

आ. पी. 54/
R. P - 54

भारतीय डाक विभाग
DEPARTMENT OF POSTS - INDIA
प्राप्ति स्वीकृति/ACKNOWLEDGEMENT

RASTRUCTURE LIMITED
As Bharuch Enviro Infrastructure Limited

रजिस्ट्री-पत्र/पार्सल प्राप्त हुआ

Received Registered Letter/Parcel

क्रमांक/No. तारीख/Dated का/of

● बीमे का मूल्य रुपये में _____

● Insured for Rupees _____

पाने वाले _____

Addressed to MOEF Cell, Western region office,
Kendriya Prayashasan Bhavan, Link Road No.3,
को/On E-5 saurshankernagar, Bhopal 462016

वितरण डाकघरकी तारीख-मोहर

Date stamp of office of delivery हस्ताक्षर और नाम/Signature and Name

Date: 07.07.20

PCB XGN ID: 14983

Subject: Half yearly EC Compliance Status of Environmental clearance for expansion and common incineration facilities at Ankleshwar by M/s BEIL Infrastructure Limited for the period October 2019 - March 2020.

- Ref: (1) Environmental Clearance No. 10-48/2007-IA-III dated 4th March, 2008
(2) Environmental Clearance No. F. 10-10/2014-IA.III dated 31st December 2015.
(3) Environmental Clearance No. F. 10-10/2014-IA.III dated 1st August, 2017.
(4) Environmental Clearance No. F. 10-10/2014-IA-III dated 16th April, 2018

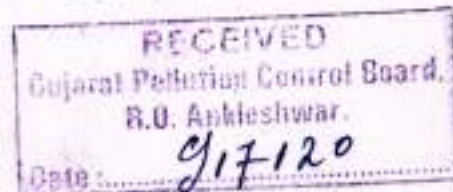
Dear Sir,

BEIL Infrastructure Limited is operating a TSDF consisting of a secured land fill Facility, two common Incinerators and MEE located at plot No # 9701-16, GIDC estate, Ankleshwar-393002, Dist. Bharuch, Gujarat.

We are submitting herewith the half yearly EC Compliance status report for the period of October 2019 - March 2020 of Environmental clearance for expansion (landfill) and common incineration facilities at Ankleshwar issued by MoEF letter No. 10-48/2007 IA-III dated 04th March, 2008 and EC # F.10-10/2014-IA.III dated 31.12.2015.

We would like to bring to your attention that for EC # F. 10-10/2014-IA.III dated 1st August 2017 and Environmental Clearance No. F. 10-10/2014-IA-III dated 16th April, 2018, Enhancement of capacity of Existing phase III Landfill Facility at Common Hazardous Waste Treatment, Storage and Disposal Facilities(TSDF) at GIDC Ankleshwar, District Bharuch, Gujarat by M/s BEIL Infrastructure Limited (BEIL), we have applied for CCA application to GPCB.

BEIL has received and disposed landfillable Hazardous waste as below
During 1st October 2019 - 31st March 2020: 150583.98 MT,
Cumulative quantity disposed in landfill from the beginning (up to 31.03.2020): 3255513.634 MT
Incinerable waste details are as follows;



CIN No.: U45300GJ1997PLC032696

Regd. Office : Plot No. 9701-16 GIDC Estate, Post Box No. 82, Ankleshwar 393 002, Dist. : Bharuch (Gujarat)
Phones (02646) 253135, 225228 • Fax : (02646) 222849 • E-mail : dalwadibd@beil.co.in

**BEIL INFRASTRUCTURE LIMITED**

(Formerly Known As Bharuch Enviro Infrastructure Limited)

Incinerable Waste Receipt	Incineration
Current year 18842.155 MT (01.10.2019 to 31.03.2020)	Current year: 11268.316 MT (01.10.2019 to 31.03.2020)
Cumulative: 310810.537 MT (Up to 31.03.2020)	Cumulative: 251155.565 MT (Up to 31.03.2020)

We would like to bring your kind attention that based on trials for Co processing of liquid & solid waste in cement kiln at M/s, Ambuja Cement and Birla Corporation in May 2011 & February 2015, CPCB /GPCB have granted permission to send liquid & solid waste for co processing. We are sending blended liquid & solid waste to M/s. Ambuja Cement, Kodinar, Gujarat and to M/s. Birla Corporation Chanderia, Rajasthan for co processing. During 01.10.19 to 31.03.20, we have sent 10636.582 MT of waste for co-processing in cement kiln. Cumulative quantity 56005.889 MT.

We are regularly submitting Information in online protocol of performance Evaluation and Monitoring of our TSDF to Central Pollution Control Board site.

In case you need any additional information, we will provide the same on hearing from you. Hoping for your kind consideration.

Thanking you,
Yours faithfully,
For **BEIL Infrastructure Limited**

B. D. Dalwadi
Chief Executive Officer

- C.C: (1) Gujarat Pollution Control Board
Ankleshwar
(2) Central Pollution Control Board
Vadodara

Compliance Status of Environmental clearance for expansion and common incineration facilities at Ankleshwar by M/s Bharuch Enviro Infrastructure Limited

Environmental Clearance No. 10-48/2007-IA-III dated 4th March, 2008

Reference is invited to letters No. camp/f/28/07, No. camp/f/44/07, dated 7.6.2007 and dated 18.9.2007 by M/s Bharuch Enviro Infrastructure Limited on the above-mentioned subject. No Objection Certificate from the Gujarat State Pollution Control Board has been obtained vide Consent to Establish No. GPCB/CE/BRCH/NOC-3354CCA-167(5)/14483, dated 22.5.2007.

Sr. No.	Observation/Conditions as per Environmental Clearance No. 10-48/2007-IA-III dated 4th March, 2008			Status of compliance of EC Conditions
1	The project involves development & operation of a secured landfill for treatment, storage and disposal of hazardous waste at GIDC, Ankleshwar, Gujarat. BEIL designed the existing TSDF with German Technical Assistance through NPC, New Delhi as phase -1 with a capacity of 5,00,000 MT and Incineration capacity at 6.5 Million K. Cal/hour. At present there are 450 member units who use secured landfill facility, during the last seven years of the operation of the facility, BEIL reported to have collected and disposed of more than 4,16,000 MT of hazardous waste and the existing facility is reported to be sufficient only till the end of 2006. Hence, BEIL proposes to expand the existing Facility as per the CPCB guidelines. The cost of the proposed expansion is estimated to be about Rs.45.45 Crores. The details of the existing and proposed expansion are given as follows:			Noted.
Sr. No.	Activity	Existing	Proposed	
1	Secured Landfill (SLF)	Capacity: 5,00,000 MT	Additional Capacity: 14,00,000 MT	Complied. As per our CCA No- AWH 89137, Date 02.11.2017 capacity of phase I and phase II is 23 lac MT. Phase 1 – after disposal of 601404.117 MT waste, was capped in March 2007. Phase 2 – after disposal of 1737344.036 MT waste it was capped Phase 3 – Waste dump till March 2020 is 916765.481 MT.
2	Incinerator	Capacity: 6.5 million K. Cal/hour (24 – 60 MT per day)	Additional Incinerator capacity: 25 Million K.	Complied As per our CCA No- AWH 89137, Date 02.11.2017 we are operating

			Cal/hour with heat recovery system (i.e.6-10 MT/hr.)	both the incinerators at 6.5 million K. Cal/hour capacity each, i.e. (6.5 million K. Cal/hour X 2)
3	Solvent Recovery System	-	50 MT/day	Project is on hold and not yet Implemented.
4	Drum decontamination and disposal system	-	500 No. of Drums/day	Complied Company has incorporated drums decontamination system in the year 2008 and for that we have obtained CCA with drums decontamination capacity -108000 nos /Year.
5	Evaporation plant	-	15 MT/hour	Complied Evaporation plant with capacity of 15 MT/Hr is installed and commissioned on 19 th March 2012 and is being operated. For that we have obtained Consent to operate i.e. CC &A AWH 89137 valid up to 31.07.2022.
6	Fly Ash Brick Manufacturing plant	-	10,000 Nos/day	Project is on hold and yet to be implemented.
7	Bio-gas plant from Kitchen waste	-	5 MT/day	We are not operating the old biogas plant from 11 th June 2019. We have installed a new Kitchen waste processing unit and is being operated.
2	<p>All the proposed facility, except landfill expansion, stated to be accommodated in the existing area itself. Waste generated from the treatment facility will be disposed off in secured landfill which includes ash from incinerated around 12,600 MT/Year: Discarded packing materials around 5,40,000 nos/yeas, the salt from Multiple Effect Evaporation system around 9,000 MT / Year. With regard to the capacity of the facility it was indicated that second phase of secured landfill facility will be 17.00 Lacs MT and the additional common incineration system will be 25.00 million kcal per hours. Public hearing was conducted on 30.08.2005 based on Environmental Impact Assessment. Minutes of public hearing were submitted. The proponents made a detailed presentation on each of the issues raised by the public and the action taken report.</p>			<p>Complied All the proposed facility, except landfill expansion are accommodated in the existing area itself. Waste generated from the treatment facility is disposed off in secured landfill which includes ash from incineration 6682.450 MT during the Oct'19 to March'20; Discarded packing materials 168.610 MT during the Oct'19 to March'20; the salt from Multiple Effect Evaporation system 5166.470 MT during the Oct'19 to March'20. With regard to the capacity of the facility second phase of secured landfill facility is of 17.00 Lacs MT. The Company has set up second</p>

		incinerator of capacity 6.5 Million K Cal / Hr. with heat recovery system and MEE.
3	The proposal falls under the category 'A', 7(d) of Environmental Impact Assessment Notification 2006 and was considered by Expert committee at its meeting held on 21 st & 22 nd June, 2007 and 23 rd , 24 th & 25 th January, 2008 and has recommended. Accordingly, the clearance is here by accorded under Environment Impact.	Noted

A. SPECIFIC CONDITIONS:

Sr. No.	Description	Status												
1	The project proponent shall ensure that the TSDF fulfills all the provision of hazardous waste (management and handling) rules 2003 and the design of landfill is as per the guidelines of the Central Pollution Control Board with proper leachate collection arrangement.	<p>Complied.</p> <p>We had fulfilled all the provisions of hazardous waste (management and handling) rules 2003 and its amendments from time to time. Now, we have fulfilled all the provisions of hazardous waste and other waste (management and handling) rules 2016, compliance is as below.</p> <p>*The relevant compliance hazardous waste and other waste (management and handling) rules 2016 are as under:</p> <table border="1"> <thead> <tr> <th colspan="3">16. Treatment, storage and disposal facility for hazardous and other wastes</th> </tr> <tr> <th>Sr. no</th> <th>Rule</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>The State Government, occupier, operator of a facility or any association of occupiers shall individually or jointly or severally be responsible for identification of sites for establishing the facility for treatment, storage and disposal of the hazardous and other waste in the State.</td> <td>Existing site (jointly identified)</td> </tr> <tr> <td>2</td> <td>The operator of common facility or occupier of a captive facility, shall design and set up the treatment, storage and disposal facility as per technical guidelines issued by the Central Pollution Control Board in this regard from time to time and shall obtain approval from the State Pollution Control Board for design and layout in this regard.</td> <td> <p>Complied.</p> <p>Design of landfill is as per the guidelines of the central pollution control board i.e. complying all location, planning – design, phase operation, liner system, closure and post closure maintenance plan, site infrastructure, environment monitoring system, financial assurance, etc. criteria along with leachate collection arrangement.</p> <p>The designs are approved by IIT's. GPCB is informed time to time on status.</p> <p>Compliance of the central pollution control board guidelines is attached as Annexure 00.</p> </td> </tr> </tbody> </table>	16. Treatment, storage and disposal facility for hazardous and other wastes			Sr. no	Rule	Status	1	The State Government, occupier, operator of a facility or any association of occupiers shall individually or jointly or severally be responsible for identification of sites for establishing the facility for treatment, storage and disposal of the hazardous and other waste in the State.	Existing site (jointly identified)	2	The operator of common facility or occupier of a captive facility, shall design and set up the treatment, storage and disposal facility as per technical guidelines issued by the Central Pollution Control Board in this regard from time to time and shall obtain approval from the State Pollution Control Board for design and layout in this regard.	<p>Complied.</p> <p>Design of landfill is as per the guidelines of the central pollution control board i.e. complying all location, planning – design, phase operation, liner system, closure and post closure maintenance plan, site infrastructure, environment monitoring system, financial assurance, etc. criteria along with leachate collection arrangement.</p> <p>The designs are approved by IIT's. GPCB is informed time to time on status.</p> <p>Compliance of the central pollution control board guidelines is attached as Annexure 00.</p>
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		3	The State Pollution Control Board shall monitor the setting up and operation of the common or captive treatment, storage and disposal facility, regularly.	Complied. GPCB visits our facility every month.
		4	The operator of common facility or occupier of a captive facility shall be responsible for safe and environmentally sound operation of the facility and its closure and post closure phase, as per guidelines or standard operating procedures issued by the Central Pollution Control Board from time to time.	Complied. Landfill operation, closure and post closure is done according to the guideline of CPCB.
		5	The operator of common facility or occupier of a captive facility shall maintain records of hazardous and other wastes handled by him in Form 3 .	Complied. All relevant details are maintained as per Form 3.
		6	The operator of common facility or occupier of a captive facility shall file an annual return in Form 4 to the State Pollution Control Board on or before the 30 th day of June following the financial year to which that return relates.	Complied. We are submitting Form – 4 (Annual Return) for each financial year.

2	The project proponent shall ensure that the transportation of the hazardous wastes to the TSDF conforms to the norms laid down in the hazardous waste (Management and Handling) rules 2003.	Complied	Transportation of hazardous waste confirmed to the provisions of hazardous waste (management and handling) rules 2003 and its amendments from time to time. Now, we have fulfilled all the provisions of hazardous waste and other waste (management and handling) rules 2016, compliance is as below.			
		18. Transportation of hazardous and other wastes.-				
		Sr. no	Rule	Status		
		1	The transport of the hazardous and other waste shall be in accordance with the provisions of these rules and the rules made by the Central Government under the Motor Vehicles Act, 1988 and the guidelines issued by the Central Pollution Control Board from time to time in this regard.	Complied. We have ensured that the transportation of the hazardous waste is done according to the guidelines.		
		2	The occupier shall provide the transporter with the relevant information in Form 9 , regarding the hazardous nature of the wastes and measures to be taken in case of an emergency and shall label the hazardous and other wastes containers as per Form 8 .	Complied. Proper Labelling system and Trem Card is provided to the transporter. Manifest system is followed.		
		4	In case of transportation of hazardous and other waste for recycling or utilization including co- processing, the sender shall intimate both the State Pollution Control Boards before handing over the waste to the transporter.	Complied. A intimation letter is giving to both the SPCBs.		
		5	In case of transit of hazardous and other waste for recycling, utilization including co- processing or disposal through a State other than the States of origin and destination, the sender shall give prior intimation to the concerned State Pollution Control Board of the States of transit before handing over the wastes to the transporter.	Complied. A intimation letter is giving to all the SPCBs involved.		

		<p>6 In case of transportation of hazardous and other waste, the responsibility of safe transport shall be either of the sender or the receiver whosoever arranges the transport and has the necessary authorization for transport from the concerned State Pollution Control Board. This responsibility should be clearly indicated in the manifest.</p> <p>7 The authorization for transport shall be obtained either by the sender or the receiver on whose behalf the transport is being arranged.</p>	<p>Noted and is been followed.</p> <p>Complied. We have 358 authorized vehicle which are equipped with GPS system and are being used for Transportation of Hazardous waste from member Industries to TSDF</p>												
3	The TSDF shall only handle the waste generated from the member units.	<p>Complied</p> <p>We accept waste only of member units, who have valid CC&A obtained from GPCB. At present we are having 667 members for Landfill and 681 members of Incinerator. In support of this we are submitting returns to GPCB.</p>													
4	Forced evaporation shall be provided to treat the effluent/leachate generated from the landfill.	<p>Complied</p> <p>We have installed Induced forced Multi Effect Evaporator to treat the effluent/leachate generated from the landfill. Part of Effluent / Leachate generated from the land fill is evaporated at the site and remaining is sent to M/s Enviro Technology Limited, Ankleshwar (CETP) for further treatment and disposal as per the consent given by GPCB. For the period Oct'19 to March'20: 13264 KL leachate treated in MEE plant & 860 KL leachate sent to ETL for further treatment & disposal.</p>													
5	All the conditions stipulated in the letter of Gujarat PCB vide their letter dated 22.05.2007 should be strictly implemented along with hazardous (Management and Handling) Rules 2003	<p>Complied</p> <p>All the 37 conditions stipulated in the letter of Gujarat PCB vide their letter dated 22.05.2007 have been implemented along with hazardous (Management and Handling) Rules 2003 and Hazardous & Other Wastes (Management & Trans-Boundary Movement) Rules 2016 and complied. Compliance of the same is attached as ANNEXURE 0.</p> <p>The relevant compliance hazardous waste and other waste (management and handling) rules 2016 are as under:</p> <table border="1"> <thead> <tr> <th colspan="3">16. Treatment, storage and disposal facility for hazardous and other wastes</th> </tr> <tr> <th>Sr. no</th> <th>Rule</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>The State Government, occupier, operator of a facility or any association of occupiers shall individually or jointly or severally be responsible for identification of sites for establishing the facility for treatment, storage and disposal of the hazardous and other waste in the State.</td> <td>Noted</td> </tr> <tr> <td>2</td> <td>The operator of common facility or occupier of a captive facility, shall design and set up the treatment, storage and disposal facility as per technical guidelines issued by the Central Pollution Control Board in this regard from time to time and shall obtain approval from the State Pollution Control Board for design and layout in this regard.</td> <td>Complied. Design of landfill is as per the guidelines of the central pollution control board i.e. complying all location, planning – design, phase operation, liner system, closure</td> </tr> </tbody> </table>	16. Treatment, storage and disposal facility for hazardous and other wastes			Sr. no	Rule	Status	1	The State Government, occupier, operator of a facility or any association of occupiers shall individually or jointly or severally be responsible for identification of sites for establishing the facility for treatment, storage and disposal of the hazardous and other waste in the State.	Noted	2	The operator of common facility or occupier of a captive facility, shall design and set up the treatment, storage and disposal facility as per technical guidelines issued by the Central Pollution Control Board in this regard from time to time and shall obtain approval from the State Pollution Control Board for design and layout in this regard.	Complied. Design of landfill is as per the guidelines of the central pollution control board i.e. complying all location, planning – design, phase operation, liner system, closure	
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			<p>and post closure maintenance plan, site infrastructure, environment monitoring system, financial assurance, etc. criteria along with leachate collection arrangement.</p> <p>The designs are approved by IIT's. the SPCB is informed time to time on status.</p> <p>Compliance of the central pollution control board guidelines has attached as Annexure 00.</p>
		3	<p>The State Pollution Control Board shall monitor the setting up and operation of the common or captive treatment, storage and disposal facility, regularly.</p> <p>Complied. GPCB visits our facility every month.</p>
		4	<p>The operator of common facility or occupier of a captive facility shall be responsible for safe and environmentally sound operation of the facility and its closure and post closure phase, as per guidelines or standard operating procedures issued by the Central Pollution Control Board from time to time.</p> <p>Complied. Landfill operation, closure and post closure is done according to the guideline of CPCB.</p>
		5	<p>The operator of common facility or occupier of a captive facility shall maintain records of hazardous and other wastes handled by him in Form 3.</p> <p>Complied. All relevant details are maintained as per Form 3.</p>
		6	<p>The operator of common facility or occupier of a captive facility shall file an annual return in Form 4 to the State Pollution Control Board on or before the 30th day of June following the financial year to which that return relates.</p> <p>Complied. We are submitting Form – 4 (Annual Return) for each financial year.</p>

18. Transportation of hazardous and other wastes. -

Sr. no	Rule	Status
1	The transport of the hazardous and other waste shall be in accordance with the provisions of these rules and the rules made by the Central Government under the Motor Vehicles Act, 1988 and the guidelines issued by the Central Pollution Control Board from time to time in this regard.	Complied. We have ensured that the transportation of the hazardous waste is done according to the guidelines.
2	The occupier shall provide the transporter with the relevant information in Form 9 , regarding the hazardous nature of the wastes and measures to be taken in case of an emergency and shall label the hazardous and other wastes containers as per Form 8.	Complied. Proper Labelling system and Trem Card is provided to the transporter.
4	In case of transportation of hazardous and other waste for recycling or utilization including co- processing, the sender shall intimate both the State Pollution Control Boards before handing over the waste to the transporter.	Complied. A intimation letter is giving to both the SPCBs.

		5	In case of transit of hazardous and other waste for recycling, utilization including co- processing or disposal through a State other than the States of origin and destination, the sender shall give prior intimation to the concerned State Pollution Control Board of the States of transit before handing over the wastes to the transporter.	Complied. A intimation letter is giving to all the SPCBs involved.	
		6	In case of transportation of hazardous and other waste, the responsibility of safe transport shall be either of the sender or the receiver whosoever arranges the transport and has the necessary authorization for transport from the concerned State Pollution Control Board. This responsibility should be clearly indicated in the manifest.	Noted and is been followed.	
		7	The authorization for transport shall be obtained either by the sender or the receiver on whose behalf the transport is being arranged.	Complied. We have 358 authorized vehicle which are equipped with GPS system and are being used for Transportation of Hazardous waste from member Industries to TSDF	

6	No ground water shall be tapped for project.	<p>Complied</p> <p>No ground water is being tapped for project. Water is being provided by GIDC for process purpose. However, Up- Stream and Down Stream Monitoring wells have been provided and their Monitoring is done once in each quarter by a third party.</p> <p>An average of both the quarters for all the ground water samples in and around the site are mentioned in the table below.</p> <p>It may be noted that, as indicated in the results, parameters of up-streams wells are higher than the downstream wells.</p> <p>Results of third-party analysis of all the borewells for both the quarters are attached as Annexure – 1.</p> <p>Ground water Analysis Period (Oct’19 to March’20):</p> <table border="1"> <thead> <tr> <th>Sr.no</th> <th>Parameters</th> <th>Unit</th> <th>Permissible limits</th> <th>Average of outside the premises</th> <th>Average of upstream borewell</th> <th>Average of downstream borewell</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Colour</td> <td>Hazen</td> <td>15</td> <td>9.7</td> <td>12.0</td> <td>8.5</td> </tr> <tr> <td>2</td> <td>pH</td> <td>-</td> <td>No relaxation</td> <td>7.6</td> <td>7.3</td> <td>7.2</td> </tr> <tr> <td>3</td> <td>Electric Conductivity</td> <td>mmhos/cm</td> <td>-</td> <td>3129.9</td> <td>6228.9</td> <td>3439.5</td> </tr> <tr> <td>4</td> <td>Turbidity</td> <td>NTU</td> <td>5</td> <td>0.8</td> <td>1.2</td> <td>1.4</td> </tr> <tr> <td>5</td> <td>TSS</td> <td>mg/lit</td> <td>-</td> <td>6.3</td> <td>6.8</td> <td>7.5</td> </tr> <tr> <td>6</td> <td>TDS</td> <td>mg/lit</td> <td>2000</td> <td>2097.4</td> <td>4165.7</td> <td>2526.8</td> </tr> <tr> <td>7</td> <td>TOC</td> <td>mg/lit</td> <td>-</td> <td>10.2</td> <td>18.3</td> <td>12.7</td> </tr> <tr> <td>8</td> <td>COD</td> <td>mg/lit</td> <td>-</td> <td>25.2</td> <td>58.7</td> <td>34.8</td> </tr> </tbody> </table>	Sr.no	Parameters	Unit	Permissible limits	Average of outside the premises	Average of upstream borewell	Average of downstream borewell	1	Colour	Hazen	15	9.7	12.0	8.5	2	pH	-	No relaxation	7.6	7.3	7.2	3	Electric Conductivity	mmhos/cm	-	3129.9	6228.9	3439.5	4	Turbidity	NTU	5	0.8	1.2	1.4	5	TSS	mg/lit	-	6.3	6.8	7.5	6	TDS	mg/lit	2000	2097.4	4165.7	2526.8	7	TOC	mg/lit	-	10.2	18.3	12.7	8	COD	mg/lit	-	25.2	58.7	34.8
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8	COD	mg/lit	-	25.2	58.7	34.8																																																											

		9	Chloride	mg/lit	1000	481.5	1483.2	832.4	
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7 The project proponent shall monitor the ambient air quality, groundwater and noise abutting the site as per norms laid down by CPCB.

Complied.
 We are carrying out internally weekly ambient air monitoring, fortnightly ground water monitoring & monthly noise level monitoring. For ambient air monitoring we are having 3 monitoring stations.
 Company is also carrying out externally quarterly monitoring of Ambient Air, ground water, noise level etc. as per norms laid down by CPCB.
 It may be noted that, as indicated in the results, parameters of up-streams wells are higher than the downstream wells.
 The monitoring results are attached for period Oct'19 to March'20 as **Annexure 1, Annexure 2, and Annexure 3.**

*Note: The frequency of third party monitoring (Air, Water and Noise) will be once in the month from next financial year that would be from April'20.

Ground water (Analysis Period Oct'19 to March'20):

Sr.no	Parameters	Unit	Permissible limits	Average of outside the premises	Average of upstream borewell	Average of downstream borewell
1	Colour	Hazen	15	9.7	12.0	8.5
2	pH	-	No relaxation	7.6	7.3	7.2
3	Electric Conductivity	mmhos/cm	-	3129.9	6228.9	3439.5
4	Turbidity	NTU	5	0.8	1.2	1.4
5	TSS	mg/lit	-	6.3	6.8	7.5
6	TDS	mg/lit	2000	2097.4	4165.7	2526.8
7	TOC	mg/lit	-	10.2	18.3	12.7
8	COD	mg/lit	-	25.2	58.7	34.8
9	Chloride	mg/lit	1000	481.5	1483.2	832.4

Ambient Air (Analysis Period Oct'19 to March'20):

Sr. no.	Parameters	Unit	GPCB/CPCB Permissible Limit	Results 1(29.2.20)	Results 2 (29.11.19)	Average Result	Min	Max
1	RSPM (Pm 10)	µg/m ³	100	96.34	80.63	88.485	80.63	96.34
2	PM _{2.5}	µg/m ³	60	56.26	42.53	49.395	42.53	56.26
3	Sulphur Dioxide	µg/m ³	80	17.57	23.13	20.35	17.57	23.13
4	Nitrogen Dioxide	µg/m ³	80	40.12	30.74	35.43	30.74	40.12
5	Ammonia (Nh ₃)	µg/m ³	400	29.79	32.34	31.065	29.79	32.34

6	Lead As Pb	µg/m ³	1	0.4	0.32	0.36	0.32	0.4
7	Nickel as Ni	ng/m ³	NS	11.28	6.21	8.745	6.21	11.28
8	Arsenic as As	ng/m ³	NS	2.45	ND	2.45	2.45	2.45

Noise level (Analysis Period Oct'19 to March'20):

Sr. No.	Noise monitoring sampling location	Category	Results (Avg)			
			GPCB/CPCB Permissible Limit (Day) (in dB)	Day	GPCB/CPCB Permissible Limit (Night) (in dB)	Night
1	Near Main Gate	Industrial	75	58.00	70	53.67
2	Near Laboratory	Industrial	75	59.33	70	52.17
3	Near Admin. Office	Industrial	75	55.67	70	51.00
4	Truck washing Area	Industrial	75	66.17	70	58.33
5	Near Drum storage Area	Industrial	75	62.50	70	56.50
6	Near security point 4	Industrial	75	58.17	70	54.33
7	Near HB-2	Industrial	75	64.67	70	59.00
8	Near Leachate well-4	Industrial	75	65.83	70	61.83
9	Near Incineration Plant	Industrial	75	66.83	70	62.5
10	East side of incinerator plant	Industrial	75	65.00	70	59.16667

8	Incineration of hazardous wastes shall be carried as per the guidelines of CPCB. The emissions from the incinerator shall be passed through APCS and disposal through 30 meter stack.	<p>Complied</p> <p>Incineration of hazardous wastes is carried out as per the guidelines of CPCB wherein the operating temperatures of RK and SC are maintained, Online stack monitoring system (CEMS) has been installed, the results of which are reflected at GPCB/CPCB and handling & transportation is also done as per the guidelines.</p> <p>The emission from the incinerator is passed through two stages Scrubbing system (dry scrubber and wet scrubber) for Air pollution control. The stack height of Incinerator plant is 45 meters as mentioned in CC&A.</p>
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9	<p>Project proponent shall ensure that wastes with organic content >5% of degradable organic matters are not disposed into the landfill. However, required arrangement for collection treatment and disposal of gases from the landfill of any, should be provided.</p>	<p>Complied.</p> <p>We are carrying out finger-print analysis of every truck load of waste received at site. We ensure that organic content >5% of degradable organic matters are not disposed into landfill. Comprehensive analysis is being carried out at the time of enrolling members. If organic content is high, the waste is sent for incineration. Only inorganic waste or waste meeting acceptance criteria, is sent to landfill. Waste having organic content not suitable for landfill as well as incinerator is send back to respective industry and again accepted only if it follows the acceptance criteria. Required arrangements for collection, treatment and disposal of gases from the landfill is provided.</p> <p>We are monitoring the vents provided at the closed portion of the landfill every month and the concentrations of hydrocarbons are very low.</p> <p>Typical reports of comprehensive analysis and finger-print analysis are attached as Annexure 4.</p>									
10	<p>Project proponent shall have environmental management plan and onsite emergency management plan.</p>	<p>Complied</p> <p>BEIL has prepared on site Emergency plan and it is updated annually. Onsite emergency plan is including points like hazard identification, risk analysis and environmental impact assessment, organization setup, communication system, action on site, link with offsite emergency plan, training rehearsals and record aspects, offsite effects of any emergency, the duties and functions to control any emergency etc. Mock drills are also being conducted.</p> <p>On-site Emergency Plan inward copy is attached as Annexure 5.</p> <p>Summary of EMP Compliance is as below, and Detailed EMP Compliance is attached as Annexure -13.</p> <table border="1" data-bbox="336 1429 1407 1736"> <thead> <tr> <th data-bbox="336 1429 416 1503">Sr. No.</th> <th data-bbox="416 1429 807 1503">Condition</th> <th data-bbox="807 1429 1407 1503">Compliance Status</th> </tr> </thead> <tbody> <tr> <td data-bbox="336 1503 416 1621">1.</td> <td data-bbox="416 1503 807 1621">Temporary storage for hazardous waste</td> <td data-bbox="807 1503 1407 1621">Complied. Temporary storage of hazardous waste of capacity 30000 MT for monsoon period has been provided.</td> </tr> <tr> <td data-bbox="336 1621 416 1736">2.</td> <td data-bbox="416 1621 807 1736">Loading and unloading of waste</td> <td data-bbox="807 1621 1407 1736">Complied. Adequate facility and equipment for unloading of waste has been provided.</td> </tr> </tbody> </table>	Sr. No.	Condition	Compliance Status	1.	Temporary storage for hazardous waste	Complied. Temporary storage of hazardous waste of capacity 30000 MT for monsoon period has been provided.	2.	Loading and unloading of waste	Complied. Adequate facility and equipment for unloading of waste has been provided.
Sr. No.	Condition	Compliance Status									
1.	Temporary storage for hazardous waste	Complied. Temporary storage of hazardous waste of capacity 30000 MT for monsoon period has been provided.									
2.	Loading and unloading of waste	Complied. Adequate facility and equipment for unloading of waste has been provided.									

3.	Transportation of waste	Complied. We have ensured that the transportation of the hazardous wastes to the TSDF confirms to the norms laid down in the Hazardous and other wastes (management and transboundary Movement) Rules, 2016. Total Approved 358 dedicated vehicles equipped with GPS system are being used for Transportation of Hazardous waste from member Industries to TSDF.
4.	Monitoring activity	Complied. We are carrying out internally as well as externally monitoring of soil, ambient air, ground water, storm water, noise monitoring on regular basis.
5.	Leachate management system	Complied. Adequate nos. of leachate (6 leachate collection wells for Phase I, 7 nos of leachate collection wells for Phase II and 3 leachate collection well for Phase III) collection wells have been provided.

BEIL has Implemented Prestigious Environmental Management system standard ISO 14001 & OHSAS 18001 Safety system. Certificates are attached as **Annexure 6**.

11 Project proponent shall carry out periodical groundwater/soil monitoring in and around the site to check the contamination including TCLP test for heavy metals.

Complied.
We carry out quarterly ground water and yearly soil monitoring externally in and around the site to check the contamination, the results of which are attached as **Annexure 1 and Annexure 7**.

Ground water Analysis Period (Oct'19 to March'20):

Sr.no	Parameters	Unit	Permissible limits	Average of outside the premises	Average of upstream borewell	Average of downstream borewell
1	Colour	Hazen	15	9.7	12.0	8.5
2	pH	-	No relaxation	7.6	7.3	7.2
3	Electric Conductivity	mmhos/cm	-	3129.9	6228.9	3439.5
4	Turbidity	NTU	5	0.8	1.2	1.4
5	TSS	mg/lit	-	6.3	6.8	7.5
6	TDS	mg/lit	2000	2097.4	4165.7	2526.8
7	TOC	mg/lit	-	10.2	18.3	12.7
8	COD	mg/lit	-	25.2	58.7	34.8
9	Chloride	mg/lit	1000	481.5	1483.2	832.4

		Soil Monitoring (2019):								
		pH(10%)	Conductivity (10%)	TDS	TOC	Lead	Copper	Mercury	Nickel	
		Near Shed No.2	8.61	1.8	13	0.36	13.29	65.73	0.334	95.12
		Near Drum cutting Area	8.85	0.41	2.8	0.38	19.01	95.16	0.411	87.35
		Near Shed No.10	9.12	0.32	2.2	0.2	1.82	102	0.394	96.95
		Near EB - 3	8.72	0.37	2.6	0.41	11.4	116	0.403	98.11
		Near HB -7	8.41	1.089	7.5	0.43	57.65	178	0.77	97.14
		Near Stabilization	8.37	0.391	3.33	0.56	12.43	98.1	0.624	115
		Near HB-1	8.11	0.857	5.8	0.53	5.6	52.4	0.543	84.14
		Near industrial Solvent Side	8.32	0.739	5.07	1.45	186	166	0.415	128
		Near deep enterprise	8.16	0.525	3.88	0.7	11.24	94.45	0.473	113
		Near inc plant	8.08	0.641	4.43	1.009	12.12	91.6	0.663	125
		Jitali road	8.29	0.75	5.16	0.88	5.5	108	0.367	96.83
		Avg	8.458182	0.717454545	5.07	0.628091	30.55091	106.1309	0.490636	103.3309
		MIN	8.08	0.32	2.2	0.2	1.82	52.4	0.334	84.14
12	Adequate dust and noise separation measures should be put in place during construction of the plant.	<p>Complied</p> <p>Adequate dust suppression systems water sprinkling, adequate enclosure, etc were applied and noise separation measures like acoustic enclosures, wherever possible, were put in place during construction of the plant.</p>								
13	Green belt development to a tune of 41,000 sqmts with thick canopy trees around the project site should be taken up to mitigate the impacts on the overall air quality at the site.	<p>Complied</p> <p>Green belt is developed in total 41,000 sq. mt to mitigate the impacts on the overall air quality at the site. Additionally, after the closure and capping of SLF in phased manner is total 75940 Sq.mt. Thus total 41.87% (14.68% + 27.19%) of total plot area is earmarked for development of green cover.</p> <p>The area available after capping of SLF in phased manner is given below: 6,500 m² in Phase-I developed as garden 16000 no of Jatropha planted. 43,440 m² in Phase-II under plantation. 10,000 m² in Phase-III proposed after capping.</p> <p>Layout of green belt within the premises is attached as Annexure – 16.</p>								
14	The groundwater, surface water and air quality	<p>Complied.</p> <p>Company is carrying out fortnightly ground water monitoring, quarterly surface water monitoring & weekly ambient air quality</p>								

should be monitored regularly to assess the leachate contamination.

Company is also carrying out externally quarterly monitoring of ground water, Ambient Air quality.
 Up- Stream and Down Stream Monitoring wells have been provided and their Monitoring is done once in each quarter by a third party.
 An average of both the quarters for all the ground water samples in and around the site are mentioned in the table below.
 It may be noted that, as indicated in the results, parameters of up-streams wells are higher than the down stream wells.
 Separate provision for storm water runoff has been provided surrounding the landfill, which leads to GIDC drainage. Storm water is discharged in GIDC drainage line only once its analysis is carried out and it is found non-contaminated. Any Contaminated storm water is sent to ETL (as per our CCA).
 Reports of Ambient Air Internal and external analysis area attached as **Annexure 2 & 2(A)** and ground water analysis are attached as **Annexure 1**.

Ambient Air Analysis (Period Oct'19 to March'20):

Sr. no.	Parameters	Unit	GPCB/CPCB Permissible Limit	Results 1(29.2.20)	Results 2 (29.11.19)	Average Result	Min	Max
1	RSPM (Pm 10)	µg/m ³	100	96.34	80.63	88.485	80.63	96.34
2	PM 2.5	µg/m ³	60	56.26	42.53	49.395	42.53	56.26
3	Sulphur Dioxide	µg/m ³	80	17.57	23.13	20.35	17.57	23.13
4	Nitrogen Dioxide	µg/m ³	80	40.12	30.74	35.43	30.74	40.12
5	Ammonia (Nh ₃)	µg/m ³	400	29.79	32.34	31.065	29.79	32.34
6	Lead As Pb	µg/m ³	1	0.4	0.32	0.36	0.32	0.4
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Ground water Analysis (Period Oct'19 to March'20):						
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15	A leachate collection system should be provided to collect the leachate at a collection point. Treatment facility for the collected leachate should be provided. The treated water shall be reused as far as possible in the project.	<p>Complied</p> <p>A well designed leachate collection system is developed. There are provision of 6 leachate collection wells for Phase I, 7 nos of leachate collection wells for Phase II and 3 leachate collection well for Phase III. Leachate is collected and either treated at the Multiple Effect Evaporation Plant in the premises or sent to CETP (M/S Enviro Technology Limited) for treatment and disposal.</p> <p>For the period Oct'19 to March'20: 13264 KL leachate treated in MEE plant & 860 KL leachate sent to ETL for further treatment & disposal as per our CC&A. 8036 KL Condensate of MEE is reused for dust suppression and incineration plant. The leachate treatment data is submitted to GPCB along with monthly report and quarterly Protocol.</p>
16	The landfill site should be as per the norms laid down by CPCB.	<p>Complied.</p> <p>We have fulfilled all the guidelines of the central pollution control board i.e. complying all location, planning – design, phase operation, liner system, closure and post closure maintenance plan, site infrastructure, environment monitoring system, financial assurance, etc. criteria along with leachate collection arrangement.</p> <p>IIT Delhi, is guiding for construction and operation of the Landfill.</p> <p>Compliance of the central pollution control board guidelines is attached as Annexure 00.</p>

17	A separate environment management cell with suitably qualified staff to carry out various environment related functions should be set up under the charge of a senior executive who will report directly to the chief executive of the organization.	<p>Complied.</p> <p>Company have separate Environmental Management cell. General Manager, manager – Environment, Environmental lab head, are directly reporting to Chief executive officer and Director.</p> <p>Details of the persons engaged in the Environment cell are as below:</p> <ol style="list-style-type: none"> 1. Mr. Manoj Patel: General Manager – Civil (BE Civil) 2. Mr. Vijay Ghadge: Advisor (Ex – GPCB) 3. Ms. Rakshita Vyas – Manager- Env. (PGD-Environment) 4. Adwitiya Bhattacharya: Environment Engineer (BE Env) 5. Bhoomi Tambda: Environment Engineer (BE Environment) 6. Khyati Chandegra: Trainee Environment Engineer (BE Environment) 7. Mr. Satish Gaddam: Head, Environment Laboratory 												
18	The funds earmarked for environment protection measures should be maintained in a separate account and there should be no diversion of these funds for any other purpose. A year wise expenditure on environmental safeguards should be reported to this ministry's regional office at Bhopal.	<p>Complied.</p> <p>A separate account is maintained for environment protection and the cumulative amount is 1326.68. These funds are not diverted for any other activity. A year wise expenditure on environmental earmarked for protection are as below.</p> <table border="1" data-bbox="360 1173 1412 1500"> <thead> <tr> <th>Year</th> <th>Capital Expense (Lacs)</th> <th>Revenue Expense (Lacs)</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>1218</td> <td>27.61</td> </tr> <tr> <td>2018-2019</td> <td>185</td> <td>43.44</td> </tr> <tr> <td>2019-2020</td> <td>626.50</td> <td>413.80</td> </tr> </tbody> </table>	Year	Capital Expense (Lacs)	Revenue Expense (Lacs)	2017-2018	1218	27.61	2018-2019	185	43.44	2019-2020	626.50	413.80
Year	Capital Expense (Lacs)	Revenue Expense (Lacs)												
2017-2018	1218	27.61												
2018-2019	185	43.44												
2019-2020	626.50	413.80												

B. General Condition

Sr. No.	Description	Status
1	Construction of the proposed structures should be undertaken meticulously confirming to the existing central/local rules and regulations. All the construction designs/drawings relation to the proposed construction activities must have approvals of the concerned state government department/agencies.	Complied. Our all designs and drawings are approved by concerned state government. Approval letter from GIDC and DISH are attached as Annexure 8 .
2	To meet any emergency situation, appropriate fire-fighting system should be available. Appropriate arrangements for uninterrupted power and water supply to meet the requirements of the environment protection equipment and continuous water supply for the firefighting system should be made.	Complied The TSDF has 1000 KL fire water arrangement. The fire Hydrant system is designed as per the TAC guideline. All storage sheds are covered by water sprinkler system as well as heat and smoke detector system. TSDF has three pumps (Jokey, Electrical and Diesel) each of capacity are 10 m ³ /Hr, 273 m ³ /Hr and 273 m ³ /Hr respectively. We have also membership of Disaster Prevention and Maintenance Center which is equipped with all requirements of disasters.
3	Full support should be extended to the officers of this ministry's regional office at Bhopal and the officers of the central and furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	Noted and complied Full support is extended to the officers of ministry's regional office at Bhopal and the officers of the central and furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.
4	In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this ministry for modification in the clearance conditions or imposition of new one for ensuring environmental protection. The project proponents should be responsible for implementing the suggested safeguard measures.	Complied. There has been no deviation or alteration in the project including the implementing agency. For modification and expansion we have obtained EC vide letter no. F.No. 10-10/2014-IA.III dated 31.12.2015, F.No. 10-10/2014-IA.III dated 01.08.2017 and F.No. 10-10/2014-IA.III dated 16.04.2018.

