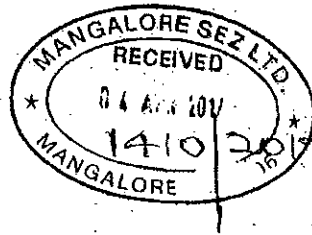
ओएनजीसी मंगलूर पेट्रोकेमिकल्स लिमिटेड
(मंगलूर रिफाइनरी एण्ड पेट्रोकेमिकल्स लिमिटेड की सहायक कंपनी)
ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery and Petrochemicals Ltd.)
एमएसईजेड, पेमुदे, मंगलूरु MSEZ, Permude, Mangaluru - 574 509 CIN: U40107KA2006PLC041258
दूरभाषा Landline:- 0824-2872000, फैक्स Fax:- 0824-2872005, Website: www.ompl.co.in

REF: OMPL/PCB/SP/2016-17/

Date: 15/3/2017

To:
The Environmental Officer
Regional Office
KSPCB
Baikampady, Mangalore-11



Dear Sir,

Sub: Submission of Environmental Monitoring Report for the Month of February 2017,
Production Report for February, 2017 & Returns Regarding Water Consumed for the
Month of February 2017

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, Production Reports & Returns Regarding Water Consumed in the Month of February 2017 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure-A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B.
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Stack Monitoring Report as Annexure-D
5. Treated Effluent Analysis Report - E
6. Returns Regarding Water Consumed, for the Month of January 2017, as Annexure-F
7. Production Report as Annexure-G
8. Form-10 - Manifest for Hazardous Waste as Annexure-H

Thanking You,

Sh. Prakash
Manager (Env)

CC: Member Secretary, KSPCB, Bangalore
CC: Head (Technical), MSEZ
CC: CEO, OMPL for info
CC: GM - PP&U, OMPL for info

ANNEXURE - A

Hubert Enviro Care Systems (P) Ltd.

C-45, Industrial Estate, Baikampady, Mangalore, Karnataka - 575011.
Ph: 0824 - 2408111, Email: kro@hecs.in, Website: www.hecs.in

H.O.: # 18, 92nd Street, Ashok Nagar, Chennai - 600 083.
Ph: 42985555 Fax: 42985500 E-mail: labsales@hecs.in

Laboratory Services Division

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 13.03.2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL - East side

Report No: HECS/AA/001/020317

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF FEBRUARY 2017

Feb'17 - Week		5 th Week		6 th Week		7 th Week		8 th Week		9 th Week	Average
Parameters	NAAQS	30-01-17	03-02-17	06-02-17	10-02-17	13-02-17	17-02-17	20-02-17	24-02-17	27-02-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	17.9	18.6	22.1	19.9	22.0	22.3	25.1	21.2	21.8	21.2
PM 10 ($\mu\text{g}/\text{m}^3$)	100	55.0	57.9	59.5	56.8	58.4	61.2	58.1	59.4	60.1	58.5
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.2	3.7	2.8	3.3	3.4	3.7	3.9	2.9	3.8	3.4
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.6	3.7	3.4	3.6	3.5	3.8	3.8	3.4	3.7	3.6
CO (mg/m^3)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL - Detection Limit; PM2.5-Particulate matter size less than 2.5 Micron, PM₁₀-Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P- Benzo - α -pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



Authorized Signatory

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Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in

Laboratory Services Division

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Shantigudda
Report Date: 13.03.2017

Report No: HECS/AA/002/020317

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF FEBRUARY 2017

Feb'17 - Week		5 th Week		6 th Week		7 th Week		8 th Week		9 th Week	Average
Parameters	NAAQS	30-01-17	03-02-17	06-02-17	10-02-17	13-02-17	17-02-17	20-02-17	24-02-17	27-02-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	20.6	21.4	20.8	21.7	21.8	22.2	22.1	21.5	21.3	21.5
PM 10 ($\mu\text{g}/\text{m}^3$)	100	60.6	59.2	61.8	62.1	61.6	60.9	59.8	61.7	61.9	61.1
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.8	3.1	2.9	2.9	3.5	3.2	3.6	3.4	3.4	3.3
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.6	3.5	3.7	3.4	3.5	3.6	3.6	3.4	3.7	3.6
CO (mg/m^3)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(α)P (ng/m^3)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(α)P - Benzo - α -pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

***** End of Report *****



Authorized Signatory

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Laboratory Services Division

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 13.03.2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Tenka Ekkar

Report No: HECS/AA/003/020317

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF FEBRUARY 2017

Feb'17 - Week		5 th Week		6 th Week		7 th Week		8 th Week		9 th Week	Average
Parameters	NAAQS	30-01-17	03-02-17	06-02-17	10-02-17	13-02-17	17-02-17	20-02-17	24-02-17	27-02-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	22.1	23.4	19.9	21.6	20.7	20.1	22.4	21.3	21.5	21.4
PM 10 ($\mu\text{g}/\text{m}^3$)	100	58.9	60.2	62.2	58.6	59.7	61.6	59.3	61.8	61.5	60.4
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	2.9	3.5	3.6	3.8	3.1	3.7	3.7	3.3	2.8	3.4
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.5	3.8	3.6	3.9	3.7	3.7	3.4	3.7	3.6	3.7
CO (mg/m^3)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL = Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P - Benzo - α - pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



Authorized Signatory

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ISO 9001, 14001 & OHSAS 18001 Certified.

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 13.03.2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Premude Village

Report No: HECS/AA/004/020317

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF FEBRUARY 2017

Feb'17 - Week		5 th Week		6 th Week		7 th Week		8 th Week		9 th Week	Average
Parameters	NAAQS	30-01-17	03-02-17	06-02-17	10-02-17	13-02-17	17-02-17	20-02-17	24-02-17	27-02-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	22.1	21.9	20.7	23.0	22.7	21.3	20.6	22.4	21.6	21.8
PM 10 ($\mu\text{g}/\text{m}^3$)	100	60.6	59.4	58.9	62.3	61.4	61.7	60.1	59.8	60.9	60.6
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.1	3.7	3.4	3.4	2.9	2.8	3.8	3.6	3.2	3.3
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.2	2.9	3.6	3.8	3.7	3.5	3.7	3.6	3.4	3.5
CO (mg/m^3)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(α)P (ng/m^3)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(α)P - Benzo - α - pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



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TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 13.03.2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL - West Side

Report No: HECS/A/005/020317

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF FEBRUARY 2017

Feb'17 - Week		5 th Week		6 th Week		7 th Week		8 th Week		9 th Week	Average
Parameters	NAAQS	30-01-17	03-02-17	06-02-17	10-02-17	13-02-17	17-02-17	20-02-17	24-02-17	27-02-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	21.5	20.9	22.4	22.1	21.6	21.7	22.4	22.2	21.9	21.9
PM 10 ($\mu\text{g}/\text{m}^3$)	100	57.2	62.5	58.9	58.4	59.7	60.7	60.2	61.4	61.9	60.3
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.1	3.8	3.5	3.5	2.8	3.3	2.9	3.0	3.6	3.3
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.2	3.9	3.6	3.5	3.5	3.2	3.3	3.7	3.4	3.5
CO (mg/m ³)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m ³)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m ³)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m ³)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter, size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ - Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P - Benzo - α -pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



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ANNEXURE-B

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/001/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : GW1 - Ground Water collected from Narayana Guru Community Hall, Premude
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.50	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.2	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	33.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	9.1	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	85.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	9.2	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	3.3	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	128.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	10.3	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	0.31	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	6.5	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L- Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/002/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : GW2 - Ground Water collected from Gagnet Labor Colony
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	6.79	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.1	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	34.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.1	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	35.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	12.7	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.98	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	93.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	5.40	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.21	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/003/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : GW3-: Ground Water collected from L&T New Labor Colony
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW3

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.72	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.2	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	6.5	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	13.2	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	53.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	18.6	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.4	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	121.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	9.5	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.22	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100ml	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/004/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : GW4-Ground Water collected Near OMPL - ETP
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW4

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.33	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	55.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	12.9	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	45.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	18.0	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.17	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	127.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	6.82	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.81	45 max
15.	Iron as Fe	IS 3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS 3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS 1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS 1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/005/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : OW1- Open Water collected from Tenka Ekkar
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.41	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.06	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	47.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	9.1	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	48.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	9.7	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.5	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	77.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.62	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.19	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note: BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/006/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : OW2 - Open Water collected from Shantigudda Village
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.48	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	1.64	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	32.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	7.89	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	59.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	10.1	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.43	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	69.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.5	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.20	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/007/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : OW3 - Open Water collected from Permude Village
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW3

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.16	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.2	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	25.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.10	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	19.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	11.02	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.8	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	46.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	2.2	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	3.0	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note: BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

Skilpa
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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/008/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : SW1 - Surface Water collected Near OMPL - Flare Area
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF SURFACE WATER MONITORING, SW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.31	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.8	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	182	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	52.4	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	102.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	13.9	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	7.9	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	242	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	74.9	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	0.27	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.01	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.12	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per liter; NA-Not Available

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

Shelva
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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/009/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : SW2 - Surface Water collected Near OMPL - Near Central Warehouse
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF SURFACE WATER MONITORING, SW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983		6.98	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	2.0	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	80	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	16	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	34	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	75.5	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	10.1	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	155	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	69.13	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.48	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.15	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per liter

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

Shilpa
Verified By



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ANNEXURE - 2

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TEST REPORT

Page No: 1 of 1

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 13.03.2017
Address of the Industry: Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Noise Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL
Sampling Date : 23.02.2017

Report No: HECS/N/001/020317

TEST RESULTS OF NOISE MONITORING FOR THE MONTH OF FEBRUARY 2017

S.No.	Sampling Location	MoEF requirements in dB		Avg. Noise level in dB	
		Day	Night	Day	Night
1.	OMPL-North	75	70	64.1	60.2
2.	OMPL-South			61.2	59.7
3.	OMPL-East			63.6	62.1
4.	OMPL-West			64.8	63.5

Note: dB: Decibel

CONCLUSION: All the parameters meet MoEF Standards




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ANNEXURE-D

Hubert Enviro Care Systems (P) Ltd.