5	This ministry reserves the right to revoke this clearance. If any of the conditions are not complied with to the satisfaction of this ministry.	Noted
6	This ministry or any other competent authority may stipulate any other additional conditions subsequently. If deemed necessary, for environmental protection, which shall be compelled with.	Noted.
7	A copy of the clearance letter shall be marked to the concerned panchayat/local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.	Complied. We had marked the copy of the clearance letter to all the concerned dated 24.03.2008 and recorded. Same is attached as Annexure 9 .
8	Gujarat Pollution Control Board should display a copy of the clearance letter at the district industries center and collector's office/tehsildar's office for 30 days.	Complied. We had submitted the copy of EC along with the letter dated 24.03.2008.
9	The project proponent should advertise at least in two local newspapers widely circulated in the region around the project one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the Gujarat State Pollution Control Board and may also be seen at website of the ministry of environment & forests at http://www.envfor.nic.in	Complied. We have given advertisement in papers SANDESH (vernacular language) & THE INDIAN EXPRESS dated 22.03.2008. We have also uploaded that on our company website www.tatvaglobal.com . Same has attached as Annexure 10 .
10	The project proponents should inform regional office Bhopal as well as the ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of work.	Complied. The consent & Authorization for the project is accorded by GPCB vide letter no GPCB/CCA-BRCH-167(13)/ID-14983/134176 dtd. 04.01.2013

		WE have informed MoEF-Bhopal as well as ministry the date of start of work and financial closure by concerned authority via our letter BEIL-PH-III/MOEF/03 dated 19.12.1014. Same is attached as Annexure 15 .
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Compliance Status of Environmental Clearance EC# F.No.10-10/2014-IA.III for Expansion of Secured Landfill (Phase-III) of Existing Integrated Common Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) in GIDC Industrial Estate, Ankleshwar, District Bharuch (Gujarat) by M/s Bharuch Enviro Infrastructure Ltd. Dated 31.12.2015

Environmental Clearance No. F. 10-10/2014-IA.III dated 31st December 2015.

1. The proposal for Expansion of Secured Landfill (Phase-III) of Existing Integrated Common Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) in GIDC Industrial Estate, Ankleshwar, District Bharuch (Gujarat) by M/s Bharuch Enviro Infrastructure Ltd, was considered by the Expert Appraisal Committee (EAC) in the Ministry for Infrastructure Development, Coastal Regulation Zone, Building/Construction and Miscellaneous Projects, in its meeting held on 24th-26th June, 2015

Sr. No.	Observation/Conditions as per Environmental Clearance No. F. 10-10/2014-IA.III dated 31st December 2015.	Status of compliance of EC Conditions
2.	The details of the project, as per the documents submitted by the project proponents (PP), and also as informed during the above EAC meetings, are reported to be as under:-	Noted
	(ii). The Project was accorded TOR vide letter No. 10-10/2014-IA-III dated 18.09.2014.	Noted
	(iii). The Project involves expansion of Secured Landfill (Phase-III) of existing Integrated Common Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) in GIDC Industrial Estate, Ankleshwar of District Bharuch (Gujarat) by M/s Bharuch Enviro Infrastructure ltd. The Project is located at 21°36'55"-21°37'09" Latitude and 73°02'03"-73°02'59" longitude.	Noted
	(iv). The Total site area is 69 acres, pit area 2.98 acres and closure area is 14.755 acres.	Noted
	(v). Green Belt development (20% of construction	Complied.

	<p>projects and 33% for others). The main objective of the green belt is to provide a barrier between the plant surroundings areas. Total 2,79,233.34 sqm land area is available at site; out of this about 41,000 sqm (14.683%) area is covered as green belt and other forms of greenery.</p>	<p>Green belt is developed in total 41,000 sq. mt to mitigate the impacts on the overall air quality at the site. Additionally, after the closure and capping of SLF in phased manner is total 75940 Sq.mt. Thus total 41.87% (14.68% + 27.19%) of total plot area is earmarked for development of green cover. The area available after capping of SLF in phased manner is given below: 6,500 m² in Phase-I developed as garden 16000 no of Jatropa planted. 43,440 m² in Phase-II under plantation. 10,000 m² in Phase-III proposed after capping. Layout of green belt within the premises is attached as Annexure – 16.</p>																					
	<p>(vi). Water requirement will be met through GIDC water supply. Total GIDC water supply required is at 631 KL/day for industrial purpose and 26 KLD for domestic Purpose.</p>	<p>Noted and complied. The Water Requirement (610 KL/day for industrial purpose and 26 KLD for domestic purpose) is fulfilled by the GIDC water only.</p> <p>Water Consumption data as per GIDC bill:</p> <table border="1" data-bbox="730 945 1487 1491"> <thead> <tr> <th>Month</th> <th>Total Water Consumption, (KL) as per GIDC bill</th> <th>Per Day in KL</th> </tr> </thead> <tbody> <tr> <td>Oct'19</td> <td>5454</td> <td>175.93</td> </tr> <tr> <td>Nov'19</td> <td>5355</td> <td>178.5</td> </tr> <tr> <td>Dec '19</td> <td>5648</td> <td>182.19</td> </tr> <tr> <td>Jan'20</td> <td>6182</td> <td>199.4</td> </tr> <tr> <td>Feb'20</td> <td>6270</td> <td>216.20</td> </tr> <tr> <td>March '20</td> <td>5172</td> <td>166.83</td> </tr> </tbody> </table>	Month	Total Water Consumption, (KL) as per GIDC bill	Per Day in KL	Oct'19	5454	175.93	Nov'19	5355	178.5	Dec '19	5648	182.19	Jan'20	6182	199.4	Feb'20	6270	216.20	March '20	5172	166.83
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	<p>(vii). The waste water generation is limited to 396.5 KLD.</p>	<p>Noted and complied. Waste water (leachate) generation is limited to 312 KLD.</p> <p>Leachate (Wastewater) Generation data (total leachate generation including Phase I, Phase II and Phase III):</p> <table border="1" data-bbox="737 1767 1481 2040"> <thead> <tr> <th>Month</th> <th>Per Day in KL</th> <th>Total in KL</th> </tr> </thead> <tbody> <tr> <td>Oct'19</td> <td>118.9</td> <td>3685</td> </tr> <tr> <td>Nov'19</td> <td>108.0</td> <td>3241</td> </tr> <tr> <td>Dec '19</td> <td>56.38</td> <td>1748</td> </tr> </tbody> </table>	Month	Per Day in KL	Total in KL	Oct'19	118.9	3685	Nov'19	108.0	3241	Dec '19	56.38	1748									
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		<table border="1"> <tbody> <tr> <td>Jan'20</td> <td>60.32</td> <td>1870</td> </tr> <tr> <td>Feb'20</td> <td>63.72</td> <td>1848</td> </tr> <tr> <td>March '20</td> <td>66.19</td> <td>2052</td> </tr> <tr> <td>Total</td> <td>473.51</td> <td>14444</td> </tr> </tbody> </table>	Jan'20	60.32	1870	Feb'20	63.72	1848	March '20	66.19	2052	Total	473.51	14444
Jan'20	60.32	1870												
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March '20	66.19	2052												
Total	473.51	14444												
	(viii). The quantity of wastewater generated will be 80.5 KLD from various stages of the operation and most of the waste water is treated and recycled to minimize the usage of ground water. The entire waste water will be treated and reused for various activities such as vehicle tyre washing, dust suppression	Noted and complied. Waste water (Leachate) generated from the operation of Phase III is treated and recycled to minimize the usage of fresh water (Ground water is not being used) by reusing in gardening and dust suppression. For Phase III cell wise construction is going on and cell 3 & 4 are in operation. Designed cell Nos are 4 for Phase III.												
	(ix). No additional power is required. Gujarat Electricity Board (GEB) will supply the power. In case of power failure D.G. Set can be used (2×600 kVA capacity each).	Complied. No additional power is required. In case of power failure D.G. Set is being used (2×600 kVA capacity each).												
	(x).													
	(xi). Investment/Cost: The total cost of the project is Rs. 30 Crores.	Complied. The actual expenditure is Rs. 5.65 Crores for 1 st and 2 nd cell of Phase III. For Phase III cell wise construction is going on, cell 1 (part), cell 3 & 4 are in operation. Designed cell Nos are 4 for Phase III.												
	(xii). Public Hearing: Public Hearing is not required for Projects/activities located within the industrial estates/parks as per Office Memorandum from MoEF&CC (IA) letter no. j-11013/36/2014-ia-I DATED 10.12.2014	Not Applicable. BEIL is located within the notified industrial estate, so public hearing was not required as per Office Memorandum from MoEF& CC (IA) letter no. j-11013/36/2014-ia-I DATED 10.12.2014.												
	(xiii). Wildlife issues: There are no National Parks, Wildlife Sanctuary, biosphere reserves found in the 10 km buffer zone.	Not Applicable. There are no National Parks, Wildlife Sanctuary, biosphere reserves found in the 10 km buffer zone. BEIL is located within the Notified industrial estate												

	(xiv). Forests Land: No Forest land is involved in the project	Not applicable. No Forest land is involved in the project. BEIL is located within the Notified industrial estate
	(xv). There are no Court cases/violations pending with the project proponent.	Complied There are no Court cases/violations pending with the project proponent.
3.	The EAC, after detailed deliberation, recommended the project in its meeting held on 24 th – 26 th June, 2015 for grant of Environmental Clearance. As per the recommendations of EAC, the Ministry of Environment, Forest and Climate Change hereby accords Environmental Clearance for the above mentioned project “Expansion of Secured Landfill (Phase-III) of Existing Integrated Common Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) in GIDC Industrial Estate, Ankleshwar, District Bharuch (Gujarat) by M/s Bharuch Enviro Infrastructure Ltd.” under the provisions of the EIA Notification, 2006 and amendments thereto and circulars issued thereon and subject to the compliance of the following specific and general conditions:	Noted
A.	<u>SPECIFIC CONDITIONS:</u>	
(i)	‘Consent to Establish’ shall be obtained from State Pollution Control Board under the Air (Prevention and control of Pollution) Act, 1981 and the Water (Prevention and Control of pollution) Act, 1974	Complied We have obtained CTE vide letter no. GPCB/CCA – BRCH – 167 (15)/ID – 14983/347176 & 347182 dtd. 02.03.2016 & CTO vide letter no. GPCB/ CCA ,ID –14983 /AWH-89137/123296 dtd. 02.11.2017 from GPCB.
(ii)	Water from bore-wells shall not be used for the proposed activities. Existing bore-wells shall be used only for monitoring the quality of ground water.	Noted & Complied. No ground water is being tapped for project. Water is being provided by GIDC for process purpose. We have provided monitoring wells at upstream (7 nos.) and downstream (6 nos.) of the TSDF. However, Up- Stream and Down Stream Monitoring wells have been provided and their Monitoring is done once in each quarter by a third party. An average of both the quarters for all the ground water samples in and around the site are mentioned in the table below.

It may be noted that, as indicated in the results, parameters of up-streams wells are higher than the down stream wells.

All the third-party reports of both the quarters are attached as **Annexure – 1**.

Ground water Analysis Period (Oct’19 to March’20):

Sr. no	Parameters	Unit	Permissible limits	Average of outside the premises	Average of upstream borewell	Average of downstream borewell
1	Colour	Hazen	15	9.7	12.0	8.5
2	pH	-	No relaxation	7.6	7.3	7.2
3	Electric Conductivity	mmhos/cm	-	3129.9	6228.9	3439.5
4	Turbidity	NTU	5	0.8	1.2	1.4
5	TSS	mg/lit	-	6.3	6.8	7.5
6	TDS	mg/lit	2000	2097.4	4165.7	2526.8
7	TOC	mg/lit	-	10.2	18.3	12.7
8	COD	mg/lit	-	25.2	58.7	34.8
9	Chloride	mg/lit	1000	481.5	1483.2	832.4

(iii) The proposed layout plan shall be realigned in such a way that the waste tipping area and processing area and other project components which produces maximum air and noise pollution is farthest from the habitation.

Noted and Complied.

The proposed layout plan is realigned in such a way that the waste tipping area and processing area and other project components which produces maximum air and noise pollution is farthest from the habitation.

Existing site located inside notified industrial estate. We are monitoring for Ambient Air & Noise level & All parameters are well within the limit. Analysis reports are attached as **Annexure 2 and Annexure 3**.

Ambient Air (Analysis Period Oct’19 to March’20):

Sr. no	Parameters	Unit	GPCB/CPCB Permissible	Result 1 (29.2 .20)	Result 2 (29.1 1.19)	Average Result	Min	Max
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o			sible Limit					
1	RSP M (Pm 10)	µg /m ³	100	96.34	80.63	88.485	80.63	96.34
2	PM 2.5	µg /m ³	60	56.26	42.53	49.395	42.53	56.26
3	Sulphur Dioxide	µg /m ³	80	17.57	23.13	20.35	17.57	23.13
4	Nitrogen Dioxide	µg /m ³	80	40.12	30.74	35.43	30.74	40.12
5	Ammونيا (Nh ₃)	µg /m ³	400	29.79	32.34	31.065	29.79	32.34
6	Lead As Pb	µg /m ³	1	0.4	0.32	0.36	0.32	0.4
7	Nickel as Ni	ng /m ³	NS	11.28	6.21	8.745	6.21	11.28
8	Arsenic as As	ng /m ³	NS	2.45	ND	2.45	2.45	2.45

Noise level (Analysis Period Oct'19 to March'20):

Sr . No.	Noise monitoring sampling location	Category	Results (Avg)			
			GPC B/C PCB Permissible Limit (Day) (in dB)	Day	GPCB/CPCB Permissible Limit (Night) (in dB)	Night
1	Near Main Gate	Industrial	75	58.00	70	53.67
2	Near Laboratory	Industrial	75	59.33	70	52.17

		3	Near Admin. Office	Industrial	75	55.67	70	51.00
		4	Truck washing Area	Industrial	75	66.17	70	58.33
		5	Near Drum storage Area	Industrial	75	62.50	70	56.50
		6	Near security point 4	Industrial	75	58.17	70	54.33
		7	Near HB-2	Industrial	75	64.67	70	59.00
		8	Near Leachate well-4	Industrial	75	65.83	70	61.83
		9	Near Incineration Plant	Industrial	75	66.83	70	62.5
		10	East side of incinerator plant	Industrial	75	65.00	70	59.16667
(iv)	State of the art measures shall be adopted for odor control from the plant.	<p>Complied.</p> <p>Company has provided scrubber in stabilization & waste storage area to control odor. Company has also provided odor control system at incinerator plant & storage areas to mask the odor. We have also provided double stage scrubber system (wet and dry) in incinerator plant to control odor. Adequate PPEs are provided to the workers for minimizing odor effects.</p> <p>We are measuring VOC level weekly by VOC meter. VOC level is well within the limit. Results are attached as Annexure 4.</p>						
(v)	The Waste lying at the existing dumping site shall be excavated and should be accumulated to designated place within the site and this accumulated waste shall be compacted and closed scientifically after reaching the design height.	<p>Complied.</p> <p>There is no dumping site. Waste received from the member industries directly go to the landfilling site.</p> <p>Existing Secured Landfill Phase 1 – after disposal of 601404.117 MT waste, was capped in March 2007. Phase 2 landfill operation started on 12th March, 2007 and after disposal of 1737344.036 MT waste its capping is going on. Phase 3 – Waste dump till march 2020 is 916765.481 MT Waste excavation is not applicable. Secured Landfill are already being compacted and closed scientifically after reaching the design height.</p>						

(vi)	Project Proponent shall develop green belt as committed	<p>Complied</p> <p>Green belt is developed in total 41,000 sq. mt to mitigate the impacts on the overall air quality at the site. Additionally, after the closure and capping of SLF in phased manner is total 75940 Sq.mt. Thus total 41.87% (14.68% + 27.19%) of total plot area is earmarked for development of green cover.</p> <p>The area available after capping of SLF in phased manner is given below:</p> <p>6,500 m² in Phase-I developed as garden 16000 no of Jatropha planted.</p> <p>43,440 m² in Phase-II under plantation.</p> <p>10,000 m² in Phase-III proposed after capping.</p> <p>Layout of green belt within the premises is attached as Annexure – 16.</p>
(vii)	The connectivity road to the side shall be as per IRC guidelines.	<p>Not Applicable</p> <p>This pertained to GIDC who has provided connectivity roads.</p>
(viii)	The waste is proposed to be transported through the village roads, the roads shall be properly widened or proper road for transportation shall be provided. Details shall be incorporated in the EMP.	<p>Not Applicable</p> <p>Existing site, located inside notified industrial estate hence, waste is not being transported through village roads. Proper Road network is available to receive waste at site from members industries.</p>
(ix)	The gas generated from the landfill facility shall be collected and disposed as per rules	<p>Noted & complied.</p> <p>Gas generated of Existing site & under operation site is being monitored.</p> <p>Since the waste is treated, stabilized and Disposed, there is no Gas Generation from the Secured Landfill. Gas vents have been Provided for the Existing Sites and the same Provisions will be made for the Secured Landfill Phase-III. We are monitoring the vent pipes of landfill internally and almost all readings we are getting BDL. The records are maintained in the laboratory. In case of gas generation, we have collection and disposal facility.</p> <p>Results are attached as Annexure 4.</p>
(x)	The proponent shall obtain necessary clearance from the Ground water Authority for the use of ground water.	<p>Not Applicable.</p> <p>Bore wells will be used only for monitoring purpose. The Water Requirement is fulfilled by the GIDC water Supply.</p>
(xi)	The depth of the Landfill site shall be decided based on the ground water table at the site.	<p>Noted and Complied.</p> <p>The landfill is being developed as per CPCB criteria (should be >2 meters) & approved drawings before starting the construction work of cell. Depth of the water table for existing site is around 30 meters, and we have gone up to 7 meters below the surface level. Hence, fulfilling the criteria of CPCB guidelines.</p>

(xii)	An On Site Emergency Management Plan shall be prepared and implemented.	Noted & Complied. BEIL has prepared on site Emergency plan and it is updated annually. Onsite emergency plan is including points like hazard identification, organization setup, communication system, action on site, link with offsite emergency plan, training rehearsals and record aspects, offsite effects of any emergency, the duties and functions to control any emergency etc. Mock drills are also being conducted. On-site Emergency Plan is submitted separately with this. The inward copy is attached as Annexure 5 .												
(xiii)	All recommendation of the EMP shall be compiled with letter and Spirit. All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF&CC along with half yearly compliance report to MoEF&CC-RO.	<p>Complied. We are having our EMP plan which includes points such as, temporary storage of hazardous waste, loading and unloading of the hazardous waste, transportation of hazardous waste, final disposal of hazardous waste into secured landfill site, monitoring activity for water quality, air quality, soil quality, noise, socio – economic, fire safety, fire, health and safety, operation maintenance and closure of the facility, post closure facility etc. EMP Compliance is attached as Annexure 13. Summary of EMP Compliance is as below:</p> <table border="1" data-bbox="715 1003 1497 1984"> <thead> <tr> <th data-bbox="715 1003 794 1115">Sr. No.</th> <th data-bbox="794 1003 1066 1115">Condition</th> <th data-bbox="1066 1003 1497 1115">Compliance Status</th> </tr> </thead> <tbody> <tr> <td data-bbox="715 1115 794 1301">1.</td> <td data-bbox="794 1115 1066 1301">Temporary storage for hazardous waste</td> <td data-bbox="1066 1115 1497 1301">Complied. Temporary storage of hazardous waste of capacity 30,000 MT for monsoon period has been provided.</td> </tr> <tr> <td data-bbox="715 1301 794 1487">2.</td> <td data-bbox="794 1301 1066 1487">Loading and unloading of waste</td> <td data-bbox="1066 1301 1497 1487">Complied. Adequate facility and equipment for unloading of waste has been provided.</td> </tr> <tr> <td data-bbox="715 1487 794 1984">3.</td> <td data-bbox="794 1487 1066 1984">Transpiration of waste</td> <td data-bbox="1066 1487 1497 1984">Complied. We have ensured that the transportation of the hazardous wastes to the TSDF confirms to the norms laid down in the hazardous waste (Management and Handling) rules 2016 and its subsequent amendments. Total Approved 358 dedicated vehicles equipped with GPS system are being used for Transportation of Hazardous waste from member Industries to TSDF.</td> </tr> </tbody> </table>	Sr. No.	Condition	Compliance Status	1.	Temporary storage for hazardous waste	Complied. Temporary storage of hazardous waste of capacity 30,000 MT for monsoon period has been provided.	2.	Loading and unloading of waste	Complied. Adequate facility and equipment for unloading of waste has been provided.	3.	Transpiration of waste	Complied. We have ensured that the transportation of the hazardous wastes to the TSDF confirms to the norms laid down in the hazardous waste (Management and Handling) rules 2016 and its subsequent amendments. Total Approved 358 dedicated vehicles equipped with GPS system are being used for Transportation of Hazardous waste from member Industries to TSDF.
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		4.	Monitoring activity	Complied. We are carrying out internally as well as externally monitoring of soil, ambient air, ground water, storm water, noise monitoring on regular basis.
		5.	Leachate management system	Complied. Adequate nos. of leachate (6 leachate collection wells for Phase I, 7 nos of leachate collection wells for Phase II and 3 leachate collection well for Phase III) collection wells have been provided.

(xiv)	Environmental Monitoring program shall be implemented as per EIA-EMP report and guidelines prescribed by CPCB for Hazardous waste facilities. Periodical ground water/soil monitoring to check the contamination in and around the site be carried out.	<p>Complied. Environmental Monitoring program is implemented as per EIA-EMP report and guidelines prescribed by CPCB for Hazardous waste facilities. Periodical ground water/soil monitoring to check the contamination in and around the site is being carried out for Phase III also. Results are attached as Annexure 1 and Annexure 7.</p> <p>Ground water Analysis Period (Oct'19 to March'20):</p> <table border="1"> <thead> <tr> <th>Sr. no</th> <th>Parameters</th> <th>Unit</th> <th>Permissible limits</th> <th>Average of outside the premises</th> <th>Average of upstream bore well</th> <th>Average of downstream borewell 1</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Colour</td> <td>Hazen</td> <td>15</td> <td>9.7</td> <td>12.0</td> <td>8.5</td> </tr> <tr> <td>2</td> <td>pH</td> <td>-</td> <td>No relaxation</td> <td>7.6</td> <td>7.3</td> <td>7.2</td> </tr> <tr> <td>3</td> <td>Electric Conductivity</td> <td>mmhos/cm</td> <td>-</td> <td>3129.9</td> <td>6228.9</td> <td>3439.5</td> </tr> <tr> <td>4</td> <td>Turbidity</td> <td>NTU</td> <td>5</td> <td>0.8</td> <td>1.2</td> <td>1.4</td> </tr> <tr> <td>5</td> <td>TSS</td> <td>mg/lit</td> <td>-</td> <td>6.3</td> <td>6.8</td> <td>7.5</td> </tr> <tr> <td>6</td> <td>TDS</td> <td>mg/lit</td> <td>2000</td> <td>2097.4</td> <td>4165.7</td> <td>2526.8</td> </tr> <tr> <td>7</td> <td>TOC</td> <td>mg/lit</td> <td>-</td> <td>10.2</td> <td>18.3</td> <td>12.7</td> </tr> <tr> <td>8</td> <td>COD</td> <td>mg/lit</td> <td>-</td> <td>25.2</td> <td>58.7</td> <td>34.8</td> </tr> <tr> <td>9</td> <td>Chloride</td> <td>mg/lit</td> <td>1000</td> <td>481.5</td> <td>1483.2</td> <td>832.4</td> </tr> </tbody> </table>					Sr. no	Parameters	Unit	Permissible limits	Average of outside the premises	Average of upstream bore well	Average of downstream borewell 1	1	Colour	Hazen	15	9.7	12.0	8.5	2	pH	-	No relaxation	7.6	7.3	7.2	3	Electric Conductivity	mmhos/cm	-	3129.9	6228.9	3439.5	4	Turbidity	NTU	5	0.8	1.2	1.4	5	TSS	mg/lit	-	6.3	6.8	7.5	6	TDS	mg/lit	2000	2097.4	4165.7	2526.8	7	TOC	mg/lit	-	10.2	18.3	12.7	8	COD	mg/lit	-	25.2	58.7	34.8	9	Chloride	mg/lit	1000	481.5	1483.2	832.4
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		Soil Monitoring (2019):						
	pH(10%)	Conductivity (10%)	TDS	TOC	Lead	Copper	Mercury	Nickel
Near Shed No.2	8.61	1.8	13	0.36	13.29	65.73	0.334	95.12
Near Drum cutting Area	8.85	0.41	2.8	0.38	19.01	95.16	0.411	87.35
Near Shed No.10	9.12	0.32	2.2	0.2	1.82	102	0.394	96.95
Near EB - 3	8.72	0.37	2.6	0.41	11.4	116	0.403	98.11
Near HB -7	8.41	1.089	7.5	0.43	57.65	178	0.77	97.14
Near Stabilization	8.37	0.391	3.33	0.56	12.43	98.1	0.624	115
Near HB-1	8.11	0.857	5.8	0.53	5.6	52.4	0.543	84.14
Near industrial Solvent Side	8.32	0.739	5.07	1.45	186	166	0.415	128
Near deep enterprise	8.16	0.525	3.88	0.7	11.24	94.45	0.473	113
Near inc plant	8.08	0.641	4.43	1.009	12.12	91.6	0.663	125
Jitali road	8.29	0.75	5.16	0.88	5.5	108	0.367	96.83
Avg	8.458182	0.717454545	5.07	0.628091	30.55091	106.1309	0.490636	103.3309
MIN	8.08	0.32	2.2	0.2	1.82	52.4	0.334	84.14
(xv)	The Leachate from the facility shall be collected and treated to meet the prescribed standards before disposal.	Complied. A well-designed leachate collection system is developed. There is provision of 6 leachate collection wells for Phase I, 7 nos of leachate collection wells for Phase II and 3 leachate collection well for Phase III. Leachate is collected and either treated at the Multiple Effect Evaporation Plant in the premises or sent to CETP (M/S Enviro Technology Limited) for treatment and disposal.						

		For the period Oct'19 to March'20: 13264 KL leachate treated in MEE plant & 860 KL leachate sent to ETL for further treatment & disposal as per our CC&A. 8036 KL Condensate of MEE is reused for dust suppression and incineration plant. The leachate treatment data is submitted to GPCB along with monthly report and quarterly Protocol.									
(xvi)	Rain water runoff from the landfill area and other hazardous waste management area shall be collected and treated in the effluent treatment plant	Complied. Separate provision for storm water runoff has been provided surrounding the landfill and other areas, which leads to GIDC drainage. Storm water is discharged in GIDC drainage line only once its analysis is carried out and results are found satisfactory. If results are not found satisfactory then the rain water runoff from storm water drain is collected and treated in MEE/ETL as per our CCA.									
(xvii)	The responses/ commitments made to the issues raised during public hearing shall be complied with in letter and spirit. A Hard copy of the actions taken shall be submitted to the Ministry.	Not Applicable Existing site is located in notified industrial area. Public Hearing is Not Applicable as per MoEF memorandum No. J-11013/36/2014-IA-I Dated 10 th December,2014.									
(xvii i)	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC.	Complied. We are having our EMP plan which includes points such as, temporary storage of hazardous waste, loading and unloading of the hazardous waste, transportation of hazardous waste, final disposal of hazardous waste into secured landfill site, monitoring activity for water quality, air quality, soil quality, noise, socio – economic, fire safety, fire, health and safety, operation maintenance and closure of the facility, post closure facility etc. EMP Compliance is attached as Annexure 13 . Summary of EMP Compliance is as below:									
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		3.	Transportation of waste	<p>Complied.</p> <p>We have ensured that the transportation of the hazardous wastes to the TSDF confirms to the norms laid down in the hazardous waste (Management and Handling) rules 2016 and its subsequent amendments.</p> <p>Total Approved 358 dedicated vehicles equipped with GPS system are being used for Transportation of Hazardous waste from member Industries to TSDF.</p>
		4.	Monitoring activity	<p>Complied.</p> <p>We hare carrying out internally as well as externally monitoring of soil, ambient air, ground water, storm water and noise monitoring on regular basis.</p>
		5.	Leachate management system	<p>Complied.</p> <p>Adequate nos. of leachate collection wells (6 leachate collection wells for Phase I, 7 nos of leachate collection wells for Phase II and 3 leachate collection well for Phase III) have been provided.</p>
B.	<u>GENERAL CONDITIONS:</u>			
(i)	The project proponent should set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	<p>Complied.</p> <p>Company have separate Environmental Management cell. General Manager, manager – Environment, Environmental lab head, are directly reporting to Chief executive officer and Director.</p> <p>Details of the persons engaged in the Environment cell are as below:</p> <ol style="list-style-type: none"> 1. Mr. Manoj Patel: General Manager – Civil (BE Civil) 2. Mr. Vijay Ghadge: Advisor (Ex – GPCB) 3. Ms. Rakshita Vyas – Manager- Env. (PGD-Environment) 4. Adwitiya Bhattacharya: Environment Engineer (BE Env) 5. Bhoomi Tambedia: Environment Engineer (BE Environment) 		

		<p>6. Khyati Chandegra: Trainee Environment Engineer (BE Environment)</p> <p>7. Mr. Satish Gaddam: Head, Environment Laboratory</p>						
(ii)	The Project proponent should extend full support to the officers of this Ministry/regional Office during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect to mitigation measures and other environmental protection activities.	<p>Complied.</p> <p>Full support is extended to the officers of the Ministry/regional Office during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect to mitigation measures and other environmental protection activities.</p>						
(iii)	The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environmental clearance under	Noted.						
(iv)	In the event of a change in the implementation agency, a fresh clearance shall be obtained from the Ministry of Environment, forest and Climate Change.	Noted.						
(v)	A copy of the clearance letter will be marked to concerned Panchayat/local NGO, if any, from whom any suggestions/representations has been made received while processing the proposal.	<p>Complied.</p> <p>Letter dated 09.01.2016 sent to the GPCB Regional Office, District Industries center and Collector's Office. The same has attached as Annexure 11.</p>						
(vi)	The environmental safeguard contained in the EIA Report should be implemented in letter and spirit.	<p>Complied.</p> <p>We are having our EMP plan which includes points such as, temporary storage of hazardous waste, loading and unloading of the hazardous waste, transportation of hazardous waste, final disposal of hazardous waste into secured landfill site, monitoring activity for water quality, air quality, soil quality, noise, socio – economic, fire safety, fire, health and safety, operation maintenance and closure of the facility, post closure facility etc.</p> <p>EMP Compliance is attached as Annexure 13.</p> <p>Summary of EMP Compliance is as below:</p> <table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Condition</th> <th>Compliance Status</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Sr. No.	Condition	Compliance Status			
Sr. No.	Condition	Compliance Status						

		1.	Temporary storage for hazardous waste	Complied. Temporary storage of hazardous waste of capacity 30 MT for monsoon period has been provided.
		2.	Loading and unloading of waste	Complied. Adequate facility and equipment for unloading of waste has been provided.
		3.	Transpiration of waste	Complied. We have ensured that the transportation of the hazardous wastes to the TSDF confirms to the norms laid down in the hazardous waste (Management and Handling) rules 2016 and its subsequent amendments. Total Approved 358 dedicated vehicles equipped with GPS system are being used for Transportation of Hazardous waste from member Industries to TSDF.
		4.	Monitoring activity	Complied. We hare carrying out internally as well as externally monitoring of soil, ambient air, ground water, storm water, noise monitoring on regular basis.
		5.	Leachate management system	Complied. Adequate nos. of leachate (6 leachate collection wells for Phase I, 7 nos of leachate collection wells for Phase II and 3 leachate collection well for Phase III)collection wells have been provided.
(vii)	A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries center and	Complied. Letter dated 09.01.2016 sent to the GPCB Regional Office, District Industries center and Collector's Office. The same has attached as Annexure 11 .		

	Collector's Office/Tehsildar's Office for 30 days.	
(viii)	The funds earmarked for environmental protection measures shall be kept in separate account and shall be reported to this Ministry and its concerned Regional Office	Complied. A separate account is maintained for environment protection and the cumulative amount is Rs. 1326.68 Lakhs till 2019-20. These funds are not diverted for any other activity
5.	The above stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974 the Air (Prevention and Control of pollution) Act, 1981, the Environment (Protection) Act, 1986, The Public Liability (Insurance) Act, 1991 and Municipal Solid Wastes (Management and Handling Rules, 2000 including the amendments and rules made thereafter.	Complied. We have obtained CTE vide letter no. GPCB/ CCA – BRCH – 167 (16)/ID – 14983/ 361331 dtd. 01.07.2017 to add capacity of Landfill as Phase # 3 at existing site& is in operation. GPCB under the provisions of Water (Prevention and Control of Pollution) Act, 1974 the Air (Prevention and Control of pollution) Act, 1981, the Environment (Protection) Act, 1986. We are having PLI policy which is renewed yearly under the Public Liability (Insurance) Act, 1991.
6.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	Complied. Existing site is in notified GIDC area and already have applicable clearance/permissions from respective authority. Permission of Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. is not required as our existing site is already in notified GIDC area.

7.	The project proponent should advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental clearance and copies of clearance letters are available with the State Pollution Control Board and Man also be seen on the website of the Ministry of Environment, forest & Climate Change at http://www.envfor.nic.in . The advertisement should be made within seven days from the date of receipt of The Clearance Letter and a copy of the same Should be forwarded to the Regional Office of this Ministry at Bhopal.	Complied. Advertisement Published in Times of India (English Language) and Divya Bhaskar (Gujarati Language). The Same has been informed to MoEF Regional Office Bhopal, MoEF New Delhi, CPCB Regional Office Vadodara and, GPCP Gandhinagar and GPCB regional Office Ankleshwar vide Letter # BEIL/ANK/EC/PH3 Dated 04.01.2016. Advertisement copies are attached as Annexure 12 .
8.	This Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation vs. Union of India in Writ Petition (Civil) No. 460 of 2004 as may be applicable to this project.	Not Applicable as it is located inside notified industrial estate.
9.	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green tribunal Act, 2010	Not applicable
10.	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Complied. The EC Compliance has been uploaded on the Company Website. The link for the same is https://www.tatvaglobal.com/comp/BEIL%20Ankleshwar--EC%20Compliance%20Report%20(Apr'19-Sep'19).pdf
11.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/ Municipal Corporation, Urban Local Body and the local NGO, if any from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied. We had marked the copy of the clearance letter to all the concerned dated 09.01.2016 and recorded. Same is attached as Annexure 11 . The Clearance Letter has been uploaded on the Company Website. The link for the same is http://www.tatvaglobal.com/comp/Phase-3-EC.pdf .

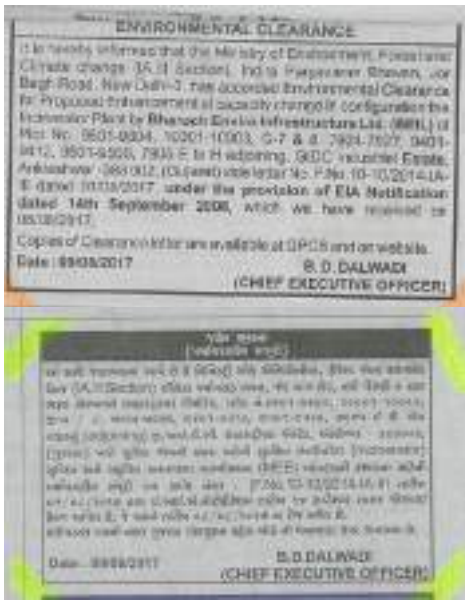
12.	The proponent shall upload the status of the compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	Complied. The EC Compliance has been uploaded on the Company Website. The link for the same is https://www.tatvaglobal.com/comp/BEIL%20Ankleshwar--EC%20Compliance%20Report%20(Apr'19-Sep'19).pdf
13.	The Project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in Hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	Complied. We are submitting regularly six monthly report for all ECs conditions to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. Last six monthly EC compliance report for the period of Apr - Sep 2019 dated 14.11.2019 was submitted on 29.11.2019.
14.	The environmental statement for each financial year ending 31 st March in Form – V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective regional Office of MoEF&CC by e-mail.	Complied. We are submitting Form –V (Environmental Statement) every financial year and it is displaying on website. Last Form – V (period 2018-19) submitted is attached as Annexure 14 . Form – V of period 2019-20 will be submitted to MOEF&CC, once we submit it to SPCB.
15.	This issues with the prior approval of the Competent Authority.	Noted.

Compliance Status of Environmental Clearance EC# F.No.10-10/2014-IA.III for Enhancement of capacity change in configuration of the incinerator installed at Common Hazardous waste Treatment, Storage and Disposal Facility (TSDF) at plot No. 9601-9604, 10001-10003, G-7 & 8, 7924-7927, 9401-9412, 9501-9506, 7905 E to H adjoining Gujarat Industrial Development Corporation(GIDC) Industrial Estate, Ankleshwar, District Bharuch (Gujarat) by M/s Bharuch Enviro Infrastructure Ltd. Dated 01.08.2017

Environmental Clearance No. F. 10-10/2014-IA.III dated 1st August 2017.

2. The proposal for grant of Environmental clearance to the project “Enhancement of capacity change in configuration of the incinerator installed at Common Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) at plot No. 9601-9604, 10001-10003, G-7 & 8, 7924-7927, 9401-9412, 9501-9506, 7905 E to H adjoining Gujarat Industrial Development Corporation(GIDC) Industrial Estate, Ankleshwar, District Bharuch (Gujarat) by M/s Bharuch Enviro Infrastructure Limited was considered by the Expert Appraisal Committee(infra-2) in its meeting held on 25th-27th May, 2017

We would like to bring to your attention that this EC # F. 10-10/2014-IA.III dated 1st August 2017, for change in configuration of incinerator, is temporarily on hold. We shall comply with the conditions stipulated once the EC is implemented. However, we have complied the following conditions.

Condition No.	Observation/Conditions as per Environmental Clearance No. F. 10-10/2014-IA.III dated 1st August 2017	Status of compliance of EC Conditions
6	The project proponent should advertise at least in two local newspapers widely circulated in the region around the project one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the Gujarat State Pollution Control Board and may also be seen at website of the ministry of environment & forests at http://www.envfor.nic.in .The advertisement should be made within seven days from the date of receipt of the clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhopal.	Complied. We have given advertisement in papers SANDESH & THE TIMES OF INDIA dated 09.08.2017. 
10	A copy of the clearance letter shall be sent by the proponent to concerned panchayat, Zilla Parisad, Municipal Corporation, Urban Local Body and the local NGO, if any, from whom	Complied. We had marked the copy of the clearance letter to all the concerned dated 12.08.2017 and recorded. Same has also uploaded on our

	suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	company website www.tatvaglobal.com . The same is attached as Annexure 17 .
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Compliance Status of Environmental Clearance EC# F. No. 10-10/2014-IA-111 for Enhancement of capacity of Existing phase III Landfill Facility at Common Hazardous Waste Treatment, Storage and Disposal Facilities (TSDF) at plot No. 9601-9604, 10001-10003, G-7 & 8, 7924-7927, 9401-9412, 9501-9506, 7905 E to H adjoining Gujarat Industrial Development Corporation(GIDC) Industrial Estate, Ankleshwar, District Bharuch (Gujarat) by M/s Bharuch Enviro Infrastructure Ltd. Dated 16.04.18

Environmental Clearance No. F. 10-10/2014-IA.III dated 16th April 2018.

2. The proposal for grant of Environmental clearance to the project “Enhancement of capacity of Existing phase III Landfill Facility at Common Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) at plot No. 9601-9604, 10001-10003, G-7 & 8, 7924-7927, 9401-9412, 9501-9506, 7905 E to H adjoining Gujarat Industrial Development Corporation(GIDC) Industrial Estate, Ankleshwar, District Bharuch (Gujarat) by M/s Bharuch Enviro Infrastructure Limited was considered by the Expert Appraisal Committee(infra-2) in its 24th meeting held on 30-31 October, 2017.

This EC # F. 10-10/2014-IA.III dated 16th April 2018, is for enhancement of capacity of existing landfill phase-3. CCA (CTO) application has been done at GPCB and project will be implemented soon after. We shall comply with the conditions stipulated once the EC is implemented.

Annexure 00

Compliance of CPCB Criteria for Hazardous waste landfill

Sr. No.	Conditions	Status
1.	<p>Location Criteria:</p> <ul style="list-style-type: none"> - Lake or Pond : 200 Mtrs - River : 100 Mtrs - Flood plain : 100 years - Highway : 500 Mtrs - Habitation : 500 Mtrs - Public Parks : 500 Mtrs - Critical habitat Area : No landfill - Wet Lands: No landfill - Airport : No Landfill - Water Supply: 500 Mtrs - Coastal Regulation Zone : No landfill - Ground Water table level: < 2 meters below the base 	<p>Complied</p> <p>Landfill is located in Ankleshwar GIDC Estate fulfilling all the criteria mentioned in the guidelines. Nearest railway station is at about 2.4 Km (NE), Dadhhal. Nearest river is at about 1.15 km (E), Kondhki Khadi. Nearest village is at about 1.2 KM (ENE), Jitali. Nearest airport is at about 63 Km (SW), Surat. Nearest highway is at about 5 Km (W), national highway No.8.</p>
2.	<p>Planning And Design criteria:</p>	Complied
	<p>1. Essential Components:</p> <ul style="list-style-type: none"> - Liner System at base and sides of landfill - A leachate collection and treatment facility - Gas collection and treatment facility - Final cover system at top - Surface water drainage system - Environmental monitoring system - Closure and post closure plan 	<p>Appropriate base and side liners has been provided according to the criteria. Leachate collection wells (6 for Phase I, 7 for Phase II and 1 for Phase III) has been provided for collecting leachate which further send to MEE or M/S ETL for treatment. Adequate nos. of vents has been provided for gas collection and monitoring. Phase I is completed, so final vegetation coverage has been done and closure of Phase II is going on. Phase-III is in use Currently in Operation (waste dump in temporary shed from 10th June). Surface water drainage system is provided.</p>
	<p>2. Phased Operation:</p> <ul style="list-style-type: none"> - During the monsoon months the waste may stockpiled in a temporary holding areas 	<p>Complied.</p> <p>Landfill site operation is being suspended during the 4</p>

	(covered with roof). During this period and the landfill may be kept capped with final cover/ intermediate cover and landfill operations suspended to reduce infiltration of rainwater into the landfill.	months of monsoon. We have separate storage shed of capacity 30,000 MT. which is also having same side and base lines system provided with roof. Landfill which is in operation is covered with tarpaulin during these period.
	<p>3. Liner system:</p> <ul style="list-style-type: none"> - Leachate control within a landfill involves the following steps: (a) prevention of migration of leachate from landfill sides and landfill base to the subsoil by suitable liner system; and (b) drainage of leachate collected at the base of a landfill to the side of the landfill and removal of the leachate from within the landfill. 	<p>Complied</p> <p>A proper base and side liners has been provided according to the criteria. Drainage system is also provided to avoid infiltration of surface water.</p>
	<p>4. Leachate Management:</p> <ul style="list-style-type: none"> - Offsite Treatment - Onsite Treatment - Recirculation 	<p>Complied</p> <p>Leachate collection wells wells (6 for Phase I, 7 for Phase II and 1 for Phase III)has been provided and collected leachate is treated onsite in MEE or sent to ETL for offsite treatment. Leachate is recirculated accelerating process of landfill stabilization.</p>
	<p>5. Gaseous Emission Management:</p> <ul style="list-style-type: none"> - Controlled passive venting - Controlled collection and treatment 	<p>Complied</p> <p>Adequate nos. of vents has been provided to collect and monitor generation of gas. Results of VOC monitoring is attached.</p>
	<p>6. Final Cover System</p>	<p>Complied</p> <p>Phase I has been closed and covered with vegetation layer with enhanced surface drainage system. Closure of Phase II has been going on. Final coverage system is according to Guidelines. Phase-III is in use Currently in Operation (waste dump in temporary shed from 10th June).</p>
	<p>7. Site Infrastructure:</p> <ul style="list-style-type: none"> - Site Entrance and Fencing. - Administrative and Site Control Offices - Access Roads - Waste Inspection and Sampling Facility. - Equipment Workshops and Garages. - Signs and Directions 	<p>Complied</p> <p>All the facilities like site entrance and fencing, administration, site control offices, access roads, waste inspection, sampling facility, water supply, lightings,</p>

	<ul style="list-style-type: none"> - Water Supply - Lighting - Vehicle Cleaning Facility - Fire Fighting Equipment 	vehicle cleaning facility, firefighting equipment, signs and directions etc. have been provided.
	8. Environment Monitoring System:	Complied Regular monitoring of leachate quality, air quality, and noise is being carried out. Monitoring of ground water, leachate, VOC generation, ambient air monitoring, noise monitoring has been conducted on regular basis. All the analysis reports are attached.
	9. Closure and post closure maintenance plan:	Complied Phase I has been closed and covered with vegetation layer with enhanced surface drainage system. Closure of Phase II has been going on. Final coverage system is according to Guidelines. Phase-III is in use Currently in Operation (waste dump in temporary shed from 10 th June).
3.	Waste Acceptance Criteria	Complied On arrival of any waste, it is first analyzed and if it follows GPCB/CPCB waste acceptance criteria then and only then it is accepted.
4.	<p>Construction and operational Criteria:</p> <ul style="list-style-type: none"> - Site Development - Phase development - Phase operation - Phase closure - Landfill closure - Post closure vegetative stabilization 	Complied Proper facilities for site development like record keeping for site manual, site reports, vehicle inspection is provided.
5.	<p>Inspection, Monitoring and record keeping criteria:</p> <ul style="list-style-type: none"> - During construction of liners and covers - During operation - During closure and post closure period - Environmental Monitoring System 	Complied Regular inspections of liners, and covers was being conducted during construction phase of landfill. Adequate environmental monitoring system has been provided.
6.	Financial Assurance Criteria	Complied We have prepared detailed financial estimates for construction, operation, and

		closure and post closure activity of the landfill.
7.	Contingency Plan for Emergency	Complied We are having onsite emergency plan, which is updated on yearly basis and submitted to GPCB, RO.

BEIL Infrastructure Limited

Compliance Status for Consent To Establish (NOC) No GPCB/CE/BRCH/NOC-

3354[CCA-167(5)/14483 DATED 22nd May, 2007

Without Prejudice to the powers of this Board under the water (Prevention and Control of Pollution) Act-1974. the Air Act – 1981 and the Environment (Protection) Act-1986 and without reducing your responsibilities under the said Acts in any way this is to inform you that this Board grants Consent to Establish (NOC) for expansion of common incinerator plant along with Heat Recovery System & Evaporation System at new Notified site for TSDF at plot No. 9601 to 9604, 10001 to 10003 G-7 & 8, 7924 to 7927, 9401 to 9412, 9501 to 9506, 7906 E to H, 9901 to 9908 & 9923 to 9928, GIDC Ankleshwar Dist. Bharuch the Following items.

The Validity period of the order will be Five Years from date of issue.

Sr. No.	Item	Capacity	Status
1	Common incineration Facility Along with Heat Recovery System & Evaporation System.	Thermal Capacity 5 to 10 T/Hr (25 Million Kcal / Hr.)	Received CC & A.

SUBJECT TO THE FOLLOWING SPECIFIC CONDITIONS:

(If ECC as per 14.9.2006 Notification is applicable only)

Sr. No.	Item	Status
1	Applicants have to obtain the Environmental Clearance from the relevant authority by 30.6.2007 since this project requires EIA clearance as per the EIA notification 2006 dated 14.9.2006.	Complied Environmental clearance obtained No .10-48/2007IA-III Dated 4 th March ,2008
2	In the mean time, unit can carry on with commencement of the project activities.	Complied
3	Unit not seeking clearance under EIA-notification 2008 by 30.6.2007 will be treated as violation under section 15 of Environment (Protection) Act. 1986.	Noted.
4	Applicant shall comply with all the conditions stipulated by SEIA / MOEF in the order of Environment clearance as and when issued.	Complied.
5	Unit shall strictly follow the CPCB guideline for common incinerator, Publisher time to time.	Complied. We are strictly following the CPCB guidelines for common incinerator, publisher time to time.

CONDITIONS UNDER WATER ACT. 1974.

1	Waste water generated from Quencher (evaporative cooler) & wet scrubber of incinerator shall not exceed 67 m ³ /day (existing 30m ³ /day from proposed incinerator) which shall be sent to CETP of M/s ETL Ankleshwar for treatment OR it will be treated in a proposed evaporation system at site and generated salt shell be proposed at land filling site at BEIL.	Complied. Waste water generated from Quencher (evaporative cooler) & wet scrubber of incinerator is not exceeding than consent limit. Which is being sent to CETP of M/s ETL Ankleshwar for treatment OR is being treated in an
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		evaporation system at site and generated salt is being dumped at BEIL.
2	The quantity of the domestic waste water (sewage) shall be nil.	Complied. The quantity of the domestic waste water is nil.
3	The applicant shall operate the incinerator at a temperature at $1100\text{ }^{\circ}\text{C} \pm 100^{\circ}$ with gas residence time of 2 (two) seconds at the post combustion chamber when the chlorine content is less than 1% when the chlorine content is more than 2% the temperature maintained will be $1200\text{ }^{\circ}\text{C} \pm 100\text{ }^{\circ}\text{C}$.	Complied. We are operating the incinerator at a temperature at $1100^{\circ}\text{C} \pm 100^{\circ}$ with gas residence time of 2 seconds at the post combustion chamber when the chlorine content is less than 1%, when the chlorine content is more than 2% the temperature is maintained at $1200\text{ }^{\circ}\text{C} \pm 100\text{ }^{\circ}\text{C}$.
4	The applicant shall be required to make storage facilities to store the effluent for at least 48 hours by providing acid proof brick lined impervious tanks/HDPE tanks.	Complied We have made storage facilities to store the effluent for at least 48 hours by providing acid proof brick lined impervious tanks/HDPE tanks.

5	The applicant shall make fixed arrangement for loading the effluent from their collection tanks to the tanker of ETL. The unit shall not keep any by-pass line or system or loose or flexible pipe line for loading the effluent into the tanker of ETL.	Complied. We had made fixed arrangement for loading the effluent from their collection tanks to the tankers of ETL.
6	Leachate from the hazardous solid waste, if any shall also be connected into a collection tank through leachate collection facilities and shall be conveyed along with industrial effluent to the CETP of ETL.	Complied Leachate are collected separately in leachate collection wells and sent to MEE or ETL for further treatment.
7	Magnetic flow meters shall be installed at the inlet & outlet of effluent collection tanks/ETP to measure the quantity of effluent lifted into the tanker of ETL.	Complied Magnetic flow meters are installed at the inlet & outlet of effluent collection tanks/ETP to measure the quantity of effluent liquid into the tankers of ETL.
8	The ENTIRE quantity of industrial effluent shall have to be conveyed by ETL. In no circumstances the effluent either treated or untreated shall be discharged into GIDC drain or any where else.	Complied Effluent generated from the industry is treated in MEE or sent to ETL for further treatment. No untreated effluent is

		discharged into GIDC drain or anywhere else.
9	Disposal system for storm water shall be provided separately. In no circumstances storm water shall be mixed with the industrial effluent.	Complied Storm water collection and disposal system is provided separately. Storm water is not being mixed with industrial effluent.
10	The applicant shall be responsible for loading its effluent into the tankers of the ETL for transporting the effluent. Due care shall be taken to avoid any leakage or spillage of effluent during loading the tanker.	Complied Separate loading arrangement system is provided
11	If the effluent contains heavy metals, phenols & cyanide, the ETL member unit shall have to treat the effluent within its premises to conform to be following standards (whichever applicable)	Complied.

<u>PARAMETERS</u>	<u>PERMISSIBLE LIMIT</u>	
Zinc (Zn)	5.0 mg/l	All parameters are well within limit.
Total Chromium	2.0 mg/l	
Nickel (Ni)	3.0 mg/l	
Mercury (Hg)	0.01 mg/l	
Cyanide (as CN)	0.2 mg/l	
Pesticides	Absent	
Phenolic Compounds	1.0 mg/l	
Lead (Pb)	0.1 mg/l	
Copper (Cu)	3.0 mg/l	
Hexavaient Chromium	0.1 mg/l	
Cadmium (Cd)	1.0 mg/l	
Arsenic (As)	0.2 mg/l	
Selenium	0.05 mg/l	

12	The applicant shall keep accurate records of quantity of production of each product. Quantity of water consumption, quantity of effluent generated and consumption or electricity on day to day basis and required to submit the complied record of one month to GPCB & ETL on or before fifth day of the succeeding month.	Complied for Existing Incinerator Noted For New Incinerator
13	In case of shut-down of plant for more than three days for any reason, the ETL unit member shall intimate to ETL authority & GPCB well in advance for the better operation & management of CETP.	Noted
14	The applicant shall either stop or curtail its production activities if the effluent is not adequately treated by the CETP of ETL to conform to the standards specified by GPCB.	Noted
15	The authorized representative of ETL shall have right of entry at any time for the purpose of inspection and monitoring the effluent collection facilities ETL (if required) of the applicant.	Noted
16	In case of incinerators, the flow measuring devices for mother liquor/toxic effluent / non biodegradable effluent, light diesel oil, Furnace oil, etc i.e. fuel used for combustion, air used for combustion shall be separately provided. Incinerator temperature recording devices as well as gaseous flow measuring devices for scrubber shall be provided. These data of temperature & flow should be recorded every day & submitted to GPCB & ETL on monthly basis.	Complied.
17	THE GIDC DRAINAGE CONNECTION GIVEN BY THE GIDC FOR DISCHARGE OF INDUSTRIAL EFFLUENT SHALL BE DISCONNECTED	Complied

	& THE OUTLET SHALL BE SEALED.	
18	If the ETL authority terminates the membership of CETP, the ETL member unit shall have to close down the manufacturing activities. Industrial operation of the process plant immediately unit the ETL membership is resumed.	Noted

CONDITIONS UNDER AIR ACT 1981:

19	The following shall be used as fuel in the boiler/incinerator as following rates	
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Sr. No.	Name of Fuel	Quantity	
1	Natural Gas	14000 to 16000 Nm ³ /day	Noted
2	Diesel in D.G. set of 1000 KVA Capacity	225 Ltr/Hr	Noted

20	The applicant shall install & operate air pollution control system in order to achieve norms prescribed below.	
21	The flue gas emission through stack shall conform to the following standards.	

Stack No.	Stack attached	Stack height in Meter	Parameter	Permissible Limit
1	D.G. Set	11	Particulate matter SO ₂ NO ₂	150 mg/NM ³ 100 ppm 50 ppm

22	There shall be no process emission from the manufacturing process as well as any other ancillary process.	Complied
23	Stack monitoring facilities like port hole, platform / adder etc, shall be provided with stacks / vents chimney in order to facilitate sampling of gases being emitted into the atmosphere.	Complied
24	The process emission through various stacks / vents of reactors. Process , vessel shall conform to the following standards.	Complied

Stack No.	Stack attached	Stack height in Meter	Air Pollution Control system	Parameter	Permissible Limit
1	Common Incinerator	45	Quencher, Caustic Scrubber bag Filter	Particulate Matter SO ₂ NO _x HCL Chlorine Ammonia H ₂ S Mercaptan	50 mg/NM ³ 200 mg/NM ³ 400 mg/NM ³ 50 mg/NM ³ 9 mg/NM ³ 175 g/NM ³ 45 mg/NM ³ 0.8 by volume
				CO Hydrocarbon Dioxins Furans TOC HF Cd + Th (& its Compound) Hg (& its – 0.05 Mg/NM ³) Syo + As + Pb + Cr + Co + Cu + Mn + Ni + V (& their compounds)	100 mg/NM ³ 15 mg/ NM ³ 0.1ng/TEQ/NM ³ ₃ 0.1ng/TEQ/NM ³ ₃ 20 mg / NM ³ 4 mg / NM ³ 0.06 mg / NM ³ 0.5 mg / NM ³

25	Stack monitoring facilities like port hole platform/ladder etc shall be provided with stacks/vents chimney in order to facilities sampling of gases being emitted into the atmosphere.	Complied
26	Ambient air quality within the premises of the industry shall conform to the following standards.	Complied
<u>PARAMETERS</u>		<u>PERMISSIBLE LIMIT</u>
Suspended Particulate Matter		500 Microgram/M ³
RSPM		150 Microgram/M ³
SO ₂		120 Microgram/M ³
NO _x		120 Microgram/M ³
HCL		200 Microgram/M ³
CL ₂		100 Microgram/M ³
Ammonia		850 Microgram/M ³
Hydrocarbon		160 Microgram/M ³
H ₂ S		500 Microgram/M ³
HF		60 Microgram/M ³
CO		5000 Microgram/M ³
CS ₂		2000 Microgram/M ³
27	All measures for the control of environmental pollution shall be provided before commencing production.	Complied
28	The Fly ash generated from incinerator will be collected & disposed off in TSDF of BEIL	Complied

All parameters are well within limit.

CONDITIONS UNDER HAZARDOUS WASTE:

29	Applicant shall have to comply with provisions of hazardous waste (Management & Handling) Rule-1989 as amended from time to time.	Complied.
30	The applicant shall obtain membership of common TSDF site for disposal of Haz. Waste as categorized in Hazardous Waste (Management & Handling) Rule-1989 as amended from time to time.	Not applicable
31	The applicant shall obtain membership of common Haz. Waste incinerator for disposal of incinerable waste.	Not applicable
32	The applicant shall provide temporary storage facilities for each type of Haz. Waste as per Haz. Waste (Management & Handling) Rule-1989 as amended from time to time.	Complied Impervious storage facility for Incinerable Hazardous waste is provided

GENERAL CONDITION:

33	If will keep necessary record of incineration of waste (quantity & quality / category wise)	Complied.
34	Floor washing, if any should be replaced by mopping with saw dust which should finally be incinerated.	Complied.
35	Proper operation and maintenance of the pollution control measures provided is essential, hence the industry should strain the personnel for operation and maintenance of pollution control system.	Complied.
36	The house keeping which is very important in overall environmental management hence the industry is required to provide pucca flooring within the plant and proper tank for collection of waste water if any & same shall be incinerate.	Complied.
37	The industry is required to monitor ground water quality in and around the plant premises to check its contamination through leachate due to improper handling of solid waste.	Complied.
38	Adequate plantation shall be carried out all along the periphery of the	Complied.

	industrial premises in such a way that the density of plantation is at least 1000 trees per acre of land and a green belt of 10 meters width is developed.	
39	The applicant shall have to submit the returns in prescribed form regarding water consummation and shall have to make payment of water cess to the Board under the waste cess Act. 1977.	Complied.
40	In case of change of ownership/management the name and address of the new owners/partners/directors/proprietor should immediately be intimated to the Board.	Noted.
41	The applicant shall however not without the prior consent of the board bring into use any new or altered outlet for the discharge of effluent or gaseous emission or sewage waste from the proposed industrial plant. The applicant is required to make applications to this board for this purpose in the prescribed forms under the provisions of the water Act-1974, the air Act-1981 and the environment (Protection) Act – 1986.	Noted.
42	The applicant also comply with the general conditions as per annexure –I attached herewith (No.1 to 38) (whichever applicable)	Noted and complied.
43	The concentration of noise in ambient air within the premises of industrial unit shall not exceed following levels. Between 6A.M. and 10 P.M.: 75dB (A) Between 10 P.M. and 6 A.M.: 70dB (A)	Complied.

**TEST REPORT**

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Customer's Name and Address :

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M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. :	PL/BL 0050
	Issue Date :	29/11/2019
	Customer's Ref. :	W.O.No. 8519200071 Dated:29.04.2019

Sampling Location : **CM Tank**

Description of Sample :	Ground Water sample	Quantity/No. of Samples :	05 Lit./One
Date of Sampling :	18/11/2019	Sampling Procedure :	IS:3025
Sampling by :	Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) :	QC/Env. Monitoring
Sample Receipt Date :	19/11/2019	Lab ID. :	BL/1911/05
Packing/ Seal :	Sealed	Test Parameters :	As per table
Date of Starting of Test :	19/11/2019	Date of Completion of Test :	29/11/2019

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.35	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	umhos/cm	4506	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.63	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	7.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	3069	IS 3025 (Part-16) 2017
7	TOC	mg/L	14	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	39	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	796	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	384	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	2.6	IS 3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	490	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	178	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.58	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.058	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.47	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.025 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Manganese as Mn : 0.03 mg/L, Iron as Fe: 0.3 mg/L, Zinc as Zn: 0.06 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Mackay Surajhwal
Sr. Scientist

Dr. Arjun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

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Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0051**
Issue Date : **29/11/2019**
Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **Gram Panchayat**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **18/11/2019** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **19/11/2019** Lab ID. : **BL/1911/06**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **19/11/2019** Date of Completion of Test : **29/11/2019**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.68	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	umhos/cm	2548	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.64	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	8.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	1684	IS 3025 (Part-16) 2017
7	TOC	mg/L	12	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	8.0	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	620	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	280	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	2.3	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	451	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	78	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	3.26	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.052	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.10	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.39	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Manganese as Mn : 0.03 mg/L, Iron as Fe: 0.3 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.


Macky Suraliwala
Sr. Scientist


Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

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Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0052**
Issue Date : **29/11/2019**
Customer's Ref. : **W.O.No. 8519200071**
Dated: **29.04.2019**

Sampling Location : **Jitali Navinagari**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **18/11/2019** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **19/11/2019** Lab ID. : **BL/1911/07**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **19/11/2019** Date of Completion of Test : **29/11/2019**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.78	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	20	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	2427	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.30	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	5.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	1578	IS 3025 (Part-16) 2017
7	TOC	mg/L	9.0	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	20	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	640	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	312	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	3.5	IS :3025 (Part-24) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	418	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	64	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.70	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.046	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.072	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.42	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.068	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Manganese as Mn : 0.03 mg/L, Pesticides : 0.1 µg/L **attached pesticides list.

Macky Suralwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

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Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0052**
Issue Date : **29/11/2019**
Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **GIDC Pond**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **18/11/2019** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **19/11/2019** Lab ID. : **BL/1911/08**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **19/11/2019** Date of Completion of Test : **29/11/2019**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.94	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	40	IS 3025 (Part - 4) 2017
3	Conductivity	umhos/cm	470	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.16	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	9.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	316	IS 3025 (Part-16) 2017
7	TOC	mg/L	Not Detected	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	Not Detected	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	102	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	83	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	0.68	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	89	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	9.2	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.1	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.046	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.058	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.037	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.32	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: TOC: 0.1 mg/L, COD: 5.0 mg/L, Lead as Pb: 0.005 mg/L, Cadmium as Cd: 0.004 mg/L, Copper as Cu: 0.02, Total Chromium: 0.025 mg/L, Mercury as Hg: 0.005 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Manganese as Mn: 0.03 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list

Macky Suraiwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.



TEST REPORT

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Customer's Name and Address :

M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. : PL/BL 0054
	Issue Date : 29/11/2019
	Customer's Ref. : W.O.No. 8519200071 Dated: 29.04.2019

Sampling Location : **EB - 9 UP Stream**

Description of Sample : Ground Water sample	Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 19/11/2019	Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 20/11/2019	Lab ID. : BL/1911/14
Packing/ Seal : Sealed	Test Parameters : As per table
Date of Starting of Test : 20/11/2019	Date of Completion of Test : 29/11/2019

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.72	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	umhos/cm	6958	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.70	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	8.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	4698	IS 3025 (Part-16) 2017
7	TOC	mg/L	30	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	89	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	2502	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	419	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	9.4	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	1649	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	278	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	3.5	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-40) 2019
20	Nickel as Ni	mg/L	0.063	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.32	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.089	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.042	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.90	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Mackay Suraliwala
Sr. Scientist

Dr. Arun Bajpal
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

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Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0055**
Issue Date : **29/11/2019**
Customer's Ref. : **W.O.No. 8519200071**
Dated: **29.04.2019**

Sampling Location : **EB - 10 UP Stream**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **19/11/2019** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **20/11/2019** Lab ID. : **BL/1911/15**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **20/11/2019** Date of Completion of Test : **29/11/2019**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.10	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	6892	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.76	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	10	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	4798	IS 3025 (Part-16) 2017
7	TOC	mg/L	26	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	92	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	2501	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	352	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	9.8	IS :3025 (Part-24) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	1613	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	278	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	5.36	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.063	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.025	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.026	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.034	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.84	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraiwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.



TEST REPORT

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Customer's Name and Address :

M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. :	PL/BL 0056
	Issue Date :	29/11/2019
	Customer's Ref. :	W.O.No. 8519200071 Dated:29.04.2019

Sampling Location : **EB - 5 UP Stream**

Description of Sample :	Ground Water sample	Quantity/No. of Samples :	05 Lit./One
Date of Sampling :	19/11/2019	Sampling Procedure :	IS:3025
Sampling by :	Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) :	QC/Env. Monitoring
Sample Receipt Date :	20/11/2019	Lab ID. :	BL/1911/16
Packing/ Seal :	Sealed	Test Parameters :	As per table
Date of Starting of Test :	20/11/2019	Date of Completion of Test :	29/11/2019

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.14	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	20	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	5146	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.77	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	6.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	3560	IS 3025 (Part-16) 2017
7	TOC	mg/L	15	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	42	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	1216	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	498	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	1.72	IS 3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	1296	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	142	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.98	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.042	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.062	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.25	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.18	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.58	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ ISPPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.



TEST REPORT

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Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0057**
Issue Date : **29/11/2019**
Customer's Ref. : **W.O.No. 8519200071**
Dated: **29.04.2019**

Sampling Location : **EB - 4 UP Stream**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **19/11/2019** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **20/11/2019** Lab ID. : **BL/1911/17**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **20/11/2019** Date of Completion of Test : **29/11/2019**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.07	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	umhos/cm	6346	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.02	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	13	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	4125	IS 3025 (Part-16) 2017
7	TOC	mg/L	17	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	50	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	2564	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	560	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	3.6	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	1298	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	172	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	3.1	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.030	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.23	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.059	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.14	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.83	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Mackay Suraljwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

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Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0058**
Issue Date : **29/11/2019**
Customer's Ref. : **W.O.No. 8519200071**
Dated: **29.04.2019**

Sampling Location : **EB - 3 Down Stream**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **19/11/2019** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **20/11/2019** Lab ID. : **BL/1911/18**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **20/11/2019** Date of Completion of Test : **29/11/2019**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.11	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	4738	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.50	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	10	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	3290	IS 3025 (Part-16) 2017
7	TOC	mg/L	17	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	38	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	1060	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	490	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	3.1	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	994	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	278	IS 3025 (Part-34) 2019
14	Nitrate	mg/L	2.46	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.052	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.31	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.028	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.82	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.03, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Manganese as Mn : 0.03 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suralfwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.



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Customer's Name and Address :

M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. : PL/BL 0059 Issue Date : 29/11/2019 Customer's Ref. : W.O.No. 8519200071 Dated:29.04.2019
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Sampling Location : **HB-1 Up Stream**

Description of Sample : Ground Water sample	Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 19/11/2019	Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 20/11/2019	Lab ID. : BL/1911/19
Packing/ Seal : Sealed	Test Parameters : As per table
Date of Starting of Test : 20/11/2019	Date of Completion of Test : 29/11/2019

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.30	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	20	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	5328	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.17	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	9.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	3416	IS 3025 (Part-16) 2017
7	TOC	mg/L	12	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	39	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	1018	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	478	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	1.0	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	1248	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	119	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.64	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.047	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.070	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.20	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.72	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Unit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc as Zn:0.06 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

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Customer's Name and Address :

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M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. : PL/BL 0060 Issue Date : 29/11/2019 Customer's Ref. : W.O.No. 8519200071 Dated:29.04.2019
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Sampling Location : HB-2 Down Stream

Description of Sample : Ground Water sample	Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 19/11/2019	Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 20/11/2019	Lab ID. : BL/1911/20
Packing/ Seal : Sealed	Test Parameters : As per table
Date of Starting of Test : 20/11/2019	Date of Completion of Test : 29/11/2019

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.23	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	umhos/cm	2608	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.45	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	5.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	1812	IS 3025 (Part-16) 2017
7	TOC	mg/L	8.0	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	35	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	618	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	483	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	2.46	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	476	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	83	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	0.9	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.051	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.032	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.068	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.023	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.61	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508.1995/ USEPA 525.2.1995/ USEPA 532.2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

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Customer's Name and Address :

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M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. : PL/BL 0061
	Issue Date : 29/11/2019
	Customer's Ref. : W.O.No. 8519200071 Dated:29.04.2019

Sampling Location : HB-4 Down Stream
Description of Sample : Ground Water sample Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 19/11/2019 Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd. Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 20/11/2019 Lab ID. : BL/1911/21
Packing/ Seal : Sealed Test Parameters : As per table
Date of Starting of Test : 20/11/2019 Date of Completion of Test : 29/11/2019

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.22	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	umhos/cm	2866	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.71	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	8.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	1983	IS 3025 (Part-16) 2017
7	TOC	mg/L	15	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	40	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	578	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	420	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	2.6	IS 3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	512	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	110	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	2.0	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.058	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.036	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.025	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.77	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.005 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Iron as Fe: 0.3 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Mackay Surajwala
Sr. Scientist

Dr. Arjun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

QF/7.8/37-WT

Customer's Name and Address :

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M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. : PL/BL 0062 Issue Date : 29/11/2019 Customer's Ref. : W.O.No. 8519200071 Dated:29.04.2019
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Sampling Location : **HB-6 Down Stream**

Description of Sample : Ground Water sample	Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 19/11/2019	Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 20/11/2019	Lab ID. : BL/1911/22
Packing/ Seal : Sealed	Test Parameters : As per table
Date of Starting of Test : 20/11/2019	Date of Completion of Test : 29/11/2019

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.13	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	5518	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	2.60	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	12	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	3856	IS 3025 (Part-16) 2017
7	TOC	mg/L	31	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	65	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	1056	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	290	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	10.8	IS :3025 (Part-14) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	1520	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	219	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	5.8	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.062	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	0.081	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.062	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.081	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.92	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc as Zn:0.06 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpal
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

QF/7.8/37-WT

Customer's Name and Address :

Page: 1 of 1

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0063**
Issue Date : **29/11/2019**
Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **HB-7 Down Stream**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **19/11/2019** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **20/11/2019** Lab ID. : **BL/1911/23**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **20/11/2019** Date of Completion of Test : **29/11/2019**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.18	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	5130	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	2.10	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	11	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	3259	IS 3025 (Part-16) 2017
7	TOC	mg/L	14	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	35	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	1184	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	498	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	6.52	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	1209	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	208	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.75	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.028	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CH E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.046	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.052	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.036	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.87	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.002 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Surajwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST REPORT**

QF/7.8/37-WT

Customer's Name and Address :

Page: 1 of 1

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0007**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071**
Dated:29.04.2019

Sampling Location : **HB - 1 UP Stream**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BL/2002/01**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.49	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	5.0	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	4241	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.29	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	5.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	2791	IS 3025 (Part-16) 2017
7	TOC	mg/L	10	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	34	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	1062	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	370	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	1.26	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	1269	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	138	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.52	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.058	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.076	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.15	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.65	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/l, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/l, Arsenic as As: 0.1 mg/l, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● FSSAI Approved Lab ● Recognized by Govt. of Gujarat ● ISO 9001:2015 Certified ● OHSAS 18001 ● ISO 9001
Note: This report is subject to terms & conditions mentioned on the back of the report. Sec. 12 of Environmental (Protection) Act-1986 schedule II auditor

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com



TEST REPORT

QF/7.8/37-WT

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Customer's Name and Address :

M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002

Test Report No. : PL/BL 0008

Issue Date : 29/02/2020

Customer's Ref. : W.O.No. 8519200071 Dated:29.04.2019

Sampling Location : EB - 5 UP Stream

Description of Sample : Ground Water sample Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 20/02/2020 Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd. Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 21/02/2020 Lab ID. : BL/2002/03
Packing/ Seal : Sealed Test Parameters : As per table
Date of Starting of Test : 21/02/2020 Date of Completion of Test : 29/02/2020

RESULT TABLE

Table with 5 columns: SR. NO., TEST PARAMETERS, UNIT, RESULT, METHOD ADOPTED. Contains 27 rows of test results for various parameters like pH, Colour, Conductivity, etc.

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg : 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as Cn: 0.001 mg/L, Zinc: 0.05mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala Sr. Scientist

Dr. Arun Bajpai Lab Manager(Q)

FSSAI Approved Lab, Recognized by Govt of India, Sec. 12 of Environmental (Protection) Act-1986, Note: This report is subject to terms & conditions mentioned overleaf, OHSAS 18001, ISO 9001, schedule II auditor

"Pollucon House", Plot No. 5 & 6, Opp.Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle,Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com

**TEST REPORT**

QF/7.8/37-WT

Customer's Name and Address :

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**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0009**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **EB - 4 UP Stream**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BL/2002/02**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.40	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	4479	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.18	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	5.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	2948	IS 3025 (Part-16) 2017
7	TOC	mg/L	13	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	40	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	1258	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	406	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	3.42	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	1318	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	188	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	2.76	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.038	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.30	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.076	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.15	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.72	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● FSSAI Approved Lab ● Recognized by Govt. of India under Sec. 12 of Environmental (Protection) Act-1986 ● ISO 9001:2015 Certified ● ISO 17025:2017 Certified ● OHSAS 18001 ● ISO 9001:2015
Note: This report is subject to terms & conditions mentioned overleaf, schedule II auditor

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com



TEST REPORT

Customer's Name and Address :

QF/7.8/37-WT

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**M/s. BEIL INFRATSTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0010**

Issue Date : **29/02/2020**

Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **EB - 3 Down Stream**

Description of Sample : Ground Water sample	Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 20/02/2020	Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 21/02/2020	Lab ID. : BL/2002/05
Packing/ Seal : Sealed	Test Parameters : As per table
Date of Starting of Test : 21/02/200	Date of Completion of Test : 29/02/2020

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.24	
2	Colour	Hazen	10	IS 3025 (Part - 11) 2017 Electrometric Method
3	Conductivity	µmhos/cm	4021	IS 3025 (Part - 4) 2017
4	Turbidity	NTU	1.26	IS 3025 (Part - 14) 2019
5	Total Suspended Solids	mg/L	4.0	APHA (23 rd Edition 2017) 2130 B
6	Total Dissolved Solids	mg/L	2649	IS 3025 (Part - 17) 2017
7	TOC	mg/L	7.0	IS 3025 (Part-16) 2017
8	COD	mg/L	24	APHA (23 rd Edition 2017) 5310 B
9	Total Hardness	mg/L	525	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
10	Total Alkalinity	mg/L	476	IS 3025 (Part - 21) 2019 EDTA Method
11	Total Kjeldahl Nitrogen	mg/L	3.24	IS 3025 (Part - 23) 2019
12	Chlorides as Cl	mg/L	980	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
13	Sulphates as SO ₄	mg/L	221	IS 3025 (Part - 32) 2019 Argentometric Method
14	Nitrate	mg/L	2.26	IS 3025 (Part-24) 2019
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 4110 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
20	Nickel as Ni	mg/L	0.068	IS 3025 (Part-48) 2019
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
24	Iron as Fe	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.390	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.070	APHA (23 rd Edition 2017) 3111 B
27	Pesticides**	µg/L	Not Detected	APHA (23 rd Edition 2017) 4500 F D SPANDS Method USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 µg/L.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● FSSAI Approved Lab

● Recognized by Govt. of India under Sec. 12 of Environmental (Protection) Act-1986

● This report is subject to terms & conditions mentioned on reverse side of schedule II auditor

● OHSAS 18001

● ISO 9001

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com



TEST REPORT

Customer's Name and Address :

QF/7.8/37-WT

Page: 1 of 1

**M/s. BEIL INFRATSTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0010**

Issue Date : **29/02/2020**

Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **EB - 3 Down Stream**

Description of Sample : Ground Water sample	Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 20/02/2020	Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 21/02/2020	Lab ID. : BL/2002/05
Packing/ Seal : Sealed	Test Parameters : As per table
Date of Starting of Test : 21/02/200	Date of Completion of Test : 29/02/2020

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.24	
2	Colour	Hazen	10	IS 3025 (Part - 11) 2017 Electrometric Method
3	Conductivity	µmhos/cm	4021	IS 3025 (Part - 4) 2017
4	Turbidity	NTU	1.26	IS 3025 (Part - 14) 2019
5	Total Suspended Solids	mg/L	4.0	APHA (23 rd Edition 2017) 2130 B
6	Total Dissolved Solids	mg/L	2649	IS 3025 (Part - 17) 2017
7	TOC	mg/L	7.0	IS 3025 (Part-16) 2017
8	COD	mg/L	24	APHA (23 rd Edition 2017) 5310 B
9	Total Hardness	mg/L	525	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
10	Total Alkalinity	mg/L	476	IS 3025 (Part - 21) 2019 EDTA Method
11	Total Kjeldahl Nitrogen	mg/L	3.24	IS 3025 (Part - 23) 2019
12	Chlorides as Cl	mg/L	980	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
13	Sulphates as SO ₄	mg/L	221	IS 3025 (Part - 32) 2019 Argentometric Method
14	Nitrate	mg/L	2.26	IS 3025 (Part-24) 2019
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 4110 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
20	Nickel as Ni	mg/L	0.068	IS 3025 (Part-48) 2019
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
24	Iron as Fe	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.390	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.070	APHA (23 rd Edition 2017) 3111 B
27	Pesticides**	µg/L	Not Detected	APHA (23 rd Edition 2017) 4500 F D SPANDS Method USEPA 506 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg : 0.001 mg/L, Arsenic as As : 0.1 mg/L, Cyanides as CN : 0.001 mg/L, Zinc : 0.06mg/L, Pesticides : 0.1 µg/L.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● FSSAI Approved Lab ● Recognized by Govt. of India under Sec. 12 of Environmental (Protection) Act-1986 ● **Note: This report is subject to terms & conditions mentioned on reverse side.** ● OHSAS 18001 ● ISO 9001 ● schedule II auditor

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com

**TEST REPORT**

QF/7.8/37-WT

Page: 1 of 1

Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0011**Issue Date : **29/02/2020**Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**Sampling Location : **HB - 2 Down Stream**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
 Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
 Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
 Sample Receipt Date : **21/02/2020** Lab ID. : **BL/2002/04**
 Packing/ Seal : **Sealed** Test Parameters : **As per table**
 Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.27	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	5.0	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	2619	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.81	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	6.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	1728	IS 3025 (Part-16) 2017
7	TOC	mg/L	9.0	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	30	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	464	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	460	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	2.73	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	479	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	103	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.16	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
20	Nickel as Ni	mg/L	0.063	IS 3025 (Part-48) 2019
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
23	Manganese as Mn	mg/L	0.046	APHA (23 rd Edition 2017) 3114 B
24	Iron as Fe	mg/L	0.073	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.068	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.56	APHA (23 rd Edition 2017) 3111 B
27	Pesticides**	µg/L	Not Detected	APHA (23 rd Edition 2017) 4500 F D SPANDES Method USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detective Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● FSSAI Approved Lab ● Recognized by Govt. of India ● ISO 9001:2015 Certified ● OHSAS 18001 ● ISO 6001
 Note: This report is subject to terms & conditions mentioned overleaf. Sec. 12 of Environmental (Protection) Act-1986 ● ISO 14001:2015 Certified ● Schedule II auditor

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com



TEST REPORT

QF/7.8/37-WT

Page: 1 of 1

Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0012**

Issue Date : **29/02/2020**

Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **HB - 4 Down Stream**

Description of Sample	: Ground Water sample	Quantity/No. of Samples	: 05 Lit./One
Date of Sampling	: 20/02/2020	Sampling Procedure	: IS:3025
Sampling by	: Pollucon Laboratories Pvt. Ltd.	Protocol (purpose)	: QC/Env. Monitoring
Sample Receipt Date	: 21/02/2020	Lab ID.	: BL/2002/06
Packing/ Seal	: Sealed	Test Parameters	: As per table
Date of Starting of Test	: 21/02/2020	Date of Completion of Test	: 29/02/2020

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.28	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	3.0	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	2617	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.89	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	6.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	1730	IS 3025 (Part-16) 2017
7	TOC	mg/L	8.0	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	28	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	484	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	406	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	3.12	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	461	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	124	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	2.2	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
20	Nickel as Ni	mg/L	Not Detected	IS 3025 (Part-18) 2019
21	Cyanides as CN	mg/L	0.064	APHA (23 rd Edition 2017) 3111 B
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
24	Iron as Fe	mg/L	0.040	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.063	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.084	APHA (23 rd Edition 2017) 3111 B
27	Pesticides**	µg/L	Not Detected	APHA (23 rd Edition 2017) 4500 F D SPANDS Method USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids - 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● FSSAI Approved Lab

● Recognized by Govt. of India subject to terms & conditions mentioned in schedule II auditor Sec. 12 of Environmental (Protection) Act-1986

● ISO 9001

● OHSAS 18001

● ISO 9001



TEST REPORT

Customer's Name and Address :

QF/7.8/37-WT

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**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0013**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071**
Dated:29.04.2019

Sampling Location : **HB - 7 Down Stream**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BL/2002/09**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.29	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	4162	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.82	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	7.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	2747	IS 3025 (Part-16) 2017
7	TOC	mg/L	9.8	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	26	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	869	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	478	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	5.12	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	970	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	194	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.28	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
20	Nickel as Ni	mg/L	0.038	IS 3025 (Part-48) 2019
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
23	Manganese as Mn	mg/L	0.058	APHA (23 rd Edition 2017) 3114 B
24	Iron as Fe	mg/L	0.070	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.065	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.76	APHA (23 rd Edition 2017) 3111 B
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg : 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.05mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

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TEST REPORT

QF/7.8/37-WT

Page: 1 of 1

Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0014**

Issue Date : **29/02/2020**

Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **EB - 9 UP Stream**

Description of Sample : Ground Water sample	Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 20/02/2020	Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 21/02/2020	Lab ID. : BL/2002/10
Packing/ Seal : Sealed	Test Parameters : As per table
Date of Starting of Test : 21/02/2020	Date of Completion of Test : 29/02/2020

RESULT TABLE				
SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH			
2	Colour	--	7.56	
3	Conductivity	Co-pt	10	IS 3025 (Part - 11) 2017 Electrometric Method
4	Turbidity	µmhos/cm	6629	IS 3025 (Part - 4) 2017
5	Total Suspended Solids	NTU	1.53	IS 3025 (Part - 14) 2019
6	Total Dissolved Solids	mg/L	3.0	APHA (23 rd Edition 2017) 2130 B
7	TOC	mg/L	4371	IS 3025 (Part - 17) 2017
8	COD	mg/L	21	IS 3025 (Part-16) 2017
9	Total Hardness	mg/L	68	APHA (23 rd Edition 2017) 5310 B
10	Total Alkalinity	mg/L	2140	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
11	Total Kjeldahl Nitrogen	mg/L	380	IS 3025 (Part - 21) 2019 EDTA Method
12	Chlorides as Cl	mg/L	6.94	IS 3025 (Part - 23) 2019
13	Sulphates as SO ₄	mg/L	1728	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
14	Nitrate	mg/L	264	IS 3025 (Part - 32) 2019 Argentometric Method
15	Lead as Pb	mg/L	3.27	IS 3025 (Part-24) 2019
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 4110 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
20	Nickel as Ni	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	0.076	IS 3025 (Part-48) 2019
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
24	Iron as Fe	mg/L	0.48	APHA (23 rd Edition 2017) 3114 B
25	Zinc as Zn	mg/L	0.094	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.076	APHA (23 rd Edition 2017) 3111 B
27	Pesticides**	µg/L	Not Detected	APHA (23 rd Edition 2017) 4500 F D SPANDS Method USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg : 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● FSSAI Approved Lab ● Recognized by Govt. Sec. 12 of Environmental (Protection) Act-1986 ● ISO 9001 ● ISO 17025 ● Schedule II auditor ● CHSAS-18001 ● ISO 9001

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Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07916605174, WEB: www.polluconlab.com



TEST REPORT

Customer's Name and Address :

QF/7.8/37-WT

Page: 1 of 1

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0015**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071**
Dated:29.04.2019

Sampling Location : **EB - 10 UP Stream**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BL/2002/11**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--		
2	Colour		7.35	IS 3025 (Part - 11) 2017 Electrometric Method
3	Conductivity	Co-pt	10	IS 3025 (Part - 4) 2017
4	Turbidity	µmhos/cm	7002	IS 3025 (Part - 14) 2019
5	Total Suspended Solids	NTU	1.27	APHA (23 rd Edition 2017) 2130 B
6	Total Dissolved Solids	mg/L	5.0	IS 3025 (Part - 17) 2017
7	TOC	mg/L	4623	IS 3025 (Part-16) 2017
8	COD	mg/L	22	APHA (23 rd Edition 2017) 5310 B
9	Total Hardness	mg/L	83	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
10	Total Alkalinity	mg/L	2578	IS 3025 (Part - 21) 2019 EDTA Method
11	Total Kjeldahl Nitrogen	mg/L	304	IS 3025 (Part - 23) 2019
12	Chlorides as Cl	mg/L	7.90	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
13	Sulphates as SO ₄	mg/L	1704	IS 3025 (Part - 32) 2019 Argentometric Method
14	Nitrate	mg/L	290	IS 3025 (Part-24) 2019
15	Lead as Pb	mg/L	4.16	APHA (23 rd Edition 2017) 4110 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
20	Nickel as Ni	mg/L	Not Detected	IS 3025 (Part-48) 2019
21	Cyanides as CN	mg/L	0.078	APHA (23 rd Edition 2017) 3111 B
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
24	Iron as Fe	mg/L	0.036	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.048	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.071	APHA (23 rd Edition 2017) 3111 B
27	Pesticides**	µg/L	Not Detected	APHA (23 rd Edition 2017) 4500 F D SPANDS Method USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/l, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg : 0.001 mg/l, Arsenic as As : 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● FSSAI Approved Lab

● Recognized

● Subject to terms & conditions mentioned in schedule II auditor

● ISO 9001

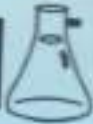
● ISO 14001

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● ISO 9001

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Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E-mail: info@polluconlab.com



TEST REPORT

Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0016**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071**
Dated: **29.04.2019**

Sampling Location : **EB - 11 UP Stream**
Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BL/2002/12**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.27	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	15	IS 3025 (Part - 4) 2017
3	Conductivity	umhos/cm	11684	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.28	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	Not Detected	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	7968	IS 3025 (Part-16) 2017
7	TOC	mg/L	21	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	76	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	3916	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	350	IS 3025 (Part - 23) 2019
11	Total Kjeldahi Nitrogen	mg/L	7.4	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	2316	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	180	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	5.84	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
20	Nickel as Ni	mg/L	Not Detected	IS 3025 (Part-48) 2019
21	Cyanides as CN	mg/L	0.074	APHA (23 rd Edition 2017) 3111 B
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
24	Iron as Fe	mg/L	0.38	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.064	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.075	APHA (23 rd Edition 2017) 3111 B
27	Pesticides**	ug/L	Not Detected	APHA (23 rd Edition 2017) 4500 F D SPANDS Method USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 ug/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

FSSAI Approved Lab • Recognized under Sec. 12 of Environmental (Protection) Act-1986 • Note: This report is subject to terms & conditions mentioned on the back of the report. • OHSAS 18001 • ISO 9001 • ISO 14001

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.