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry		: M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village Mangalore-574509		Page No	: 1 of 9
Stack ID		: NHT Charge heater		Report No	: HECS/S/0200217001
Sampled by		: HECS Pvt. Ltd.		Report Date	: 13.03.2017
Date of Sampling		: 16.02.2017			
Source		: Stack Emission			
Date of Sample Receipt		: 18.02.2017			
General Details					
Ambient Temperature (°C)				32	
Stack Diameter (m)				1.94	
Stack Height (m)				65	
Stack Temperature (°C)				228	
Flue Gas Velocity (m/s)				9.7	
Flue gas flow rate (Nm ³ /hr)				57489.99	
Results					
Sl.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	4	5
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	BDL	50
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	40	250
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	0.6	100
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY		VERIFIED BY		LABORATORY HEAD	



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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry	: M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village Mangalore-574509	Page No	: 2 of 9		
Stack ID	: Isomer Charge Heater	Report No	: HECS/S/0200217002		
Sampled by	: HECS Pvt. Ltd.	Report Date	: 13.03.2017		
Date of Sampling	: 14.02.2017				
Source	: Stack Emission				
Date of Sample Receipt	: 16.02.2017				
General Details					
Ambient Temperature (°C)		31			
Stack Diameter (m)		2.3			
Stack Height (m)		65			
Stack Temperature (°C)		179			
Flue Gas Velocity (m/s)		4.5			
Flue gas flow rate(Nm3/hr)		42134.88			
Results					
Sl.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm3	3	5
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm3	BDL	50
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm3	64	250
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm3	0.4	100
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY 		VERIFIED BY 		LABORATORY HEAD 	



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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry	: M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village Mangalore-574509	Page No	: 3 of 9		
Stack ID	: CPP (GTG-HRSG) - 1	Report No	: HECS/S/0200217003		
Sampled by	: HECS Pvt. Ltd.	Report Date	: 13.03.2017		
Date of Sampling	: 18.02.2017				
Source	: Stack Emission				
Date of Sample Receipt	: 20.02.2017				
General Details					
Ambient Temperature (°C)			32		
Stack Diameter (m)			2.8		
Stack Height (m)			70		
Stack Temperature(°C)			121		
Flue Gas Velocity (m/s)			12.7		
Flue gas flow rate(Nm3/hr)			202178.78		
Results					
Sl.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm3	32	50
2	Sulphur Dioxide(SO2)	IS 11255(Part 3)-1985	mg/Nm3	44	850
3	Oxides of Nitrogen(NOx)	IS 11255(Part 7)-2005	mg/Nm3	62	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm3	0.8	150
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY 		VERIFIED BY 			
					

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry	M/s Mangalore Petrochemicals limited	Page No	: 4 of 9		
	Mangalore SEZ, Permude Village	Report No	: HECS/S/0200217004		
	Mangalore-574509	Report Date	: 13.03.2017		
Stack ID	: Platformer Unit Charge Heater				
Sampled by	: HECS Pvt. Ltd.				
Date of Sampling	: 17.02.2017				
Source	: Stack Emission				
Date of Sample Receipt	: 18.02.2017				
General Details					
Ambient Temperature (°C)		32			
Stack Diameter (m)		4.1			
Stack Height (m)		94			
Stack Temperature(°C)		110			
Flue Gas Velocity (m/s)		5.3			
Flue gas flow rate(Nm3/hr)		183011.33			
Results					
Sl.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm3	4	5
2	Sulphur Dioxide(SO2)	IS 11255(Part 3)-1985	mg/Nm3	BDL	50
3	Oxides of Nitrogen(NOx)	IS 11255(Part 7)-2005	mg/Nm3	16	250
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm3	0.4	100
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY		VERIFIED BY		LABORATORY HEAD	



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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry	: M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village Mangalore-574509	Page No	: 5 of 9		
Stack ID	: CPP Utility Boiler	Report No	: HECS/S/0200217005		
Sampled by	: HECS Pvt. Ltd.	Report Date	: 13.03.2017		
Date of Sampling	: 18.02.2017				
Source	: Stack Emission				
Date of Sample Receipt	: 20.02.2017				
General Details					
Ambient Temperature (°C)			33		
Stack Diameter (m)			2.74		
Stack Height (m)			70		
Stack Temperature(°C)			172		
Flue Gas Velocity (m/s)			16		
Flue gas flow rate(Nm3/hr)			215959.9		
Results					
Sl.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm3	28	50
2	Sulphur Dioxide(SO2)	IS 11255(Part 3)-1985	mg/Nm3	16	850
3	Oxides of Nitrogen(NOx)	IS 11255(Part 7)-2005	mg/Nm3	18	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm3	1.1	150
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARD					
ANALYSED BY 		VERIFIED BY 		LABORATORY HEAD 	
					

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Hubert Enviro Care Systems (P) Ltd.

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H.O.: # 18, 92nd Street, Ashok Nagar, Chennai - 600 083.
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Laboratory Services Division

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry	M/s Mangalore Petrochemicals limited Mangalore SEZ, Perumde Village Mangalore-574509	Page No	6 of 9		
Stack ID	Tatory Charge Heater	Report No	HECS/S/0200217006		
Sampled by	HECS Pvt. Ltd.	Report Date	10.03.2017		
Date of Sampling	15.02.2017				
Source	Stack Emission				
Date of Sample Receipt	17.02.2017				
General Details					
Ambient Temperature (°C)		33			
Stack Diameter (m)		1.75			
Stack Height (m)		65			
Stack Temperature(°C)		134			
Flue Gas Velocity (m/s)		5.4			
Flue gas flow rate(Nm3/hr)		32147.59			
Results					
Sl.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm3	3.6	5
2	Sulphur Dioxide(SO2)	IS 11255(Part 3)-1985	mg/Nm3	9	50
3	Oxides of Nitrogen(NOx)	IS 11255(Part 7)-2005	mg/Nm3	43	250
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm3	0.3	100
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY		VERIFIED BY		LABORATORY HEAD	

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry	M/s Mangalore Petrochemicals Limited	Page No	: 7 of 9
	Mangalore SEZ, Permude Village	Report No	: HECS/S/0200217007
Stack ID	Mangalore-574509	Report Date	: 10.03.2017
Sampled by	: Xylene Column Reboiler Heater(Part A)		
Date of Sampling	: HECS Pvt. Ltd.		
Source	: 17.02.2017		
Date of Sample Receipt	: Stack Emission		
	: 18.02.2017		

General Details

Ambient Temperature (°C)	
Stack Diameter (m)	33
Stack Height (m)	3.69
Stack Temperature(°C)	90
Flue Gas Velocity (m/s)	128
Flue gas flow rate(Nm3/hr)	5.9
Results	160277.44

Sl.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm3	5	50
2	Sulphur Dioxide(SO2)	IS 11255(Part 3)-1985	mg/Nm3	10	850
3	Oxides of Nitrogen(NOx)	IS 11255(Part 7)-2005	mg/Nm3	58	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm3	1.1	150

Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS

Shaila
ANALYSED BY

Shilpa
VERIFIED BY



Shilpa
LABORATORY HEAD

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry	: M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village Mangalore-574509	Page No	: 8 of 9		
Stack ID	: Xylene Column Reboiler Heater(Part B)	Report No	: HECS/S/0200217008		
Sampled by	: HECS Pvt. Ltd.	Report Date	: 10.03.2017		
Date of Sampling	: 15.02.2017				
Source	: Stack Emission				
Date of Sample Receipt	: 17.02.2017				
General Details					
Ambient Temperature (°C)			33		
Stack Diameter (m)			3.69		
Stack Height (m)			98		
Stack Temperature(°C)			127		
Flue Gas Velocity (m/s)			5.8		
Flue gas flow rate(Nm3/hr)			156642.13		
Results					
Sl.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm3	4	50
2	Sulphur Dioxide(SO2)	IS 11255(Part 3)-1985	mg/Nm3	9	850
3	Oxides of Nitrogen(NOx)	IS 11255(Part 7)-2005	mg/Nm3	29	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm3	1	150
Inference:- STACK EMSSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY <i>Shaila</i>		VERIFIED BY <i>Shilpa</i>		LABORATORY HEAD <i>Shilpa</i>	



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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry	M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village Mangalore-574509	Page No	: 9 of 9		
Stack ID	: BTF(Toluene Column Reboiler Heater)	Report No	: HECS/S/0200217009		
Sampled by	: HECS Pvt. Ltd.	Report Date	: 10.03.2017		
Date of Sampling	: 16.02.2017				
Source	: Stack Emission				
Date of Sample Receipt	: 18.02.2017				
General Details					
Ambient Temperature (°C)			33		
Stack Diameter (m)			3.29		
Stack Height (m)			80		
Stack Temperature(°C)			196		
Flue Gas Velocity (m/s)			5.3		
Flue gas flow rate(Nm ³ /hr)			97860.36		
Results					
Sl.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	3.5	50
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	42	850
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	48	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	0.7	150
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY 		VERIFIED BY 		 LABORATORY HEAD 	

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ANNEXURE - E

Hubert Enviro Care Systems (P) Ltd.

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/011/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 10.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4)1983 (Reaff 2006)	Hazen Units	2.0	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006		Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn.. 2012	mg/L	11.0	100
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	6.71	6.0-8.5
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	28.0	Shall not exceed 5 degree Centigrade above the receiving water temperature
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	5
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26)1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	1
8.	Ammonical Nitrogen as N	IS 3025 Part (34)1988	mg/L	8.9	50
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34)1988	mg/L	20.1	100
10.	Free Ammonia as NH ₃	IS:3025 (Part34)1998 Reaff. 2003	mg/L	BDL(DL 0.02)	5
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44)1993 (Reaff 2009)	mg/L	9.0	30
12.	COD as O ₂	IS 3025 Part (58)2006	mg/L	50.0	125
13.	Lead as Pb	IS:3025 (Pt 47)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	0.1
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	2.0
16.	Copper as Cu	IS:3025:5,(Pt 42)1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
17.	Zinc as Zn	IS:3025 (Part49)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	5.0
18.	Nickel as Ni	IS:3025 (Part54)2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
19.	Fluoride as F ⁻	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29)1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	2.0
21.	Particle Size of Suspended solids	APHA 22nd Edition	-	Passed through 850 micron	850 micron
22.	Arsenic as As	IS:3025 (Part37)1988(Reaff 2009)	mg/L	BDL(DL 0.005)	0.2

Verified By

Signature

Authorized Signatory
MANGALORE
575011

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/011/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 10.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
23.	Mercury as Hg	IS:3025 (Part48)1994 RA 1999	mg/L	BDL(DL 0.001)	0.01
24.	Cadmium as Cd	IS:3025 (Part41)1991	mg/L	BDL(DL 0.01)	0.1
25.	Selenium as Se	IS:3025 (Part56)2003	mg/L	BDL(DL 0.005)	0.05
26.	Cyanide as CN	IS:3025 (Part27)1986 Reaff. 2009	mg/L	BDL(DL 0.01)	0.2
27.	Phenolic Compounds as C ₆ H ₅ OH	IS 3025 Part (43)1992,RA 2009	mg/L	BDL(DL 0.001)	0.35
28.	Total Iron as Fe	IS 3025(Pt 53):2003(Reaff 2009)	mg/L	0.21	3
29.	Manganese	IS:3025:(Pt-59):2006	mg/L	BDL(DL 0.01)	2
30.	Total Phosphorous as P	IS 3025(Pt 31):1988(Reaff 2009)	mg/L	BDL(DL 0.01)	3
31.	Nitrate	IS 3025 (Pt 34):1988 (Reaff 2009)	mg/L	BDL(DL 1)	20
32.	Vanadium as V	IS:3025 (Part56)2003	mg/L	BDL(DL 0.01)	0.1
33.	Benzo(a)pyrene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.2
34.	Benzene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.1
35.	Bioassay Test	IS 6582(Part 2):2001	Tf	9:1	90% survival of fish after 96 hrs in 100% effluent

Note:-BDL - Below Detection Limit; D.L- Detection Limit; mg/L - Milligrams per liter

CONCLUSION: ETP OUTLET EFFULENT WATER AS ABOVE PARAMETERS ARE WITHIN STANDARDS

End of Report

Stalpa
Verified By



Authorized Signatory

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/015/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4)1983 (Reaff 2006)	Hazen Units	2.0	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006	-	Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn.. 2012	mg/L	8.0	100
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	7.5	6.0-8.5
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	28.0	Shall not exceed 5 degree Centigrade above the receiving water temperature
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	5
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26)1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	1
8.	Ammonical Nitrogen as N	IS 3025 Part (34)1988	mg/L	9.8	50
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34)1988	mg/L	20.0	100
10.	Free Ammonia as NH ₃	IS:3025 (Part34)1998 Reaff. 2003	mg/L	BDL(DL 0.02)	5
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44)1993 (Reaff 2009)	mg/L	9.0	30
12.	COD as O ₂	IS 3025 Part (58)2006	mg/L	53	125
13.	Lead as Pb	IS:3025 (Pt 47)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	0.1
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	2.0
16.	Copper as Cu	IS:3025:5,(Pt 42)1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
17.	Zinc as Zn	IS:3025 (Part49)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	5.0
18.	Nickel as Ni	IS:3025 (Part54)2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
19.	Fluoride as F ⁻	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29)1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	2.0
21.	Particle Size of Suspended solids	APHA 22nd Edition		Passed through 850 micron	850 micron
22.	Arsenic as As	IS:3025 (Part37)1988(Reaff 2009)	mg/L	BDL(DL 0.005)	0.2

Verified By
S. Nipa

Authorized signatory

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/015/020317
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 13.03.2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 23.02.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.

TEST RESULTS OF GUARD POND PUMP DISCHARGE

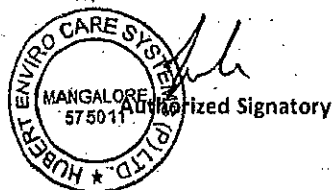
S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
23.	Mercury as Hg	IS:3025 (Part48):1994 RA 1999	mg/L	BDL(DL 0.001)	0.01
24.	Cadmium as Cd	IS:3025 (Part41):1991	mg/L	BDL(DL 0.01)	0.1
25.	Selenium as Se	IS:3025 (Part56):2003	mg/L	BDL(DL 0.005)	0.05
26.	Cyanide as CN	IS:3025 (Part27):1986 Reaff. 2009	mg/L	BDL(DL 0.01)	0.2
27.	Phenolic Compounds as C ₆ H ₅ OH	IS 3025 Part (43):1992, RA 2009	mg/L	BDL(DL 0.001)	0.35
28.	Total Iron as Fe	IS 3025(Pt 53):2003(Reaff 2009)	mg/L	0.20	3
29.	Manganese	IS:3025:(Pt-59):2006	mg/L	BDL(DL 0.01)	2
30.	Total Phosphorous as P	IS 3025(Pt 31):1988(Reaff 2009)	mg/L	BDL(DL 0.01)	3
31.	Nitrate	IS 3025 (Pt 34):1988 (Reaff 2009)	mg/L	BDL(DL 1)	20
32.	Vanadium as V	IS:3025 (Part56):2003	mg/L	BDL(DL 0.01)	0.1
33.	Benzo(a)pyrene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.2
34.	Benzene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.1
35.	Bioassay Test	IS 6582(Part 2):2001	TF	9:1	90% survival of fish after 96 hrs in 100% effluent

Note:-BDL - Below Detection Limit; D.L- Detection Limit; mg/L - Milligrams per liter

CONCLUSION: ETP OUTLET EFFULENT WATER AS ABOVE PARAMETERS ARE WITHIN STANDARDS

End of Report

Shilpa
Verified By



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ANNEXURE - I

Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of Feb, 2017

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed	0	72459	72459			
	Cooling Water						
	Boiler Feed Water	0	73645	73645			
	Fire Water	0	15596	15596			
	Domestic purpose, Drinking Water & Sanitation	0	3168	3168			
	Processing whereby water gets polluted and the pollutants are easily biodegradable.						
	Service Water		3320	3320			Subtracting total flow from BFW, CT & Drinking water consumption
Total Consumption				168188			

Signature of the Consumer

Name

Address

Shivprakash
Shivprakash, Manager (Env)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

ANNEXURE - G

ONGC Mangalore Petrochemicals Limited

Production Details for February - 2017

Net Naptha Processed -1,18,140 MT

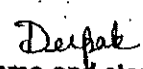
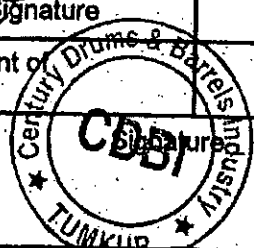
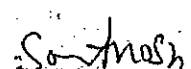
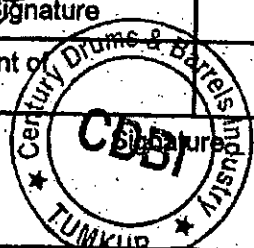
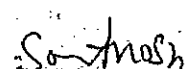
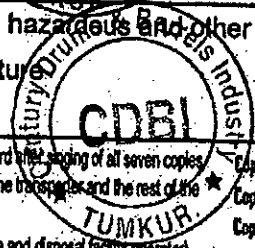
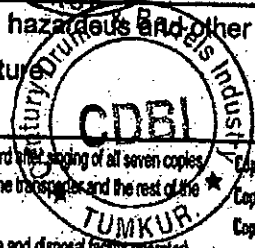
Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	62,660
2	Benzene (Co product)	16,381



FORM - 10
[See Rule 19 (I)]

ANNEXURE - II

MANIFEST FOR HAZARDOUS AND OTHER WASTE

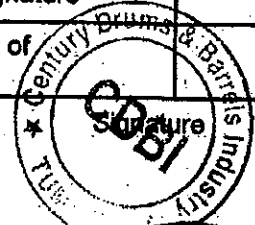
1.	Sender's Name and Mailing Address (Including Phone No. & e-mail)	ONGC Mangalore Petrochemicals Limited. Mangalore SE2 unit, Perumde Village Mangalore - 574509 Ph: 0824-2881518		
2.	Sender's authorisation No.	PCB/HWM/SEO/H.D. Reg. 70422/2014-15/1636		
3.	Manifest Document No.	051		
4.	Transporters Name & Address (Including Phone No. & e-mail)	MD Enterprises Tumkur own Transport mob: 9986087668		
5.	Type of vehicle	(Truck/Tanker/Special Vehicle)		
6.	Transporter's Registration No.	PCB/SEO/WMC/2013/212		
7.	Vehicle Registration No.	KA 52 4627		
8.	Receiver's name and mailing address (including Phone No. and e-mail)	CENTURY Drums & Barrels Industries Plot No 161 A & B, Vasantnarsapur Industries Area, 1st Phase, KIADB, TUMKUR.		
9.	Receiver's authorisation No.	PCB/WMC/601/HWM/2016/DB/-576.		
10.	Waste Description	Plastic Carboys of 30ltr newold Blue and Black colored.		
11.	Total quantity No. of Containers	 m ³ or MT 700 Nos.		
12.	Physical form	(Solid / Semi-solid / Sludge / Gilly / Tarry / Slurry)		
13.	Special handing instruction and additional information	—		
14.	Sender's Certification	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked, and labeled and are in all respects in proper condition for transport by road according to applicable national government regulations.		
	Name and stamp	  		
	Transporter acknowledgement of receipt of Wastes	 		
15.	Name and stamp	 		
16.	Receiver's certification for receipt to hazardous and other waste	 		
	Name and stamp	 		

Copy1 (White) : To be forwarded by the sender to the State Pollution Control Board after signing of all seven copies
Copy2 (Yellow) : To be retained by the sender after taking signature after from the transporter and the rest of the
signed copies to be carried by the transporter
Copy3 (Pink) : To be retained by the receiver (actual user or treatment storage and disposal facility operator)
after receiving the waste and the remaining four copies are to be duly signed by the receiver

Copy4 (Orange) : To be handed over to the transporter by the receiver after accepting waste
Copy5 (Green) : To be sent by the receiver to the State Pollution Control Board
Copy6 (Blue) : To be sent by the receiver to the sender
Copy7 (Gray) : To be sent by the receiver to the State Pollution Control Board
of the sender in case the sender is in another State

FORM - 10
[See Rule 19 (I)]