TEST REPORT

Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0017**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **CM Tank**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BL/2002/13**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.71	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	3261	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.47	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	8.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	2156	IS 3025 (Part-16) 2017
7	TOC	mg/L	10	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	32	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	814	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	370	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	3.42	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	508	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	190	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.38	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.063	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.068	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.35	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg : 0.005 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 µg/L. **attached pesticide list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● PSSAI Approved Lab ● Recognized by Government of India under Sec. 12 of Environmental (Protection) Act-1986 ● ISO 9001:2015 Certified ● OHSAS 18001 ● ISO 14001:2015 Certified ● This report is subject to terms & conditions mentioned overleaf. ● CQS (Quality System) Auditor

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174. WEB: www.polluconlab.com. E-mail: pollucon@email.com, info@pollucon.com

Detection Lim
0.001 mg/L

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"Pollucon

0261-2635750

**TEST REPORT**

QF/7.8/37-WT

Customer's Name and Address :

Page: 1 of 1

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0019**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071**
Dated: **29.04.2019**

Sampling Location : **Jitali Navinagari**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BL/2002/15**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.43	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	2.0	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	2938	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.18	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	4.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	2013	IS 3025 (Part-16) 2017
7	TOC	mg/L	7.4	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	24	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	511	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	294	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	3.98	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	512	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	86	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.56	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.058	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.084	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.32	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.078	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Pesticides : 0.1 µg/L, TOC: 1.0 mg/L**attached pesticides list

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpal
Lab Manager(Q)

● FSSAI Approved Lab ● Recognized by Govt. of India under Sec. 12 of Environmental (Protection) Act-1986 ● ISO 14001 ● OHSAS 18001 ● ISO 9001
Note: This report is subject to terms & conditions mentioned overleaf. ● ISO 14001 ● OHSAS 18001 ● ISO 9001
schedule II auditor

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart,
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**TEST REPORT**

QF/7.B/37-WT

Customer's Name and Address :

Page: 1 of 1

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0022**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071**
Dated:29.04.2019

Sampling Location : **HB-6**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BI/2002/08**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.2	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	5.0	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	2811	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	1.46	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	5.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	1848	IS 3025 (Part-16) 2017
7	TOC	mg/L	7.0	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	25	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	651	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	270	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	7.64	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	478	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	180	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	4.20	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.078	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.070	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.086	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.75	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg : 0.001 mg/L, Arsenic as As : 0.1 mg/L, Cyanides as CN : 0.002 mg/L, Zinc : 0.06mg/L, Total Kjeldahl Nitrogen : 1.0 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

● FSSAI Approved Lab

● Recognized by Govt. of Gujarat under Sec. 12 of Environmental (Protection) Act-1986

● Conditions mentioned in schedule II auditor

● OHSAS 18001

● ISO 9001

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016806174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com



TEST REPORT

QF/7.8/37-WT

Customer's Name and Address :

Page: 1 of 1

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0023**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **HB-5**

Description of Sample : **Ground Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BI/2002/07**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	7.38	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	8.0	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	2791	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.84	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	10.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	1841	IS 3025 (Part-16) 2017
7	TOC	mg/L	8.0	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	25	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	526	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	432	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	3.68	IS :3025 (Part-34) :1998 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	490	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	132	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	2.40	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.076	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.049	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.09	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.56	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.01, Total Chromium : 0.025 mg/L, Mercury as Hg : 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.06mg/L, Total Kjeldahl Nitrogen : 1.0 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

FSSAI Approved Lab, Recognized by Govt. of Gujarat under Sec. 12 of Environmental (Protection) Act-1986, ISO 9001:2015 Certified, ISO 17025:2017 Certified, Schedule II auditor, OHSAS 18001, ISO 9001

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Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com

**TEST REPORT**

QF/7.8/37-WT

Customer's Name and Address :

Page: 1 of 1

M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. : PL/BL 0020A Issue Date : 29/02/2020 Customer's Ref. : W.O.No. 8519200071 Dated:29.04.2019
--	--

Sampling Location : GIDC Pond

Description of Sample : Surface Water sample	Quantity/No. of Samples : 05 Lit./One
Date of Sampling : 20/02/2020	Sampling Procedure : IS:3025
Sampling by : Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) : QC/Env. Monitoring
Sample Receipt Date : 21/02/2020	Lab ID. : BL/2002/16
Packing/ Seal : Sealed	Test Parameters : As per table
Date of Starting of Test : 21/02/2020	Date of Completion of Test : 29/02/2020

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	8.04	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	15	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	499	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.92	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	12	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	328	IS 3025 (Part-16) 2017
7	TOC	mg/L	Not Detected	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	Not Detected	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	110	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	88	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	0.76	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	99	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	10.6	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	1.30	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.062	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.07	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.048	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.38	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	Not Detected	USEPA 508 1995/ USEPA 525.2 1995/ USEPA 532 2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg: 0.001 mg/L, Arsenic as As: 0.1 mg/L, Cyanides as CN: 0.001 mg/L, Zinc: 0.05mg/L, Total Kjeldahl Nitrogen : 1.0 mg/L, TOC: 1.0 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suralfwala
Sr. Scientist

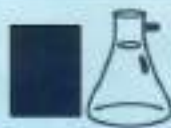
Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

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- Recognised by MoEF, New Delhi Under Sec. 12 of Environmental (Protection) Act-1986
- GPCB approved schedule II auditor
- ISO 14001
- OHSAS 18001
- ISO 9001

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**TEST REPORT**

QF/7.8/37-WT

Customer's Name and Address :

Page: 1 of 1

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0021A**
Issue Date : **29/02/2020**
Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Sampling Location : **GNFC Pond**

Description of Sample : **Surface Water sample** Quantity/No. of Samples : **05 Lit./One**
Date of Sampling : **20/02/2020** Sampling Procedure : **IS:3025**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **QC/Env. Monitoring**
Sample Receipt Date : **21/02/2020** Lab ID. : **BI/2002/17**
Packing/ Seal : **Sealed** Test Parameters : **As per table**
Date of Starting of Test : **21/02/2020** Date of Completion of Test : **29/02/2020**

RESULT TABLE

SR. NO.	TEST PARAMETERS	UNIT	RESULT	METHOD ADOPTED
1	pH	--	8.12	IS 3025 (Part - 11) 2017 Electrometric Method
2	Colour	Co-pt	10	IS 3025 (Part - 4) 2017
3	Conductivity	µmhos/cm	378	IS 3025 (Part - 14) 2019
4	Turbidity	NTU	0.92	APHA (23 rd Edition 2017) 2130 B
5	Total Suspended Solids	mg/L	6.0	IS 3025 (Part - 17) 2017
6	Total Dissolved Solids	mg/L	298	IS 3025 (Part-16) 2017
7	TOC	mg/L	Not Detected	APHA (23 rd Edition 2017) 5310 B
8	COD	mg/L	8.0	APHA (23 rd Edition 2017) 5220 B Open Reflux Method
9	Total Hardness	mg/L	102	IS 3025 (Part - 21) 2019 EDTA Method
10	Total Alkalinity	mg/L	116	IS 3025 (Part - 23) 2019
11	Total Kjeldahl Nitrogen	mg/L	0.87	IS :3025 (Part-34) :1988 Clause 2.3 (Reaffirmed 2009)
12	Chlorides as Cl	mg/L	64	IS 3025 (Part - 32) 2019 Argentometric Method
13	Sulphates as SO ₄	mg/L	9.8	IS 3025 (Part-24) 2019
14	Nitrate	mg/L	0.64	APHA (23 rd Edition 2017) 4110 B
15	Lead as Pb	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
16	Cadmium as Cd	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
17	Copper as Cu	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
18	Total Chromium	mg/L	Not Detected	APHA (23 rd Edition 2017) 3111 B
19	Mercury as Hg	mg/L	Not Detected	IS 3025 (Part-48) 2019
20	Nickel as Ni	mg/L	0.048	APHA (23 rd Edition 2017) 3111 B
21	Cyanides as CN	mg/L	Not Detected	APHA (23 rd Edition 2017) 4500 CN E Colorimetric Method
22	Arsenic as As	mg/L	Not Detected	APHA (23 rd Edition 2017) 3114 B
23	Manganese as Mn	mg/L	0.064	APHA (23 rd Edition 2017) 3111 B
24	Iron as Fe	mg/L	0.087	APHA (23 rd Edition 2017) 3111 B
25	Zinc as Zn	mg/L	0.046	APHA (23 rd Edition 2017) 3111 B
26	Fluorides as F	mg/L	0.34	APHA (23 rd Edition 2017) 4500 F D SPANDS Method
27	Pesticides**	µg/L	**Not Detected	USEPA 508.1995/ USEPA 525.2.1995/ USEPA 532.2000

Detection Limit: Total Suspended Solids : 2.0 mg/L, Lead as Pb : 0.005 mg/L, Cadmium as Cd : 0.004 mg/L, Copper as Cu : 0.02, Total Chromium : 0.025 mg/L, Mercury as Hg : 0.001 mg/L, Arsenic as As : 0.1 mg/L, Cyanides as CN : 0.001 mg/L, Zinc : 0.06mg/L, Total Kjeldahl Nitrogen : 1.0 mg/L, Pesticides : 0.1 µg/L. **attached pesticides list.

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager(Q)

Note: This report is subject to terms & conditions mentioned overleaf.

- FSSAI Approved Lab
- Recognised by MoEF, New Delhi Under Sec. 12 of Environmental (Protection) Act-1986
- GPCB approved schedule II auditor
- ISO 14001
- OHSAS 18001
- ISO 9001

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com



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Barcode Id 8a26294236 Report No/Sample ID TC814119000000625F Report Date 31-Oct-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED				
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002				
Sample Description:	AMBIENT AIR				
Sample Quantity:	25 ml	Sample Received Date:	03-Oct-19		
Sampling Location:	NEAR LAB (ST-01)	Sampling Procedure:			
Sample Collected By	AJAY	Analysis Start Date:	04-Oct-19		
Packing Details	null	Analysis Completion Date:	06-Oct-19		
Fuel	---	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	17.05	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	96.11	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	44.08	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	25.68	80	IS:5182(P-6), 2006
5	*AMMONIA (AIR)	µg/m ³	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	µg/m ³	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m ³	0.064	1	CPCB GUIDELINE
8	NICKEL AS NI	µg/m ³	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

Remarks:

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Barcode Id d9cb67b0bc Report No/Sample ID TC814119000000626F Report Date 31-Oct-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED				
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002				
Sample Description:	B/H NEW LANDFILL SIDE (ST-02)				
Sample Quantity:	25 ml	Sample Received Date:	03-Oct-19		
Sampling Location:	B/H NEW LANDFILL SIDE	Sampling Procedure:			
Sample Collected By	AJAY	Analysis Start Date:	04-Oct-19		
Packing Details	null	Analysis Completion Date:	06-Oct-19		
Fuel	-	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m3	8.73	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m3	94.30	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m3	38.15	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m3	18.76	80	IS:5182(P-6), 2006
5	*AMMONIA (AIR)	µg/m3	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	µg/m3	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m3	0.02	1	CPCB GUIDELINE
8	NICKEL AS NI	µg/m3	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id ea4e82c304 Report No/Sample ID TC814119000000648F Report Date 31-Oct-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED				
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist ; Bharuch,Gujarat Ankleshwar - 393002				
Sample Description:	NEAR EB-09				
Sample Quantity:	25 ml	Sample Received Date:	25-Oct-19		
Sampling Location:	NEAR EB-09 (ST-03)	Sampling Procedure:			
Sample Collected By	AJAY PATEL	Analysis Start Date:	26-Oct-19		
Packing Details	null	Analysis Completion Date:	31-Oct-19		
Fuel	--	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m3	11.81	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m3	97.22	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m3	42.12	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m3	28.87	80	IS:5182(P-6), 2006
5	*AMMONIA (AIR)	µg/m3	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	µg/m3	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m3	0.023	1	CPCB GUIDELINE
8	NICKEL AS NI	µg/m3	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id 829e10c669 Report No/Sample ID TC814119000000649F Report Date 31-Oct-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED				
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002				
	NEAR INCINERION OFFICE				
Sample Description:	(ST- 04)				
Sample Quantity:	25 ML	Sample Received Date:	25-Oct-19		
Sampling Location:	NEAR OFFICE	INCINERION	Sampling Procedure:		
Sample Collected By	AJAY PATEL	Analysis Start Date:	26-Oct-19		
Packing Details	null	Analysis Completion Date:	31-Oct-19		
Fuel	-	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m3	12.65	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m3	95.65	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m3	45.10	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m3	28.24	80	IS:5182(P-6), 2006
5	*AMMONIA (AIR)	µg/m3	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	µg/m3	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m3	0.031	1	CPCB GUIDELINE
8	NICKEL AS NI	µg/m3	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id 6efe5c2399 Report No/Sample ID TC814119000000650F Report Date 31-Oct-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED				
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002				
	B/H SHED NO-08 (ST-05)				
Sample Description:					
Sample Quantity:	25 ML	Sample Received Date:	25-Oct-19		
Sampling Location:		Sampling Procedure:			
Sample Collected By	AJAY PATEL	Analysis Start Date:	26-Oct-19		
Packing Details	null	Analysis Completion Date:	31-Oct-19		
Fuel	--	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	15.32	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	95.08	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	40.04	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	38.38	80	IS:5182(P-6), 2006
5	*AMMONIA (AIR)	µg/m ³	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	µg/m ³	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m ³	0.025	1	CPCB GUIDELINE
8	NICKEL AS NI	µg/m ³	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id b093dea250 Report No/Sample ID TC814119000000696F Report Date 01-Dec-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED				
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002				
Sample Description:	AMBIENT AIR				
Sample Quantity:	25 ml	Sample Received Date:	07-Nov-19		
Sampling Location:	B/H Shed No 8 (ST-05)	Sampling Procedure:			
Sample Collected By	BY BEIL	Analysis Start Date:	08-Nov-19		
Packing Details	null	Analysis Completion Date:	09-Dec-19		
Fuel	---	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	4.54	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	84.50	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	30.22	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	16.50	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m ³	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	ng/m ³	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m ³	0.032	1	CPCB GUIDELINE
8	NICKEL AS NI	ng/m ³	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id 39ce773578 Report No/Sample ID TC814119000000695F Report Date 01-Dec-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED				
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002				
Sample Description:	AMBIENT AIR				
Sample Quantity:	25 ml	Sample Received Date:	07-Nov-19		
Sampling Location:	Nr.Inc Office (ST-04)	Sampling Procedure:			
Sample Collected By	BY BEIL	Analysis Start Date:	08-Nov-19		
Packing Details	null	Analysis Completion Date:	09-Dec-19		
Fuel	---	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	6.01	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	87.82	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	26.25	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	13.01	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m ³	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	µg/m ³	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m ³	0.025	1	CPCB GUIDELINE
8	NICKEL AS NI	µg/m ³	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id 04b31536f2 Report No/Sample ID TC814119000000694F Report Date 01-Dec-19

Name Of Customer:		BEIL INFRASTRUCTURE LIMITED			
Address Of Customer:		Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002			
Sample Description:		AMBIENT AIR			
Sample Quantity:	25 ml	Sample Received Date:	07-Nov-19		
Sampling Location:	Nr.EB-9 (ST-03)	Sampling Procedure:			
Sample Collected By	BY BEIL	Analysis Start Date:	08-Nov-19		
Packing Details	null	Analysis Completion Date:	01-Dec-19		
Fuel	---	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	*SULPHUR DIOXIDE	µg/m3	6.33	80	IS:5182(P-2), 2001
2	*RSPM(PM10)	µg/m3	83.72	100	IS:5182(P-23), 2006
3	*PM 2.5	µg/m3	24.37	60	GPCB GUIDELINE
4	*NITROGEN DIOXIDE	µg/m3	11.41	80	IS:5182(P-6), 2006
5	*ARSENIC AS AS	ng/m3	BDL	6	CPCB GUIDELINE
6	*LEAD AS PB	µg/m3	0.021	1	CPCB GUIDELINE
7	*NICKEL AS NI	ng/m3	BDL	20	CPCB GUIDELINE
8	*AMMONIA	µg/m3	BDL	400	APHA801 AIR SAMPLING& ANALYSIS)

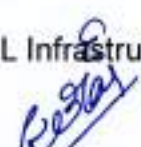
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Barcode Id 4e12475a42 Report No/Sample ID TC814119000000704F Report Date 01-Dec-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED				
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002				
Sample Description:	AMBIENT AIR				
Sample Quantity:	1	Sample Received Date:	14-Nov-19		
Sampling Location:	B/H New Landfill Site (ST-02)	Sampling Procedure:			
Sample Collected By	By BEIL	Analysis Start Date:	15-Nov-19		
Packing Details	null	Analysis Completion Date:	16-Nov-19		
Fuel	---	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	10.17	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	87.43	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	25.38	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	27.86	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m ³	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	ng/m ³	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m ³	0.029	1	CPCB GUIDELINE
8	NICKEL AS NI	ng/m ³	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Page: 1 of 1

Barcode Id c02fbcdfaa Report No/Sample ID TC814119000000703F Report Date 01-Dec-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED				
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002				
Sample Description:	AMBIENT AIR				
Sample Quantity:	25 ml	Sample Received Date:	14-Nov-19		
Sampling Location:	Nr.Lab (ST-01)	Sampling Procedure:			
Sample Collected By	By BEIL	Analysis Start Date:	15-Nov-19		
Packing Details	null	Analysis Completion Date:	17-Nov-19		
Fuel	---	Sample Type	Air Sample		
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	34.94	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	84.51	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	24.4	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	23.99	80	IS:5182(P-6), 2006
5	ARSENIC AS AS	ng/m ³	BDL	6	CPCB GUIDELINE
6	LEAD AS PB	µg/m ³	0.031	1	CPCB GUIDELINE
7	NICKEL AS NI	ng/m ³	BDL	20	CPCB GUIDELINE
8	AMMONIA	µg/m ³	BDL	400	APHA801 AIR SAMPLING & ANALYSIS)

* Parameters are not in NABL scope

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Barcode Id d52c084d3c Report No/Sample ID TC814119000000847F Report Date 24-Dec-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16, GIDC Estate Ankleshwar, Dist : Bharuch, Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR		
Sample Quantity:	25 ml	Sample Received Date:	14-Dec-19
Sampling Location:	NEAR LAB (ST-01)	Sampling Procedure:	
Sample Collected By	by BEIL	Analysis Start Date:	15-Dec-19
Packing Details	null	Analysis Completion Date:	24-Dec-19
Fuel	--	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m3	4.33	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m3	96.38	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m3	31.8	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m3	1.47	80	IS:5182(P-6), 2006
5	ARSENIC AS AS	ng/M3	BDL	0.6	CPCB GUIDELINE
6	LEAD AS PB	µg/m3	0.021	1	CPCB GUIDELINE
7	NICKEL AS NI	ng/M3	BDL	20	CPCB GUIDELINE
8	AMMONIA	µg/m3	BDL	400	APHA801 AIR SAMPLING & ANALYSIS)

* Parameters are not in NABL scope

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Works Office: Plot No 9701-16, G.I.D.C. Estate, Post Box No 82, Ankleshwar - 393002, Dist - Bharuch (Gujarat)

Tel: (02646) 253135, 225228 | Fax: (02646) 222849 | E-Mail: dalwadibd@beil.co.in, sathish.gaddam@beil.co.in

Regd. office: Plot No 117-118, G.I.D.C. Estate, Ankleshwar - 393002, Dist - Bharuch (Gujarat)

CIN NO : U45300GJ1997PLC032696

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Barcode Id f40784bf13 Report No/Sample ID TC814119000000774F Report Date 12-Dec-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR		
Sample Quantity:	01	Sample Received Date:	03-Dec-19
Sampling Location:	Nr,EB-9 (ST-03)	Sampling Procedure:	
Sample Collected By	BY BEIL	Analysis Start Date:	04-Dec-19
Packing Details	null	Analysis Completion Date:	12-Dec-19
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m3	19.28	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m3	91.43	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m3	45.56	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m3	30.60	80	IS:5182(P-6), 2006
5	ARSENIC AS AS	ng/M3	BDL	6	CPCB GUIDELINE
6	LEAD AS PB	µg/m3	0.034	1	CPCB GUIDELINE
7	NICKEL AS NI	ng/M3	BDL	20	CPCB GUIDELINE
8	AMMONIA	µg/m3	BDL	400	APHA801 AIR SAMPLING& ANALYSIS)

* Parameters are not in NABL scope

Remarks:

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Barcode Id a00fd3efb4 Report No/Sample ID TC814119000000775F Report Date 12-Dec-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR		
Sample Quantity:	01	Sample Received Date:	03-Dec-19
Sampling Location:	Nr,Inc-Office (ST-04)	Sampling Procedure:	
Sample Collected By	BY BEIL	Analysis Start Date:	04-Dec-19
Packing Details	null	Analysis Completion Date:	12-Dec-19
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m3	20.77	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m3	93.41	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m3	40.60	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m3	41.44	80	IS:5182(P-6), 2006
5	ARSENIC AS AS	ng/M3	BDL	6	CPCB GUIDELINE
6	LEAD AS PB	µg/m3	0.037	1	CPCB GUIDELINE
7	NICKEL AS NI	ng/M3	BDL	20	CPCB GUIDELINE
8	AMMONIA	µg/m3	BDL	400	APHA801 AIR SAMPLING & ANALYSIS)

- * Parameters are not in NABL scope

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Barcode Id af570c891c Report No/Sample ID TC814119000000776F Report Date 12-Dec-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR		
Sample Quantity:	01	Sample Received Date:	03-Dec-19
Sampling Location:	Nr,Shed No-8 (ST-05)	Sampling Procedure:	
Sample Collected By	BY BEIL	Analysis Start Date:	04-Dec-19
Packing Details	null	Analysis Completion Date:	12-Dec-19
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m3	21.60	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m3	91.0	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m3	43.56	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m3	43.89	80	IS:5182(P-6), 2006
5	ARSENIC AS AS	ng/M3	BDL	6	CPCB GUIDELINE
6	LEAD AS PB	µg/m3	0.0034	1	CPCB GUIDELINE
7	NICKEL AS NI	ng/M3	BDL	20	CPCB GUIDELINE
8	AMMONIA	µg/m3	BDL	400	APHA801 AIR SAMPLING & ANALYSIS)

* Parameters are not in NABL scope

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Barcode Id af2ce4fd8a Report No/Sample ID TC814119000000848F Report Date 24-Dec-19

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR		
Sample Quantity:	25 ml	Sample Received Date:	14-Dec-19
Sampling Location:	B/H NEW LANDFILL SIDE-	Sampling Procedure:	
Sample Collected By	by BEIL	Analysis Start Date:	15-Dec-19
Packing Details	null	Analysis Completion Date:	24-Dec-19
Fuel	--	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	6.31	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	93.66	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	33.12	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	8.39	80	IS:5182(P-6), 2006
5	ARSENIC AS AS	ng/M3	BDL	0.6	CPCB GUIDELINE
6	LEAD AS PB	µg/m ³	0.030	1	CPCB GUIDELINE
7	NICKEL AS NI	ng/M3	BDL	20	CPCB GUIDELINE
8	AMMONIA	µg/m ³	BDL	400	APHA801 AIR SAMPLING& ANALYSIS)

* Parameters are not in NABL scope

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Barcode Id 3b5dec0159 Report No/Sample ID TC814120000000038F Report Date 01-Feb-20

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR (STATION-1)		
Sample Quantity:	25 ml	Sample Received Date:	16-Jan-20
Sampling Location:	OPP-LAB NEAR LANDFILL PHASE-1 (ST-01)	Sampling Procedure:	
Sample Collected By	Ajay Patel	Analysis Start Date:	17-Jan-20
Packing Details	null	Analysis Completion Date:	01-Feb-20
Fuel	---	Sample Type	Air Sample

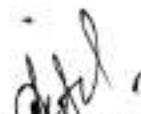
Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	14.36	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	90.50	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	28.44	60	CPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	18.20	80	IS:5182(P-6), 2006
5	ARSENIC AS AS	ng/M ³	BDL	6.0	CPCB GUIDELINE
6	LEAD AS PB	µg/m ³	BDL	1.0	CPCB GUIDELINE
7	NICKEL AS NI	ng/M ³	BDL	20	CPCB GUIDELINE
8	AMMONIA	µg/m ³	BDL	400	CPCB GUIDELINE

* Parameters are not in NABL scope

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-Barcode Id 27db9c0010 Report No/Sample ID TC814120000000040F Report Date 01-Feb-20

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR (STATION-2)		
Sample Quantity:	25 ml	Sample Received Date:	16-Jan-20
Sampling Location:	Nr, Phase-2 opp, LW-3, Detox side road.	Sampling Procedure:	
Sample Collected By	Ajay Patel	Analysis Start Date:	17-Jan-20
Packing Details	---	Analysis Completion Date:	01-Feb-20
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	20.16	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	92.64	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	30.44	60	CPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	28.24	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m ³	BDL	400	CPCB GUIDELINE
6	ARSENIC AS AS	ng/M ³	BDL	6.0	CPCB GUIDELINE
7	LEAD AS PB	µg/m ³	BDL	1.0	CPCB GUIDELINE
8	NICKEL AS NI	ng/M ³	BDL	20	CPCB GUIDELINE


* Parameters are not in NABL scope

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Barcode Id 2975e3c32a Report No/Sample ID TC814120000000041F Report Date 01-Feb-20

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR (STATION-3)		
Sample Quantity:	25 ml	Sample Received Date:	16-Jan-20
Sampling Location:	ST-3: Behind Shed No. 08 corner	Sampling Procedure:	
Sample Collected By	Ajay Patel	Analysis Start Date:	17-Jan-20
Packing Details	---	Analysis Completion Date:	01-Feb-20
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	26.16	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	92.54	100	IS:5182(P-23), 2006
	PM 2.5	µg/m ³	32.06	60	CPCB GUIDELINE
3	NITROGEN DIOXIDE	µg/m ³	24.30	80	IS:5182(P-6), 2006
4	ARSENIC AS AS	ng/M ³	BDL	6.0	CPCB GUIDELINE
5	LEAD AS PB	µg/m ³	BDL	1.0	CPCB GUIDELINE
6	NICKEL AS NI	ng/M ³	BDL	20	CPCB GUIDELINE
7	AMMONIA	µg/m ³	BDL	400	CPCB GUIDELINE

* Parameters are not in NABL scope

Remarks:

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Barcode Id e0c01f0123 Report No/Sample ID TC814120000000086F Report Date 17-Feb-20

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR (STATION-1)		
Sample Quantity:	25 ml	Sample Received Date:	06-Feb-20
Sampling Location:	OPP-LAB NEAR LANDFILL	Sampling Procedure:	
Sample Collected By	BY BEIL	Analysis Start Date:	08-Feb-20
Packing Details	null	Analysis Completion Date:	17-Feb-20
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m3	6.08	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m3	85.26	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m3	49.90	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m3	8.29	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m3	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	ng/M3	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m3	BDL	1.0	CPCB GUIDELINE
8	NICKEL AS NI	ng/M3	BDL	20	CPCB GUIDELINE


* Parameters are not in NABL scope

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Barcode Id 7d07bd067b Report No/Sample ID TC814120000000091F Report Date 17-Feb-20

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR (STATION-2)		
Sample Quantity:	1	Sample Received Date:	06-Feb-20
Sampling Location:	Phase-2, Opp. LW-3, Detox	Sampling Procedure:	
Sample Collected By	BY BEIL	Analysis Start Date:	07-Feb-20
Packing Details	null	Analysis Completion Date:	17-Feb-20
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	7.03	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	91.36	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	32.80	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	11.80	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m ³	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	ng/M ³	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m ³	BDL	1	CPCB GUIDELINE
8	NICKEL AS NI	ng/M ³	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id 95ceb3f802 Report No/Sample ID TC814120000000087F Report Date 17-Feb-20

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR (STATION-3)		
Sample Quantity:	25 ml	Sample Received Date:	06-Feb-20
Sampling Location:	Behind Shed No. 08 corner.	Sampling Procedure:	
Sample Collected By	BY BEIL	Analysis Start Date:	07-Feb-20
Packing Details	null	Analysis Completion Date:	17-Feb-20
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	SULPHUR DIOXIDE	µg/m ³	12.46	80	IS:5182(P-2), 2001
2	RSPM(PM10)	µg/m ³	88.20	100	IS:5182(P-23), 2006
3	PM 2.5	µg/m ³	30.44	60	GPCB GUIDELINE
4	NITROGEN DIOXIDE	µg/m ³	8.44	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m ³	BDL	400	TITRIMETRIC
6	ARSENIC AS AS	ng/M ³	BDL	6	CPCB GUIDELINE
7	LEAD AS PB	µg/m ³	BDL	1	CPCB GUIDELINE
8	NICKEL AS NI	ng/M ³	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id 3aac310d79 Report No/Sample ID TC814120000000212F Report Date 31-Mar-20

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR (STATION-1)		
Sample Quantity:	25 ml	Sample Received Date:	17-Mar-20
Sampling Location:	Opp,Lab Near Landfill Phase-	Sampling Procedure:	
Sample Collected By	BY BEIL	Analysis Start Date:	18-Mar-20
Packing Details	null	Analysis Completion Date:	31-Mar-20
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	RSPM(PM10)	µg/m ³	66.19	100	IS:5182(P-23), 2006
2	PM 2.5	µg/m ³	25.19	60	GPCB GUIDELINE
3	SULPHUR DIOXIDE	µg/m ³	2.78	80	IS:5182(P-2), 2001
4	NITROGEN DIOXIDE	µg/m ³	4.86	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m ³	BDL	400	TITRIMETRIC
6	LEAD AS PB	µg/m ³	BDL	1.0	CPCB GUIDELINE
7	ARSENIC AS AS	µg/m ³	BDL	6	CPCB GUIDELINE
8	NICKEL AS NI	ng/M ³	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id b2d819b0cc Report No/Sample ID TC814120000000204F Report Date 17-Mar-20

Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16, GIDC Estate Ankleshwar, Dist : Bharuch, Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR (STATION-2)		
Sample Quantity:	25 ml	Sample Received Date:	13-Mar-20
Sampling Location:	Opposite of C6LW4 Phase-2,	Sampling Procedure:	
Sample Collected By	By BEIL	Analysis Start Date:	14-Mar-20
Packing Details	null	Analysis Completion Date:	17-Mar-20
Fuel	—	Sample Type	Air Sample


Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	RSPM(PM10)	µg/m3	90.21	100	IS:5182(P-23), 2006
2	PM 2.5	µg/m3	35.11	60	GPCB GUIDELINE
3	SULPHUR DIOXIDE	µg/m3	6.40	80	IS:5182(P-2), 2001
4	NITROGEN DIOXIDE	µg/m3	9.70	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m3	BDL	400	TITRIMETRIC
6	LEAD AS PB	µg/m3	BDL	1	CPCB GUIDELINE
7	ARSENIC AS AS	µg/m3	BDL	6	CPCB GUIDELINE
8	NICKEL AS NI	ng/M3	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

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Barcode Id 80b4520c42 Report No/Sample ID TC814120000000205F Report Date 17-Mar-20

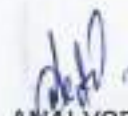
Name Of Customer:	BEIL INFRASTRUCTURE LIMITED		
Address Of Customer:	Plot No 9701-16,GIDC Estate Ankleshwar,Dist : Bharuch,Gujarat Ankleshwar - 393002		
Sample Description:	AMBIENT AIR (STATION-3)		
Sample Quantity:	25 ml	Sample Received Date:	13-Mar-20
Sampling Location:	Behind Shed No. 08 corner	Sampling Procedure:	
Sample Collected By	By BEIL	Analysis Start Date:	14-Mar-20
Packing Details	null	Analysis Completion Date:	17-Mar-20
Fuel	---	Sample Type	Air Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	RSPM(PM10)	µg/m ³	87.73	100	IS:5182(P-23), 2006
2	PM 2.5	µg/m ³	28.48	60	GPCB GUIDELINE
3	SULPHUR DIOXIDE	µg/m ³	8.75	80	IS:5182(P-2), 2001
4	NITROGEN DIOXIDE	µg/m ³	13.78	80	IS:5182(P-6), 2006
5	AMMONIA (AIR)	µg/m ³	BDL	400	TITRIMETRIC
6	LEAD AS PB	µg/m ³	BDL	1	CPCB GUIDELINE
7	ARSENIC AS AS	µg/m ³	BDL	6	CPCB GUIDELINE
8	NICKEL AS NI	ng/M3	BDL	20	CPCB GUIDELINE

* Parameters are not in NABL scope

Remarks:

----- END OF REPORT -----


ANALYSED BY


VERIFIED BY


For BEIL Infrastructure Ltd.
AUTHORIZED BY

**TEST CERTIFICATE**

QF/7.8/37-AQ

Page: 1 of 1

Customer's Name and Address :

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0071**
Issue Date : **29/11/2019**
Customer's Ref. : **W.O.No. 8519200071
Dated:29.04.2019**

Location of Sampling : **Near Laboratories**
Date of Sampling : **18/11/2019** Sampling Procedure : **As per table**
Sampling by : **Pollucon Laboratories Pvt. Ltd.** Protocol (purpose) : **Ambient Air Quality Monitoring**
Sample Receipt Date : **19/11/2019** Lab ID : **BL/1911/01 [A-M]**
Date of Starting of Test : **19/11/2019** Date of Completion of Test : **25/11/2019**

RESULT TABLE

SR. NO.	TEST PARAMETER	UNIT	RESULTS	LIMIT [®]	METHOD OF MEASUREMENT
1	Suspended Particulate Matter	µg/m ³	330	NS [*]	IS 5182 (Part-4) 2014
2	Particulate Matter (PM ₁₀)	µg/m ³	80.63	100	IS 5182 (Part-23) 2017
3	Particulate Matter (PM _{2.5})	µg/m ³	42.53	60	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
4	Sulphur Dioxide as SO ₂	µg/m ³	23.13	80	IS 5182 (Part-2) 2017
5	Oxides of Nitrogen as NO ₂	µg/m ³	30.74	80	IS 5182 (Part-6) 2017
6	Ozone (O ₃) [†]	µg/m ³	28.58	180	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
7	Carbon Monoxide as CO	mg/m ³	1.66	04	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
8	Ammonia as NH ₃	µg/m ³	32.34	400	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
9	Benzene as C ₆ H ₆	µg/m ³	Not Detected	NS [*]	IS 5182 (Part-11) 2017
10	Benzo (a) Pyrene (BaP) – particulate phase only	ng/m ³	Not Detected	NS [*]	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
11	Arsenic as As	ng/m ³	Not Detected	NS [*]	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
12	Nickel as Ni	ng/m ³	6.21	NS [*]	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
13	Lead as Pb	µg/m ³	0.32	1.0	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
14	Hydrocarbon as HC	ppm	Not Detected	NS [*]	Digital Gas Analyzer
15	HCl	µg/m ³	12.84	NS [*]	SOP: Stack HC-02
16	Chlorine as Cl ₂	µg/m ³	Not Detected	NS [*]	IS 5182 (Part-19) 2014
17	Hydrogen Sulphide as H ₂ S	µg/m ³	Not Detected	NS [*]	IS 5182 (Part-7) 2014

NS^{*}: Not Specified, †As per consent order No. AWH-89137 Date of issue: 02/11/2017 Valid Up to: 31/07/2022.

Ravi Jariwala
Sr. Environmental Scientist

Dr. Arun Bajpai
Lab Manager (Q)

Note: This report is subject to terms & conditions mentioned overleaf.

**TEST CERTIFICATE**

QF/7.8/37-AQ

Customer's Name and Address :

Page: 1 of 1

M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. :	PL/BL 0001
	Issue Date :	29/02/2020
	Customer's Ref. :	W.O.No. 8519200071 Dated:29.04.2019

Location of Sampling :	Near Laboratories		
Date of Sampling :	21/02/2020	Sampling Procedure :	As per table
Sampling by :	Pollucon Laboratories Pvt. Ltd.	Protocol (purpose) :	Ambient Air Quality Monitoring
Sample Receipt Date :	22/02/2020	Lab ID :	BL/2002/24 [A-M]
Date of Starting of Test :	22/02/2020	Date of Completion of Test :	29/02/2020

RESULT TABLE

SR. NO.	TEST PARAMETER	UNIT	RESULTS	LIMIT[®]	METHOD OF MEASUREMENT
1	Particulate Matter (PM ₁₀)	µg/m ³	95.34	100	IS 5182 (Part-23) 2017
2	Particulate Matter (PM _{2.5})	µg/m ³	56.26	60	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
3	Sulphur Dioxide as SO ₂	µg/m ³	17.57	80	IS 5182 (Part-2) 2017
4	Oxides of Nitrogen as NO ₂	µg/m ³	40.12	80	IS 5182 (Part-6) 2017
5	Ozone (O ₃) [§]	µg/m ³	23.66	180	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
6	Carbon Monoxide as CO	mg/m ³	1.83	04	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
7	Ammonia as NH ₃	µg/m ³	29.79	400	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
8	Benzene as C ₆ H ₆	µg/m ³	Not Detected	NS [†]	IS 5182 (Part-11) 2017
9	Benzo (a) Pyrene (BaP) - particulate phase only	ng/m ³	Not Detected	NS [†]	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
10	Arsenic as As	ng/m ³	2.45	NS [†]	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
11	Nickel as Ni	ng/m ³	11.28	NS [†]	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
12	Lead as Pb	µg/m ³	0.40	1.0	CPCB guidelines for AAQM (Vol. I, NAAQMS/36/2012-13)
13	Hydrocarbon as HC	µg/m ³	Not Detected	NS [†]	Gas chromatography
14	HCl	µg/m ³	30.45	NS [†]	USEPA 26A:1996
15	Chlorine as Cl ₂	µg/m ³	Not Detected	NS [†]	IS 5182 (Part-19) 2014
16	Hydrogen Sulphide as H ₂ S	µg/m ³	9.64	NS [†]	IS 5182 (Part-7) 2014

Detection Limit : Benzene as C₆H₆: 2.0 µg/m³, Benzo (a) Pyrene (BaP) - particulate phase only: 0.5 ng/m³, Arsenic as As: 2.0 ng/m³, Nickel as Ni: 5.0 ng/m³, Hydrocarbon as HC: 50 µg/m³, Hydro Chloric Acid as HCl: 5.0 µg/m³, Chlorine as Cl₂: 15 µg/m³, Hydrogen Sulphide as H₂S: 0.8 µg/m³.
[†]Limit as per GPCB Consent Order No.AWH-70720 Issue Date: 18/04/2015 Up to 17/04/2020. NS[†]: Not Specified.

Ravi Jariwala
Sr. Environmental Scientist**Dr. Arun Bajpai**
Lab Manager (Q)

Note: This report is subject to terms & conditions mentioned overleaf.

- PSSAI Approved Lab
- Recognised by MoEF, New Delhi Under Sec. 12 of Environmental (Protection) Act-1986
- GPCB approved schedule II auditor
- ISO 14001
- OHSAS 18001
- ISO 9001

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com



BEIL INFRASTRUCTURE LIMITED

(Formerly known as Bharuch Eco Infrastructure Ltd.)

ANALYTICAL RESEARCH LABORATORY

TEST REPORT

MoEF Approved Laboratory NABL ACCREDITED LAB (TC-8141) ISO 14001 & BS OHSAS 18001 Certified Laboratory

Page: 1 of 1

Report Date: 07-Oct-19

Name of Customer	BEIL Infrastructure Ltd.		
Address of Customer	Plot No. 9701-16, GIDC Estate, Ankleshwar-393002, Dist.: Bharuch		
Sample Description	*Noise Monitoring		
Sample Quantity	01	Sample Received Date	05-Oct-19
Sampling Location	As per Below Table	Sampling Procedure	Instrumental Method
Sample Collected By	By BEIL Team	Analysis Start Date	05-Oct-19
Packing Detail	--	Analysis Completion Date	05-Oct-19
		Fuel	--

Sr. No.	Location	Unit	- Result		Method Ref.
			Day	Night	
1	Near Main Gate	dB(A)	59	55	By Sound Level Meter
2	Near Laboratory	dB(A)	59	54	By Sound Level Meter
3	Near ADM Building	dB(A)	59	54	By Sound Level Meter
4	Near Truck washing	dB(A)	65	58	By Sound Level Meter
5	Near Drum Storage Area	dB(A)	62	56	By Sound Level Meter
6	Near security point 4	dB(A)	59	55	By Sound Level Meter
7	Near HB - 2	dB(A)	63	57	By Sound Level Meter
8	Near Leachate Well-4	dB(A)	64	60	By Sound Level Meter
9	Near Incinerator Plan	dB(A)	65	61	By Sound Level Meter
10	East side of Incinerator Plant	dB(A)	64	60	By Sound Level Meter

Permissible Limit:

Day- Not More Than 75 dB(A)

Night- Not More Than 70 dB(A)

*Parameters are not covered in NABL scope

----- END OF REPORT -----

For BEIL Infrastructure Ltd.

Daisy A. Patel
ANALYSED BY

Rajesh
AUTHORIZED BY
HOD (QA)



BEIL INFRASTRUCTURE LIMITED

(Formerly known as Bharuch Enviro Infrastructure Ltd.)