MANIFEST FOR HAZARDOUS AND OTHER WASTE

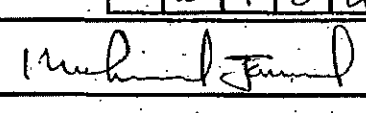
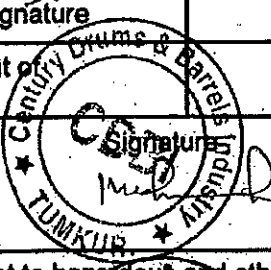
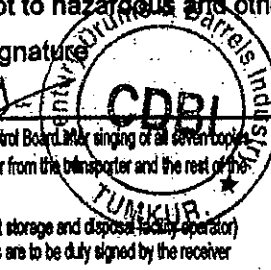
1.	Sender's Name and Mailing Address (Including Phone No. & e-mail)	ONGC Mangalore, Petrochemicals Limited Mangalore SEZ unit, Peemude Village Mangalore - 574509. Ph: 0824-2881518
2.	Sender's authorisation No.	PCB/HWM/SEO/H-D Reg 570422/2014-15/1836
3.	Manifest Document No.	8054
4.	Transporters Name & Address (Including Phone No. & e-mail)	MD Endon poles Tumkur own Transport mol: 9980027668
5.	Type of vehicle	(Truck/Tanker/Special Vehicle)
6.	Transporter's Registration No.	PCB/SEO/WMC/2013/212
7.	Vehicle Registration No.	KA 52-4627
8.	Receiver's name and mailing address (including Phone No. and e-mail)	CENTURY Drums & Barrels Industries Plot No 161 A & B, Vasanthnarsapur Industries Area, 1st Phase, KIADB, TUMKUR.
9.	Receiver's authorisation No.	PCB/WMC/GOI/HWM/2016/OP-576
10.	Waste Description	Plastic Carboys 125/30Ltr new old Blue & Black color
11.	Total quantity No. of Containers	 m ³ or MT 750 Nos.
12.	Physical form	(Solid / Semi-solid / Sludge / Oily / Tarry / Slurry)
13.	Special handing instruction and additional information	
14.	Sender's Certification	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked, and labeled and are in all respects in proper condition for transport by road according to applicable national government regulations.
	Name and stamp  Signature	Month Day Year 02 16 2017
	Transporter acknowledgement of receipt of Wastes	
15.	Name and stamp  Signature	Month Day Year 02 16 2017
16.	Receiver's certification for receipt to hazardous and other waste Name and stamp  Signature	Month Day Year 02 16 2017

Copy 1 (White) : To be forwarded by the sender to the State Pollution Control Board after signing of all seven copies
Copy 2 (Yellow) : To be retained by the sender after taking signature after from the transporter and the rest of the
signed copies to be carried by the transporter
Copy 3 (Pink) : To be retained by the receiver (actual user or treatment storage and disposal facility operator)
after receiving the waste and the remaining four copies are to be duly signed by the receiver

Copy 4 (Orange) : To be handed over to the transporter by the receiver after accepting waste
Copy 5 (Green) : To be sent by the receiver to the State Pollution Control Board
Copy 6 (Blue) : To be sent by the receiver to the sender
Copy 7 (Gray) : To be sent by the receiver to the State Pollution Control Board
of the sender in case the sender is in another State

FORM - 10
[See Rule 19 (I)]

MANIFEST FOR HAZARDOUS AND OTHER WASTE

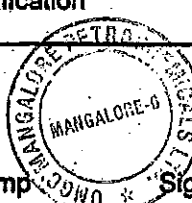
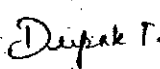
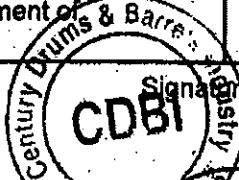
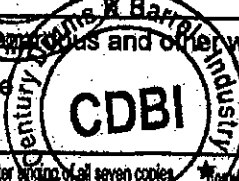
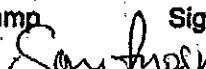
1.	Sender's Name and Mailing Address (Including Phone No. & e-mail)	ONGC Mangalore Petrochemicals Limited Mangalore SE2 unit, Perumade Village Mangalore-574509 Ph: 0824-2881518
2.	Sender's authorisation No.	PCB/HWM/SEO/H.D. Reg. No. 70422/2014-15/1636
3.	Manifest Document No.	053
4.	Transporters Name & Address (Including Phone No. & e-mail)	M DENTERPARKS, TUMKUR own Transport mob: 9980027668.
5.	Type of vehicle	(Truck/Tanker/Special Vehicle)
6.	Transporter's Registration No.	PCB/SEO/WMC/2013/212
7.	Vehicle Registration No.	KA 52 4627
8.	Receiver's name and mailing address (including Phone No. and e-mail)	CENTURY Drums & Barrels Industries Plot No 161 A & B, Vasanthnarsapur Industries Area, 1st Phase, KIADB, TUMKUR.
9.	Receiver's authorisation No.	PCB/WMC/GOI/HWM/2016/08-876.
10.	Waste Description	Plastic Carboys 730ltr. new/old. blue and black colour
11.	Total quantity No. of Containers	 m ³ or MT 650 Nos.
12.	Physical form	(Solid / Semi-solid / Sludge / Oily / Tarry / Slurry)
13.	Special handing instruction and additional information	—
14.	Sender's Certification	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked, and labeled and are in all respects in proper condition for transport by road according to applicable national government regulations.
	Name and stamp:  Signature	Month Day Year 0 2 1 3 2 0 1 7
	Transporter acknowledgement of receipt of Wastes	
15.	Name and stamp 	Month Day Year 0 2 1 3 2 0 1 7
16.	Receiver's certification for receipt of hazardous and other waste Name and stamp 	Month Day Year

Copy1 (White) : To be forwarded by the sender to the State Pollution Control Board after signing of all seven copies
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Copy7 (Grey) : To be sent by the receiver to the State Pollution Control Board
of the sender in case the sender is in another State

FORM - 10
[See Rule 19 (I)]

MANIFEST FOR HAZARDOUS AND OTHER WASTE

1.	Sender's Name and Mailing Address (Including Phone No. & e-mail)	ONGC Mangalore Petrochemicals Limited Mangalore SEZ Unit, Perumwale Village Mangalore - 574509 PH: 0824-2881518
2.	Sender's authorisation No.	PCB/HWM/SEO/H.O Reg 70422/2014/15/1636
3.	Manifest Document No.	055
4.	Transporters Name & Address (Including Phone No. & e-mail)	MD Enterprises Tumkur own transport mob: 9980027668
5.	Type of vehicle	(Truck/Tanker/Special Vehicle)
6.	Transporter's Registration No.	PCB/SEO/WMC/2013/212
7.	Vehicle Registration No.	KA 52 H 627
8.	Receiver's name and mailing address (including Phone No. and e-mail)	CENTURY Drums & Barrels Industries Plot No 161 A & B, Vasantnarsapur Industries Area, 1st Phase, KIADB, TUMKUR.
9.	Receiver's authorisation No.	PCB/WMC/601/HWM/2016/OB-576.
10.	Waste Description	Plastic Cans of 300ml new old blue blank colour
11.	Total quantity No. of Containers	 m ³ or MT 650 Nos.
12.	Physical form	(Solid / Semi-solid / Sludge / Oily / Tarry / Slurry)
13.	Special handling instruction and additional information	-
14.	Sender's Certification	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked, and labeled and are in all respects in proper condition for transport by road according to applicable national government regulations.
	Name and stamp  Signature: 	Month Day Year 0 2 1 5 2 0 1 7
	Transporter acknowledgement of receipt of Wastes	
15.	Name and stamp  Signature: 	Month Day Year 0 2 1 5 2 0 1 7
16.	Receiver's certification for receipt of hazardous and other waste Name and stamp  Signature: 	Month Day Year

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Copy7 (Grey) : To be sent by the receiver to the State Pollution Control Board of the sender in case the sender is in another State

Hubert Enviro Care Systems (P) Ltd.

C-45, Industrial Estate, Baikampady, Mangalore, Karnataka - 575011.
Ph: 0824 - 2408111, Email: kro@hecs.in, Website: www.hecs.in

H.O.: # 18, 92nd Street, Ashok Nagar, Chennai - 600 083.
Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in

Laboratory Services Division

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/006/030417
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 03.04.2017
Sample Description : OW2 - Open Water collected from Shantigudda Village
Date of Collection : 22.03.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.53	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	1.75	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	34.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.02	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	61.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	11.4	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.52	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	76.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.7	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.26	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note: BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

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Verified By



Shah
Authorized Signatory

Hubert Enviro Care Systems (P) Ltd.

C-45, Industrial Estate, Balkampady, Mangalore, Karnataka - 575011.
Ph: 0824 - 2408111, Email: kro@hecs.in, Website: www.hecs.in

H.O.: # 18, 92nd Street, Ashok Nagar, Chennai - 600 083.

Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in

Laboratory Services Division

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/007/030417
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 03.04.2017
Sample Description : OW3 - Open Water collected from Premude Village
Date of Collection : 22.03.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW3

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.22	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.24	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	26.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.98	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	21.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	12.1	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.9	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	54.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	2.3	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	2.8	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Notes:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

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Verified By



[Signature]
Authorized Signatory

1. The report in full or part shall not be used for any promotional or publicity purpose without written consent by HECS organization. 2. Samples are not drawn by HECS unless or otherwise mentioned. 3. Unless specifically requested by customer the test items will not be retained more than 15 days from the date of issue of test report. 4. Under no circumstances lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issue of test report. 5. The test results relate only to the test items.

Hubert Enviro Care Systems (P) Ltd.

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Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in

Laboratory Services DivisionAccredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.**TEST REPORT**

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/008/030417
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 03.04.2017
Sample Description : SW1 - Surface Water collected Near OMPL - Flare Area
Date of Collection : 22.03.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

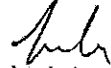
TEST RESULTS OF SURFACE WATER MONITORING, SW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.39	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.7	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	188	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	55.0	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	107.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	15.0	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	8.4	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	261	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	77.2	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	0.29	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.09	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.13	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per liter; NA-Not Available

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

Verified By
Authorized Signatory


Hubert Enviro Care Systems (P) Ltd.

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Laboratory Services Division

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ISO 9001, 14001 & OHSAS 18001 Certified.

TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/009/030417
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 03.04.2017
Sample Description : SW2 - Surface Water collected Near OMPL - Near Central Warehouse
Date of Collection : 22.03.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF SURFACE WATER MONITORING, SW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.0	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.8	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	77	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	14.5	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	32	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	73.6	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	9.8	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	148	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	67.0	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.43	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.14	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per liter

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

Verified By



Authorized Signatory

1. The report in full or part shall not be used for any promotional or publicity purpose without written consent by HECS organization. 2. Samples are not drawn by HECS unless or otherwise mentioned. 3. Unless specifically requested by customer the test items will not be retained more than 15 days from the date of issue of test report. 4. Under no circumstances lab accepts any liability or loss / damage caused by use or misuse of test report after invoicing or issue of test report. 5. The test results relate only to the test items.

Hubert Enviro Care Systems (P) Ltd.

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Ph: 42985555 Fax : 42985500 E-mail : labsales@hecs.in

Laboratory Services Division

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

TEST REPORT

Page No: 1 of 1

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 03.04.2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Noise Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL
Sampling Date : 22.03.2017

Report No: HECS/N/001/030417

TEST RESULTS OF NOISE MONITORING FOR THE MONTH OF MARCH 2017

S.No.	Sampling Location	MoEF requirements in dB		Avg. Noise level in dB	
		Day	Night	Day	Night
1.	OMPL-North	75	70	65.8	61.1
2.	OMPL-South			62.6	60.8
3.	OMPL-East			65.1	63.2
4.	OMPL-West			66.2	64.6

Note: dB; Decibel

CONCLUSION: All the parameters meet MoEF Standards

Plh
Authorized signatory

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Laboratory Services DivisionAccredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.**TEST REPORT**

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/015/030417
 Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 03.04.2017
 Sample Description : Guard Pond Pump Discharge (ETP Effluent)
 Date of Collection : 22.03.2017
 Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4):1983 (Reaff 2006)	Hazen Units	1.9	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006	-	Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn.. 2012	mg/L	9.0	
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	7.6	6.0-8.5
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	28.0	Shall not exceed 5 degree Centigrade above the receiving water temperature
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	5
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26)1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	1
8.	Ammonical Nitrogen as N	IS 3025 Part (34)1988	mg/L	10.3	50
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34)1988	mg/L	19.0	100
10.	Free Ammonia as NH ₃	IS:3025 (Part34)1998 Reaff. 2003	mg/L	BDL(DL 0.02)	5
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44)1993 (Reaff 2009)	mg/L	9.6	30
12.	COD as O ₂	IS 3025 Part (58)2006	mg/L	55	125
13.	Lead as Pb	IS:3025 (Pt 47)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	0.1
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	2.0
16.	Copper as Cu	IS:3025:5,(Pt 42)1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
17.	Zinc as Zn	IS:3025 (Part49)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	5.0
18.	Nickel as Ni	IS:3025 (Part54)2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
19.	Fluoride as F ⁻	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29)1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	2.0
21.	Particle Size of Suspended solids	APHA 22nd Edition	-	Passed through 850 micron	850 micron
22.	Arsenic as As	IS:3025 (Part37)1988(Reaff 2009)	mg/L	BDL(DL 0.005)	0.2

Verified By: *Black*Authorized Signatory: *[Signature]*

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/015/030417
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 03.04.2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 22.03.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
23.	Mercury as Hg	IS:3025 (Part48)1994 RA 1999	mg/L	BDL(DL 0.001)	0.01
24.	Cadmium as Cd	IS:3025 (Part41)1991	mg/L	BDL(DL 0.01)	0.1
25.	Selenium as Se	IS:3025 (Part56)2003	mg/L	BDL(DL 0.005)	0.05
26.	Cyanide as CN	IS:3025 (Part27)1986 Reaff. 2009	mg/L	BDL(DL 0.01)	0.2
27.	Phenolic Compounds as C ₆ H ₅ OH	IS 3025 Part (43)1992,RA 2009	mg/L	BDL(DL 0.001)	0.35
28.	Total Iron as Fe	IS 3025(Pt 53):2003(Reaff 2009)	mg/L	0.19	3
29.	Manganese	IS:3025:(Pt-59):2006	mg/L	BDL(DL 0.01)	2
30.	Total Phosphorous as P	IS 3025(Pt 31):1988(Reaff 2009)	mg/L	BDL(DL 0.01)	3
31.	Nitrate	IS 3025 (Pt 34):1988 (Reaff 2009)	mg/L	BDL(DL 1)	20
32.	Vanadium as V	IS:3025 (Part56)2003	mg/L	BDL(DL 0.01)	0.1
33.	Benzo(a)pyrene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.2
34.	Benzene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.1
35.	Bioassay Test	IS 6582(Part 2):2001	Tf	9:1	90% survival of fish after 96 hrs in 100% effluent

Note:-BDL - Below Detection Limit; D.L- Detection Limit; mg/L - Milligrams per liter

CONCLUSION: ETP OUTLET EFFULENT WATER AS ABOVE PARAMETERS ARE WITHIN STANDARDS

End of Report

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Laboratory Services DivisionAccredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.**TEST REPORT**

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/011/030417
 Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 03.04.2017
 Sample Description : Guard Pond Pump Discharge (ETP Effluent)
 Date of Collection : 09.03.2017
 Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

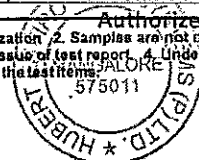
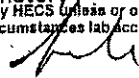
TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4):1983 (Reaff 2006)	Hazen Units	2.0	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006	-	Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn., 2012	mg/L	10.0	100
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	6.80	6.0-8.5
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	28.0	Shall not exceed 5 degree Centigrade above the receiving water temperature
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	5
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26):1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	1
8.	Ammonical Nitrogen as N	IS 3025 Part (34):1988	mg/L	9.2	50
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34):1988	mg/L	21.3	100
10.	Free Ammonia as NH ₃	IS:3025 (Part34):1998 Reaff. 2003	mg/L	BDL(DL 0.02)	5
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44):1993 (Reaff 2009)	mg/L	9.6	30
12.	COD as O ₂	IS 3025 Part (58):2006	mg/L	52.0	125
13.	Lead as Pb	IS:3025 (Pt 47):1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	0.1
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	2.0
16.	Copper as Cu	IS:3025,5,(Pt 42):1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
17.	Zinc as Zn	IS:3025 (Part49):1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	5.0
18.	Nickel as Ni	IS:3025 (Part54):2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
19.	Fluoride as F ⁻	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29):1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	2.0
21.	Particle Size of Suspended solids	APHA 22nd Edition	-	Passed through 850 micron	850 micron
22.	Arsenic as As	IS:3025 (Part37):1988(Reaff 2009)	mg/L	BDL(DL 0.005)	0.2

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Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/011/030417
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 03.04.2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 09.03.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
23.	Mercury as Hg	IS:3025 (Part48)1994 RA 1999	mg/L	BDL(DL 0.001)	0.01
24.	Cadmium as Cd	IS:3025 (Part41)1991	mg/L	BDL(DL 0.01)	0.1
25.	Selenium as Se	IS:3025 (Part56)2003	mg/L	BDL(DL 0.005)	0.05
26.	Cyanide as CN	IS:3025 (Part27)1986 Reaff. 2009	mg/L	BDL(DL 0.01)	0.2
27.	Phenolic Compounds as C ₆ H ₅ OH	IS 3025 Part (43)1992, RA 2009	mg/L	BDL(DL 0.001)	0.35
28.	Total Iron as Fe	IS 3025(Pt 53):2003(Reaff 2009)	mg/L	0.23	3
29.	Manganese	IS:3025:(Pt-59):2006	mg/L	BDL(DL 0.01)	2
30.	Total Phosphorous as P	IS 3025(Pt 31):1988(Reaff 2009)	mg/L	BDL(DL 0.01)	3
31.	Nitrate	IS 3025 (Pt 34):1988 (Reaff 2009)	mg/L	BDL(DL 1)	20
32.	Vanadium as V	IS:3025 (Part56)2003	mg/L	BDL(DL 0.01)	0.1
33.	Benzo(a)pyrene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.2
34.	Benzene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.1
35.	Bioassay Test	IS 6582(Part 2):2001	Tf	9:1	90% survival of fish after 96 hrs in 100% effluent

Note:-BDL - Below Detection Limit; D.L- Detection Limit; mg/L - Milligrams per liter

CONCLUSION: ETP OUTLET EFFULENT WATER AS ABOVE PARAMETERS ARE WITHIN STANDARDS

End of Report

Shaila
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Shaila
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ओएनजीसी मंगलूर पेट्रोकेमिकल्स लिमिटेड
(मंगलूर रिफाइनरी एण्ड पेट्रोकेमिकल्स लिमिटेड की सहायक कंपनी)
ONGC Mangalore Petrochemicals Limited

(A Subsidiary of Mangalore Refinery and Petrochemicals Ltd.)

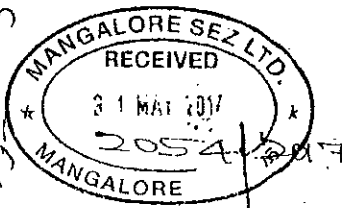
एमएसईजेड, पेर्मुदे, मंगलूरु MSEZ, Permude, Mangaluru - 574 509 CIN: U40107KA2006PLC041258

दूरभाषा Landline:- 0824-2872000, फैक्स Fax:- 0824-2872005, Website: www.ompl.co.in

REF: OMPL/PCB/SP/2017-18/

Date: 15/5/2017

To:
The Environmental Officer
Regional Office
KSPCB
Baikampady, Mangalore-11



Dear Sir,

Sub: Submission of Environmental Monitoring Report for the Month of April, 2017, Production Report for April 2017 & Returns Regarding Water Consumed for the Month of April, 2017

Ref: CFO No. PCB/245/HPI//ONGC/2014-15/593 dated 18th August 2014

With respect to the above subject; we are herewith submitting the following Environmental Monitoring Reports, Production Reports & Returns Regarding Water Consumed in the Month of April 2017 respectively, enclosed herewith.