ANALYTICAL RESEARCH LABORATORY

TEST REPORT

MoEF Approved Laboratory NABL ACCREDITED LAB (TC-8141) ISO 14001 & BS OHSAS 18001 Certified Laboratory

Page: 1 of 1

Report Date: 02-Nov-19

Name of Customer	BEIL Infrastructure Ltd.		
Address of Customer	Plot No. 9701-16, GIDC Estate, Ankleshwar-393002, Dist.: Bharuch		
Sample Description	*Noise Monitoring		
Sample Quantity	01	Sample Received Date	01-Nov-19
Sampling Location	As per Below Table	Sampling Procedure	Instrumental Method
Sample Collected By	By BEIL Team	Analysis Start Date	01-Nov-19
Packing Detail	--	Analysis Completion Date	01-Nov-19
		Fuel	--

Sr. No.	Location	Unit	Result		Method Ref.
			Day	Night	
1	Near Main Gate	dB(A)	59	58	By Sound Level Meter
2	Near Laboratory	dB(A)	62	57	By Sound Level Meter
3	Near ADM Building	dB(A)	57	55	By Sound Level Meter
4	Near Truck washing	dB(A)	68	60	By Sound Level Meter
5	Near Drum Storage Area	dB(A)	60	57	By Sound Level Meter
6	Near security point 4	dB(A)	61	55	By Sound Level Meter
7	Near HB - 2	dB(A)	63	57	By Sound Level Meter
8	Near Leachate Well-4	dB(A)	65	61	By Sound Level Meter
9	Near Incinerator Plan	dB(A)	69	63	By Sound Level Meter
10	East side of Incinerator Plant	dB(A)	65	60	By Sound Level Meter

Permissible Limit:

Day- Not More Than 75 dB(A)

Night- Not More Than 70 dB(A)

*Parameters are not covered in NABL scope

----- END OF REPORT -----

For BEIL Infrastructure Ltd.

Sathish A. Pethy
ANALYSED BY

[Signature]
AUTHORIZED BY
HOD (QA)



BEIL INFRASTRUCTURE LIMITED

(Formerly known as Bharuch Envo Infrastructure Ltd.)

ANALYTICAL RESEARCH LABORATORY

TEST REPORT

NoEF Approved Laboratory NABL ACCREDITED LAB (TC-8141) ISO 14001 & BS OHSAS 18001 Certified Laboratory

Page: 1 of 1

Report Date: 10-Dec-19

Name of Customer	BEIL Infrastructure Ltd.		
Address of Customer	Plot No. 9701-16, GIDC Estate, Ankleshwar-393002, Dist.: Bharuch		
Sample Description	*Noise Monitoring		
Sample Quantity	01	Sample Received Date	06-Dec-19
Sampling Location	As per Below Table	Sampling Procedure	Instrumental Method
Sample Collected By	By BEIL Team	Analysis Start Date	06-Dec-19
Packing Detail	--	Analysis Completion Date	06-Dec-19
		Fuel	--

Sr. No.	Location	Unit	Result		Method Ref.
			Day	Night	
1	Near Main Gate	dB(A)	60	57	By Sound Level Meter
2	Near Laboratory	dB(A)	61	55	By Sound Level Meter
3	Near ADM Building	dB(A)	58	56	By Sound Level Meter
4	Near Truck washing	dB(A)	69	57	By Sound Level Meter
5	Near Drum Storage Area	dB(A)	63	56	By Sound Level Meter
6	Near security point 4	dB(A)	61	58	By Sound Level Meter
7	Near HB - 2	dB(A)	64	57	By Sound Level Meter
8	Near Leachate Well-4	dB(A)	65	60	By Sound Level Meter
9	Near Incinerator Plant	dB(A)	70	63	By Sound Level Meter
10	East side of Incinerator Plant	dB(A)	66	61	By Sound Level Meter

Permissible Limit:

Day- Not More Than 75 dB(A)

Night- Not More Than 70 dB(A)

*Parameters are not covered in NABL scope

----- END OF REPORT -----

For BEIL Infrastructure Ltd.

Nisarg H-Pet
ANALYSED BY

[Signature]
AUTHORIZED BY
HOD (QA)



BEIL INFRASTRUCTURE LIMITED

(Formerly known as Bharuch Enviro Infrastructure Ltd.)

ANALYTICAL RESEARCH LABORATORY

TEST REPORT

MoEF Approved Laboratory NABL ACCREDITED LAB (TC-8141) ISO 14001 & BS OHSAS 18001 Certified Laboratory

Page: 1 of 1

Report Date: 06-Jan-2020

Name of Customer	BEIL Infrastructure Ltd.		
Address of Customer	Plot No. 9701-16, GIDC Estate, Ankleshwar-393002, Dist.: Bharuch		
Sample Description	*Noise Monitoring		
Sample Quantity	01	Sample Received Date	04-Jan-2020
Sampling Location	As per Below Table	Sampling Procedure	Instrumental Method
Sample Collected By	By BEIL Team	Analysis Start Date	04-Jan-2020
Packing Detail	--	Analysis Completion Date	04-Jan-2020
		Fuel	--

Sr. No.	Location	Unit	Result		Method Ref.
			Day	Night	
1	Near Main Gate	dB(A)	59	54	By Sound Level Meter
2	Near Laboratory	dB(A)	62	55	By Sound Level Meter
3	Near ADM Building	dB(A)	58	53	By Sound Level Meter
4	Near Truck washing	dB(A)	67	57	By Sound Level Meter
5	Near Drum Storage Area	dB(A)	61	58	By Sound Level Meter
6	Near security point 4	dB(A)	57	54	By Sound Level Meter
7	Near HB - 2	dB(A)	66	61	By Sound Level Meter
8	Near Leachate Well-4	dB(A)	67	65	By Sound Level Meter
9	Near Incinerator Plan	dB(A)	69	64	By Sound Level Meter
10	East side of Incinerator Plant	dB(A)	64	59	By Sound Level Meter

Permissible Limit:

Day- Not More Than 75 dB(A)

Night- Not More Than 70 dB(A)

*Parameters are not covered in NABL scope

----- END OF REPORT -----

For BEIL Infrastructure Ltd.

Sathish A. Gaddam
ANALYSED BY

Sathish A. Gaddam
AUTHORIZED BY
HOD (QA)



BEIL INFRASTRUCTURE LIMITED

(Formerly known as Bharuch Enviro Infrastructure Ltd.)

ANALYTICAL RESEARCH LABORATORY

TEST REPORT

MoEF Approved Laboratory NABL ACCREDITED LAB (TC-8141) ISO 14001 & BS OHSAS 18001 Certified Laboratory

Page: 1 of 1

Report Date: 05-Feb-2020

Name of Customer	BEIL Infrastructure Ltd.		
Address of Customer	Plot No. 9701-16, GIDC Estate, Ankleshwar-393002, Dist.: Bharuch		
Sample Description	*Noise Monitoring		
Sample Quantity	01	Sample Received Date	04-Feb-2020
Sampling Location	As per Below Table	Sampling Procedure	Instrumental Method
Sample Collected By	By BEIL Team	Analysis Start Date	04-Feb-2020
Packing Detail	--	Analysis Completion Date	05-Feb-2020
		Fuel	--

Sr. No.	Location	Unit	Result		Method Ref.
			Day	Night	
1	Near Main Gate	dB(A)	55	50	By Sound Level Meter
2	Near Laboratory	dB(A)	57	52	By Sound Level Meter
3	Near ADM Building	dB(A)	50	49	By Sound Level Meter
4	Near Truck washing	dB(A)	65	58	By Sound Level Meter
5	Near Drum Storage Area	dB(A)	67	57	By Sound Level Meter
6	Near security point 4	dB(A)	56	54	By Sound Level Meter
7	Near HB - 2	dB(A)	64	59	By Sound Level Meter
8	Near Leachate Well-4	dB(A)	69	65	By Sound Level Meter
9	Near Incinerator Plan	dB(A)	69	64	By Sound Level Meter
10	East side of Incinerator Plant	dB(A)	66	57	By Sound Level Meter

Permissible Limit:

Day- Not More Than 75 dB(A)

Night- Not More Than 70 dB(A)

*Parameters are not covered in NABL scope

----- END OF REPORT -----

For BEIL Infrastructure Ltd.

ANALYSED BY

VERIFIED BY

AUTHORIZED BY
HOD (QA)



BEIL INFRASTRUCTURE LIMITED

(Formerly known as Bharuch Enviro Infrastructure Ltd.)

ANALYTICAL RESEARCH LABORATORY

TEST REPORT

MoEF Approved Laboratory NABL ACCREDITED LAB (TC-8141) ISO 14001 & BS OHSAS 18001 Certified Laboratory

Page: 1 of 1

Report Date: 20-Mar-2020

Name of Customer	BEIL Infrastructure Ltd.		
Address of Customer	Plot No. 9701-16, GIDC Estate, Ankleshwar-393002, Dist.: Bharuch		
Sample Description	*Noise Monitoring		
Sample Quantity	01	Sample Received Date	19-Mar-2020
Sampling Location	As per Below Table	Sampling Procedure	Instrumental Method
Sample Collected By	By BEIL Team	Analysis Start Date	19-Mar-2020
Packing Detail	--	Analysis Completion Date	20-Mar-2020
		Fuel	--

Sr. No.	Location	Unit	Result		Method Ref.
			Day	Night	
1	Near Main Gate	dB(A)	56	48	By Sound Level Meter
2	Near Laboratory	dB(A)	55	40	By Sound Level Meter
3	Near ADM Building	dB(A)	52	39	By Sound Level Meter
4	Near Truck washing	dB(A)	63	59	By Sound Level Meter
5	Near Drum Storage Area	dB(A)	62	54	By Sound Level Meter
6	Near security point 4	dB(A)	55	50	By Sound Level Meter
7	Near HB - 2	dB(A)	68	63	By Sound Level Meter
8	Near Leachate Well-4	dB(A)	65	60	By Sound Level Meter
9	Near Incinerator Plan	dB(A)	59	60	By Sound Level Meter
10	East side of Incinerator Plant	dB(A)	65	58	By Sound Level Meter

Permissible Limit:

Day- Not More Than 75 dB(A)

Night- Not More Than 70 dB(A)

*Parameters are not covered in NABL scope

----- END OF REPORT -----

For BEIL Infrastructure Ltd.

ANALYSED BY

VERIFIED BY

AUTHORIZED BY
HOD (QA)



BEILINFRASTRUCTURE LTD.

(Formerly known as Bharuch Enviro Infrastructure Ltd.)

ANALYTICAL RESEARCH LABORATORY

TEST REPORT



MoEF Approved Laboratory NABL Accredited Lab ISO 14001 & BS OHSAS 18001 Certified Laboratory

Page: 1 of 2

Barcode Id 07a8ea1d24 Report No/Sample ID TC814119000000637P Report Date 16-Oct-19

Name Of Customer:	SEJAL CHEM TECH INDUSTRIES		
Address Of Customer:	Plot No.C1 B-7118, GIDC Ind. Estate,		Ankleshwar - 393 002.
	Dist. Bharuch, Gujerat, India.		
Sample Description:	ETP Waste		
Sample Quantity:	1.0 kg	Sample Received Date:	15-Oct-19
Sampling Location:		Sampling Procedure:	
Sample Collected By	By Customer	Analysis Start Date:	15-Oct-19
Packing Details	Plastic Bag	Analysis Completion Date:	16-Oct-19
Fuel	---	Sample Type	Hazardous Waste Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	*PHYSICAL STATE	-	Solid	---	VISUALLY
2	*SAMPLE APPEARANCE	-	Off White Colour	---	VISUALLY
3	PH (10% SOLN)	-	8.42	4 to 12	APHA 4500H+B
4	CALORIFIC VALUE	Cal/gm	369	<2500	IS:1448(PART-6):1984
5	*HALOGEN	%	1.39	---	APHA 4500CL-B
6	TOTAL SULPHUR	%	8.33	---	CHNS ANALYZER
7	LOSS ON DRYING AT 110°C	%	27.64	---	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
8	Oil and grease by Soxhlet method	%	< 0.01	---	
9	*ANNEALING LOSS AT 550°C	%	6.62	<20.0	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
10	ASH CONTENT AT 900°C	%	65.69	---	IS 1448 (PART-4) :1984
11	*FLAMMABILITY TEST	-	Not Flammable	---	QUALITATIVE ORGANIC ANALYSIS
12	*COMPATIBILITY TEST	-	OK	---	
13	*PFLT TEST	-	Pass	---	USEPA METHOD 9095B
14	*LRT TEST	ml	00	<3.0	USEPA 9096
15	PHENOLIC COMPOUNDS (10% SOLN)	mg/Ltr.	< 0.01	<100	APHA 5530-D
16	ARSENIC (10% SOLN)	mg/Ltr.	< 0.001	<1.0	APHA 3111-AS-B
17	LEAD (10% SOLN)	mg/Ltr.	0.2012	< 2.0	APHA 3111-PB-B
18	CADMIUM (10% SOLN)	mg/Ltr.	0.0096	<0.2	APHA 3111-B
19	TOTAL CHROMIUM (10% SOLN)	mg/Ltr.	< 0.01	---	APHA 3111-CR-B
20	COPPER (10% SOLN)	mg/Ltr.	1.3863	<10.0	APHA 3111-CU-B
21	NICKEL (10% SOLN)	mg/Ltr.	0.0703	< 3.0	APHA 3111-NI-B
22	MERCURY (10% SOLN)	mg/Ltr.	< 0.001	<0.1	APHA 3111-HG-B

Works Office: Plot No 9701-16, G.I.D.C. Estate, Post Box No 82, Ankleshwar - 393002, Dist - Bharuch (Gujarat)
Tel: (02646) 253135, 225228 | Fax: (02646) 222849 | E-Mail: dalwadibd@beil.co.in, sathish.gaddam@beil.co.in
Regd. office: Plot No 117-118, G.I.D.C. Estate, Ankleshwar - 393002, Dist - Bharuch (Gujarat)

CIN NO : U45300GJ1997PLC032696

Terms & Condition are on backside

**BEIL INFRASTRUCTURE LTD.**(Formerly known as Bharuch Enviro Infrastructure Ltd.)**ANALYTICAL RESEARCH LABORATORY****TEST REPORT**

MoEF Approved Laboratory

NABL Accredited Lab

ISO 14001 & BS OHSAS 18001 Certified Laboratory

Page: 2 of 2

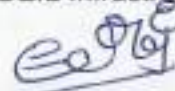
Barcode Id 07a8ea1d24 Report No/Sample ID TC814119000000637P Report Date 16-Oct-19

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
23	ZINC (10% SOLN)	mg/Ltr.	0.0290	<10.0	APHA 3111-ZN-B
24	FLUORIDE (10% SOLN)	mg/Ltr.	< 0.01	<50.0	APHA 4500--F- C
25	AMMONIACAL NITROGEN (10% SOLN)	mg/Ltr.	9.03	---	APHA 4500 NH3 C
26	*CYANIDE (10% SOLN)	mg/Ltr.	< 0.01	< 2.0	APHA 4500-CN
27	NITRATE (10% SOLN)	mg/Ltr.	25.41	< 30.0	APHA 4500-NO3-D
28	*COD (10% SOLN)	mg/Ltr.	537	---	APHA 5220-B

* Parameters are not in NABL scope

Remarks: Sample is suitable for Landfill

----- END OF REPORT -----


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Barcode Id 2cf054b382 Report No/Sample ID TC814119000000631P Report Date 07-Oct-19

Name Of Customer:	KING ACID AND CHEMICALS CO.		
Address Of Customer:	313/9, GIDC, ANKLESHWAR		
Sample Description:	LIQUID WASTE		
Sample Quantity:	1.0 ltr	Sample Received Date:	05-Oct-19
Sampling Location:		Sampling Procedure:	
Sample Collected By	By customer	Analysis Start Date:	05-Oct-19
Packing Details	plastic bottle	Analysis Completion Date:	07-Oct-19
Fuel	--	Sample Type	Hazardous Waste Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	PH	%	7.32	--	APHA 4500H+B
2	*PHYSICAL STATE	-	Liquid	--	VISUALLY
3	*SAMPLE APPEARANCE	-	clear colorless	--	VISUALLY
4	CALORIFIC VALUE	Cal/gm	272	--	IS:1448(PART-6):1984
5	CARBON	%	1.49	--	CHNS ANALYZER
6	HYDROGEN	%	4.46	--	CHNS ANALYZER
7	NITROGEN	%	1.07	--	CHNS ANALYZER
8	TOTAL SULPHUR	%	0.221	--	CHNS ANALYZER
9	*HALOGEN	%	0.15	--	APHA 4500CL-B
10	*CYANIDE	ppm	<0.01	--	APHA 4500-CN
11	MOISTURE CONTENT	%	94.32	--	IS:2362:1993
12	*ANNEALING LOSS AT 550°C	%	4.8	--	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
13	ASH CONTENT AT 900°C	%	0.53	--	IS 1448 (PART-4) 1984
14	*FLASH POINT	dC	No flash	--	IS: 1448 (P-21) : 1992
15	*COMPATIBILITY TEST	-	Compatible	--	
16	*FLAMMABILITY TEST	-	Not flammable	--	QUALITATIVE ORGANIC ANALYSIS
17	*REACTIVITY AIR / WATER	-	Not Reactive	--	ASTM D-5058-90
18	*REACTIVITY WITH LIME	-	Not Reactive	--	ASTM D-5058-90
19	*REACTIVITY WITH TRIETHYL AMINE	-	Not Reactive	--	ASTM D-5058-90
20	FLUORIDE	mg/Ltr.	BDL	--	APHA 4500--F- C
21	AMMONIACAL NITROGEN	ppm	2	--	APHA 4500 NH3 C

* Parameters are not in NABL scope

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Barcode Id 2cf054b382 Report No/Sample ID TC814119000000631P Report Date 07-Oct-19

Remarks: Sample is suitable for Incineration.

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Barcode Id 40a18146c5 Report No/Sample ID TC814119000000630P Report Date 09-Oct-19

Name Of Customer:	KING ACID AND CHEMICALS CO.		
Address Of Customer:	313/9, GIDC, ANKLESHWAR		
Sample Description:	SOLID WASTE		
Sample Quantity:	1.0 Kg	Sample Received Date:	05-Oct-19
Sampling Location:		Sampling Procedure:	
Sample Collected By	By customer	Analysis Start Date:	06-Oct-19
Packing Details	PLASTIC BAG	Analysis Completion Date:	09-Oct-19
Fuel	--	Sample Type	Hazardous Waste Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	*PHYSICAL STATE	-	Solid	--	VISUALLY
2	*SAMPLE APPEARANCE	-	Brown color solid	--	VISUALLY
3	PH (10% SOLN)	-	9.48	4 to 12	APHA 4500H+B
4	CALORIFIC VALUE	Cal/gm	649	<2500	IS:1448(PART-6):1984
5	*HALOGEN	%	0.26	--	APHA 4500CL-B
6	TOTAL SULPHUR	%	0.647	--	CHNS ANALYZER
7	LOSS ON DRYING AT 110°C	%	24.97	--	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
8	Oil and grease by Soxhlet method	%	0.26	<4.00	
9	*ANNEALING LOSS AT 550°C	%	19.14	<20.0	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
10	ASH CONTENT AT 900°C	%	54.13	--	IS 1448 (PART-4) :1984
11	*FLAMMABILITY TEST	-	Not Flammable	--	QUALITATIVE ORGANIC ANALYSIS
12	*COMPATIBILITY TEST	-	Compatible	--	
13	*PFLT TEST	-	Pass	--	USEPA METHOD 9095B
14	*LRT TEST	ml	0.0	<3.0	USEPA 9096
15	PHENOLIC COMPOUNDS (10% SOLN)	mg/Ltr.	0.092	<100	APHA 5530-D
16	ARSENIC (10% SOLN)	mg/Ltr.	BDL	<1.0	APHA 3111-AS-B
17	LEAD (10% SOLN)	mg/Ltr.	0.4460	<2.0	APHA 3111-PB-B
18	CADMIUM (10% SOLN)	mg/Ltr.	0.0962	<0.2	APHA 3111-B
19	TOTAL CHROMIUM (10% SOLN)	mg/Ltr.	0.0502	--	APHA 3111-CR-B
20	COPPER (10% SOLN)	mg/Ltr.	0.3058	<10.0	APHA 3111-CU-B
21	NICKEL (10% SOLN)	mg/Ltr.	0.3842	<3.0	APHA 3111-NI-B
22	MERCURY (10% SOLN)	mg/Ltr.	BDL	<0.1	APHA 3111-HG-B
23	ZINC (10% SOLN)	mg/Ltr.	0.4513	<10.0	APHA 3111-ZN-B

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Barcode Id 40a18146c5 Report No/Sample ID TC814119000000630P Report Date 09-Oct-19

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
24	FLUORIDE (10% SOLN)	mg/Ltr.	BDL	<50.0	APHA 4500-F- C
25	AMMONIACAL NITROGEN (10% SOLN)	mg/Ltr.	BDL	<1000	APHA 4500 NH3 C
26	*CYANIDE (10% SOLN)	mg/Ltr.	<0.01	<2.0	APHA 4500-CN
27	NITRATE (10% SOLN)	mg/Ltr.	25.54	<30.0	APHA 4500-NO3-D
28	*COD (10% SOLN)	mg/Ltr.	798	--	APHA 5220-B

- Parameters are not in NABL scope

Remarks: Sample is suitable for landfill.

----- END OF REPORT -----


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Page: 1 of 2

Barcode Id 77c4db1638 Report No/Sample ID TC814119000000852P Report Date 19-Dec-19

Name Of Customer:	Gall India Limited GAS processing unit		
Address Of Customer:	GAS processing unit, Gandhar village, Rozatankaria, Amod		
Sample Description:	MOLECULAR AND CERAMIC BALLS		
Sample Quantity:	2 kg	Sample Received Date:	16-Dec-19
Sampling Location:		Sampling Procedure:	
Sample Collected By	By customer	Analysis Start Date:	16-Dec-19
Packing Details	Plastic Bag	Analysis Completion Date:	19-Dec-19
Fuel	---	Sample Type	Hazardous Waste Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	*PHYSICAL STATE	-	Solid	--	VISUALLY
2	*SAMPLE APPEARANCE	-	Light brown color	--	VISUALLY
3	PH (10% SOLN)	-	9.66	4 to 12	APHA 4500H+B
4	CALORIFIC VALUE	Cal/gm	169	<2500	IS:1448(PART-6):1984
5	*HALOGEN	%	0.36	--	APHA 4500CL-B
6	TOTAL SULPHUR	%	0.124	--	CHNS ANALYZER
7	LOSS ON DRYING AT 110°C	%	4.07	--	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
8	Oil and grease by Soxhlet method	%	0.006	<4.00	
9	*ANNEALING LOSS AT 550°C	%	3.64	<20.0	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
10	ASH CONTENT AT 900°C	%	91.08	--	IS 1448 (PART-4):1984
11	*FLAMMABILITY TEST	-	Not Flammable	--	QUALITATIVE ORGANIC ANALYSIS
12	*COMPATIBILITY TEST	-	Compatible	--	
13	*PFLT TEST	-	Pass	--	USEPA METHOD 9095B
14	*LRT TEST	ml	0.0	<3.0	USEPA 9096
15	PHENOLIC COMPOUNDS (10% SOLN)	mg/Ltr.	BDL	<100	APHA 5530-D
16	ARSENIC (10% SOLN)	mg/Ltr.	BDL	<1.0	APHA 3111-AS-B
17	LEAD (10% SOLN)	mg/Ltr.	BDL	<2.0	APHA 3111-PB-B
18	CADMIUM (10% SOLN)	mg/Ltr.	BDL	<0.2	APHA 3111-B
19	TOTAL CHROMIUM (10% SOLN)	mg/Ltr.	0.1202	<0.5	APHA 3111-CR-B
20	COPPER (10% SOLN)	mg/Ltr.	0.0739	<10.0	APHA 3111-CU-B
21	NICKEL (10% SOLN)	mg/Ltr.	BDL	<3.0	APHA 3111-NI-B
22	MERCURY (10% SOLN)	mg/Ltr.	BDL	<0.1	APHA 3111-HG-B
23	ZINC (10% SOLN)	mg/Ltr.	0.0559	<10.0	APHA 3111-ZN-B

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Barcode Id 77c4db1638 Report No/Sample ID TC814119000000852P Report Date 19-Dec-19

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
24	FLUORIDE (10% SOLN)	mg/Ltr.	0.125	<50.0	APHA 4500-F- C
25	AMMONIACAL NITROGEN (10% SOLN)	mg/Ltr.	7	<1000	APHA 4500 NH3 C
26	*CYANIDE (10% SOLN)	mg/Ltr.	<0.01	<2.0	APHA 4500-CN
27	NITRATE (10% SOLN)	mg/Ltr.	7.959	<30.0	APHA 4500-NO3-D
28	*COD (10% SOLN)	mg/Ltr.	54	--	APHA 5220-B

* Parameters are not in NABL scope

Remarks: Sample is suitable for Landfill.

----- END OF REPORT -----

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Barcode Id 83c8bd8753 Report No/Sample ID TC814119000000850P Report Date 19-Dec-19

Name Of Customer:	CARDKEM PHARMA PVT LTD		
Address Of Customer:	CARDKEM PHARMA PVT LTD2301-02,GIDC,ANKLESHWAR		
Sample Description:	Residue waste		
Sample Quantity:	500 gm	Sample Received Date:	16-Dec-19
Sampling Location:		Sampling Procedure:	
Sample Collected By	By Customer	Analysis Start Date:	16-Dec-19
Packing Details	Plastic Bag	Analysis Completion Date:	19-Dec-19
Fuel	--	Sample Type	Hazardous Waste Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	*PHYSICAL STATE	-	Tarry	---	VISUALLY
2	*SAMPLE APPEARANCE	-	Black Colour	---	VISUALLY
3	PH (10% SOLN)	-	2.41	---	APHA 4500H+B
4	CALORIFIC VALUE	Cal/gm	5275	--	IS:1448(PART-6):1984
5	CARBON	%	58.2	---	CHNS ANALYZER
6	HYDROGEN	%	5.72	---	CHNS ANALYZER
7	NITROGEN	%	9.62	---	CHNS ANALYZER
8	TOTAL SULPHUR	%	5.96	---	CHNS ANALYZER
9	*HALOGEN	%	0.53	---	APHA 4500CL-B
10	*CYANIDE	mg/Kg	<0.01	---	APHA 4500-CN
11	LOSS ON DRYING AT 110°C	%	18.51	---	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
12	*ANNEALING LOSS AT 550°C	%	78.02	---	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
13	ASH CONTENT AT 900°C	%	3.45	---	IS 1448 (PART-4) :1984
14	*COMPATIBILITY TEST	-	OK	---	
15	*FLAMMABILITY TEST	-	Flammable	---	QUALITATIVE ORGANIC ANALYSIS
16	*REACTIVITY AIR / WATER	-	Not Reactive	---	ASTM D-5058-90
17	*REACTIVITY WITH LIME	-	Not Reactive	---	ASTM D-5058-90
18	*REACTIVITY WITH TRIETHYL AMINE	-	Not Reactive	---	ASTM D-5058-90
19	FLUORIDE	mg/Kg	0.504	---	APHA 4500-F- C
20	AMMONIACAL NITROGEN	mg/Kg	36929	---	APHA 4500 NH3 C

* Parameters are not in NABL scope

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Barcode Id 83c8bd8753 Report No/Sample ID TC814119000000850P Report Date 19-Dec-19

Remarks: Sample is Suitable for Incineration

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Barcode Id 0d5abf9193 Report No/Sample ID TC814120000000156P Report Date 04-Mar-20

Name Of Customer:	Meridian Enterprises Pvt. Ltd.		
Address Of Customer:	Plot no. 418, GIDC, Kabilpore, Navsari-396424		
Sample Description:	ETP Sludge		
Sample Quantity:	1.0 Kg	Sample Received Date:	27-Feb-20
Sampling Location:		Sampling Procedure:	
Sample Collected By	By customer	Analysis Start Date:	02-Mar-20
Packing Details	Plastic Bag	Analysis Completion Date:	04-Mar-20
Fuel	--	Sample Type	Hazardous Waste Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	*PHYSICAL STATE	-	Solid	--	VISUALLY
2	*SAMPLE APPEARANCE	-	Grey color solid	--	VISUALLY
3	PH (10% SOLN)	-	6.54	4 to 12	APHA 4500H+B
4	CALORIFIC VALUE	Cal/gm	398	<2500	IS:1448(PART-6):1984
5	*HALOGEN	%	1.68	---	APHA 4500CL-B
6	TOTAL SULPHUR	%	1.24	---	CHNS ANALYZER
7	LOSS ON DRYING AT 110°C	%	5.56	---	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
8	Oil and grease by Soxhlet method	%	BDL	<4.00	
9	*ANNEALING LOSS AT 550°C	%	14.68	<20.0	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
10	ASH CONTENT AT 900°C	%	79.69	---	IS 1448 (PART-4) :1984
11	*FLAMMABILITY TEST	-	Not Flammable	--	QUALITATIVE ORGANIC ANALYSIS
12	*COMPATIBILITY TEST	-	Compatible	--	
13	*PFLT TEST	-	Pass	--	USEPA METHOD 9095B
14	*LRT TEST	ml	0.0	<3.0	USEPA 9096
15	PHENOLIC COMPOUNDS (10% SOLN)	mg/Ltr.	0.526	<100	APHA 5530-D
16	ARSENIC (10% SOLN)	mg/Ltr.	BDL	<1.0	APHA 3111-AS-B
17	LEAD (10% SOLN)	mg/Ltr.	BDL	<2.0	APHA 3111-PB-B
18	CADMIUM (10% SOLN)	mg/Ltr.	BDL	<0.2	APHA 3111-B
19	TOTAL CHROMIUM (10% SOLN)	mg/Ltr.	0.0919	--	APHA 3111-CR-B
20	COPPER (10% SOLN)	mg/Ltr.	0.2241	<10.0	APHA 3111-CU-B
21	NICKEL (10% SOLN)	mg/Ltr.	0.1123	<3.0	APHA 3111-NI-B
22	MERCURY (10% SOLN)	mg/Ltr.	BDL	<0.1	APHA 3111-HG-B
23	ZINC (10% SOLN)	mg/Ltr.	0.0651	<10.0	APHA 3111-ZN-B
24	FLUORIDE (10% SOLN)	mg/Ltr.	BDL	<50.0	APHA 4500-F- C



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Barcode Id 0d5abf9193 Report No/Sample ID TC814120000000156P Report Date 04-Mar-20

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
25	AMMONIACAL NITROGEN (10% SOLN)	mg/Ltr.	278	<1000	APHA 4500 NH3 C
26	*CYANIDE (10% SOLN)	mg/Ltr.	<0.01	<2.0	APHA 4500-CN
27	NITRATE (10% SOLN)	mg/Ltr.	13.439	<30.0	APHA 4500-NO3-D
28	*COD (10% SOLN)	mg/Ltr.	245	--	APHA 5220-B

- Parameters are not in NABL scope

Remarks: Sample is suitable for Landfill

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Page: 1 of 2

Barcode Id 78063de2d2 Report No/Sample ID TC814120000000200P Report Date 13-Mar-20

Name Of Customer:	JAY JALARAM ENTERPRISES		
Address Of Customer:	PLOT No.2402/2,GIDC,ANKLESHWAR.		
Sample Description:	SAMPLE C		
Sample Quantity:	2.0 KG	Sample Received Date:	07-Mar-20
Sampling Location:		Sampling Procedure:	
Sample Collected By	By customer	Analysis Start Date:	11-Mar-20
Packing Details	PLASTIC SAMPLE BAG	Analysis Completion Date:	13-Mar-20
Fuel	null	Sample Type	Hazardous Waste Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	*PHYSICAL STATE	-	Solid	--	VISUALLY
2	*SAMPLE APPEARANCE	-	Yellowish Black	--	VISUALLY
3	PH (10% SOLN)	-	7.71	---	APHA 4500H+B
4	CALORIFIC VALUE	Cal/gm	1444	---	IS:1448(PART-6):1984
5	CARBON	%	16.42	---	CHNS ANALYZER
6	HYDROGEN	%	3.16	--	CHNS ANALYZER
7	NITROGEN	%	3.09	---	CHNS ANALYZER
8	TOTAL SULPHUR	%	7.20	--	CHNS ANALYZER
9	*HALOGEN	%	22.63	--	APHA 4500CL-B
10	*CYANIDE	mg/Ltr.	<0.01	--	APHA 4500-CN
11	LOSS ON DRYING AT 110°C	%	24.37	--	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
12	*ANNEALING LOSS AT 550°C	%	22.52	>20.0	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
13	ASH CONTENT AT 900°C	%	53.01	---	IS 1448 (PART-4) :1984
14	*FLASH POINT	dC	No Flash up to 100° C	--	IS: 1448 (P:21) : 1992
15	*COMPATIBILITY TEST	-	Compatible	--	---
16	*FLAMMABILITY TEST	-	Light Flammable	--	QUALITATIVE ORGANIC ANALYSIS
17	*REACTIVITY AIR / WATER	-	Not reactive	--	ASTM D-5058-90
18	*REACTIVITY WITH LIME	-	Not reactive	--	ASTM D-5058-90
19	*REACTIVITY WITH TRIETHYL AMINE	-	Not reactive	--	ASTM D-5058-90
20	FLUORIDE	mg/Ltr.	11.08	--	APHA 4500-F- C
21	AMMONIACAL NITROGEN	mg/Ltr.	13	--	APHA 4500 NH3 C

* Parameters are not in NABL scope



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Page: 2 of 2

Barcode Id 78063de2d2 Report No/Sample ID TC814120000000200P Report Date 13-Mar-20

Remarks: Sample is suitable for Incineration

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Srey A. Jadhav
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Barcode Id 26ecd3f6b5 Report No/Sample ID TC81412000000201P Report Date 13-Mar-20

Name Of Customer:	JAY JALARAM ENTERPRISES		
Address Of Customer:	PLOT No.2402/2,GIDC,ANKLESHWAR.		
Sample Description:	sample D		
Sample Quantity:	2.0 KG	Sample Received Date:	07-Mar-20
Sampling Location:		Sampling Procedure:	
Sample Collected By	By customer	Analysis Start Date:	11-Mar-20
Packing Details	plastic bag	Analysis Completion Date:	13-Mar-20
Fuel	null	Sample Type	Hazardous Waste Sample

Sr. No	Parameters	Unit	Result	Permissible Limit	Method Ref.
1	*PHYSICAL STATE	-	Solid	--	VISUALLY
2	*SAMPLE APPEARANCE	-	Yellow Color	--	VISUALLY
3	PH (10% SOLN)	-	8.18	--	APHA 4500H+B
4	CALORIFIC VALUE	Cal/gm	5934	>2500	IS:1448(PART-6):1984
5	CARBON	%	55.91	--	CHNS ANALYZER
6	HYDROGEN	%	2.19	--	CHNS ANALYZER
7	NITROGEN	%	3.46	--	CHNS ANALYZER
8	TOTAL SULPHUR	%	8.97	--	CHNS ANALYZER
9	*HALOGEN	%	8.09	--	APHA 4500CL-B
10	*CYANIDE	mg/Ltr.	<0.01	--	APHA 4500-CN
11	LOSS ON DRYING AT 110°C	%	14.19	--	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
12	*ANNEALING LOSS AT 550°C	%	80.57	>20.0	STD. METHODS OF CHEMICAL ANALYSIS BY N H SURMAN
13	ASH CONTENT AT 900°C	%	4.89	--	IS 1448 (PART-4) :1984
14	*FLASH POINT	dC	No Flash up to 100° C	---	IS: 1448 (P:21) : 1992
15	*COMPATIBILITY TEST	-	Compatible	--	---
16	*FLAMMABILITY TEST	-	Flammable	--	QUALITATIVE ORGANIC ANALYSIS
17	*REACTIVITY AIR / WATER	-	Not reactive	--	ASTM D-5058-90
18	*REACTIVITY WITH LIME	-	Not reactive	--	ASTM D-5058-90
19	*REACTIVITY WITH TRIETHYL AMINE	-	Not reactive	--	ASTM D-5058-90
20	FLUORIDE	mg/Ltr.	3.08	--	APHA 4500-F- C
21	AMMONIACAL NITROGEN	mg/Ltr.	2735	---	APHA 4500 NH3 C

* Parameters are not in NABL scope



BEIL INFRASTRUCTURE LIMITED

(Formerly known as Bharuch Enviro Infrastructure Ltd.)

ANALYTICAL RESEARCH LABORATORY

TEST REPORT



TC-8141

MoEF Approved Laboratory NABL ACCREDITED LAB (TC-8141) ISO 14001 & BS OHSAS 18001 Certified Laboratory

Page: 2 of 2

Barcode Id 26ecd3f6b5 Report No/Sample ID TC814120000000201P Report Date 13-Mar-20

Remarks: Sample is Suitable for Incineration

----- END OF REPORT -----

Prity A Ret
ANALYSED BY

[Signature]
VERIFIED BY

[Signature]
For BEIL Infrastructure Ltd.
AUTHORIZED BY

Receipt Date From: 01-OCT-2019

FINGERPRINT ANALYSIS REPORT - LANDFILL

Receipt Date To: 31-OCT-2019

Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
1	5bb361f57c			30-SEP-19 21:22:53	01-Oct-2019 05.43	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2970.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
2	2d473efe30			30-SEP-19 21:24:10	01-Oct-2019 05.42	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1460.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
3	ae9f4cd3ab			30-SEP-19 21:30:46	01-Oct-2019 05.41	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	1610.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
4	0ddfd20263			30-SEP-19 22:43:49	01-Oct-2019 05.38	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2780.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
5	656e5acf76			30-SEP-19 22:59:24	01-Oct-2019 05.40	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1550.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
6	04f2056004			01-OCT-19 00:59:49	01-Oct-2019 05.51	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	3680.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
7	9a4d04cbac			01-OCT-19 01:04:56	01-Oct-2019 05.48	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2270.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
8	75786f0d2f			01-OCT-19 01:29:00	01-Oct-2019 05.50	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1680.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
9	bb3fd11cf6			01-OCT-19 01:52:08	01-Oct-2019 05.47	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	850.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
10	010cd1b508			01-OCT-19 02:25:16	01-Oct-2019 05.46	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	1310.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
11	4c16277a7e			01-OCT-19 02:35:08	01-Oct-2019 05.45	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2690.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
12	abfa1d2923			01-OCT-19 05:12:35	01-Oct-2019 06.45	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	1970.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
13	0095dbbc53			01-OCT-19 06:00:27	01-Oct-2019 06.44	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	1650.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
14	05d2be4bbc			01-OCT-19 08:01:34	01-Oct-2019 10.59	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1730.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
15	b7ded6266d			01-OCT-19 08:35:53	01-Oct-2019 10.58	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	2670.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
16	378ebfb762			01-OCT-19 09:44:18	01-Oct-2019 17.46	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	17910.000		COMPATIBLE	NON-FLAMMABLE	17.9	ODOURLESS	PASS	COMPARABLE	NO	44.89	7.5
17	afb6657415			01-OCT-19 10:07:05	01-Oct-2019 11.00	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2480.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
18	ad6190c791			01-OCT-19 10:08:48	01-Oct-2019 11.01	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	2120.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
19	08523f2ebd			01-OCT-19 10:31:11	01-Oct-2019 13.11	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1340.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
20	379ff7e388			01-OCT-19 11:33:21	01-Oct-2019 13.12	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2840.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
21	800109f2f4			01-OCT-19 11:41:18	01-Oct-2019 13.14	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	960.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
22	6e968fa436			01-OCT-19 11:55:46	01-Oct-2019 13.15	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1200.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
23	2b0b4629ad			01-OCT-19 12:10:47	01-Oct-2019 13.12	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1120.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
24	b6377a209f			01-OCT-19 13:22:15	03-Oct-2019 09.52	ETP SLUDGE (34.3)	SOLID	SOLID WASTE	220.000		COMPATIBLE	NON-FLAMMABLE	2.2	ODOURLESS	PASS	COMPARABLE	NO	13.08	7.5
25	1a43f2ead0			01-OCT-19 13:33:28	01-Oct-2019 17.47	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT FROM EVAPORATION	20380.000		COMPATIBLE	NON-FLAMMABLE	3.2	ODOURLESS	NOT PASS	COMPARABLE	NO	14.15	7.5
26	5c8959c216			01-OCT-19 14:28:34	01-Oct-2019 17.52	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2270.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
27	6c526f7104			01-OCT-19 14:30:13	01-Oct-2019 21.36	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2700.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
28	b32fe49668			01-OCT-19 14:33:23	01-Oct-2019 21.35	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2480.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
29	39ce37a5b1			01-OCT-19 15:02:40	01-Oct-2019 21.34	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2730.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
30	f186bb2eb3			01-OCT-19 15:08:53	01-Oct-2019 21.34	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	1960.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
31	ac3f592cbe			01-OCT-19 15:30:09	01-Oct-2019 17.49	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	14050.000		COMPATIBLE	NON-FLAMMABLE	9.3	ODOURLESS	NOT PASS	COMPARABLE	NO	71.28	7.5
32	3846e974e4			01-OCT-19 15:31:30	01-Oct-2019 21.28	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	1940.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
33	9d00a2b9ff			01-OCT-19 15:34:17	01-Oct-2019 17.50	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	14360.000		COMPATIBLE	NON-FLAMMABLE	10.0	ODOURLESS	NOT PASS	COMPARABLE	NO	71.78	7.5
34	39ba936ebd			01-OCT-19 15:43:05	01-Oct-2019 17.51	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	400.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
35	f06162a7e3			01-OCT-19 15:44:55	01-Oct-2019 21.26	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	750.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
36	f980274923			01-OCT-19 16:00:06	01-Oct-2019 21.25	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2700.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
1	c4c226fe91			30-OCT-19 14:40:28	02-Nov-2019 17.12	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	1380.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
2	c617253c41			30-OCT-19 15:06:49	02-Nov-2019 17.13	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2970.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
3	000ff2817b			30-OCT-19 18:16:42	01-Nov-2019 16.19	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	12990.000		COMPATIBLE	NON-FLAMMABLE	30.5	ODOURLESS	PASS	COMPARABLE	NO	69.29	7.5
4	24a2cccb60			31-OCT-19 21:57:33	01-Nov-2019 00.11	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1250.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
5	309222b343			31-OCT-19 22:02:17	01-Nov-2019 00.12	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	1740.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
6	05f842efeb			31-OCT-19 22:26:13	01-Nov-2019 00.12	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2570.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
7	d3af27090f			31-OCT-19 22:48:43	01-Nov-2019 00.13	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1380.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
8	f7e51c2a08			31-OCT-19 23:12:26	01-Nov-2019 00.13	INCINERATION ASH (36.2)	SOLID	P_2 GCT ASH	12570.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
9	7e101c8543			31-OCT-19 23:26:34	01-Nov-2019 01.56	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1340.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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10	6dbb5392ba			31-OCT-19 23:47:35	01-Nov-2019 01.54	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2320.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
11	404273fef4			01-NOV-19 00:32:48	01-Nov-2019 01.58	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1140.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
12	3ad3490da6			01-NOV-19 01:21:50	01-Nov-2019 01.57	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1670.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
13	1b7c501f0e			01-NOV-19 01:29:20	01-Nov-2019 01.55	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	1690.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
14	e9ffbd6791			01-NOV-19 01:31:27	01-Nov-2019 01.56	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	740.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
15	1094c063f9			01-NOV-19 02:29:39	01-Nov-2019 05.13	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1080.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
16	790a2d3855			01-NOV-19 02:47:58	01-Nov-2019 05.14	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	1190.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
17	8d8718b11f			01-NOV-19 03:40:14	01-Nov-2019 05.15	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	1590.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
18	3ccace50d0			01-NOV-19 03:43:28	01-Nov-2019 05.16	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	3390.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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19	583cec8a6c			01-NOV-19 04:41:48	01-Nov-2019 05.16	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	1390.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
20	0f2b8c9fb9			01-NOV-19 05:22:33	01-Nov-2019 06.23	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1880.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
21	acca697be8			01-NOV-19 05:24:01	01-Nov-2019 06.22	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2210.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
22	22146223d8			01-NOV-19 05:25:17	01-Nov-2019 06.23	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	1810.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
23	c8521de1f4			01-NOV-19 08:05:19	01-Nov-2019 15.59	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2170.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
24	32d49abdde			01-NOV-19 14:24:10	01-Nov-2019 17.20	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT FROM EVAPORATION	15175.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	21.49	7.5
25	f6ceb7e0			01-NOV-19 14:28:39	01-Nov-2019 17.20	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT FROM EVAPORATION	17635.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	9.25	7.5
26	1b34d68bd7			01-NOV-19 14:33:07	01-Nov-2019 17.19	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT FROM EVAPORATION	15545.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	8.34	7.5
27	cdf7f9945c			01-NOV-19 14:40:37	01-Nov-2019 16.02	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	580.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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28	f4c3057d92			01-NOV-19 14:45:27	01-Nov-2019 15.58	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1130.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
29	ec1e797c69			01-NOV-19 14:48:30	02-Nov-2019 17.06	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2530.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
30	7831d1593f			01-NOV-19 14:50:36	02-Nov-2019 17.11	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	1860.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
31	a51022764d			01-NOV-19 14:53:06	02-Nov-2019 17.06	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2650.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
32	58705a9c49			01-NOV-19 15:19:16	01-Nov-2019 18.38	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT FROM EVAPORATION	18560.0 00		COMPATIBLE	NON-FLAMMABLE	26.4	ODOURLESS	NOT PASS	COMPARABLE	NO	40.0	7.5
33	973d360b21			01-NOV-19 15:20:47	02-Nov-2019 17.10	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	3230.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
34	bf16b90abd			01-NOV-19 15:21:48	02-Nov-2019 17.10	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	1130.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
35	21a4f4a65c			01-NOV-19 15:30:39	02-Nov-2019 17.09	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2390.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
36	23ea8710d3			01-NOV-19 15:32:04	02-Nov-2019 17.08	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2330.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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1	9b7e3090fc			21-NOV-19 14:17:02	02-Dec-2019 13.06	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	DEAD BIOMASS	4310.000		COMPATIBLE	NON-FLAMMABLE	0.0	ODOURLESS	PASS	COMPARABLE	NO	9.01	7.5
2	201972e7d8			29-NOV-19 10:33:11	02-Dec-2019 11.07	NON RECYCLE WASTE (33.3)	NON RECYCLE WASTE	NRP WASTE	350.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
3	bde2cec357			30-NOV-19 13:41:40	01-Dec-2019 12.35	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1910.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
4	1cc38ad19f			30-NOV-19 14:45:54	01-Dec-2019 12.22	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	1850.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
5	4223818327			30-NOV-19 16:10:34	01-Dec-2019 12.28	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT	18420.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	11.86	7.5
6	1a1c2e5821			30-NOV-19 16:12:20	02-Dec-2019 11.11	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	13730.000		COMPATIBLE	NON-FLAMMABLE	5.00	ODOURLESS	PASS	COMPARABLE	NO	29.22	7.5
7	a3d483738e			30-NOV-19 16:14:30	02-Dec-2019 11.31	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	17730.000		COMPATIBLE	NON-FLAMMABLE	14.8	ODOURLESS	PASS	COMPARABLE	NO	30.18	7.5
8	ad24f5ac49			30-NOV-19 16:32:22	01-Dec-2019 13.20	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	2130.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
9	cea6bbb991			30-NOV-19 16:35:48	01-Dec-2019 12.30	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	3640.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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10	80737371c8			30-NOV-19 16:37:40	01-Dec-2019 12.33	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	19340.000		COMPATIBLE	NON-FLAMMABLE	18.4	ODOURLESS	PASS	COMPARABLE	NO	64.31	7.5
11	8d73ca7575			30-NOV-19 16:42:33	01-Dec-2019 12.31	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT	20630.000		COMPATIBLE	NON-FLAMMABLE	7.8	ODOURLESS	NOT PASS	COMPARABLE	NO	28.40	7.5
12	d6644a414a			30-NOV-19 16:47:15	01-Dec-2019 12.32	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	13785.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	19.86	7.5
13	e5f2df7c90			30-NOV-19 16:49:39	01-Dec-2019 12.30	INSULATION WASTE (31.1)	NON RECYCLE WASTE	INSULATION WASTE	730.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
14	8c2b093bd9			30-NOV-19 16:51:06	01-Dec-2019 12.29	NON RECYCLE WASTE (33.3)	NON RECYCLE WASTE	NRP WASTE	375.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
15	9bb75521ca			30-NOV-19 16:57:05	01-Dec-2019 12.37	INSULATION WASTE (31.1)	NON RECYCLE WASTE	INSULATION WASTE	610.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
16	7622c4f5f4			30-NOV-19 16:59:01	01-Dec-2019 12.35	INSULATION WASTE (31.1)	NON RECYCLE WASTE	INSULATION WASTE	630.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
17	d3095fe374			30-NOV-19 17:01:09	01-Dec-2019 13.11	ETP SLUDGE (34.3)	SOLID	BRINE SLUDGE	16640.000		COMPATIBLE	NON-FLAMMABLE	8.2	ODOURLESS	PASS	COMPARABLE	NO	34.10	7.5
18	91b5749f35			30-NOV-19 17:02:45	01-Dec-2019 12.36	NON RECYCLE WASTE (33.3)	NON RECYCLE WASTE	NRP WASTE	490.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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19	ccb80295b8			30-NOV-19 17:04:28	01-Dec-2019 13.12	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	18700.000		COMPATIBLE	NON-FLAMMABLE	21.8	ODOURLESS	NOT PASS	COMPARABLE	NO	48.10	7.5
20	5e2611c2b0			30-NOV-19 17:06:34	01-Dec-2019 13.13	ETP SLUDGE (34.3)	SOLID	GYPSUM SLUDGE	14055.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	19.41	7.5
21	3e351f95e5			30-NOV-19 17:09:19	01-Dec-2019 13.14	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	19110.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	16.49	7.5
22	00ddd778c9			30-NOV-19 17:14:04	01-Dec-2019 13.17	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT	9650.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	5.33	7.5
23	3496af4a52			30-NOV-19 17:51:06	01-Dec-2019 13.18	NON RECYCLE WASTE (33.3)	NON RECYCLE WASTE	NRP WASTE	735.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
24	ee57df8722			30-NOV-19 17:54:40	01-Dec-2019 13.19	ETP SLUDGE (34.3)	SOLID	GYPSUM SLUDGE	13425.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	21.17	7.5
25	242e5055cc			30-NOV-19 17:57:40	01-Dec-2019 13.20	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT WASTE	19580.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	7.48	7.5
26	5b02a10545			30-NOV-19 17:59:53	01-Dec-2019 13.14	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	11850.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
27	707cba200d			30-NOV-19 20:59:52	01-Dec-2019 12.24	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	1700.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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28	c4d9f1fa3e			30-NOV-19 21:04:13	01-Dec-2019 12.26	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1350.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
29	a3031f09f3			30-NOV-19 22:18:21	01-Dec-2019 12.27	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	2490.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
30	b169786253			30-NOV-19 22:22:49	01-Dec-2019 13.15	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2030.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
31	750ae38443			30-NOV-19 23:18:46	01-Dec-2019 13.19	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	2240.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
32	1d9f78f225			01-DEC-19 00:39:38	01-Dec-2019 13.12	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2440.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
33	d4a3f989d0			01-DEC-19 00:44:38	01-Dec-2019 12.33	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	2260.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
34	73f7ebecb			01-DEC-19 01:11:55	01-Dec-2019 12.20	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	1560.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
35	c9fd050230			01-DEC-19 01:48:01	01-Dec-2019 12.23	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1670.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
36	b4af65e86f			01-DEC-19 02:05:14	01-Dec-2019 13.10	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	4300.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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1	cbeebdb10f			01-JUL-19 13:54:24	29-Jan-2020 16.03	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	2260.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
2	bf040ee105			05-JUL-19 10:34:31	29-Jan-2020 16.03	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1240.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
3	386cec60b3			11-JUL-19 16:09:18	31-Jan-2020 10.50	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	2050.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
4	ef5c2c682f			31-DEC-19 15:15:07	01-Jan-2020 11.48	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	19720.00 00		COMPATIBLE	NON-FLAMMABLE	14.0	ODOURLESS	PASS	COMPARABLE	NO	62.75	7.5
5	2283c28ffd			31-DEC-19 15:56:41	01-Jan-2020 10.44	PROCESS RESIDUE WASTE (29.1)	SOLID	SOLID WASTE	7510.00 0		COMPATIBLE	NON-FLAMMABLE	1.2	ODOURLESS	PASS	COMPARABLE	NO	13.18	4.00
6	93c6b2f01e			31-DEC-19 15:59:50	01-Jan-2020 10.21	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	2300.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
7	f1ca350a8b			31-DEC-19 16:06:04	01-Jan-2020 10.06	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT WASTE	19330.00 00	18.52	COMPATIBLE	NON-FLAMMABLE	0.0	ODOURLESS	PASS	COMPARABLE	NO	13.08	7.5
8	ab2f39fc35			31-DEC-19 16:39:30	01-Jan-2020 10.08	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT WASTE	17460.00 00	19.21	COMPATIBLE	NON-FLAMMABLE	0.0	ODOURLESS	PASS	COMPARABLE	NO	14.12	7.5
9	15610e8b5e			31-DEC-19 17:07:40	01-Jan-2020 14.50	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	3490.00 0		COMPATIBLE	NON-FLAMMABLE	10.5	ODOURLESS	PASS	COMPARABLE	NO	62.74	7.5

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10	55deeab4d8			31-DEC-19 17:51:37	01-Jan-2020 10.10	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	13700.000		COMPATIBLE	NON-FLAMMABLE	8.5	ODOURLESS	PASS	COMPARABLE	NO	44.16	7.5
11	4bd7696d1c			31-DEC-19 18:10:28	01-Jan-2020 10.05	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	10520.000		COMPATIBLE	NON-FLAMMABLE	25.3	ODOURLESS	PASS	COMPARABLE	NO	65.62	7.5
12	e09a5d6070			31-DEC-19 18:21:13	01-Jan-2020 09.24	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	1360.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
13	3839bcf899			31-DEC-19 22:38:57	01-Jan-2020 04.07	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2320.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
14	91f8a94112			31-DEC-19 23:22:00	01-Jan-2020 04.06	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	2830.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
15	ed46f2d7d4			31-DEC-19 23:38:09	01-Jan-2020 04.05	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	3670.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
16	d0cdb693e			31-DEC-19 23:47:13	01-Jan-2020 04.09	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2850.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
17	becbb3bc59			01-JAN-20 01:26:45	01-Jan-2020 04.16	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	1720.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
18	b052f37c22			01-JAN-20 01:32:37	01-Jan-2020 04.06	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1800.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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19	0af752c83a			01-JAN-20 01:45:05	01-Jan-2020 04.08	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	740.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
20	fb48a3d842			01-JAN-20 02:26:24	01-Jan-2020 04.15	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	3210.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
21	e54f74d6a3			01-JAN-20 03:00:25	01-Jan-2020 04.17	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	2210.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
22	de87f86319			01-JAN-20 03:01:53	01-Jan-2020 04.14	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	4490.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
23	6414720055			01-JAN-20 03:38:28	01-Jan-2020 04.14	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	4520.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
24	e6e38a53ce			01-JAN-20 03:43:45	01-Jan-2020 04.13	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1870.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
25	e6fab93404			01-JAN-20 04:16:44	01-Jan-2020 06.53	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	2430.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
26	c366c54dc8			01-JAN-20 07:39:55	01-Jan-2020 19.32	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	23470.000		COMPATIBLE	NON-FLAMMABLE	19.8	ODOURLESS	PASS	COMPARABLE	NO	68.92	7.5
27	6f61ecd0d8			01-JAN-20 09:40:50	01-Jan-2020 19.36	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	13980.000		COMPATIBLE	NON-FLAMMABLE	5.0	ODOURLESS	PASS	COMPARABLE	NO	61.08	7.5

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28	4206dd9365			01-JAN-20 09:43:04	01-Jan-2020 19.35	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	13180.000		COMPATIBLE	NON-FLAMMABLE	4.6	ODOURLESS	PASS	COMPARABLE	NO	58.78	7.5
29	4d854a0205			01-JAN-20 09:53:50	01-Jan-2020 19.37	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	16720.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	6.98	7.5
30	31ad7d0627			01-JAN-20 09:58:04	01-Jan-2020 19.33	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	18730.000		COMPATIBLE	NON-FLAMMABLE	9.9	ODOURLESS	NOT PASS	COMPARABLE	NO	63.74	7.5
31	00e09e4862			01-JAN-20 10:04:25	01-Jan-2020 19.37	NON RECYCLE WASTE (33.3)	NON RECYCLE WASTE	NRP WASTE	640.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
32	ec617dfa89			01-JAN-20 10:10:09	01-Jan-2020 19.33	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	18380.000		COMPATIBLE	NON-FLAMMABLE	11.8	ODOURLESS	NOT PASS	COMPARABLE	NO	32.74	7.5
33	a8a39fd73c			01-JAN-20 10:15:49	01-Jan-2020 19.39	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	16050.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	8.12	7.5
34	b31215dc3f			01-JAN-20 10:17:27	01-Jan-2020 19.39	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	17100.000		COMPATIBLE	NON-FLAMMABLE	0.00	ODOURLESS	PASS	COMPARABLE	NO	7.38	7.5
35	865ec7a264			01-JAN-20 10:24:13	01-Jan-2020 19.41	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	15800.000		COMPATIBLE	NON-FLAMMABLE	17.2	ODOURLESS	PASS	COMPARABLE	NO	71.72	7.5
36	858c0aac2d			01-JAN-20 10:29:56	01-Jan-2020 19.34	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	6870.000		COMPATIBLE	NON-FLAMMABLE	15.8	ODOURLESS	NOT PASS	COMPARABLE	NO	67.62	7.5

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
1	3db66731b4			16-JUL-19 09:46:39	03-Feb-2020 11.59	INCINERATION ASH (36.2)	SOLID	BUNKER SLUDGE-1	2130.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
2	f0e271720f			29-JUL-19 22:04:00	03-Feb-2020 11.56	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	2000.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
3	af1cf02e79			05-AUG-19 11:10:27	03-Feb-2020 11.57	INCINERATION ASH (36.2)	SOLID	P_2 GCT ASH	2980.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
4	d8008531ea			17-AUG-19 10:23:44	03-Feb-2020 12.01	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	2220.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
5	39c6e7542e			01-SEP-19 08:04:23	05-Feb-2020 10.58	INCINERATION ASH (36.2)	SOLID	P_2 GCT ASH	4090.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
6	07f112de394			02-SEP-19 16:34:53	05-Feb-2020 11.00	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	2200.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
7	ddf25bbb6a			12-SEP-19 05:11:56	05-Feb-2020 11.07	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2980.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
8	be1f33b3d4			05-OCT-19 09:41:48	05-Feb-2020 12.03	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	1540.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
9	a06e6f93c0			05-OCT-19 17:41:09	05-Feb-2020 12.05	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	950.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
10	a1b16135b2			26-OCT-19 23:00:19	05-Feb-2020 12.06	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	0.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
11	b3f78f1160			26-OCT-19 23:30:23	05-Feb-2020 12.08	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	0.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
12	6e18589ec0			09-NOV-19 04:36:58	05-Feb-2020 12.11	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1510.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
13	6cdb04e58d			20-NOV-19 13:11:16	04-Feb-2020 16.48	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	2010.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
14	1765e5b88a			25-NOV-19 16:42:03	04-Feb-2020 16.53	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	400.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
15	574811c71e			02-DEC-19 11:27:14	04-Feb-2020 16.51	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	3300.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
16	62fc3683b4			26-DEC-19 12:03:46	04-Feb-2020 16.52	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1150.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
17	d020af825f			18-JAN-20 14:23:48	04-Feb-2020 16.54	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2200.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
18	8ab6d671ab			31-JAN-20 12:37:18	01-Feb-2020 09.13	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2420.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
19	34b21a634e			31-JAN-20 14:40:02	01-Feb-2020 09.09	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	15230.000	15.85	COMPATIBLE	NON-FLAMMABLE	0.0	ODOURLESS	PASS	COMPARABLE	NO	6.12	7.5
20	61f6f0be16			31-JAN-20 16:38:56	01-Feb-2020 09.40	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	11780.000		COMPATIBLE	NON-FLAMMABLE	5.6	ODOURLESS	PASS	COMPARABLE	NO	38.16	7.5
21	5e2e90b6b6			31-JAN-20 16:41:09	01-Feb-2020 09.38	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	13540.000		COMPATIBLE	NON-FLAMMABLE	7.0	ODOURLESS	PASS	COMPARABLE	NO	44.20	7.5
22	709ea61372			31-JAN-20 16:45:32	01-Feb-2020 09.48	NON RECYCLE WASTE (33.3)	NON RECYCLE WASTE	NRP WASTE	2170.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
23	a40ea43632			31-JAN-20 17:28:45	01-Feb-2020 09.36	PROCESS RESIDUE WASTE (29.1)	SOLID	PROCESS WASTE	12160.000	6.60	COMPATIBLE	NON-FLAMMABLE	10.2	ODOURLESS	PASS	COMPARABLE	NO	49.01	7.5
24	4c057b307c			31-JAN-20 17:30:32	01-Feb-2020 09.35	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	10500.000		COMPATIBLE	NON-FLAMMABLE	10.5	ODOURLESS	PASS	COMPARABLE	NO	68.20	4.0
25	b162a428d7			31-JAN-20 17:35:36	01-Feb-2020 09.41	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	16130.000		COMPATIBLE	NON-FLAMMABLE	17.2	ODOURLESS	PASS	COMPARABLE	NO	62.11	7.5
26	0855d8b93c			31-JAN-20 17:39:33	01-Feb-2020 09.37	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	18190.000		COMPATIBLE	NON-FLAMMABLE	13.5	ODOURLESS	PASS	COMPARABLE	NO	56.43	7.5
27	251d443c59			31-JAN-20 23:01:13	01-Feb-2020 04.05	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	1110.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
28	c1075085cf			31-JAN-20 23:06:31	01-Feb-2020 04.04	INCINERATION ASH (36.2)	SOLID	P_2 GCT ASH	1490.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
29	7cc457ad59			31-JAN-20 23:08:34	01-Feb-2020 04.04	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	3110.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
30	e0d1658b3d			01-FEB-20 00:52:56	01-Feb-2020 04.05	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1530.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
31	c65fed2d9			01-FEB-20 01:19:06	01-Feb-2020 04.01	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1320.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
32	49497c912b			01-FEB-20 01:57:24	01-Feb-2020 03.59	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	1040.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
33	49a57a82d6			01-FEB-20 01:58:58	01-Feb-2020 04.00	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1500.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
34	fc87eb68a9			01-FEB-20 02:08:46	01-Feb-2020 03.58	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	4620.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
35	8727e0f82d			01-FEB-20 02:39:08	01-Feb-2020 06.34	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1940.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
36	a3f4a0594e			01-FEB-20 02:42:05	01-Feb-2020 06.34	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	1660.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
1	d3bb20c3b0			29-FEB-20 10:20:02	01-Mar-2020 09.19	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	15970.000		COMPATIBLE	NON-FLAMMABLE	15.6	ODOURLESS	NOT PASS	COMPARABLE	NO	69.23	7.5
2	2123cdf689			29-FEB-20 13:53:34	01-Mar-2020 09.28	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	17320.000		COMPATIBLE	NON-FLAMMABLE	9.8	ODOURLESS	NOT PASS	COMPARABLE	NO	53.14	7.5
3	3001831eb1			29-FEB-20 14:17:40	01-Mar-2020 11.28	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	2780.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
4	639447ac9c			29-FEB-20 14:23:51	01-Mar-2020 09.31	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	15360.000		COMPATIBLE	NON-FLAMMABLE	14.0	ODOURLESS	NOT PASS	COMPARABLE	NO	31.32	7.5
5	807da25b48			29-FEB-20 14:52:13	01-Mar-2020 11.28	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	1910.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
6	df717765c1			29-FEB-20 14:53:18	01-Mar-2020 11.27	KITCHEN/GARDEN WASTE, CONSTRUCTION WASTE (NO CATEGORY)	SOLID	KITCHEN WASTE	1910.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
7	ff5dd41a3f			29-FEB-20 23:12:46	01-Mar-2020 04.39	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	1890.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
8	83baa446df			01-MAR-20 00:40:06	01-Mar-2020 04.38	INCINERATION ASH (36.2)	SOLID	P_1 GCT ASH	2440.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
9	7794ee7687			01-MAR-20 01:28:03	01-Mar-2020 04.38	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1400.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
10	4d4679effc			01-MAR-20 02:02:26	01-Mar-2020 04.37	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1560.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
11	034140fc1a			01-MAR-20 02:26:32	01-Mar-2020 06.51	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	930.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
12	1705c594cc			01-MAR-20 03:01:35	01-Mar-2020 06.50	INCINERATION ASH (36.2)	SOLID	P_1 BURNT ASH	3260.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
13	0abd22f8b2			01-MAR-20 03:12:19	01-Mar-2020 06.49	INCINERATION ASH (36.2)	SOLID	P_2 BURNT ASH	1740.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
14	8b3689b1e6			01-MAR-20 03:22:12	01-Mar-2020 06.48	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	1000.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
15	cd3690428b			01-MAR-20 06:00:54	01-Mar-2020 06.47	INCINERATION ASH (36.2)	SOLID	P_2 LIME ASH	890.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
16	3077e70275			01-MAR-20 06:12:56	01-Mar-2020 06.47	INCINERATION ASH (36.2)	SOLID	P_1 LIME ASH	1640.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
17	b8873dd387			01-MAR-20 08:30:41	01-Mar-2020 11.26	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2200.00 0		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
18	24cccedb92			01-MAR-20 08:49:39	01-Mar-2020 18.48	INSULATION WASTE (31.1)	NON RECYCLE WASTE	INSULATION WASTE	870.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
19	2a561cb269			01-MAR-20 08:51:19	01-Mar-2020 18.52	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	11140.000		COMPATIBLE	NON-FLAMMABLE	5.0	ODOURLESS	NOT PASS	COMPARABLE	NO	68.56	7.5
20	7c2a8db860			01-MAR-20 08:52:15	01-Mar-2020 11.25	PROCESS RESIDUE WASTE (29.1)	SOLID	MEE SALT BEIL	2270.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
21	979c0849b7			01-MAR-20 08:54:17	01-Mar-2020 18.53	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	10120.000		COMPATIBLE	NON-FLAMMABLE	5.5	ODOURLESS	NOT PASS	COMPARABLE	NO	74.12	7.5
22	b473cea9b5			01-MAR-20 08:56:23	01-Mar-2020 19.19	ETP SLUDGE (34.3)	SOLID	BRINE SLUDGE	13540.000		COMPATIBLE	NON-FLAMMABLE	5.0	ODOURLESS	PASS	COMPARABLE	NO	40.12	7.5
23	5ab8b099f3			01-MAR-20 08:58:07	01-Mar-2020 18.48	ETP SLUDGE (34.3)	SOLID	BRINE SLUDGE	14070.000		COMPATIBLE	NON-FLAMMABLE	5.3	ODOURLESS	PASS	COMPARABLE	NO	38.60	7.5
24	63e0eb9388			01-MAR-20 09:01:23	01-Mar-2020 19.33	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT	16260.000		COMPATIBLE	NON-FLAMMABLE	0.0	ODOURLESS	PASS	COMPARABLE	NO	10.01	7.5
25	efdc483e19			01-MAR-20 09:03:16	01-Mar-2020 19.21	ETP SLUDGE (34.3)	SOLID	BRINE SLUDGE	14190.000		COMPATIBLE	NON-FLAMMABLE	4.8	ODOURLESS	PASS	COMPARABLE	NO	40.44	7.5
26	9031805d87			01-MAR-20 09:04:20	01-Mar-2020 10.39	INCINERATION ASH (36.2)	SOLID	P_2 GCT ASH	3940.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
27	bd273a4e25			01-MAR-20 09:05:02	01-Mar-2020 10.40	INCINERATION ASH (36.2)	SOLID	P_2 GCT ASH	1470.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		

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Sr No	ID	MANIFEST	CUSTOMER	Inward Date	Analysis Date	Waste Type / Category No	Physical State	Product Code	Quantity (KG)	*ANNEALING LOSS	*COMPATIBILITY TEST	*FLAMMABILITY TEST	*LRT TEST	*ODOUR	*PFLT TEST	COMPARISON WITH STD	METAL STABILIZATION REQUIRED	MOISTURE CONTENT	PH
28	37f3c811c9			01-MAR-20 09:06:24	01-Mar-2020 19.22	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	17960.000		COMPATIBLE	NON-FLAMMABLE	11.1	ODOURLESS	PASS	COMPARABLE	NO	37.15	7.5
29	b563f973dd			01-MAR-20 09:10:09	01-Mar-2020 18.54	ETP SLUDGE (34.3)	SOLID	ETP SLUDGE	18960.000		COMPATIBLE	NON-FLAMMABLE	14.0	ODOURLESS	NOT PASS	COMPARABLE	NO	37.19	7.5
30	2591d24a50			01-MAR-20 09:11:58	01-Mar-2020 19.34	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT	16500.000		COMPATIBLE	NON-FLAMMABLE	0.0	ODOURLESS	PASS	COMPARABLE	NO	9.80	7.5
31	fff94d133f			01-MAR-20 09:18:43	01-Mar-2020 18.49	NON RECYCLE WASTE (33.3)	NON RECYCLE WASTE	NRP WASTE	1090.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
32	1f61317aba			01-MAR-20 09:20:27	01-Mar-2020 18.55	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT	16930.000		COMPATIBLE	NON-FLAMMABLE	7.5	ODOURLESS	NOT PASS	COMPARABLE	NO	31.26	7.5
33	999682bd24			01-MAR-20 09:23:55	01-Mar-2020 18.50	NON RECYCLE WASTE (33.3)	NON RECYCLE WASTE	NRP WASTE	1340.000		COMPATIBLE	NON-FLAMMABLE		ODOURLESS	PASS	COMPARABLE	NO		
34	c2b8ef59a2			01-MAR-20 09:25:47	01-Mar-2020 19.36	PROCESS RESIDUE WASTE (29.1)	SOLID	PROCESS WASTE	11010.000		COMPATIBLE	NON-FLAMMABLE	0.0	ODOURLESS	PASS	COMPARABLE	NO	14.60	7.5
35	558358df09			01-MAR-20 09:27:32	01-Mar-2020 19.39	PROCESS RESIDUE WASTE (29.1)	SOLID	PROCESS WASTE	16745.000		COMPATIBLE	NON-FLAMMABLE	0.0	ODOURLESS	PASS	COMPARABLE	NO	16.40	7.5
36	bc05ab8eaf			01-MAR-20 09:38:08	01-Mar-2020 19.38	PROCESS RESIDUE WASTE (29.1)	SOLID	SALT WASTE	19290.000		COMPATIBLE	NON-FLAMMABLE	0.0	ODOURLESS	PASS	COMPARABLE	NO	12.80	7.5

Phase- I Monitoring of Gas Vent Provided in SLFUU

Annexure-V Page1/3

Sr No	Location	VOC			H ₂ S		
		Results in ppb			Results in ppb		
		19-Oct-19	14-Nov-19	11-Dec-19	19-Oct-19	14-Nov-19	11-Dec-19
1	VENT-08	BDL	BDL	1.00	BDL	BDL	BDL
2	VENT-09	BDL	BDL	BDL	BDL	BDL	BDL
3	VENT-11	BDL	BDL	BDL	BDL	BDL	BDL
4	VENT-14	1.00	BDL	1.00	BDL	BDL	1.00
5	VENT-15	BDL	1.00	BDL	BDL	BDL	BDL
6	VENT-17	BDL	BDL	BDL	1.00	BDL	BDL
7	VENT-18	BDL	BDL	BDL	BDL	BDL	BDL
8	VENT-19	BDL	BDL	BDL	BDL	BDL	BDL
9	VENT-21	BDL	BDL	BDL	BDL	BDL	BDL
10	VENT-22	BDL	1.00	BDL	BD L	BDL	BDL
11	VENT-23	BDL	BDL	BDL	BDL	1.00	BDL
12	VENT-24	BDL	BDL	1.00	BDL	BDL	BDL
13	VENT-25	BDL	BDL	BDL	BDL	BDL	BDL

For BEIL INFRASTRUCTURE LTD.


Mr. Ajay Patel
(Executive-QA)


Mr. Sathish Gaddam
(Sr. Manager-QA)

Phase- II Monitoring of Gas Vent Provided in SLF

Annexure-V Page2/3

Sr No	Location	VOC			H ₂ S		
		Results in ppb			Results in ppb		
		19-Oct-19	14-Nov-19	11-Dec-19	19-Oct-19	14-Nov-19	11-Dec-19
1	VENT-3	BDL	BDL	BDL	BDL	BDL	BDL
2	VENT-7	BDL	BDL	BDL	BDL	BDL	BDL
3	VENT-8	BDL	BDL	BDL	BDL	BDL	BDL
4	VENT-09	BDL	1.00	BDL	BDL	BDL	BDL
5	VENT-10	BDL	BDL	1.00	BDL	BDL	BDL
6	VENT-12	BDL	BDL	BDL	BDL	BDL	BDL
7	VENT-14	BDL	BDL	BDL	BDL	BDL	BDL
8	VENT-15	BDL	BDL	BDL	BDL	BDL	BDL
9	VENT-16	BDL	BDL	BDL	BDL	BDL	BDL
10	VENT-24	BDL	BDL	BDL	BDL	BDL	BDL
11	VENT-25	BDL	1.00	BDL	BDL	BDL	BDL
12	VENT-26	BDL	BDL	1.00	BDL	BDL	1.00
13	VENT-27	BDL	BDL	BDL	BDL	BDL	BDL
14	VENT-28	BDL	BDL	BDL	BDL	BDL	BDL
15	VENT-29	BDL	BDL	BDL	BDL	1.00	BDL
16	VENT-30	BDL	BDL	BDL	BDL	BDL	BDL
20	VENT-31	BDL	BDL	BDL	BDL	BDL	BDL
21	VENT-32	BDL	BDL	BDL	BDL	BDL	BDL
22	VENT-33	BDL	BDL	BDL	BDL	BDL	BDL
23	VENT-34	BDL	BDL	1.00	BDL	BDL	BDL
24	VENT-35	BDL	BDL	BDL	BDL	BDL	BDL
25	VENT-36	1.00	BDL	BDL	BDL	BDL	BDL
26	VENT-37	BDL	BDL	BDL	1.00	BDL	BDL
27	VENT-38	BDL	BDL	BDL	BDL	1.00	1.00
28	VENT-39	BDL	BDL	BDL	BDL	BDL	BDL
29	VENT-40	BDL	BDL	BDL	BDL	BDL	BDL
30	VENT-41	BDL	BDL	BDL	BDL	BDL	BDL
31	VENT-42	BDL	BDL	1.00	BDL	BDL	BDL
32	VENT-43	BDL	1.00	BDL	BDL	BDL	BDL
33	VENT-44	BDL	BDL	BDL	BDL	BDL	BDL
34	VENT-45	1.00	BDL	1.00	BDL	BDL	BDL
35	VENT-46	BDL	BDL	BDL	BDL	BDL	BDL
36	VENT-47	BDL	1.00	BDL	BDL	BDL	BDL
37	VENT-48	BDL	BDL	BDL	BDL	BDL	1.00
38	VENT-49	BDL	BDL	1.00	BDL	BDL	BDL
39	VENT-50	BDL	BDL	BDL	BDL	BDL	BDL
40	VENT-51	BDL	1.00	BDL	BDL	1.00	BDL
41	VENT-52	BDL	BDL	BDL	BDL	BDL	BDL
42	VENT-53	1.00	BDL	BDL	BDL	BDL	BDL

For BEIL INFRASTRUCTURE LTD.


 Mr. Ajay Patel

(Executive-QA)


 Mr. Sathish Gaddam

(Sr. Manager-QA)

Phase- III Monitoring of Gas Vent Provided in SLF

Annexure-V Page3/3


Sr No	Location	VOC			H ₂ S		
		Results in ppb			Results in ppb		
		19-Oct-19	14-Nov-19	11-Dec-19	19-Oct-19	14-Nov-19	11-Dec-19
1	VENT-1	BDL	BDL	BDL	BDL	BDL	BDL
2	VENT-2	BDL	1.00	BDL	BDL	1.00	BDL
3	VENT-3	BDL	BDL	BDL	1.00	BDL	BDL
4	VENT-4	BDL	BDL	BDL	BDL	BDL	BDL
5	VENT-5	BDL	BDL	1.00	BDL	BDL	BDL
6	VENT-6	BDL	BDL	BDL	BDL	BDL	BDL
7	VENT-7	1.00	BDL	BDL	BDL	BDL	BDL
8	VENT-8	BDL	BDL	BDL	BDL	BDL	1.00L
9	VENT-9	BDL	BDL	BDL	BDL	BDL	BDL
10	VENT-10	BDL	BDL	BDL	1.00	BDL	BDL
11	VENT-11	BDL	BDL	BDL	BDL	BDL	BDL
12	VENT-12	BDL	1.00	BDL	BDL	BDL	BDL
13	VENT-13	BDL	BDL	BDL	BDL	1.00	BDL
14	VENT-14	BDL	BDL	BDL	BDL	BDL	BDL
15	VENT-15	BDL	BDL	BDL	BDL	BDL	BDL

For BEIL INFRASTRUCTURE LTD.



Mr. Ajay Patel

(Executive-QA)



Mr. Sathish Gaddam

(Sr. Manager-QA)

Phase - I Monitoring of Gas Vent Provided in SLF Annexure - V Page 1/3

Sr. No.	Location	VOC			H ₂ S		
		Results in ppb			Results in ppm		
		16-Jan-20	13-Feb-20	17-Mar-20	16-Jan-20	13-Feb-20	17-Mar-20
1	VENT -08	BDL	BDL	BDL	BDL	BDL	BDL
2	VENT -09	BDL	BDL	BDL	BDL	BDL	BDL
3	VENT -11	1.0	BDL	BDL	BDL	BDL	BDL
4	VENT -14	BDL	BDL	BDL	BDL	BDL	BDL
5	VENT -15	BDL	BDL	1.0	BDL	BDL	BDL
6	VENT -17	BDL	BDL	BDL	BDL	BDL	BDL
7	VENT -18	BDL	BDL	BDL	BDL	1.0	BDL
8	VENT -19	BDL	BDL	BDL	BDL	BDL	BDL
9	VENT -21	BDL	BDL	BDL	BDL	BDL	BDL
10	VENT -22	BDL	1.0	BDL	1.0	BDL	BDL
11	VENT -23	BDL	BDL	BDL	BDL	BDL	1.0
12	VENT -24	BDL	BDL	BDL	BDL	BDL	BDL
13	VENT -25	BDL	BDL	BDL	BDL	BDL	BDL



Mr. Ajay Patel
 (Executive -QA)

FOR BEIL INFRASTRUCTURE LTD.



Mr. Satish Gaddam
 (Sr. Manager-QA)

Phase - II Monitoring of Gas Vent Provided in SLF Annexure - V Page 2/3

Sr. No.	Location	VOC			H ₂ S		
		Results in ppb			Results in ppm		
		16-Jan-20	13-Feb-20	17-Mar-20	16-Jan-20	13-Feb-20	17-Mar-20
1	VENT -3	BDL	BDL	BDL	BDL	1	BDL
2	VENT -7	BDL	BDL	BDL	BDL	BDL	BDL
3	VENT -8	BDL	BDL	BDL	BDL	BDL	BDL
4	VENT -9	BDL	BDL	BDL	BDL	BDL	BDL
5	VENT -10	BDL	1	BDL	BDL	BDL	BDL
6	VENT -12	1	BDL	BDL	BDL	BDL	BDL
7	VENT -14	BDL	BDL	BDL	BDL	BDL	BDL
8	VENT -15	BDL	BDL	BDL	BDL	BDL	BDL
9	VENT -16	BDL	BDL	BDL	1	BDL	BDL
10	VENT -24	BDL	BDL	1	BDL	BDL	BDL
11	VENT -25	BDL	BDL	BDL	BDL	BDL	BDL
12	VENT -26	BDL	BDL	BDL	BDL	BDL	BDL
13	VENT -27	BDL	BDL	BDL	BDL	BDL	BDL
14	VENT -28	BDL	BDL	BDL	BDL	BDL	1
15	VENT -29	BDL	BDL	BDL	BDL	1	BDL
16	VENT -30	BDL	BDL	BDL	BDL	BDL	BDL
17	VENT -31	BDL	BDL	1	BDL	BDL	BDL
18	VENT -32	BDL	BDL	BDL	BDL	BDL	BDL
19	VENT -33	BDL	BDL	BDL	BDL	BDL	BDL
20	VENT -34	BDL	BDL	BDL	BDL	1	BDL
21	VENT -35	BDL	BDL	BDL	BDL	BDL	BDL
22	VENT -36	BDL	BDL	BDL	BDL	BDL	BDL
23	VENT -37	BDL	BDL	BDL	BDL	BDL	BDL
24	VENT -38	BDL	BDL	BDL	BDL	BDL	BDL
25	VENT -39	BDL	1	BDL	BDL	BDL	BDL
26	VENT -40	BDL	BDL	BDL	BDL	BDL	BDL
27	VENT -41	BDL	BDL	BDL	BDL	BDL	BDL
28	VENT -42	BDL	BDL	BDL	1	BDL	BDL
29	VENT -43	BDL	BDL	BDL	BDL	BDL	1
30	VENT -44	BDL	BDL	BDL	BDL	BDL	BDL
31	VENT -45	BDL	BDL	BDL	BDL	BDL	BDL
32	VENT -46	1	BDL	BDL	BDL	BDL	BDL
33	VENT -47	BDL	BDL	BDL	BDL	BDL	BDL
34	VENT -48	BDL	BDL	BDL	BDL	BDL	BDL
35	VENT -49	BDL	BDL	BDL	BDL	BDL	BDL
36	VENT -50	BDL	BDL	BDL	BDL	BDL	BDL
37	VENT -51	BDL	BDL	BDL	BDL	BDL	BDL
38	VENT -52	BDL	BDL	BDL	BDL	BDL	BDL
39	VENT -53	BDL	BDL	BDL	BDL	BDL	BDL


Mr. Ajay Patel
 (Executive -QA)

FOR BEIL INFRASTRUCTURE LTD.



Mr. Sathish Gaddam
 (Sr. Manager-QA)

Phase - III Monitoring of Gas Vent Provided in SLF Annexure - V Page 3/3

Sr. No.	Location	VOC			H ₂ S		
		Results in ppb			Results in ppm		
		16-Jan-20	13-Feb-20	17-Mar-20	16-Jan-20	13-Feb-20	17-Mar-20
1	VENT -1	BDL	BDL	BDL	BDL	BDL	BDL
2	VENT -2	BDL	BDL	BDL	BDL	BDL	BDL
3	VENT -3	BDL	BDL	BDL	1	BDL	BDL
4	VENT -4	BDL	1	BDL	BDL	BDL	BDL
5	VENT -5	BDL	BDL	BDL	BDL	BDL	BDL
6	VENT -6	BDL	BDL	BDL	BDL	BDL	BDL
7	VENT -7	BDL	BDL	BDL	BDL	BDL	BDL
8	VENT -8	BDL	BDL	1	BDL	1	BDL
9	VENT -9	1	BDL	BDL	BDL	BDL	1
10	VENT -10	BDL	BDL	BDL	BDL	BDL	BDL
11	VENT -11	BDL	BDL	BDL	BDL	BDL	BDL
12	VENT -12	BDL	BDL	BDL	BDL	BDL	BDL
13	VENT -13	BDL	BDL	BDL	BDL	BDL	BDL
14	VENT -14	BDL	BDL	BDL	BDL	BDL	BDL
15	VENT -15	BDL	BDL	BDL	BDL	BDL	BDL


Mr. Ajay Patel
(Executive -QA)

FOR BEIL INFRASTRUCTURE LTD.


Mr. Sathish Gaddam
(Sr. Manager-QA)

Ref/ank/19-20/02

Date: 04/11/2019

To,

Dy. Director of industrial safety and Health,
Bharuch.

Sub : Submission of Onsite Emergency plan


Dear Sir,


We are submitting "On Site Emergency plan" update on October-2019 for the year 2019-20.


This is for your kind information and record please.

Thanking you,

For, BEIL Infrastructure limited.


B.D. Dalwadi


(Factory Manager)


नि. कलाई
इंजनीअर
संस्थीयल सेवडी से-स डेव
०५.११.१९
5-11-19



BEIL Infrastructure Limited

ONSITE EMERGENCY PLAN

Update On Oct, 2019

Plot No # 9701-9716, GIDC Industrial Estate, Ankleshwar – 393 002

Dist – Bharuch, Gujarat

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CHAPTER-I

PRELIMINARY

1. INTRODUCTION OF THIS PLAN

Primarily this plan is prepared to furnish details, which may require at the time of the emergency, to delegate responsibility, to estimate the consequences in advance and to prepare ourselves to control any type of EMERGENCY. This plan is in two sections. The first section explains basic requirements as follow.

- Definition.
- Objectives
- Hazard identification.
- Risk analysis and environmental Impact Assessment.
- Organization setup.
- Communication system.
- Action on site.
- Link with offsite emergency plan.
- Training rehearsal and record aspect.

Second section is given as Annexure Section containing useful Annexure. These annexes are designed to give specific information required during emergency. Ready information in all this Annexure will considerably save time in initiating all actions at the time of emergency. It will also be useful to Govt. for preparing the Area emergency control (Contingent) plan.

A separate chapter is given to pay attention on.

- Offsite effects of any emergency.
- The duties and functions to control it.
- Link with onsite emergency plan.

2. IDENTIFICATION OF THE FACTORY

Bharuch Enviro Infrastructure Ltd (BEIL) is a Company promoted by industries in Bharuch District with major shareholding by UPL Ltd. to handle different types of wastes generated by the neighboring industries. Drains and Temporary Storage have been provided. BEIL is operating a secured landfill for disposal of solid / hazardous wastes from member industries in the region. The site has implemented Environmental Management System Standards ISO 14001 and Occupational Health & Safety Assessment Standards OHSAS 18001. The site is in operation from 1998 and so far, more than 23 Lacs MT of solid / hazardous wastes have been collected and disposed off

The unit operates continuously in three shifts with total employees of around 300 in the factory. In every shift around 30 people are working.

Following are the details about the plant.

1. (A) Name_& Address of Factory

Bharuch Enviro Infrastructure Ltd.,
9701 - 9716, GIDC Industrial Estate,
Ankleshwar- 393 002
Dist. Bharuch,
Gujarat State

Location

- The factory is around 12 kms, away from Bharuch Town and it is towards South side.
- From Ankleshwar station, it is 6 km towards East side.