1. Ambient Air Quality Monitoring at 5 different locations in and around OMPL, enclosed as Annexure- A
2. Water Analysis Reports at 9 different locations in and around OMPL, as Annexure-B
3. Noise Level Monitoring Report at OMPL, as Annexure-C
4. Stack Monitoring Report as Annexure-D
5. Treated Effluent Analysis Report – E
6. Returns Regarding Water Consumed, for the Month of April 2017, as Annexure-F
7. Production Report as Annexure-G

Thanking You,

Shivaprakash
Manager (Env)

CC: Member Secretary, KSPCB, Bangalore
CC: Head (Technical), MSEZ
CC: CEO, OMPL for info
CC: COO, OMPL for info

Chase / 10/20/17
Rahul - 1

29/5

ANNEXURE - A

Hubert Enviro Care Systems (P) Ltd.
C-45, Industrial Estate, Balkampady, Mangalore, Karnataka - 575011.
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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 04/05/2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore -- 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL - East side

Report No: HECS/AA/001/040517

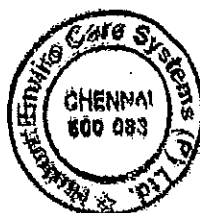
CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF APRIL 2017

APRIL'17 - Week		14 th Week		15 th Week		16 th Week		17 th Week		Average
Parameters	NAAQS	03-04-17	06-04-17	10-04-17	13-04-17	17-04-17	20-04-17	24-04-17	27-04-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	20.4	18.7	21.1	25.2	23.6	22.0	24.5	24.8	22.53
PM 10 ($\mu\text{g}/\text{m}^3$)	100	56.7	55.9	58.1	61.3	59.2	57.8	60.5	61.0	58.81
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.0	3.3	2.9	3.4	3.6	3.8	3.7	3.2	3.36
NO _x ($\mu\text{g}/\text{m}^3$)	80	3.5	3.8	3.8	3.6	3.7	3.5	3.7	3.6	3.65
CO (mg/m^3)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO_x - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P - Benzo - α - pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



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ISO 9001, 14001 & OHSAS 18001 Certified.

Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 04/05/2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Shantigudda

Report No: HECS/AA/002/040517

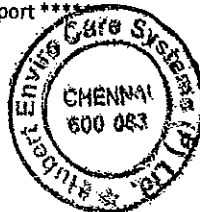
CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF APRIL 2017

APRIL'17 - Week		14 th Week		15 th Week		16 th Week		17 th Week		Average
Parameters	NAAQS	03-04-17	06-04-17	10-04-17	13-04-17	17-04-17	20-04-17	24-04-17	27-04-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	20.9	22.1	21.8	21.2	20.6	22.3	20.7	21.5	21.38
PM 10 ($\mu\text{g}/\text{m}^3$)	100	59.9	60.2	59.4	62.4	61.9	62.0	61.3	61.7	61.1
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.0	3.4	2.9	3.1	3.6	3.5	3.3	3.2	3.25
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.5	3.7	3.4	3.6	3.6	3.7	3.4	3.5	3.55
CO (mg/m^3)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL - Detection Limit; PM2.5-Particulate matter size less than 2.5 Micron, PM₁₀-Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P- Benzo- α -pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report*****



[Signature]

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Hubert Enviro Care Systems (P) Ltd.

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**Laboratory Services Division**

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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 04/05/2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Tenka Ekkar

Report No: HECS/AA/003/040517

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF APRIL 2017

APRIL'17 - Week		14 th Week		15 th Week		16 th Week		17 th Week		Average
Parameters	NAAQS	03-04-17	06-04-17	10-04-17	13-04-17	17-04-17	20-04-17	24-04-17	27-04-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	22.6	21.1	19.9	20.8	22.2	23.4	23.0	21.7	21.83
PM 10 ($\mu\text{g}/\text{m}^3$)	100	59.9	60.4	61.6	62.3	62.0	61.8	60.7	61.1	61.22
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.0	3.5	2.9	3.8	3.4	3.2	3.6	3.1	3.31
NO _x ($\mu\text{g}/\text{m}^3$)	80	3.6	3.4	3.4	3.8	3.7	3.6	3.5	3.7	3.58
CO (mg/m^3)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5} - Particulate matter size less than 2.5 Micron, PM₁₀ - Particulate matter size less than 10 Micron; SO₂ - Sulphur dioxide; NO_x - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P - Benzo- α -pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 04/05/2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : Premude Village

Report No: HECS/AA/004/040517

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF APRIL 2017

APRIL'17 - Week		14 th Week		15 th Week		16 th Week		17 th Week		Average
Parameters	NAAQS	03-04-17	06-04-17	10-04-17	13-04-17	17-04-17	20-04-17	24-04-17	27-04-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	21.0	20.6	22.5	21.8	23.1	22.2	20.9	21.4	21.68
PM 10 ($\mu\text{g}/\text{m}^3$)	100	59.9	59.2	60.4	62.4	62.0	61.8	61.3	60.9	60.98
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.0	2.8	3.4	3.1	3.5	3.7	3.3	3.6	3.3
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.4	3.3	3.1	3.4	3.6	3.6	3.5	3.2	3.38
CO (mg/m^3)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzeñe ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(a)P (ng/m^3)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL - Detection Limit; PM2.5-Particulate matter size less than 2.5 Micron, PM₁₀-Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(a)P- Benzo - α -pyrene; ng/m^3 - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 04/05/2017
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Ambient Air Quality Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL - West Side

Report No: HECS/A/005/040517

CONSOLIDATED TEST RESULTS OF AMBIENT AIR MONITORING FOR THE MONTH OF APRIL 2017

APRIL'17 - Week		14 th Week		15 th Week		16 th Week		17 th Week		Average
Parameters	NAAQS	03-04-17	06-04-17	10-04-17	13-04-17	17-04-17	20-04-17	24-04-17	27-04-17	
PM 2.5 ($\mu\text{g}/\text{m}^3$)	60	21.4	20.9	22.6	22.1	21.7	21.0	22.2	21.5	21.67
PM 10 ($\mu\text{g}/\text{m}^3$)	100	60.4	59.7	59.2	62.6	61.9	61.3	62.0	60.8	60.98
SO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.1	2.9	3.4	3.4	3.3	3.6	3.5	3.2	3.3
NO ₂ ($\mu\text{g}/\text{m}^3$)	80	3.2	3.4	3.4	3.6	3.3	3.5	3.5	3.3	3.4
CO (mg/m^3)	2.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Ozone ($\mu\text{g}/\text{m}^3$)	100	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)	BDL (DL 10)
Ammonia ($\mu\text{g}/\text{m}^3$)	400	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)	BDL (DL 5)
Lead ($\mu\text{g}/\text{m}^3$)	1.0	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)	BDL (DL 0.05)
Arsenic (ng/m^3)	6.0	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)
Nickel (ng/m^3)	20	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)	BDL (DL 0.5)
Benzene ($\mu\text{g}/\text{m}^3$)	05	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)	BDL (DL 1)
B(α)P (ng/m^3)	01	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)	BDL (DL 0.1)

Note: BDL = Below detection limit; DL - Detection Limit; PM_{2.5}-Particulate matter size less than 2.5 Micron, PM₁₀-Particulate matter size less than 10 Micron; SO₂ Sulphur dioxide; NO₂ - Nitrogen-di-oxide; CO - Carbon Mono Oxide; B(α)P- Benzo - α -pyrene; ng/m³ - nanogram per cubic meter; $\mu\text{g}/\text{m}^3$ - microgram per cubic meter

CONCLUSION: All the parameters meet NAAQ Standards

*****End of Report *****



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ANNEXURE - B

Hubert Enviro Care Systems (P) Ltd.

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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/001/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : GW1 - Ground Water collected from Narayana Guru Community Hall, Permude
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.52	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.1	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	32.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	9.5	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	84.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	9.4	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	3.4	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	130.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	10.0	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	0.31	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	6.5	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

Shaila
Verified By



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Certificate No. T-3180

TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/002/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : GW2 - Ground Water collected from Gagtel Labor Colony
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW2

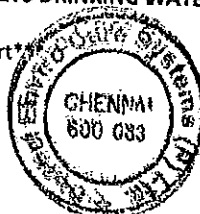
S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	6.78	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.12	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	34.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.6	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	35.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	12.5	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	3.00	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	96.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	5.5	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.25	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note: BDL - Below Detection Limit; D.L - Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter; MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/003/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : GW3:- Ground Water collected from L&T New Labor Colony
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW3

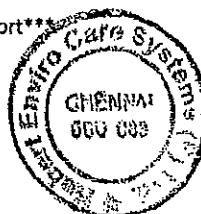
S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.79	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.21	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	6.6	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	13.0	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	52.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	17.9	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.5	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	126.00	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	9.8	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.23	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:- BDL - Below Detection Limit; D.L.- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/004/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : GW4-Ground Water collected Near OMPL – ETP
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GROUND WATER MONITORING, GW4

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.34	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	54.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	12.5	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	44.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	17.7	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.27	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	131.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	6.83	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.65	45 max
15.	Iron as Fe	IS 3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS 3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS 1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS 1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note: BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: GROUND WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/005/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : OW1- Open Water collected from Tenka Ekkar
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.42	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.16	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	46.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	9.4	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	47	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	9.8	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	4.3	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	79.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.51	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.20	45 max
15.	Iron as Fe	IS 3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS 3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS 1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS 1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Notes:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/006/040517
Address of the Industry : Mangalore SEZ, Premuda Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : OW2 - Open Water collected from Shantigudda Village
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW2

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.53	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	1.75	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	BDL (DL 0.1)	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	34.00	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.02	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	61.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	11.4	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.52	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	76.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	4.7	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.26	45 max
15.	Iron as Fe	IS 3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS 3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS 1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS 1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/007/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : OW3 - Open Water collected from Premude Village
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF OPENWELL WATER MONITORING, OW3

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.13	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.21	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	25.0	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	8.72	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	20.00	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	11.0	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	2.8	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	50.0	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	2.2	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	2.7	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	BDL (DL 0.02)	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per Liter;
MPN- Most Probable Number; mL-Milliliter

CONCLUSION: OPENWELL WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/008/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : SW1 - Surface Water collected Near OMPL - Flare Area
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF SURFACE WATER MONITORING, SW1

S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	7.30	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.6	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	179	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	51.0	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	101.0	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	14.0	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	8.2	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	247	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	72.2	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	0.27	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.04	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.12	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per liter; NA-Not Available

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

S. Siva
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ANNEXURE - C

Hubert Enviro Care Systems (P) Ltd.