(B) Regd. Office Address

Plot No. 117-118, GIDC Estate,
Ankleshwar 393 002
Dist.: Bharuch (Gujarat)

2. Telephone Nos.

Factory : (02646) 253135 / 225228
Registered Office : (02646) 251223 / 250336

3. Full Name & Designation of the Occupier

Mr. Ashok A. Panjawani (Director)

4. Office Address & Telephone No. Of Occupier

Bharuch Enviro Infrastructure Ltd.,
9701 - 9716, GIDC Industrial Estate,
Ankleshwar- 393 002

Dist. Bharuch,

Gujarat State

Office Tel.No. : (02646) 253135, 225228

Residential Tel. No. : 9909994902

5. Working Shifts :

Shift	Male	Female	Total
General (9:00 AM To 5:30 PM)	178	20	198
First (07.00 AM To 03.00 PM)	125	0	125
Second (3:00 PM To 11:00 PM)	75	0	75
Third (11:00 PM To 7:00 AM)	65	0	65
TOTAL	443	20	463

6. Persons to be contacted first in case of emergency

Name & Designation	Place of availability	Telephone Nos	
		Office	Residence
Mr. B. D. Dalwadi	ADM	02646-253135 Ext-101	9909994959
Mr. Manoj Patel	ADM	02646-253135 Ext-115	9909994907
Mr. Atul Agrawal	Inci.office	02646-25135 Ext-202	9909994908
Mr. Omprakash Mahto	Plant Office	02646-253135 Ext-201	9099097212
Mr. M.G. Gami	Incinerator Plant	02646-253135 Ext-217	8758526894
Mr. Ashish Gurjar	HR Office	02646-253135 Ext-107	9913064336
Mr. Sathish Gaddam	QC	02646-253135 Ext-127	8238088363
Mr. Dinkar Trivedi	Old Control Room	02646-253135 Ext-238	9978996347
Mr. Sanjay S Joshi	Safety Office	02646-253135 Ext-232	7575001962

Pls. refer annexure - 1 on page no. 66

3. MAP OF THE AREA

M/s. Bharuch Enviro Infrastructure Ltd., is located at 9701 to 9716, GIDC Industrial Estate, Ankleshwar – 393 002 Dist: Bharuch, Gujarat State. It is 6 km. away from Ankleshwar Railway Station. Other chemical manufacturing units located are, on the East side Agriculture land upto Jitali, North Side Industrial Solvents & chemicals Pvt. Ltd., South Side Agriculture land, on West side small scale industries, M/s, Prerana, M/s, Dhiraj can.

Pls. refer annexure – 2 on page no. 67

4. DEFINITIONS

Various definitions on different analogy used on Onsite & off site Emergency Plan are as below:

An accident is an unplanned event, which has a probability of causing personal injury or property damage or both. It may result in physical harm (injury or diseases) to person(s), damage to property, and loss of company, a near miss or any combination of these effects.

A major accident is a sudden, unexpected, unplanned event, resulting from uncontrolled developments during an industrial activity, which causes, or has the potential to cause –

- i. Serious adverse effect immediate or delayed (death, injuries, poisoning or hospitalization.) to a number of people inside the installation and /or to persons outside the establishment, OR
- ii. Significant damage to crops, plants or animals, or significant contamination of land, water, or air, OR
- iii. An emergency intervention outside the establishment (e.g.: evacuation of local population, stopping of local traffic), OR
- iv. Significant changes in the process operating conditions, such as stoppage or suspension of normal work in a concerned plant for a significant period of time, OR
- v. Any combination of above.

An emergency could be defined as any situation which presents a threat to safety of persons or/and property. It may require outside help also.

A major emergency occurring at a work is one that may affect several departments within it and or may cause serious injuries, loss of life, extensive damage to property or

serious disruption outside the works. It will require the use of outside resources to handle it effectively.

Usually the result of malfunction of the normal operating procedures, it may also be participated by the intervention of an outside agency, such as severe electrical storm, flooding, crashed air craft or deliberate acts of arson or sabotage.

Emergency due to operating conditions (uncontrolled reactions, small fire, small gas leak, spill, failure of power, water, air, steam, cooling media, scrubbing media, etc.) is not considered as a major emergency. Operating instructions in the safety manual shall cover this area, though the on-site emergency plan will also be helpful.

Disaster is a catastrophic situation in which the day-to-day patterns of the life are, in many instances, suddenly disrupted and people are plunged in to helplessness and suffering and as a result of need protection, clothing, shelter, medical and social care and other necessities of life, such as –

1. Disaster resulting from natural phenomena likes earthquake, volcanic eruptions, storm, surges, cyclones, tropical storms, floods, landslides, forest fires, and massive insect infestation. Also in this group, violent draught which will cause a creeping disaster leading to famine, disease, and death must be included.

2. Second group includes disastrous events occasioned by man, or by man's impact on environment, such as armed conflict, industrial accidents, factory fires, explosions and escape of toxic gases or chemical substances, river pollution, mining or other structural collapses; air sea, rail and transport accidents, air crafts crashes, collisions of vehicles carrying inflammable liquids, oil spills at sea, and dam failure.

Environment as defined u/s 2(a) of the Environment Protection Act includes water, air, and land and the inter relationship which exists among and between water, air and land and human beings, other living creatures, plants, micro-organism and property.

Environmental pollutant defined by the same Act as any solid, liquid or any gaseous substance present in such concentration as may be or tend to be injurious to environment.

Hazardous substance is also defined by the same Act and Hazardous process is defined by Section 2(cb) of the F.A.1948.

Hazard is a physical situation which may cause human injury, damage to property or the environment or some combination of these criteria.

Chemical hazard is a hazard due to chemical (including its storage, process, handling etc.) and it is realized by fire, explosion, toxicity, corrosivity, radiation, etc.

Risk is the likelihood of an undesired event (i.e. accident, injury or death) occurring within a specific period or under specified circumstances. It may be either a frequency or

a probability depending on the circumstances. As per example risk of death for a man aged 30 is 1×10^{-3} per annum and that for a man aged 60 is 1×10^{-3} per annum.

Individual risk is the frequency at which an individual may be expected to sustain a given level of harm from the realization of specific hazards.

Social risk is a measure of the chances of a number of people being affected by a single event or set of events and is often presented as f/n curves (i.e. frequency v/s number of people affected). The On-Site Emergency Plan deals with measures to prevent and controls emergency with the factory and not affecting outside public or environment.

The off-Site Emergency Plan will deal with measures to prevent and control emergencies affecting public and the environment outside the premises. The manufacturer should provide the necessary information on the nature, extent and likely effects of such incidents.

The Contingent or Disaster Plan of the area will be developed by the district or local authority based on the on-site and off-site emergency plan of individual units in that area.

5. OBJECTIVES OF THE EMERGENCY PLAN

It is the policy of M/s. Bharuch Enviro Infrastructure Ltd. That each individual should be aware of and understand his role in case of fire or explosion, or toxic release of gases/material.

The purpose of the preparation of disaster control plan is to work out as much details as possible for the likely events and prepare the instructions to point out action to be taken by individuals in case of fire or explosion or toxic release in the plant and surrounding areas. This is apart from the action taken by the process personnel, which will be according to their plant emergency procedures. These instructions are general in nature; however, it must be borne in mind that instruction of this nature cannot detail every action required in every situation which may arise. The action of each individual is described to minimize confusion and speed up action.

The key objectives of Emergency Plan are:

1. To define and assess emergency, including risk and environmental impact assessment

2. To control and contain incidents.
3. To safeguard employee and people in vicinity.
4. To minimize damage to property or/and the environment.
5. To inform employees, the general public and the authority about the hazards/risks assessed, safeguards provided, residual risk if any and the role to be played by them during emergency.
6. To be ready for 'mutual aid' if need is arising to help neighboring unit. Normal jurisdiction of OEP is the own premises only, but looking to the time factor in arriving the external help or off-site plan agency, the jurisdiction must be extended outside to the extent possible in case of emergency occurring out side
7. To inform authorities and mutual aid centers to come for help.
8. To effect rescue and treatment of casualties. To count injured.
9. To identify and list any dead.
10. To inform and help relatives.
11. To secure the safe rehabilitation of affected areas and to restore normalcy.
12. To provide authoritative information to the news media.
13. To preserve records, equipments etc. and to organize investigation in to the cause of the emergency and preventive measures to stop its reoccurrence.
14. To ensure safety of works before personnel re-enter and resume work.
15. To work out a plan with all provisions to handle emergencies and to provide for emergency preparedness and the periodical rehearsal of the plan.

On site emergency plan: Statutory requirement

- **Factory Act 1948, Section 41-B (4):** It requires to draw up an Onsite Emergency Plan with detailed Disaster Control Measures for the Factory and to educate the workers employed in the factory premises.
- **Rule 13 of the Manufacture, Storage, and Import of Hazardous Chemicals Rules, 1998:** Preparation of Onsite Emergency Plan by the occupier.

It is obligatory by Rule 15 of MSIHC-1989 on the part of an Occupier of hazardous chemicals to prepare an emergency plan and to take appropriate steps to inform the 'Do's and Don'ts' which should be adopted in the event of major accident.

CHAPTER-II

RISK & ENVIRONMENTAL IMPACT ASSESSMENT

1. FACTORY LAYOUT

Pls. refer Annexure – 3 on page no. 68

2. STORAGE HAZARDS & CONTROLS

Products & raw materials

Main process of M/s Bharuch Enviro Infrastructure Limited is to treat, store and transport hazardous waste generated by member units at TSDF. This is a nonmanufacturing Industry. No any product is produced here except heat recovered from incineration process and combustible gas has been produced by treatment of biodegradable food waste.

Core activity of the industrial unit is to protect environment by providing efficient treatment facility of industrial hazardous waste.

List of raw material

BEIL is TSDF facility of Industrial Hazardous waste; this is a nonmanufacturing Industry. No any product is produced hence no RM has been used but following RM used which is required to treat waste.

- 1) NaOH
- 2) Lime
- 3) Carbon; and
- 4) Natural Gas (as a fuel)

Pls. refer Annexure – 4 for storage hazards & controls on page no. 69

MSDS of chemicals are also provided.

Pls. refer Annexure – 5 for MSDSs on page no. 72

3. PROCESS & VESSEL HAZARDS & CONTROLS

Bharuch Enviro Infrastructure is having two main facilities first one is common hazardous waste treatment, storage and disposal facility (Landfill of Hazardous waste) and second one is Incineration (including Incinerator with heat recovery and MEE and storages of Incinerable waste) and others are drum decontamination and recycling of waste plastic.

A) LAND FILL SITE

OPERATIONAL METHODOLOGY OF TSDF

1) Waste Acceptance Criteria

- The generator should have Authorization for disposal as per Hazardous Waste (Management, Handling & Tranboundary Movement) Rules, 2008.
- At the time of taking membership, the company is doing complete analysis of solid waste and the same sample is preserved for further physical verification.
- As the dumper comes to site, it is weighed and, samples are taken from 3 different location and composite sample is made and analyzed for following quick parameters:
 - pH
 - PFLT test for moisture content
 - Odour
 - Flammability
 - Compatibility
 - Physical state
 - LRT
 - Annealing loss

Only if the sample passes through above quick tests it is allowed to enter the disposal site.

2) Manifest System

We have manifest system as per Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008. Manifests are six copies in different colors. However, GPCB has introduced an online manifest system for waste acceptance. At present, the online system is being followed. (GPCB- XGN generated manifest)

3) Transportation of Hazardous Solid Waste from Generation Site to TSDF

Transportation of hazardous solid waste is done as per guidelines of CPCB. The TSDF is having approved transporter with dedicated vehicles (Hydraulic) for transportation of solid waste. All the vehicles are having the nameplate with details of company's name, address, phone no., etc. During transportation, containers are closed from all sides and covered from top.

4) Weighing and Sampling of Waste

As the dumper enters weighbridge, samples are taken from three different locations and a composite sample is made. Once the quick test is passed, truck is allowed to enter the premises. If any truck does not meet the Hazardous solid waste inlet specification, it is returned back to member industry for necessary treatment.

5) Operation of TSDF dumping area

The dumper carrying the hazardous waste is first subjected to quick tests and if it is approved by QA, the hydraulic dumpers are sent for unloading in landfill area. The operation of land filling area is cell wise.

6) Ground Water Sampling and Analysis

Provided monitoring wells at the site for ground water monitoring. There are twelve electric bore wells. Four wells at the upstream and four wells at the downstream. Three additional wells are provided at the downstream side of Phase-II (new site). The monitoring parameters are analyzed as per the guidelines given by the CPCB. Company has laboratory facility for analysis of bore well water. Monitoring is done once in Month.

7) Leachate Management System

Cell-wise leachate collection wells are provided. There are 6 number of Leachate well for closed site and 7 leachate well for the continue Phase-II. Leachate is pumped out from leachate wells to tankers and is sent to the M/s. ETL (CETP), Ankleshwar for treatment & disposal and part of it is being treated in MEE plant.

8) Gaseous Emission Management

Provided air vents at the closed portion of the land fill. We are regular monitoring of these vents for VOC & HC.

9) Closure and post closure maintenance details for closed cells including vegetative stabilization:

Provided coverage system with vegetative cover area as per CPCB criteria for Phase-I cells. The closed portion is given proper landscape.

We are providing storage shade on operational cell during monsoon period. The main operational site is kept covered by tarpaulin with separate rain water collection system during monsoon.

10) Surface Water Drainage System

The storm water drainage system is provided at the site. The surface water generated during rainy season is collected through storm water system and after filtration, recharged to ground water through water harvesting system.

11) Site Infrastructure:

- (a) We have established administrative and site control office with latest equipment like computers & computerized weigh-bridge, printers, fax, Xerox machine with scanning etc.
- (b) We have provided with a well-equipped laboratory. For sampling and analysis of solid wastes, air, leachate and observation borewell water, Incinerable waste. The laboratory is accredited by national Accreditation Board for Analytical Laboratory (NABL).
- (c) Peripheral roads have been constructed near the Incinerable waste storage sheds.
- (d) Three additional storage sheds are constructed for Incinerable wastes. At present, there are a total 10 sheds for storage of Incinerable wastes.
- (e) Stabilization facility is provided for wastes that require treatment/stabilization before disposal in landfill.
- (f) Green belt details:

We have developed green belt in and around our site and have planted more than 5000 trees.

12) Safety and pollution control i.e. traffic, noise, odour, litter, bird control, vermin and other pests, dust, mud on road, landfill fire control, landfill safety aspects.

- Usage of PPE's like gum boots, glove, gas mask by the person-working site.
- Avoiding manual operation. The company is using hydraulic dumpers for transportation of wastes, no manual unloading is required for wastes.

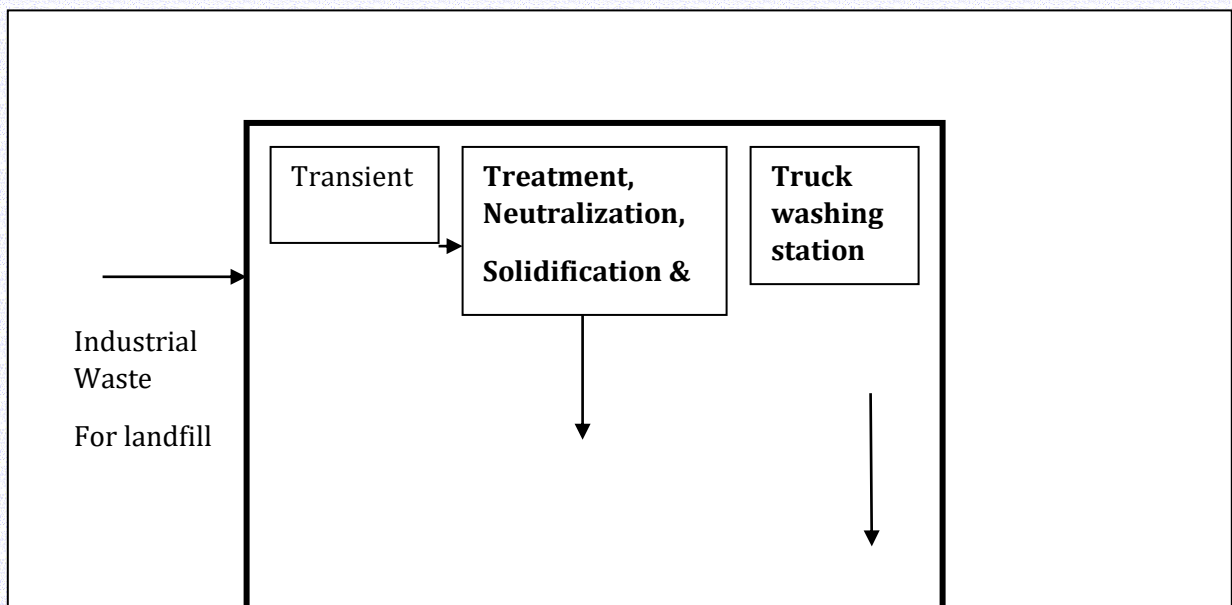
- The company is utilized bulldozers for separating and compacting the wastes
- The company is checking the ignitability and compatibility of wastes before dumping the wastes to the site it is helping in fire control and any reactivity after disposal.
- There are not many noise making equipment used at site
- The company has procured road-sweeping machine for maintaining good housekeeping of roads.
- Odour control is being done with control of the characteristics of wastes being received. Closed handling system is used.
- The used area is covered with soil, which helps in control of vermin / insect / pests etc.
- Drivers are given training for handling hazardous wastes at the disaster prevention and management centre at Ankleshwar.
- Routine inspection of vehicles is done.
- On site emergency plan is prepared.

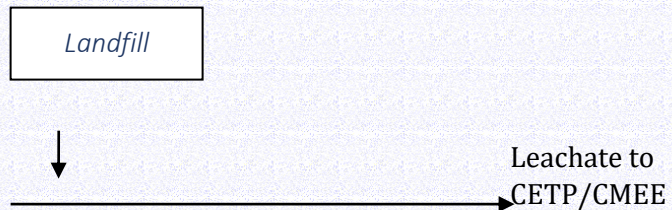
13) Closure and Post Closure Plan:

Completed landfill site has been provided top cover with vegetative cover of approx 36,360 sq.m. area. The closed portion is given proper landscape. The surface water generated during rainy season is collected through storm water system and after filtration, recharged to ground water through water harvesting system. The covered portion is maintained properly and inspected by civil engineer.

A post closure fund is allotted and is being collected from all the member industries.

Flow diagram of landfill facility





B) INCINERATION DETAILS:

The unit has set up common incineration systems in the year 2005 & 2012 respectively at the same site. The incineration systems are as rotary kiln type with post combustion chamber, Evaporative cooler, dry scrubber, bag filter, wet scrubber, ID fan. The systems can treat solid wastes/liquid waste/sludge generated by the industries.

Incinerator Plants with Heat Recovery and Evaporation system

The incineration systems are set up with same capacity and air pollution control system. In the both incinerators, additionally Heat Recovery System along with Multiple Effect Evaporation System is incorporated. The incineration plant is designed as per CPCB Guideline.

All required basic infrastructure facilities – like Storage System, Waste charging system, Fire Hydrant System, Laboratory is already available at the site. The incineration system consists of feeding system, dual burners (natural gas or liquid waste), rotary kiln, secondary combustion chamber, evaporative cooler, lime / carbon injection system, bag filter, wet scrubber, ID Fan, continuous monitoring system and chimney. Additionally, heat recovery boiler is installed, which recovers the heat from flue gas coming out from secondary combustion chamber and produced steam is taken to Multiple Effect Evaporation System. Heat Recovery Boiler is made of special material of construction to take care of corrosive environment present in the flue gas. The flue gas coming out of boiler will be cooled in the Gas Conditioning Tower with the help of water and air; and flue gas at a temperature of 200 to 250 ° C will be taken to inlet of Bag Filter prior to lime / carbon injection point. The plant can be operated either with Heat Recovery System or without Heat Recovery System as per provisions made. In case of any shut down of Multiple Effect Evaporation Plant or any problem with the Boiler, incineration plant can be in operation and evaporative cooler will take care of cooling of flue gas as per provision in the First incinerator.

The flue gas is passed through Bag Filter 720 nos. of Teflon bags for removal of Suspended Particles and lime used. Used lime collected is disposed off in secured landfill. The clear gas coming from Bag Filter is taken to Wet Scrubber which is a big tower where Caustic solution will be circulated. Here, acidic gases are removed and all parameters are within permissible limits with respect to SPM, HCL and SO₂.

There is a Mist Eliminator before ID Fan to remove condensed water. ID Fan sucks flue gas from Rotary Kiln to Chimney and provides required negative pressure in the system.

Rotary Kiln and Secondary Combustion Chamber are lined with high alumina refractory to take care of the temperature. Rotary Kiln is operated at 850 ± 50 ° C and Secondary Combustion Chamber is operated at above 1100 ° C temperature, with above 2 seconds gas residence time.

The concrete chimney of 45 M height is constructed to vent the cleaned flue gas. This chimney is also acid proof lined. Inside diameter of chimney is 1.84 M and 4 nos. of sampling points are provided at 22 M height. A sampling platform is also provided at 21 M height with handrails.

The chimney has been designed with a capacity considering both incinerators.

List of Equipments

- Waste feeding/charging facility;
- Rotary Kiln
- Post combustion Chamber
- Heat Recovery Boiler
- Standby Natural Gas / F.O. operated Boiler
- Evaporative cooler
- Lime and Carbon feeding system
- Bag filter
- Pneumatic conveyer with dust collector
- Wet scrubber
- Continuous Monitoring System
- ID Fan
- Chimney
- Multiple Effect Evaporation system
- Ash Handling System
- Control Panel
- Emergency Power Supply

- MCC Panel
- Fire Hydrant System; and
- Video Camera for monitoring

INCINERATORS WITH HEAT RECOVERY BOILER AND EVAPORATION SYSTEM PROCESS DISCREPTION:

Rotary Kiln

It is pre-heated to 750° C using natural gas. Its operating temperature will be 850 ± 50° C. The waste feeding is started when the temperature reaches 800° C using various types of feeding mechanisms provided. The kiln is rotating in clock-wise direction with Girth gear and drive mechanism. The vacuum to be maintained at -10 to -5 mm wc in order to take out the flue gas to chimney. The solid retention time is 90 mins. Pneumatic ceiling is provided at front end to avoid entry of air.

Post-Combustion Chambers

In the post-combustion chamber temperature is maintained above 1100°C as per CPCB guidelines and the gas retention time is above 2 Seconds. The natural gas is used as auxiliary fuel to maintain the temperature. The high calorific value waste can also be injected to maintain temp. The aqueous waste spray also helps in maintaining heat load. The ash from the kiln as well as the post combustion chamber is collected in the submerged ash conveyor at the bottom of this chamber. The negative pressure inside the chamber is -10 to -15 mm wc. The entire volatile organic compound is thermally degraded in this chamber. An emergency vent is provided on the top of this chamber.

On the Top of this chamber two out let duct lines are provided. One is directly connected with main Evaporative cooler and the second one is for diverting the hot flue gases to waste heat recovery boiler.

Waste Heat Recovery Boiler

The flue gas from Post combustion chamber enters at Temperature of 1100° C in waste heat recovery Boiler and convert the water in to steam by heat transfer. Out let Temperature of flue gas from Heat Recovery Boiler will be 400° C.

The steam generated from Heat Recovery Boiler is used to operate Evaporation system.

Gas Conditioning Tower of Waste Heat Recovery Boiler

The function of this chamber is to cool the gas coming from waste heat recovery boiler from 400° C to 220° C with the water sprays provided

Evaporative Cooler of Incinerator plant:

When the heat recovery Boiler will not be under operation the Evaporative Cooler of Incineration plant will be taken in the line to cool the flue gas coming from secondary combustion chamber. The flue gas will enter with a temperature more than 1100 ° C. To cool the flue gas water spray will be utilized. The atomized water particles absorb the heat of flue gas and get evaporated inside the chamber with considerable drop in the Temperature. The pressure in this chamber will be -50 to - 20 mm wc.

Lime and carbon injection system:

The purpose of the system is for the dry scrubbing of the flue gas coming from the combustion chamber. The lime and carbon are stored in separate feed hoppers and is injected in to the main flue gas line through Powder Handling Automation Lime and Carbon feeding system. This is a completely closed system and prevents dusting.

Bag filter

The Bag Filter is having approximately 700 nos. of Teflon Bags. The cooled gas from the evaporative cooler or from Gas Conditioning Tower of Heat Recovery System, after injection of Lime / Carbon, enters in to the Bag Filter chamber. The bag filters operate on the principle of pulse jet. Pneumatically operated valve controls the pulse jet operations. The deposited used lime is discharged in the dust collection system. The dust free flue gas goes to wet scrubbing system.

Considering the material of construction of the bags i.e. Teflon, proper care is taken to maintain the temperature less than 250 Deg C at the inlet of Bag Filter. The pressure drop across the bag filter is controlled by avoiding deposit of lime on the bags.

Wet Scrubber

The function of the Wet Scrubber is to remove remaining acidity from the flue gas. Caustic solution is circulated in the scrubber. This scrubber is made of FRP+FRV and is having packing. Before entering the wet scrubber, with the scrubber solution, the flue gas is cooled from 200 Deg. C to 80 Deg. C. The scrubbed solution is partly evaporated or it is sent to CETP for treatment and disposal or treated in Evaporation System and generated condensate send to CETP for treatment and disposal

ID Fan and chimney

ID Fan will provide required vacuum in the entire incineration system. The discharge of ID Fan is connected to the chimney. The new chimney is made of concrete with 45 M height. Sampling points are provided at 22 M height.

Submerged Ash Conveyor

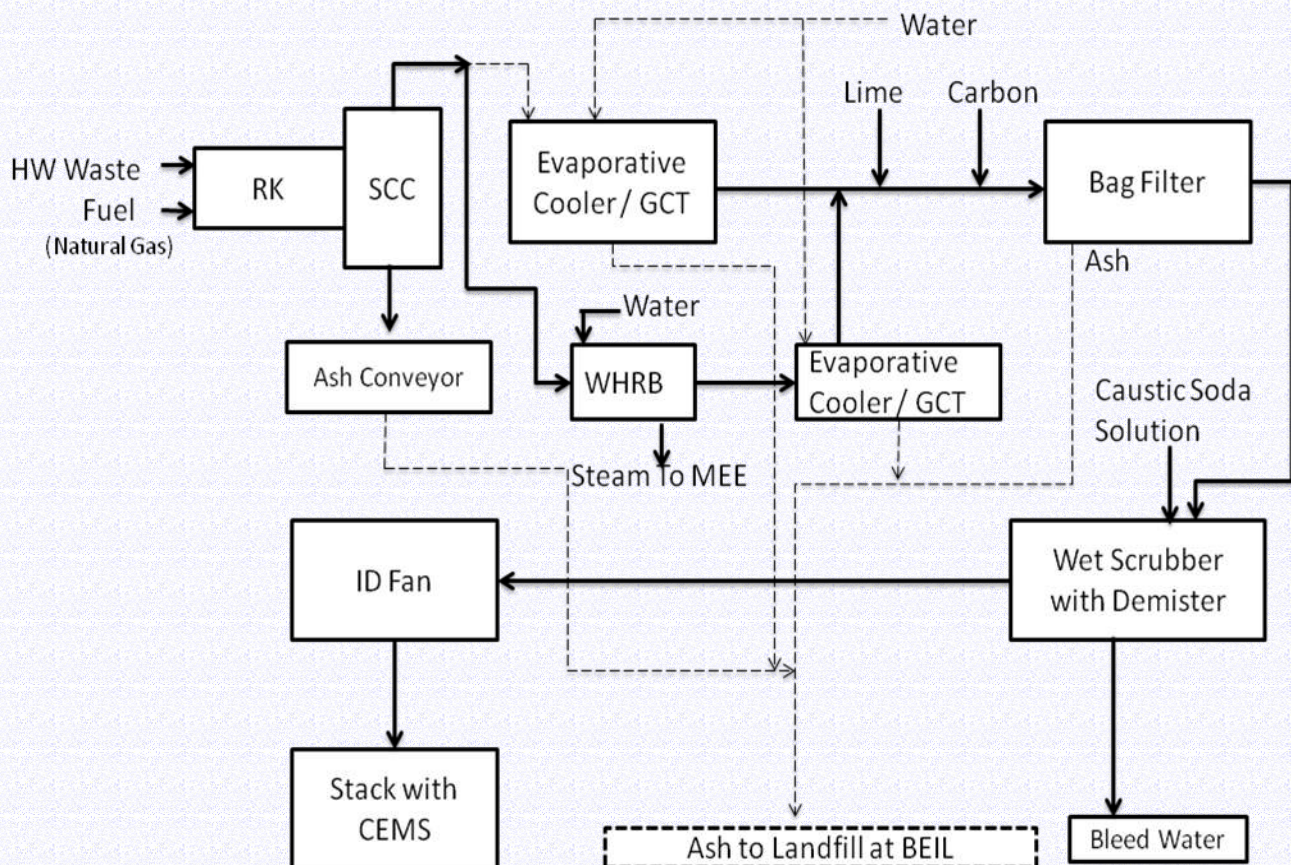
The ash generated from the incineration system is collected in the submerged ash conveyor. The collected ash is disposed off in the landfill.

Multiple Effect Evaporation system:

The Multiple Effect Evaporation System having 3 stages with striper and centrifuge have capacity of 15TPH. Steam generated from Heat Recovery Boiler is taken for evaporation. The system can evaporate effluent with high dissolved solids and the salt can be collected from the last stage.

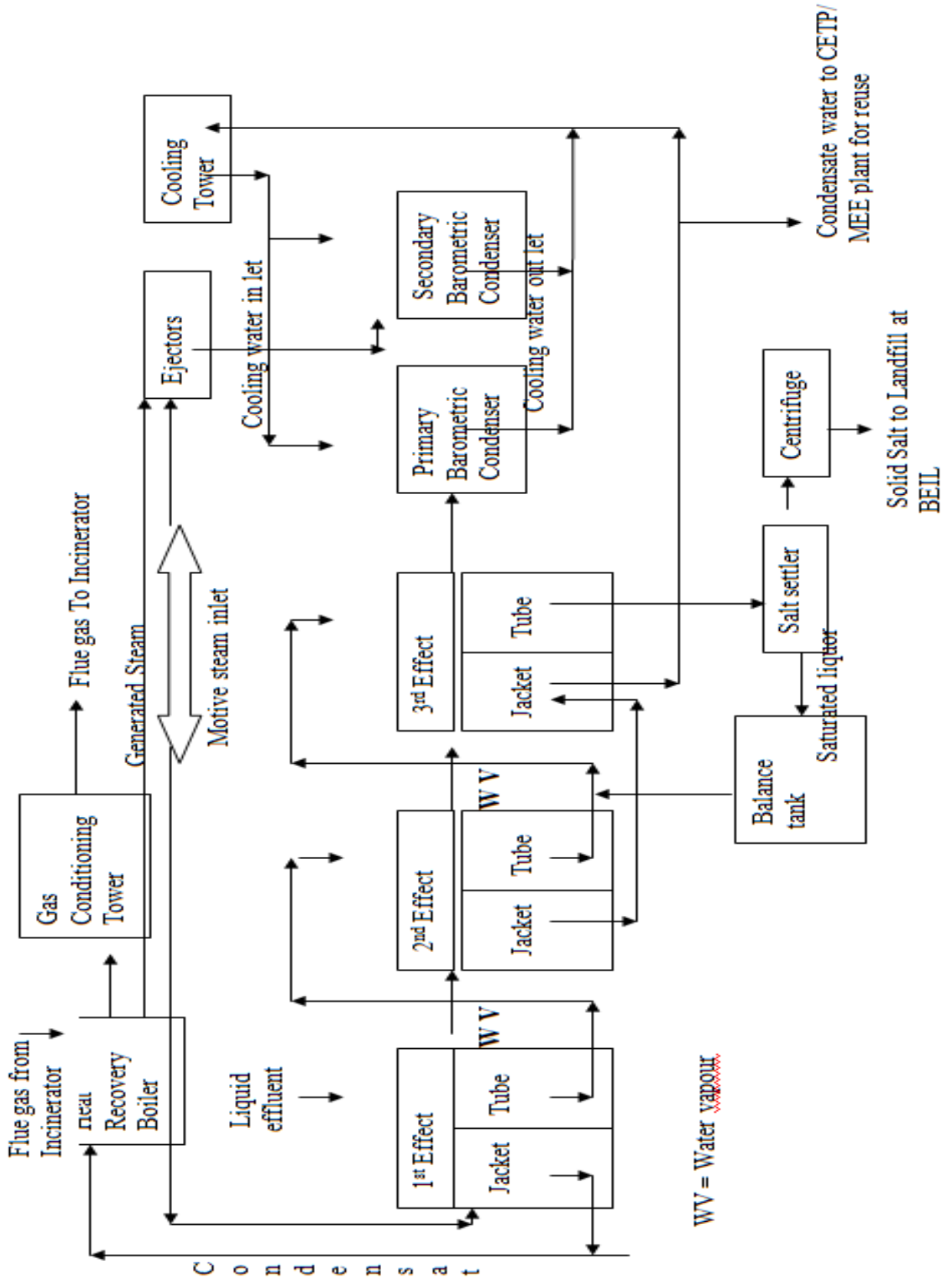
A stand-by Boiler is also arranged for availability of steam when the incineration plant is not in operation or any other maintenance problem. This will help in better operation of the MEE System.

Incineration plants with Heat Recovery Boiler



Multi Effect Evaporation Plant Flow Diagram

Flow Diagram Multiple Effect Evaporation



a) Blending Procedure of Mix liquid waste / Solid waste for co-processing for Cement Industries:

BEIL is Treatment storage and disposal facility of Hazardous waste. TSDF is receiving the waste generated from the member Industries for Secured landfill disposal, incineration and Evaporation.

The waste received for Incineration is first analyzed by our Laboratory and on the base of the analysis the storage is being decided. BEIL has storage facility for Incinerable waste as per CPCB guideline. The waste is segregated on the Physical state, chemical characteristics, Calorific value, Reactivity and P^H.

Considering the fact that incineration of the hazardous waste in the Common incinerator facility provides an environment friendly solution but not the best option. In the current scenario of energy crisis, co- processing of the combustible waste in a cement plant is one of the better option from Energy recovery point of view as well as better option to help reduced the CO₂ emission

Accordingly, BEIL collects the waste liquid and solid from various waste streams / waste generators, blend the liquid / solid waste, which is suitable for co processing and send it to Ambuja Cements limited in compliance with CPCB / GPCB guidelines.

As per the "Guideline on Co-Processing in cement/power/steel Industries" published by central pollution control Board (Ministry of Environment & Forest, Govt. of India, New Delhi), February – 2010, Trial Run for co-processing of waste mix liquid and Solid of BEIL, Ankleshwar was carried out at Ambuja Cement.

Pollution Control Board has been granted permission for co-processing of mix liquid & solid waste of Bharuch Enviro Infrastructure Limited at m/s Ambuja cement.

BEIL has developed facility for preparation of Mixing / blending of the waste.

To send the liquid waste for co-processing first waste menu will be decided on the base of chemical properties, Compatibility, reactivity, flammability and corrosively. The selected waste liquid will be transferred to the charging tanks from drums. Then the liquid waste is taken to the storage tank, which is having humanizer for proper mixing of the liquid waste. Pumps are provided at the tank for loading of the tankers to send it to cement industries for co-processing. This is a complete close system and Fire hydrant system is provided around the area.

b) Plastic waste recycling

PROCESS DESCRIPTION

1. Plastic waste recycling plant

To recycle the plastic waste, steps is being taken as under:

1. Collection of plastic waste.
2. Segregation of plastic waste.
3. Cleaning / Washing & drying of Plastic Waste.
4. Cutting / Sizing of Plastic waste.
5. Agglomeration / Densification of plastic waste.
6. Making granules in the extruder machine

1. Plastic waste for use in RDF/selling

To reuse the plastic waste as RDF/selling, following steps are as under.

1. Segregation of plastic waste.
2. Cleaning/Washing & drying of Plastic Waste.
3. Cutting / Sizing of Plastic waste.
4. Packing of sized Plastic Waste

Collection of Plastic Waste

We are receiving approx. 800 MT per annum of Plastic Waste from member industries in form of plastic packing material, which are disposed in secured landfilling. We had taken trials for recycling of the plastic packing material received at our site. We took trials to make granules out of this waste plastic. The granules we got are marketable and are saleable. Following processes were undertaken at machinery manufacturer's site to process the plastic.

Segregation of plastic waste

We segregate the plastic waste based on the LDPE (transparent plastic bags) Low Density Polyethylene and HDPE (wovensex material bags) High-density polyethylene

Cutting / Sizing of Plastic waste

The cleaned plastics waste is then required to be properly sized so that those may be fed into the extruders for processing and palletizing. The sizing operation depends on the type and shape of the waste plastics. During this process, attention is required to separate any powdery material from the sized / chipped plastics. For LDPE/HDPE (plastic bags) plastic waste, this sizing is important to feed sized material into the extruder to make granules.

Cleaning / Washing & Drying of Plastic Waste

Cleaning / Washing of plastic waste depends on the contamination in the waste. Generally industrial waste does not need to clean like domestic waste, but if needed we can follow the cleaning method as per below.

First of all, wash the plastic waste by normal water which removes the dust and soil particles then followed by detergent / caustic (1%) solution which removes the contamination which was not removed by simple water and finally by hot water to remove the detergent & caustic from the surface of plastic waste.

After washing its need to dry in the sunlight in open space or passing the waste from the hot air in the drier.

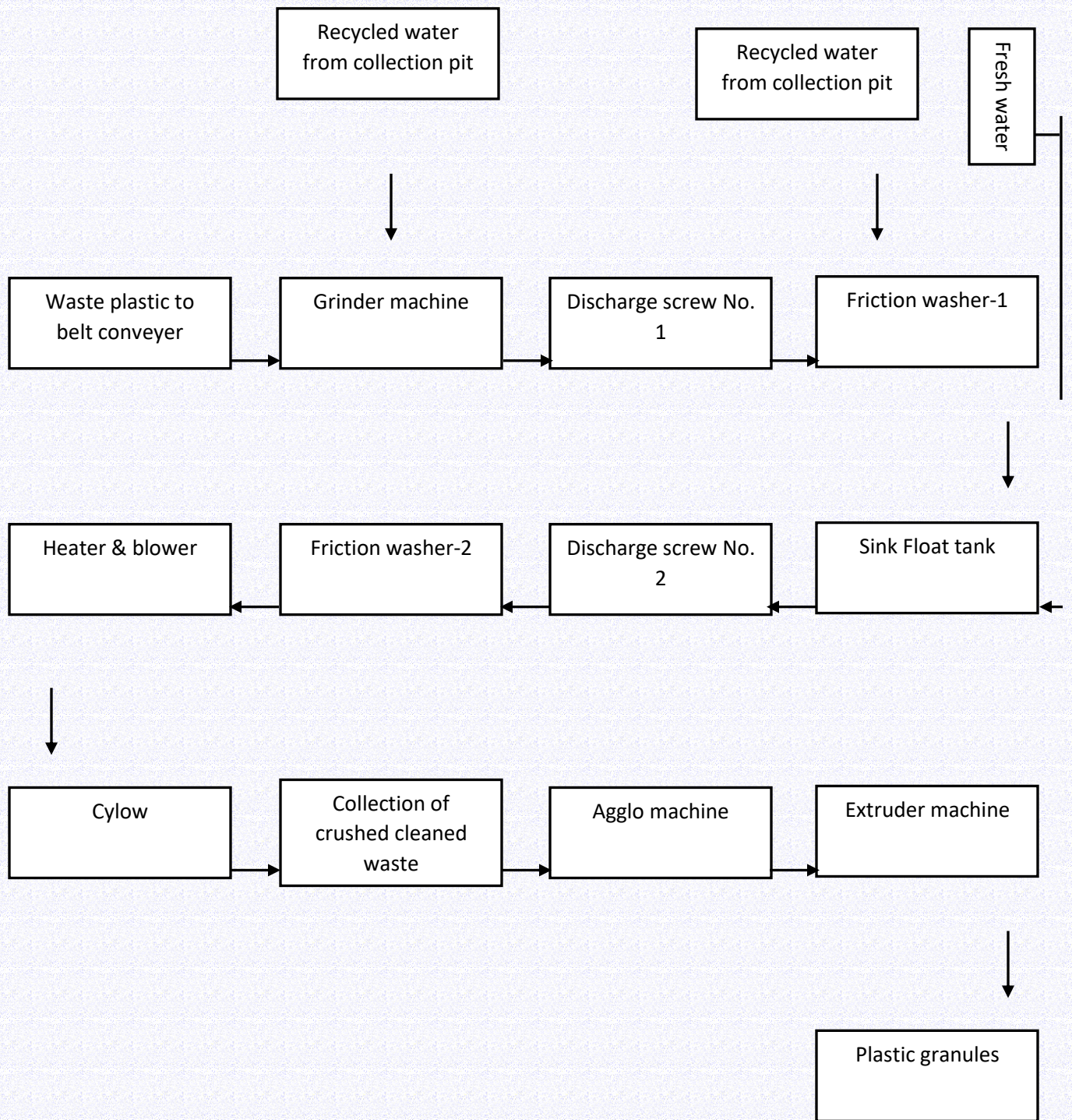
Agglomeration of Plastics

During the production agglomerated continuously with the PALLMANN Plast-Agglomerator into free-flowing granules.

Making granules in the extruder machine

After proper sizing of the waste plastic, now it is ready to enter into the extruder machine where the plastic waste is melted and come out with the granules of the plastic. That granules can be packed and is ready for the sale.

Process Flow Diagram for processing of Plastic Waste



The Member Industries send their Incinerable waste to BEIL for Incineration in drums and tankers. The tankers are directly unloaded to the storage tanks. The drums are charged in to the reactors after confirmation of Compatibility test; empty drums are shifted to empty drum storage area.

BEIL has developed the drums decontamination facility with high spray nozzle system. Drums are washed inside by using caustic solution, sodium hypochlorite, fresh water etc. as per the characteristics of the waste. The outside surface is also cleaned by fresh water

The decontaminated drums are tested, approved & sold to authorized scrap dealer.

The waste water generate during decontamination is being incinerated

Pls. refer Annexure – 6 on page no. 104

4. OTHER HAZARDS & CONTROLS

Pls. refer Annexure – 7 on page no. 106

5. TRADE WASTE DISPOSAL

BEIL generates incineration ash from both incinerator plants & Salt from MEE plant and dispose it in landfill site – BEIL.

Waste water generates from incineration plant, drum washing facility, Plastic Processing plant & laboratory and treat in MEE plant. MEE plant condensate water send to common effluent treatment plant (ETL) for further treatment.