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TEST REPORT

Page No: 1 of 1

Name of the Industry : M/s. ONGC Mangalore Petrochemicals Limited Report Date: 04.05.2017
Address of the Industry: Mangalore SEZ, Premude Village, Mangalore - 574509.
Sample Description : Noise Monitoring
Sample Collected by : Hubert Enviro Care Systems (P) Ltd
Sampling Location : OMPL
Sampling Date : 22.04.2017

Report No: HECS/N/001/040517

TEST RESULTS OF NOISE MONITORING FOR THE MONTH OF APRIL 2017

S.No.	Sampling Location	MoEF requirements in dB		Avg. Noise level in dB	
		Day	Night	Day	Night
1.	OMPL-North	75	70	66.9	62.3
2.	OMPL-South			63.8	61.9
3.	OMPL-East			66.4	64.5
4.	OMPL-West			67.5	65.5

Note: dB: Decibel

CONCLUSION: All the parameters meet MoEF Standards



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ANNEXURE-D

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Certificate No. T-3180

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry and address	M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village, Mangalore-574509
Stack ID	NHT Charge heater
Sampled by	M/s HECS Pvt. Ltd.
Date of Sampling	19.04.2017
Source	Stack Emission Monitoring
Date of Sample Receipt	21.04.2017
Report No	HECS/S/210417001
Report Date	15.05.2017

GENERAL DETAILS

Ambient Temperature (°C)	33
Stack Diameter (m)	1.94
Stack Height (m)	65
Stack Temperature (°C)	229
Flue Gas Velocity (m/s)	9.8
Flue gas flow rate (Nm ³ /hr)	57641.4

RESULTS

S.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	4	5
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	BDL	50
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	42	250
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	0.7	100

Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS

ANALYSED BY

VERIFIED BY

AUTHORISED BY

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry and address	M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village, Mangalore-574509
Stack ID	Isomer Charge Heater
Sampled by	HECS Pvt. Ltd.
Date of Sampling	18.04.2017
Source	Stack Emission
Date of Sample Receipt	20.04.2017
Report No	HECS/S/200417002
Report Date	04.05.2017

GENERAL DETAILS

Ambient Temperature (°C)	33
Stack Diameter (m)	2.3
Stack Height (m)	65
Stack Temperature (°C)	181
Flue Gas Velocity (m/s)	4.6
Flue gas flow rate (Nm ³ /hr)	42291.1

RESULTS

S.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	4	5
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	BDL	50
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	67	250
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	0.5	100

Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS

Shaila
ANALYSED BY

Shilpa
VERIFIED BY

[Signature]
AUTHORISED BY

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ANALYSIS REPORT OF SOURCE EMISSION					
Name of the Industry and address		M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village, Mangalore-574509			
Stack ID		CPP (GTG-HRSG) - 1			
Sampled by		HECS Pvt. Ltd.			
Date of Sampling		20.04.2017			
Source		Stack Emission			
Date of Sample Receipt		22.04.2017			
Report No		HECS/S/220417003			
Report Date		04.05.2017			
GENERAL DETAILS					
Ambient Temperature (°C)		34			
Stack Diameter (m)		2.8			
Stack Height (m)		70			
Stack Temperature (°C)		122			
Flue Gas Velocity (m/s)		12.7			
Flue gas flow rate (Nm ³ /hr)		202350.4			
RESULTS					
S.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	34	50
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	46	850
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	65	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	0.7	150
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY 		VERIFIED BY 		AUTHORISED BY 	

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the industry and address	M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village, Mangalore-574509
Stack ID	CCR Charge Heater
Sampled by	HECS Pvt. Ltd.
Date of Sampling	19.04.2017
Source	Stack Emission
Date of Sample Receipt	21.04.2017
Report No	HECS/S/210417004
Report Date	04.05.2017

GENERAL DETAILS

Ambient Temperature (°C)	34
Stack Diameter (m)	4.1
Stack Height (m)	94
Stack Temperature (°C)	112
Flue Gas Velocity (m/s)	5.4
Flue gas flow rate (Nm ³ /hr)	183278.2

RESULTS

S.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	4	5
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	BDL	50
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	17	250
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	0.4	100

Inference:- STACK EMSSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS

Shaila
ANALYSED BY

Shaila
VERIFIED BY

[Signature]
AUTHORISED BY

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry and address	M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village, Mangalore -574509
Stack ID	CPP Utility Boiler
Sampled by	HECS Pvt. Ltd.
Date of Sampling	20.04.2017
Source	Stack Emission
Date of Sample Receipt	22.04.2017
Report No	HECS/S/220417005
Report Date	04.05.2017

GENERAL DETAILS

Ambient Temperature (°C)	34
Stack Diameter (m)	2.74
Stack Height (m)	70
Stack Temperature (°C)	174
Flue Gas Velocity (m/s)	16.1
Flue gas flow rate (Nm ³ /hr)	216118.5

RESULTS

S.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	30	50
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	17	850
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	19	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	1.1	150

Inference:- STACK EMSSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS

Shaila
ANALYSED BY

Shilpa
VERIFIED BY

[Signature]
AUTHORISED BY

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry and address	M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village, Mangalore-574509
Stack ID	Tatory Charge Heater
Sampled by	HECS Pvt. Ltd.
Date of Sampling	19.04.2017
Source	Stack Emission
Date of Sample Receipt	21.04.2017
Report No	HECS/S/210417006
Report Date	04.05.2017

GENERAL DETAILS

Ambient Temperature (°C)	34
Stack Diameter (m)	1.75
Stack Height (m)	65
Stack Temperature (°C)	136
Flue Gas Velocity (m/s)	5.5
Flue gas flow rate (Nm ³ /hr)	32269.7

RESULTS

S.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	4.0	5
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	10	50
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	45	250
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	0.4	100

Inference:- STACK EMSSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS

Shaila
ANALYSED BY

Shifa
VERIFIED BY

[Signature]
AUTHORISED BY

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry and address	M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village, Mangalore-574509				
Stack ID	Xylene Column Reboiler Heater(Part A)				
Sampled by	HECS Pvt. Ltd.				
Date of Sampling	17.04.2017				
Source	Stack Emission				
Date of Sample Receipt	19.04.2017				
Report No	HECS/S/190417007				
Report Date	04.05.2017				
GENERAL DETAILS					
Ambient Temperature (°C)	34				
Stack Diameter (m)	3.69				
Stack Height (m)	90				
Stack Temperature (°C)	129				
Flue Gas Velocity (m/s)	5.9				
Flue gas flow rate (Nm ³ /hr)	160480.2				
RESULTS					
S.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	6	50
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	11	850
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	62	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	1.2	150
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY <i>Shaila</i>		VERIFIED BY <i>Shilpa</i>		AUTHORISED BY <i>[Signature]</i>	

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry and address	M/s Mangalore Petrochemicals limited				
Stack ID	Xylene Column Reboiler Heater(Part B)				
Sampled by	HECS Pvt. Ltd.				
Date of Sampling	18.04.2017				
Source	Stack Emission				
Date of Sample Receipt	20.04.2017				
Report No	HECS/S/200417008				
Report Date	04.05.2017				
GENERAL DETAILS					
Ambient Temperature (°C)	34				
Stack Diameter (m)	3.69				
Stack Height (m)	98				
Stack Temperature (°C)	128				
Flue Gas Velocity (m/s)	5.8				
Flue gas flow rate (Nm ³ /hr)	156848				
RESULTS					
S.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	5	50
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	10	850
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	30	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	1.0	150
Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS					
ANALYSED BY <i>Shaila</i>		VERIFIED BY <i>Shilpa</i>		AUTHORISED BY <i>[Signature]</i>	

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ANALYSIS REPORT OF SOURCE EMISSION

Name of the Industry and address	M/s Mangalore Petrochemicals limited Mangalore SEZ, Permude Village, Mangalore-574509
Stack ID	BTF (Toluene Column Reboiler Heater)
Sampled by	HECS Pvt. Ltd.
Date of Sampling	17.04.2017
Source	Stack Emission
Date of Sample Receipt	19.04.2017
Report No	HECS/S/190417009
Report Date	04.05.2017

GENERAL DETAILS

Ambient Temperature (°C)	34
Stack Diameter (m)	3.29
Stack Height (m)	80
Stack Temperature (°C)	198
Flue Gas Velocity (m/s)	5.4
Flue gas flow rate (Nm ³ /hr)	98009.8

RESULTS

S.No	Parameters	Protocol	Unit	Result	Standard
1	SPM	IS 11255(Part 1)-1985	mg/Nm ³	4.0	50
2	Sulphur Dioxide(SO ₂)	IS 11255(Part 3)-1985	mg/Nm ³	44	850
3	Oxides of Nitrogen(NO _x)	IS 11255(Part 7)-2005	mg/Nm ³	51	350
4	Carbon monoxide (CO)	IS 5182(Part 10)-1999	mg/Nm ³	0.8	150

Inference:- STACK EMISSIONS AS ABOVE PARAMETERS ARE WITHIN STANDARDS

Shaila
ANALYSED BY

Shilpa
VERIFIED BY

[Signature]
AUTHORISED BY

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/009/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : SW2 - Surface Water collected Near OMPL - Near Central Warehouse
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF SURFACE WATER MONITORING, SW2

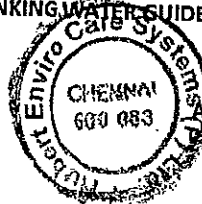
S.No.	Parameters monitored	Test method followed	Units	Results	As per IS10500:2012 Permissible Limit
1.	pH (at 25°C)	IS 3025 (Part-11) 1983	-	6.92	6.5-8.5
2.	Colour	IS 3025 (Part-4) 1983	Hazen unit	BDL (DL 1)	15
3.	Turbidity	IS 3025 (Part-10) 1984	NTU	1.7	5 max
4.	Odour	IS 3025 (Part-5) 1983	-	Agreeable	Agreeable
5.	Taste	IS 3025 (Part-8) 1984	-	Agreeable	Agreeable
6.	Total Hardness as CaCO ₃	IS 3025 (Part-21) 1983	mg/L	72	600 max
7.	Calcium as Ca	IS 3025 (Part-40) 1991	mg/L	13.6	200 max
8.	Total Alkalinity as CaCO ₃	IS 3025 (Part-23) 1986	mg/L	30	200 max
9.	Chloride as Cl	IS 3025 (Part-32) 1988	mg/L	67.9	1000 max
10.	Magnesium as Mg	IS 3025 (Part-46) 1994	mg/L	9.0	100 max
11.	Total Dissolved Solids	IS 3025 (Part-16) 1984	mg/L	140	2000 max
12.	Sulphate as SO ₄	IS 3025 (Part-24) 1986	mg/L	63.0	400 max
13.	Fluoride	IS 3025 (Part-60) 2008	mg/L	BDL (DL 0.2)	1.5 max
14.	Nitrate as NO ₃	ASTM (Part-31) 1978	mg/L	1.40	45 max
15.	Iron as Fe	IS3025 (Part-53) 2003	mg/L	0.13	0.3 max
16.	Hexavalent Chromium Cr ⁶⁺	IS3025 (Part-52) 2003	mg/L	BDL (DL 0.01)	0.05 max
17.	Total coli form Bacteria	IS1622:1981(R.aff 2009)	MPN/100mL	Absent	Not Detectable
18.	Escherichia coli	IS1622:1981(R.aff 2009)	Per 100mL	Absent	Not Detectable

Note:-BDL - Below Detection Limit; D.L- Detection Limit; NTU-Nephelometric Turbidity Unit; mg/L - Milligrams per liter

CONCLUSION: SURFACE WATER AS ABOVE PARAMETERS MEETS DRINKING WATER GUIDELINES OF IS: 10500:2012

End of Report

Shailb
Verified By



Authorized Signatory

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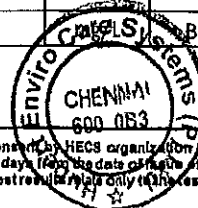
TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/011/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 14.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4):1983 (Reaff 2006)	Hazen Units	2.0	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006	-	Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn.. 2012	mg/L	9.6	100
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	6.73	6.0-8.5
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	29.0	Shall not exceed 5 degree Centigrade above the receiving water temperature
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	5
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26):1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	1
8.	Ammonical Nitrogen as N	IS 3025 Part (34):1988	mg/L	8.8	50
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34):1988	mg/L	20.0	100
10.	Free Ammonia as NH ₃	IS:3025 (Part34):1998 Reaff. 2003	mg/L	BDL(DL 0.02)	5
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44):1993 (Reaff 2009)	mg/L	9.1	30
12.	COD as O ₂	IS 3025 Part (58):2006	mg/L	47.0	125
13.	Lead as Pb	IS:3025 (Pt 47):1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	0.1
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	2.0
16.	Copper as Cu	IS:3025:5,(Pt 42):1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
17.	Zinc as Zn	IS:3025 (Part49):1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	5.0
18.	Nickel as Ni	IS:3025 (Part54):2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
19.	Fluoride as F ⁻	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29):1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	2.0
21.	Particle Size of Suspended solids	APHA 22nd Edition	-	Passed through 850 micron	850 micron
22.	Arsenic as As	IS:3025 (Part37):1988(Reaff 2009)	-	BDL(DL 0.005)	0.2

Verified By



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Hubert Enviro Care Systems (P) Ltd.

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**Laboratory Services Division**

Accredited by NABL in the fields of Chemical
ISO 9001, 14001 & OHSAS 18001 Certified.

Certificate No. T-3180

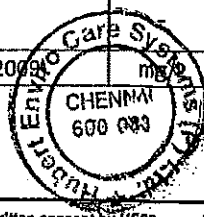
TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/015/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.,

TEST RESULTS OF GUARD POND PUMP DISCHARGE

S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
1.	Color	IS:3025:(Pt 4):1983 (Reaff 2006)	Hazen Units	1.8	All efforts should be made to remove colour and unpleasant odour as far as practicable
2.	Odour	IS 3025 (Part5)-1983, Reaff 2006	-	Agreeable	
3.	Total suspended Solids	2540D APHA 22nd Edn.. 2012	mg/L	9.2	100
4.	pH	IS:3025:(Pt 11):1983 (Reaff 2006)	-	7.52	6.0-8.5
5.	Temperature	IS 3025 (Pt 9):1983 (Reaff:2006)	°C	29.0	Shall not exceed 5 degree Centigrade above the receiving water temperature
6.	Oil & Grease	IS 3025,4(Pt 39):2000 (Reaff 2009)	mg/L	BDL(DL 1)	5
7.	Total Residual Chlorine as Cl ₂	IS:3025 (Pt26)1986 (Reaff 2009)	mg/L	BDL (DL 0.1)	1
8.	Ammonical Nitrogen as N	IS 3025 Part (34)1988	mg/L	9.8	50
9.	Total Kjeldhal Nitrogen as N	IS 3025 Part (34)1988	mg/L	17.8	100
10.	Free Ammonia as NH ₃	IS:3025 (Part34)1998 Reaff. 2003	mg/L	BDL(DL 0.02)	5
11.	BOD, 3 days @ 27°C as O ₂	IS:3025 (Pt 44)1993 (Reaff 2009)	mg/L	9.1	30
12.	COD as O ₂	IS 3025 Part (58)2006	mg/L	50	125
13.	Lead as Pb	IS:3025 (Pt 47)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	0.1
14.	Chromium (Hexavalent) as Cr ⁶⁺	IS 3025 Part (52):2003	mg/L	BDL(DL 0.01)	0.1
15.	Total Chromium as Cr	IS 3025(Pt52):2003 (Reaff 2009)	mg/L	BDL(DL 0.01)	2.0
16.	Copper as Cu	IS:3025:5,(Pt 42)1992 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
17.	Zinc as Zn	IS:3025 (Part49)1994 (Reaff 2009)	mg/L	BDL(DL 0.1)	5.0
18.	Nickel as Ni	IS:3025 (Part54)2003 (Reaff 2009)	mg/L	BDL(DL 0.05)	1.0
19.	Fluoride as F-	IS 3025 part (60):2008	mg/L	BDL(DL 0.2)	1.0
20.	Sulphide as S ²⁻	IS:3025 (Pt 29)1986 (Reaff 2009)	mg/L	BDL(DL 0.04)	2.0
21.	Particle Size of Suspended solids	APHA 22nd Edition		Passed through 850 micron	850 micron
22.	Arsenic as As	IS:3025 (Part37)1988(Reaff 2009)	mg/L	BDL(DL 0.005)	0.2

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TEST REPORT

Name of the Industry : M/s ONGC Mangalore Petrochemicals Limited Report No. : HECS/W/015/040517
Address of the Industry : Mangalore SEZ, Premude Village, Mangalore - 574509 Report Date: 04.05.2017
Sample Description : Guard Pond Pump Discharge (ETP Effluent)
Date of Collection : 22.04.2017
Sample Drawn by : M/s Hubert Enviro Care Systems (P) Ltd.

TEST RESULTS OF GUARD POND PUMP DISCHARGE

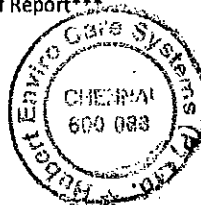
S.No.	Parameters monitored	Test method followed	Units	Results	Permissible Limit
23.	Mercury as Hg	IS:3025 (Part48)1994 RA 1999	mg/L	BDL(DL 0.001)	0.01
24.	Cadmium as Cd	IS:3025 (Part41)1991	mg/L	BDL(DL 0.01)	0.1
25.	Selenium as Se	IS:3025 (Part56)2003	mg/L	BDL(DL 0.005)	0.05
26.	Cyanide as CN	IS:3025 (Part27)1986 Reaff. 2009	mg/L	BDL(DL 0.01)	0.2
27.	Phenolic Compounds as C6H5OH	IS 3025 Part (43)1992, RA 2009	mg/L	BDL(DL 0.001)	0.35
28.	Total Iron as Fe	IS 3025(Pt 53):2003(Reaff 2009)	mg/L	0.18	3
29.	Manganese	IS:3025:(Pt-59):2006	mg/L	BDL(DL 0.01)	2
30.	Total Phosphorous as P	IS 3025(Pt 31):1988(Reaff 2009)	mg/L	BDL(DL 0.01)	3
31.	Nitrate	IS 3025 (Pt 34):1988 (Reaff 2009)	mg/L	BDL(DL 1)	20
32.	Vanadium as V	IS:3025 (Part56)2003	mg/L	BDL(DL 0.01)	0.1
33.	Benzo(a)pyrene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.2
34.	Benzene	USEPA 8270C	mg/L	BDL(DL 0.0001)	0.1
35.	Bioassay Test	IS 6582(Part 2):2001	Tf	9:1	90% survival of fish after 96 hrs in 100% effluent

Note:-BDL - Below Detection Limit; D.L- Detection Limit; mg/L - Milligrams per liter

CONCLUSION: ETP OUTLET EFFULENT WATER AS ABOVE PARAMETERS ARE WITHIN STANDARDS

End of Report

Shaila
Verified By



[Signature]
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Form-1 (Rule 4)
Returns Regarding Water Consumed during the Month of April, 2017

Name and address of the Consumer	Purpose for which water consumed	Reading at the beginning of the first day of the calendar month under report	Reading at the end of the last day of the calendar month under report	Quantity of Water Consumed in Kilo Liters	If the meter was out of order, the monthly average consumption of water for the previous 3 months of the working period	Quantity of water qualifying for rebate according to the assessee	Remarks
M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509	Industrial cooling, spraying in mine pits or boiler feed	0	62853	62853			
	Cooling Water						
	Boiler Feed Water	0	80074	80074			
	Fire Water	0	27642	27642			
	Domestic purpose Drinking Water & Sanitation Processing whereby water gets polluted and the pollutants are easily bio-degradable	0					
Service Water			2976	2976			Subtracting total flow from BFW, CT & Drinking water consumption
Total Consumption				175259			

Signature of the Consumer

Name

Address


Sh. Prakash, Manager (Env)

M/s ONGC Mangalore Petrochemicals Limited, Mangalore Special Economic Zone, Permude, Mangalore -574 509

ANNEXURE - G1

ONGC Mangalore Petrochemicals Limited

Production Details for April, 2017

Net Naptha Processed -1,20,500 MT

Sl. No.	Name of the Product	Quantity, MT
1	Paraxylene (Product)	64,968
2	Benzene (Co product)	17,139