Pls. refer Annexure – 8 on page no. 108

6. RECORD OF PAST INCIDENTS

A fire was taken place at hazardous waste storage shed no. 7. BEIL has taken sufficient steps to stop its reoccurrence. BEIL has provided total 10 nos. of storage sheds with impervious floor with leachate collection system. All the sheds are covered with water sprinkler system. Smoke & heat detectors are provided in all the sheds. Fire hydrant system and portable fire extinguishers are also provided.

Pls. refer Annexure – 9 on page no. 109

7. RISK ASSESSMENT

1. The following maximum credible accident scenarios may occur in a hazardous waste landfill (TSDF).

1. Slop Failure of landfill
2. Water accumulation at landfill due to heavy rain

1. Slop failure of Landfill

Precaution is always better than cure. To mitigate the slope failure during designing and operation of BEIL landfill the Stability analysis criteria are considered and are as follow.

Stability Analysis of Slope:

$$F_c = c / (y_d * H S_n)$$

The F_c shall be more than 1.5.

In each case for BEIL Landfill the F_c is @ 4

Settlement of landfill base on soft soil.

$$\text{Settlement} = (C_c H / (1 + e_o)) * \log_{10} (P_o + \Delta P) / P_o$$

For, ΔP 24.98 the settlement is 216mm and for ΔP 22.90 the settlement is 205mm

Geomembrane Stability: Tensile Stress under self-weight

Design Ratio shall be more than 10

For BEIL it is 11.72

Geomembrane Stability: Tensile Stress under waste down – drag during filling.

Design ratio shall be more than 10

For Landfill for BEIL it is 963.70

Stability of soil over Geomembrane.

A. Sliding of soil over Geomembrane F.O.S. shall be more than 1.5 for landfill of BEIL it is 1.513

B. Tensile Force in Geomembrane: design Ratio shall be more than 2.2 for BEIL landfill it is 2.2

Vehicle or Ramp or Slop:

(Static) F.O.S. is 5.29 (Shall be more than 3)

(Dynamic F.O.S. is 4.93 (shall be more than 3)

Wheel loading

Design Ratio is 5 (shall be more than 3)

M/s. KCT Consultancy Services as per CPCB criteria carried out the stability analysis for Landfill Facility.

The capping activity is also carried out immediate once the waste filling is completed in particular cell.

After completion of capping of landfill site there should not be chances of increase moisture content of filled waste, so there should not be any chances of failure of top slop.

Phase I was completed in all respect with capping in Dec 2008 till date we have not observed any toe failure or slop failure in closed landfill site.

Phase II we have completed cell capping. Phase III has been started for landfilling.

Only present active cells are under operation so failure of slop is also minimized.

To prevent the failure of slop during the operation we are compacting it with dozer and roller. We are also making temporary bund wall to prevent any sliding of waste during operation.

Following steps to be carried out in case of slope failure:

- Implementation of onsite emergency plan
- Incoming waste to be stopped
- Slop failure may increase exposure risk to personnel and public so necessary PPEs to be provided. Relocation and covering of waste to be performed quickly and safely
- Perform mitigating activity to limit further contamination or damage
- Work to be done round the clock
- Primary report to be prepared and reviewed at regular intervals regarding the activities of waste shifting.

II. Water accumulation in landfill due to heavy rain.

We are keeping four nos of Diesel pump of 40 m³/hr capacity and 5 Electric pump of 80 m³/hr capacity to pump out the accumulated water due to heavy rain. In the event of a

landfill instability such as a slope failure the first concern is always safety, safety of site personnel, safety of site entrants, and safety of general public. The situation will need to be assessed concisely and necessary emergency procedures and precautions implemented as quickly as possible.

Following steps to be carried out in case of water accumulation in landfill due to heavy rain:

- Implementation of onsite emergency plan
- Start pumps to pump out the water accumulated.
- Check the water quality, if contaminated send for treatment.
- Necessary PPEs like helmet, gum boot, hand gloves, rain coat to be provided. If required, relocation and covering of waste to be performed quickly and safely
- Perform mitigating activity to limit further contamination or damage
- Work to be done round the clock
- Primary report to be prepared and reviewed at regular intervals regarding the activities of waste shifting.

2. The following maximum credible accident scenarios may occur in a hazardous waste Incineration unit

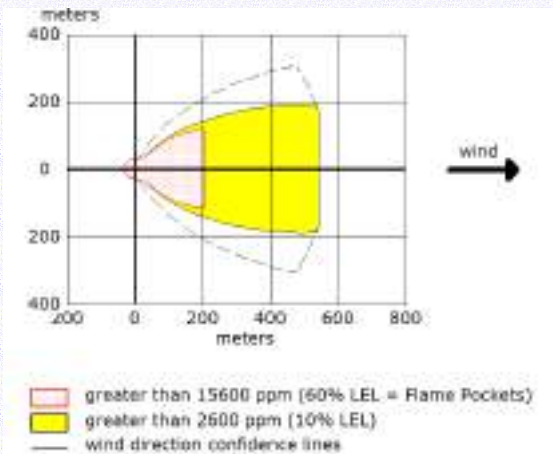
- 1. MCA-1 Release of Acetone from Drum storage warehouse**
- 2. MCA-2 Release of SO₂ during fire in waste storage shed**
- 3. MCA-3 Release of HCL vapour during Fire in waste storage shed**
- 4. MCA-4 Release of NO₂ during fire in waste storage shed**
- 5. MCA-5 Jet fire from NG gas line leakage**

Dispersion Calculations

MCA-1- Release of Acetone from Drum storage warehouse

The properties of Hazardous waste are very difficult to determine the flammable characteristics, so the highly flammable solvents like Acetone is assumed for consequence modeling Storage stock arrangement of hazardous waste stored in HDPE or MS container arranged in three number of rows in each block with adequate separation distance between the blocks and each block contains 100 MT of hazardous

waste either solid or semi solid waste. Solvent vapours can get released due to radiation heat from nearby storage block. It can form flammable mixture cloud. For consequence, modeling the inventory of 100 MT Acetone vapour is considered as most of the industries are using Acetone.

1. ACETONE, 2 m/s-wind velocity and F- Weather class	
<p>SITE DATA:</p> <p>Location: ANKLESHWAR, INDIA</p> <p>Building Air Exchanges Per Hour: 0.54 (unsheltered single storied)</p> <p>Time: April 25, 2017 1051 hours ST (using computer's clock)</p> <p>CHEMICAL DATA:</p> <p>Chemical Name: ACETONECAS Number: 67-64-1</p> <p>Molecular Weight: 58.08 g/mol</p> <p>AEGL-1 (60 min): 200 ppm AEGL-2 (60 min): 3200 ppm AEGL-3 (60 min): 5700 ppm</p> <p>LEL: 26000 ppm UEL: 130000 ppm</p> <p>Ambient Boiling Point: 56.3° C</p> <p>Vapor Pressure at Ambient Temperature: 0.41 atm</p> <p>Ambient Saturation Concentration: 406,612 ppm or 40.7%</p> <p>ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)</p> <p>Wind: 2 meters/second from SW at 3 meters</p> <p>Ground Roughness: open country Cloud Cover: 5 tenths</p> <p>Air Temperature: 32° C</p> <p>Stability Class: F (user override)</p> <p>No Inversion Height Relative Humidity: 50%</p>	<p>SCENARIO: Flammable cloud in organic waste drum storage shed.</p>  <p>THREAT ZONE:</p> <p>Threat Modeled: Flammable Area of Vapor Cloud</p> <p>Model Run: Heavy Gas</p> <p>Red : 203 meters --- (15600 ppm = 60% LEL = Flame Pockets)</p> <p>Yellow: 540 meters --- (2600 ppm = 10% LEL)</p>

SOURCE STRENGTH:

Direct Source: 100000 kilograms/hr Source
 Height: 3 feet

Release Duration: 30 minutes

Release Rate: 1,670 kilograms/min

Total Amount Released: 50,000 kilograms

1. ACETONE, 3 m/s - wind velocity, D- Weather class**SITE DATA:**

Location: ANKLESHWAR, INDIA

Building Air Exchanges Per Hour: 0.72 (unsheltered single storied)

Time: April 25, 2017 1056 hours ST (using computer's clock)

CHEMICAL DATA:

Chemical Name: ACETONE

CAS Number: 67-64-1 Molecular Weight:
 58.08 g/mol

AEGL-1 (60 min): 200 ppm AEGL-2 (60 min): 3200 ppm
 AEGL-3 (60 min): 5700 ppm

LEL: 26000 ppm UEL: 130000 ppm

Ambient Boiling Point: 56.3° C

Vapor Pressure at Ambient Temperature: 0.41 atm

Ambient Saturation Concentration: 406,612 ppm or 40.7%

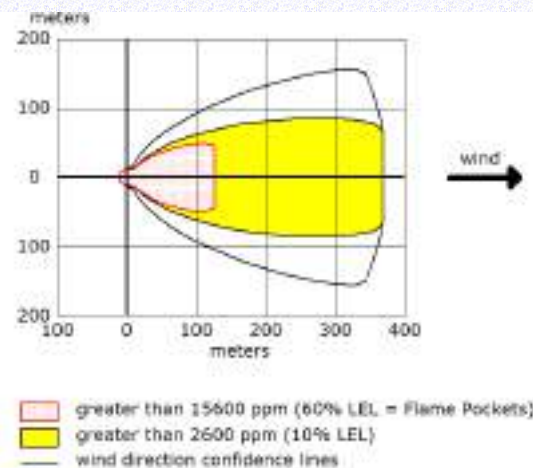
ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: 3 meters/second from SW at 3 meters

Ground Roughness: open country Cloud Cover:
 5 tenths

Air Temperature: 32° C

SCENARIO: Flammable cloud in organic waste drum storage shed.

**THREAT ZONE:**

Threat Modeled: Flammable Area of Vapor Cloud

Model Run: Heavy Gas

Red : 126 meters --- (15600 ppm = 60% LEL = Flame Pockets)

Yellow: 369 meters --- (2600 ppm = 10% LEL)

Stability Class: D (user override)

No Inversion Height

Relative Humidity: 50%

SOURCE STRENGTH:

Direct Source: 100000 kilograms/hr Source
Height: 3 feet

Release Duration: 30 minutes

Release Rate: 1,670 kilograms/min

Total Amount Released: 50,000 kilograms

MCA-2 - Release of SO2 during fire in waste storage shed

The properties of Hazardous waste are very difficult to determine the toxic characteristics so assuming the toxic vapors like SO₂, HCL and NO₂ are considered for consequence modeling

Storage stock arrangement of hazardous waste stored in HDPE or MS container arranged three number of stages in each block with adequate separation distance between the blocks and each block contains 300 MT of hazardous waste either solid or semi solid waste. For consequence modeling, the inventory of 1 MT SO₂ toxic gas or vapor plume is considered.

2. Sulphur Dioxide, 2 m/s-wind velocity and F- Weather class - 1MT	
<p>SITE DATA:</p> <p>Location: ANKLESHWAR, INDIA</p> <p>Building Air Exchanges Per Hour: 0.54 (unsheltered single storied)</p> <p>Time: April 25, 2017 1134 hours ST (using computer's clock)</p> <p>CHEMICAL DATA:</p> <p>Chemical Name: SULFUR DIOXIDE</p> <p>CAS Number: 7446-9-5</p> <p>Molecular Weight: 64.06 g/mol</p> <p>AEGL-1 (60 min): 0.2 ppm AEGL-2 (60 min): 0.75 ppm AEGL-3 (60 min): 30 ppm</p> <p>IDLH: 100 ppm</p> <p>Ambient Boiling Point: -10.0° C</p> <p>Vapor Pressure at Ambient Temperature: greater than 1 atm</p> <p>Ambient Saturation Concentration: 1,000,000 ppm or 100.0%</p> <p>ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)</p> <p>Wind: 2 meters/second from SW at 3 meters</p> <p>Ground Roughness: open country Cloud Cover: 5 tenths</p> <p>Air Temperature: 32° C</p>	<p>Scenario :</p> <p>Toxic vapor release during the fire incident in 300MT organic waste storage shed. Approximately 1 MT SO₂ is considered.</p> <div style="text-align: center;"> <p>kilometers</p> <p>3 1 0 -1 -3</p> <p>0 2 4 6 8 10</p> <p>kilometers</p> <p>wind →</p> <p> █ greater than 30 ppm (AEGL-3 [60 min]) █ greater than 0.75 ppm (AEGL-2 [60 min]) █ greater than 0.2 ppm (AEGL-1 [60 min]) — wind direction confidence lines Note: Threat zone picture is truncated at the 10 km limit. </p> </div> <p>THREAT ZONE:</p> <p>Model Run: Heavy Gas</p> <p>Red : 729 meters --- (30 ppm = AEGL-3 [60 min])</p> <p>Orange: 6.4 kilometers --- (0.75 ppm = AEGL-2 [60 min])</p> <p>Yellow: greater than 10 kilometers --- (0.2 ppm = AEGL-1 [60 min])</p>

<p>DATA)</p> <p>Wind: 3 meters/second from SW at 3 meters</p> <p>Ground Roughness: open country Cloud Cover: 5 tenths</p> <p>Air Temperature: 32° C</p> <p>Stability Class: D (user override)</p> <p>No Inversion Height</p> <p>Relative Humidity: 50%</p> <p>SOURCE STRENGTH:</p> <p>Direct Source: 1000 kilograms/hr Source Height: 3 meters</p> <p>Release Duration: 30 minutes</p> <p>Release Rate: 16.7 kilograms/min</p> <p>Total Amount Released: 500 kilograms</p> <p>Note: This chemical may flash boil and/or result in two phase flow.</p>	<p>min])</p> <p>Orange: 3.3 kilometers --- (0.75 ppm = AEGL-2 [60 min])</p> <p>Yellow: 6.6 kilometers --- (0.2 ppm = AEGL-1 [60 min])</p>
---	---

Relative Humidity: 50%

SOURCE STRENGTH:

Direct Source: 1000 kilograms/hr Source Height: 3 meters

Release Duration: 30 minutes

Release Rate: 16.7 kilograms/min

Total Amount Released: 500 kilograms

Note: This chemical may flash boil and/or result in two phase flow.

3. HYDROGEN CHLORIDE - 3 m/s - wind velocity, D- Weather class - 1MT

SITE DATA:

Location: ANKLESHWAR, INDIA

Building Air Exchanges Per Hour: 0.72 (unsheltered single storied)

Time: April 25, 2017 1145 hours ST (using computer's clock)

CHEMICAL DATA:

Warning: HYDROGEN CHLORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Chemical Name: HYDROGEN CHLORIDE

CAS Number: 7647-1-0

Molecular Weight: 36.46 g/mol

AEGL-1 (60 min): 1.8 ppm AEGL-2 (60 min): 22 ppm AEGL-3 (60 min): 100 ppm

IDLH: 50 ppm

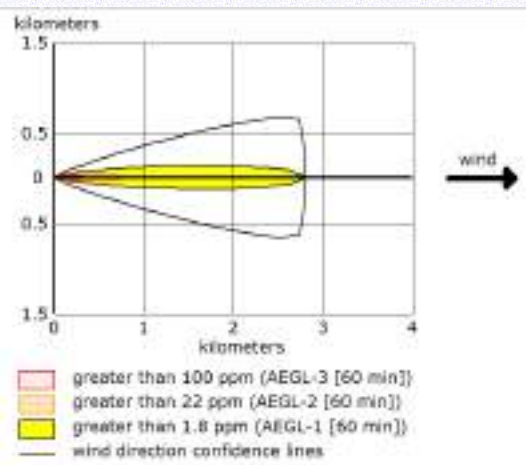
Ambient Boiling Point: -85.0° C

Vapor Pressure at Ambient Temperature: greater than 1 atm

Ambient Saturation Concentration: 1,000,000

Scenario :

Toxic vapor release during the fire incident in 300MT organic waste storage shed. Approximately 1 MT SO₂ is considered.



THREAT ZONE:

Model Run: Heavy Gas

Red : 340 meters --- (100 ppm = AEGL-3 [60 min])

<p>ppm or 100.0%</p> <p>ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)</p> <p>Wind: 3 meters/second from SW at 3 meters</p> <p>Ground Roughness: open country Cloud Cover: 5 tenths</p> <p>Air Temperature: 32° C</p> <p>Stability Class: D (user override)</p> <p>No Inversion Height Relative Humidity: 50%</p> <p>SOURCE STRENGTH:</p> <p>Direct Source: 1000 kilograms/hr Source Height: 3 meters</p> <p>Release Duration: 30 minutes</p> <p>Release Rate: 16.7 kilograms/min</p> <p>Total Amount Released: 500 kilograms</p> <p>Note: This chemical may flash boil and/or result in two phase flow.</p>	<p>Orange: 757 meters --- (22 ppm = AEGL-2 [60 min])</p> <p>Yellow: 2.8 kilometers --- (1.8 ppm = AEGL-1 [60 min])</p>
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Height: 3 meters
 Release Duration: 30 minutes
 Release Rate: 16.7 kilograms/min
 Total Amount Released: 500 kilograms
 Note: This chemical may flash boil and/or result in two phase flow.

4.NITROGEN DIOXIDE, 3 m/s - wind velocity, D- Weather class - 1MT

SITE DATA:

Location: ANKLESHWAR, INDIA
 Building Air Exchanges Per Hour: 0.72 (unsheltered single storied)
 Time: April 25, 2017 1138 hours ST (using computer's clock)

CHEMICAL DATA:

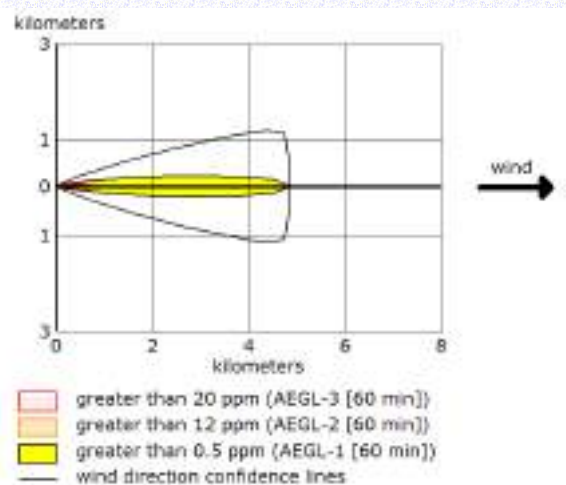
Chemical Name: NITROGEN DIOXIDE
 CAS Number: 10102-44-0 Molecular Weight: 46.01 g/mol
 AEGL-1 (60 min): 0.5 ppm AEGL-2 (60 min): 12 ppm AEGL-3 (60 min): 20 ppm
 IDLH: 20 ppm
 Ambient Boiling Point: 21.0° C
 Vapor Pressure at Ambient Temperature: greater than 1 atm
 Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: 3 meters/second from SW at 3 meters
 Ground Roughness: open country Cloud Cover: 5 tenths
 Air Temperature: 32° C
 Stability Class: D (user override)
 No Inversion Height Relative

Scenario :

Toxic vapor release during the fire incident in 1 MT organic waste drum storage shed.



THREAT ZONE:

Model Run: Heavy Gas
 Red : 702 meters --- (20 ppm = AEGL-3 [60 min])
 Orange: 920 meters --- (12 ppm = AEGL-2 [60 min])
 Yellow: 4.9 kilometers --- (0.5 ppm = AEGL-1 [60 min])

Humidity: 50%

SOURCE STRENGTH:

Direct Source: 1000 kilograms/hr Source
Height: 3 meters

Release Duration: 30 minutes

Release Rate: 16.7 kilograms/min

Total Amount Released: 500 kilograms

Note: This chemical may flash boil and/or result
in two phase flow.

Flammable gas is burning as it escapes from pipe

Pipe Diameter: 3 inches

Pipe Length: 200 meters

Unbroken end of the pipe is connected to an infinite source

Pipe Roughness: smooth Hole Area: 7.07 sq in

Pipe Press: 2 atmospheres Pipe Temperature: 32° C

Max Flame Length: 6 meters

Burn Duration: ALOHA limited the duration to 1 hour

 Max Burn Rate: 46.5 kilograms/min

 Total Amount Burned: 964 kilograms

5.NG Gas, 3 m/s - wind velocity, D- Weather class

SITE DATA:

Location: ANKLESHWAR, INDIA

Building Air Exchanges Per Hour: 0.72 (unsheltered single storied)

Time: May 8, 2017 1206 hours ST (using computer's clock)

CHEMICAL DATA:

Chemical Name: METHANE

CAS Number: 74-82-8

Molecular Weight: 16.04 g/mol

PAC-1: 65000 ppm PAC-2: 230000 ppm PAC-3: 400000 ppm

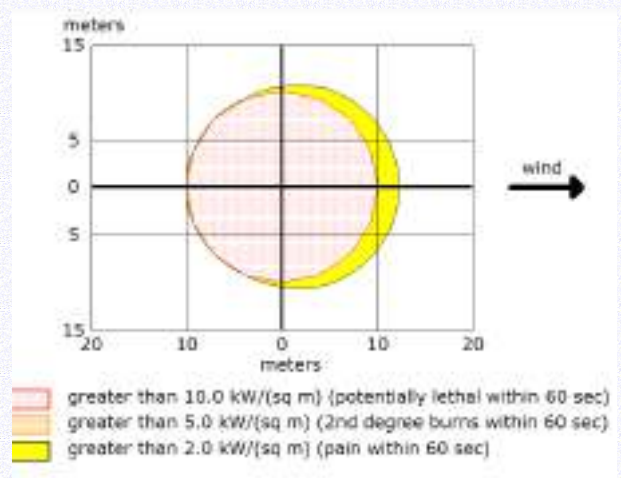
LEL: 50000 ppm UEL: 150000 ppm

Ambient Boiling Point: -161.5° C

Vapor Pressure at Ambient Temperature: greater than 1 atm.

Ambient Saturation Concentration: 1,000,000

Scenario: Jet fire from NG gas line leakage, 3 inch pipe size



THREAT ZONE:

Threat Modeled: Thermal radiation from jet fire

Red : 10 meters --- (10.0 kW/(sq m) = potentially lethal within 60 sec)

Orange: 10 meters --- (5.0 kW/(sq m) = 2nd

<p>ppm or 100.0%</p> <p>ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)</p> <p>Wind: 3 meters/second from SW at 3 meters</p> <p>Ground Roughness: open country Cloud Cover: 5 tenths</p> <p>Air Temperature: 32° C</p> <p>Stability Class: D (user override)</p> <p>No Inversion Height</p> <p>Relative Humidity: 50%</p> <p>SOURCE STRENGTH:</p> <p>Flammable gas is burning as it escapes from pipe</p> <p>Pipe Diameter: 3 inches</p> <p>Pipe Length: 200 meters</p> <p>Unbroken end of the pipe is connected to an infinite source</p> <p>Pipe Roughness: smooth</p> <p>Hole Area: 7.07 sq in</p> <p>Pipe Press: 2 atmospheres</p> <p>Pipe Temperature: 32° C</p> <p>Max Flame Length: 6 meters</p> <p>Burn Duration: ALOHA limited the duration to 1 hour</p> <p>Max Burn Rate: 46.5 kilograms/min</p> <p>Total Amount Burned: 964 kilograms</p>	<p>degree burns within 60 sec)</p> <p>Yellow: 12 meters --- (2.0 kW/(sq m) = pain within 60 sec)</p>
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Pls. refer Annexure – 10 & 11 on page no. 110 & 111 respectively.

8. ENVIRONMENTAL IMPACT ASSESSMENT

The project data/activities has been analyzed & linked with the existing baseline environmental conditions in order to list out the affected environmental parameters and assess the likely impacts on such parameters. Pls. refer Annexure – 12 & 13 on page no. & 112 & 113 respectively.

CCHAPTER-III

EMERGENCY ORGANISATION

This chapter is device to suggest the organization for emergency preparedness. No plan will succeed without emergency organization. Key personnel to combat emergency are nominated with specific responsibilities according to the set procedures (rehearsed) and making the best use of resources available and to avoid confusion). Such key personnel include incident controller, Site main controller, other key personnel and essential workers. Assembly points for non-essential workers, emergency control centre, ambulance van, fire and toxicity control arrangements, medical arrangements, transport and evacuation arrangements, pollution control arrangements, other arrangements and persons to manage them are also an important part of the emergency organization.

1. INCIDENT CONTROLLER:

His primary duty is to take charge at the scene of the incident. In the initial stages he may be require to take decisions involving the operation of the other plants or to stop or to continue any process and to take technical decision to control the incident. Therefore, he should be fully knowledgeable for these purposes. He might be the shift or plant manager. Appoint such person for each shift including holidays. Any one incident controller must be available at any time. Their duties are fixed that way. The deputy is appointed to take charge of Incident Controller, if he is not available due to some any reason. He is also equally competent.

Responsibilities / Duties of Incident Controller

1. Assess the scale of the emergency and decide if a major emergency (for identification see page-6) exists or is likely. On his decision, he will activate the on-site emergency plan and if necessary the off-site emergency plan (see page-6).
2. Assume the duties of the Site Main Controller pending the latter's arrival (for SMC's duties see page-43). For this purpose, he will depute his deputy on the scene and he will go to the control center. Particularly he will-
 - a. Direct the shutting down and evacuation of the plant and areas likely to be affected by the emergency.
 - b. Ensure that the outside emergency services, including mutual aid, have been called in.

- c. Ensure that key personnel have been called in.
3. Direct all operations within the affected area with the following priorities:
 - a. Secure the safety of the personnel.
 - b. Minimize damage to plant, property and the environment.
 - c. Minimize loss of material.
4. Direct rescue and fire-fighting operations until the arrival of the outside Fire Brigade, when he will relinquish control to the Fire Brigade.
5. Search for casualties.
6. Evacuate non-essential workers to the assembly points.
7. Set up a communications point and establish radio/telephone/messenger contact as appropriate with the Emergency Control Centre.
8. Give advice and information as requested to the Head of the Fire Brigade and other Emergency Services.
9. Brief the site main controller and keep informed of developments.
10. Preserve evidences that will be necessary for subsequent inquiry in to the cause of the emergency and concluding preventive measures.

Pls. refer Annexure – 14 on page no. 114

Deputy Incident controller is appointed to deal with the emergency in absence of Incident Controller.

Pls. refer Annexure – 15 on page no. 114

2. SITE MAIN CONTROLLER:

He has overall responsibility for directing operations and calling outside help from emergency control center. He is required to take decisions by collaboration between the senior managers at the site (works) and the senior officers of the outside services.

Responsibilities / Duties of Incident Controller

Immediately being aware of the emergency, he will go to the emergency control center. On arrival, he will –

1. Relieve the incident controller of responsibility for overall main control.
2. On consultation with the incident controller decide whether major emergency exist and on declaration of a major emergency, ensure that the outside emergency services and mutual help are called, the off-site plan (page-3) activated and if necessary, nearby factories and population are informed.

3. Ensure that the key personnel are called in.
4. Exercise direct operational control of those parts of the works outside the affected area.
5. Continually review and assess possible developments to determine the most probable course of events.
6. Direct the safe close down and evacuation of plants in consultation with the incident controller and key personnel. If necessary, arrange for evacuation of neighboring population.
7. Ensure that casualties are receiving adequate attention. Arrange for hospitalization of victims and additional help, if required. Ensure that the relatives are advised.
8. Inform and communicate with the chief officers of the fire and police service. District emergency authority and with the factory inspectorate and experts on health and safety. Provide advice on possible effects on areas outside the factory.
9. In case of prolonged emergencies involving risk to outside areas by wind-blown materials. Contact the local meteorological office to receive early notification of impending changes in weather conditions.
10. Ensure the accounting for personnel and rescue of missing persons.
11. Control traffic movement within the factory.
12. Arrange for a chronological record of the emergency to be maintained.
13. Where the emergency is prolonged, arrange for the relief of personnel and the provision of catering facilities.
14. Issue authorized statements to the news media. Where necessary, inform head office.
15. Ensure that proper consideration is given to the preservation of evidence. Arrange for photographs/videos.
16. Control rehabilitation of affected areas and victims on cessation of the emergency. Do not restart the plant unless it is ensured safe to start and cleared by authorities.

Pls. refer Annexure – 16 on page no. 115

3. OTHER KEY PERSONNEL:

Other key personnel are required to provide advice to and implement the decisions made by the site main controller in the light of information received on the developing situation at the emergency.

Such key personnel include the senior managers responsible for safety, security, fire, gas, and spill control, pollution control, communication system including telephone, wireless, messenger etc. medical services, transport, engineering, production, technical

services (including utilities, laboratories), stores and personnel (including welfare, canteen, etc.).

As necessary, they will decide the actions needed to shut down plants, evacuate personnel, carry out emergency engineering work, arrange for supplies of equipment, utilities (fuel, water, power, etc.) carry out atmospheric tests, provide catering facilities, liaise with police, fire brigade, emergency planning authority, factory inspectorate, hospitals, neighboring industries find population, assembly points, outside shelters, mutual aid centers, relatives of casualties, press and so on, under the direction of the site main controller.

At the declaration of a major emergency, all key personnel and others called in to assist shall report to the emergency control center. They shall be available at any time on duty or on call on off-duty or holiday.

Pls. refer Annexure – 17 on page no. 115

4. ESSENTIAL WORKERS:

A taskforce of essential trained workers (expert's teams) must be available to get the work done by the incident controller and the site main controller, such work will include:

1. Firefighting, gas leak and spill control till a fire brigade takes the charge.
2. To help to the fire brigade and mutual aid teams, if it is so required.
3. Shutting down plant and making it safe.
4. Emergency engineering work e.g. isolating equipment, materials, process, providing temporary by-pass lines, safe transfer of material, urgent repairing or replacement, electrical work etc.
5. Provision of emergency power, water, lighting, instruments, equipments, material etc.
6. Movement of equipment, special vehicle and transport to or from the site of the incident.
7. Search evacuation, rescue, and welfare.
8. First-aid and medical help.
9. Moving tankers or other vehicles from areas of risk.
10. Carrying out atmospheric test and pollution control.
11. Managing of assembly points to record the arrival of evacuated personnel. Managing for outside shelters and welfare of evacuated persons there.
12. Assistance at casualties' reception areas to record details of casualties.

13. Assistance at communication centers to handle outgoing and incoming calls and to act as messengers if necessary.
14. Manning of works entrances in liaison with the police to direct emergency vehicles entering the work, to control traffic leaving the works and to turn away or make alternative safe arrangements for visitors, contractors and other traffic arriving at the works.
15. Informing surrounding factories and the public as directed by the site main controller.
16. Any special help required.

Pls. refer Annexure – 18 on page no. 116

5. ASSEMBLY POINTS:

In affected and vulnerable plants, all non-essential workers (who are not assigned any emergency duty) shall evacuate the area and report to a specified assembly point. The need to evacuate non-essential workers from non-affected area will be determined by the size of works and the foreseeable rate at which the incident may escalate.

Each assembly point is clearly marked by a conspicuous notice and provided with an identification number e.g. ASSEMBLY POINT NO.1 mark such points permanently for the notice of people.

Total three assembly points are provided:

- (1) To ensure that employees do not have to approach the affected area to reach the point
- (2) In case any assembly point lies in the path of windblown harmful materials e.g. toxic gas, burning brands, thrown (exploded) materials, etc. in case the factory is big having more plants and wide area.

Each assembly point is managed by a nominated person(s) to record the names and departments of those reporting there. He has a means of communication with the site main controller in case it is necessary to establish the whereabouts of people and to receive further instructions concerning the deployment of the evacuated personnel.

Before reaching an assembly point or subsequently, if it is required to pass through an affected area or the release of toxic substance, suitable personal protective equipments (PPE) including respirator, helmets, etc. should be available to the people.

Pls. refer Annexure – 19 on page no. 117

6. EMERGENCY CONTROL CENTRE:

The emergency control center (or room) is the place from which the operations to handle the emergency are directed and coordinated. It will be attended by the site main controller, key personnel and senior officers of the fire, police, factory inspectorate, district authorities and emergency services. The center is equipped to receive and transmit information and directions from and to the incident controller and areas of the works as well as outside. It also has equipment for logging the development of the incident to assist the controllers to determine any necessary action.

In addition to the means of communication, the center is equipped with relevant data and equipment which will assist those manning the center to be conversant with the developing situation and enable them to plan accordingly.

It is sited in an area of minimum risk and close to a road to allow for ready access by a radio-equipped vehicle for use if other systems fail or extra communication facilities are needed.

The center therefore contains:

1. An adequate number of external telephones.
2. An adequate number of internal telephones.
3. Mobile phones and walkie-talkie.
4. Plans of the factory.
5. Additional plans which may be marked up during the emergency to show:
 - a) Areas affected or endangered within the factory.
 - b) Surrounding areas, population and other environment likely to be affected due to toxic release, wind speed recorders and ready computer models (risk counters) based on prevailing wind direction, velocity, weather conditions and other parameters, will be much useful for quick judgment and evacuation of those areas.
 - c) Areas where particular problems arise.
 - d) Area evacuated and safe routes for escape.
 - e) Deployment of emergency vehicles and personnel.
 - f) Other relevant information.
6. Nominal roll of employees, work permits, gate entries and documents for head count or access to this information. Employee's blood group information and addresses will also be useful.
7. Note pads, pens, pencils, rubber and stationery to record all messages received and sent by whatsoever means.

8. Note copies of this on-site emergency plan i.e. updated full text including all annexure. From this, some vehicles and messengers (runners) should be kept ready at the center.

9. A tape-recorder and video to record the incident and evidences of the cause and effect and actions to control the emergency.

10. Torches, umbrella, rain coats and some extra sets of gas detectors, explosive meters and personal protective equipments.

Pls. refer Annexure – 20 on page no. 117

7. FIRE AND TOXIC CONTROL ARRANGEMENTS:

BEIL has its own TAC approved wet fire hydrant system:

1. Total 120 numbers of Fire Extinguishers are available in plant, utility, QC, tank farm and storage area to handle any class of Fire. The portable fire extinguishers provided in the all area are mainly of ABC/ Dry Chemical, Carbon Dioxide & M. Foam type. The Electrical installations are provided with Carbon dioxide type of fire extinguishers. Apart from above, trolley mounted Carbon Dioxide & M. Foam type fire extinguisher is located near Electrical Control Panel & storage area.
2. Wet fire hydrant system has been provided in the factory area with jockey pump and main fire pumps, which come on line automatically when there is a pressure drop in the fire hydrant system. The main Hydrant Pump connected to the Fire Hydrant System is electrical driven. The standby can be Diesel Engine Driven Pump or Electrical Motor driven connecting to alternate source of energy from DG in case of failure of main electrical supply.

a) Fire Fighting Water Storage Details

Sr. No.	Description	Capacity
1	Raw water storage	200 KL
2	Fire water storage	1000 KL
	Total Water Storage	1200 KL

b) Jockey Pump

Capacity : 03 M3/Hr. at 70-M head

RPM : 2900

Motor HP : 10

c) Diesel Driven Pump

Capacity : 273 M3/hr. at 70-M head

RPM : 1880

Motor HP : 133

d) Electrical Power-Driven Pump

Capacity : 273 M3/Hr. at 70-M head

RPM : 2970

Motor HP : 120

e) Electrical Power-Driven Pump

Capacity : 173 M3/Hr. at 70-M head

RPM : 2935

Motor HP : 60

f) Fire Hydrant Point Details

Sr. No.	Description	Quantity
1	Single hydrant	57 Nos.
2	Water monitor	26 Nos.
3	Hose pipe	28 Nos.
4	Hose box	23 Nos.

g) Sand Buckets

Sr. No.	Description	Quantity
1	DG room	03 Nos.
2	HT yard	03 Nos.
3	Shed No. 1	05 Nos.
4	Shed No. 2	05 Nos.
5	Shed No. 3	05 Nos.
6	Shed No. 4	05 Nos.
7	Shed No. 5	05 Nos.
8	Shed No. 6	04 Nos.
9	Shed No. 7	05 Nos.
10	Shed No. 8	05 Nos.
11	Shed No. 9	05 Nos.
12	Shed No. 10	05 Nos.
13	Helipad	07 Nos.
	Total	62 Nos.

h) External Fire Fighting Service

For additional help in firefighting, the fire brigade can be called from DPMC Ankleshwar, Panoli, ONGC & Bharuch Nagarpalika. The response time to get external help from above fire station and the distances are as below:

Sr. No.	Fire Brigade Station	Distance	Response Time
1	DPMC Ankleshwar	3 KM	5 Min.
2	ONGC, Ankleshwar	6 KM	8 Min.
3	Nagarpalika, Ankleshwar	7 KM	10 Min.
4	Fire Station, Panoli	10 KM	15 Min.
5	Nagarpalika, Bharuch	12 KM	30 Min.
6	GNFC Bharuch	15 KM	35 Min.

2. Emergency Handling Arrangement

1. Emergency Control Center : 01 Nos. (Main Gate)

It is sited in Office Building, which is readily accessible & with minimum risks equipped with telephone facilities and announcements if extra communications facility needed. It has enough means to receive and transmit information and directions from Emergency Controller to incident controller and other areas.

In emergency control center due to its safer location and advantage of easier accessibility, all necessary personnel protective equipment, and fire fighting extinguishers are stocked in sufficient quantity.

2. SCBA : 06 Nos.

- Near Old control room : 01 Nos.
- Safety Office : 01 Nos
- Charging Area : 01 Nos
- Incinerator Plant Building : 01 Nos
- MEE Plant : 01 Nos
- Plastic Processing Plant : 01 Nos

3. Assembly Points : 03 Nos.

4. Siren : 02 Nos. (Plant-1 + Adm. Building)

5. Wind Indicator : 07 Nos. (Plant-1 + Adm. Bldg. + Phase-1
+Lab building+ plant-2+ inci control room)

3. Other PPE's available at ECC.

Sr. No.	Name of PPE	Qty.	Sr. No.	Name of PPE	Qty.
1	Safety Helmet	06 Nos.	5	Face Shield	03 Nos.
2	Disposable Hand Gloves	02 Pkts.	6	PVC Apron	02 Nos.
3	PVC Hand Gloves	06 Pkts.	7	Safety Belt	02 Nos.
4	Safety Goggles	06 Nos.	8	Air Bubble Hood	02 Nos.

Pls. refer Annexure – 21 on page no 118

8. MEDICAL ARRANGEMENTS:

Occupational health centre is available for medical treatment of the workers in normal working and also at the time of emergency. It is fully equipped with necessary instruments, arrangements, medicines including antidotes, and staff. It has sufficient space, capacity and sited in a safe place (avoiding normal downwind direction). There are sufficient first aid boxes and first aiders properly trained. The staff is available round the clock.

An emergency vehicle is available for the purpose of transportation of serious cases of accidents or sickness.

First Aiders

1. First Aid trained staff available round the clock in each plant. The First Aiders are arranged/selected such that in each shift, minimum one first aider is available in all plant.
2. External Faculty gives First Aid Training to all First Aiders.

First Aid Box

First-aid boxes with emergency medicines are available at following locations:

- ✓ Electrical panel room
- ✓ Safety office
- ✓ Safety office (mobile)
- ✓ Instrument office
- ✓ Plant-1 control room
- ✓ Laboratory
- ✓ Security office
- ✓ MEE plant
- ✓ Plastic Processing Plant
- ✓ Stabilisation Plant
- ✓ Manitenance room
- ✓ Ambulance Van
- ✓ OHC (Mobile first aid box)

Routine checking of First Aid Box by HSE department.

Emergency Vehicle

Ambulance is available round the clock in factory premises to carry injured person into nearby hospital.

Hospital

Jayaben Modi hospital, GIDC Ankleshwar & Municipal Hospital, Bharuch Hospital has all the facilities for treatment of serious cases and is well equipped with following. The hospitals are 5 km and 15 km away respectively Bharuch Enviro Infrastructure Ltd, Ankleshwar.

- X-Ray facilities, Pathological Laboratory.
- Well-equipped operation theatre and facilities to carry emergency surgery.
- Blood grouping facilities and Blood Bank.

The hospital has all the necessary specialists and medical staff with different wards and hospitalization.

Pls. refer Annexure – 22 on page no. 122

9. TRANSPORT AND EVACUATION ARRANGEMENTS:

Transport & Evacuation Arrangements are available in the factory round the clock.

Pls. refer Annexure – 23 on page no. 123

10. POLLUTION CONTROL ARRANGEMENTS:

Adequate pollution control arrangements for water, air & soil are provided.

Pls. refer Annexure – 24 on page no. 124

11. OTHER ARRANGEMENTS:

Heavy vehicles like JCB, forklifts are available round the clock. Transporters for material are also available round the clock. Two DG sets having 600 KV capacity are provided for alternate power supply in case of electricity failure.

Special equipments like oxygen meter, LEL meter, VOC meter are easily available.

Weather monitoring system is installed to monitor following parameters:

- Ambient temperature
- Wind direction
- Wind speed
- Humidity
- Rain flow
- UV radiation
- Barometric pressure

Apart from these, BEIL has formed an Emergency Response Team to deal with any kind of emergency.

Pls. refer Annexure – 25 on page no. 125

CHAPTER-IV

COMMUNICATION SYSTEM

The communication system beginning with raising the alarm, declaring the major emergency and procedure to make it known to others is explained below in brief.

1. RAISING THE ALARM:

In BEIL plant there are 02 Nos. of alarm/sirens. In case of an emergency, any person can press the button so that alarm/alarm can be heard. Alarm is audible all over the factory.

Siren Code

Sr. No.	Siren Type	Description
1	Fire or Other emergency	10 sec. ON & 5 sec. OFF three times
2	Gas leak	15 Sec. ON & 15 Sec. OFF four times
3	All clear	1 min. continue
4	Testing	1 Min. Continuous on every Wednesday

Pl. refer Annexure-26 on page No. 125

Security personnel who will initiate appropriate action to call on/pass on information to all required persons. Complete list of internal phone nos. & external phone nos. is available with security personnel. Availability of emergency vehicle is always ensured.

Pl. refer Annexure-27 & 28 on page No. 126 & 127 respectively for the list of internal phone nos. & external phone nos.

As standard procedure any person can raise the alarm to control the situation at earliest possible and avoid the development of major emergency, where appropriate early notification to outside agency is also needed.

2. DECLARING THE MAJOR EMERGENCY:

The declaration of major emergency puts many agencies on action and the running system may be disturbed which may be very costly at times or the consequences may be serious, therefore such declaration should not be decided on whims or immature judgment or without proper thought.

In BEIL plant only Site Main Controller (SMC) does declaration of major emergency. In absence of SMC, persons are nominated for declaration of emergency.

Pl. refer Annexure-29 on page No. 128

3. TELEPHONE MESSAGES:

After hearing the emergency alarm and emergency declaration or even while just receiving the emergency message on phone, a telephone operator will immediately contact SMC and on his advice call the local fire brigade. In case internal/external telephone system becomes inoperative, he shall inform the Officer-HRD through a messenger/runner. In case fire is discovered but no alarm is sounding, he shall receive information about location from the person discovering the fire and thereafter immediately consult the Emergency Controller and inform on telephone to the staff, location of the Incident and to evacuate to their assembly points. His such duties are described in the emergency instruction booklet given as the last annexure.

Pl. refer Annexure-30 on page No. 129

4. COMMUNICATION OF EMERGENCY:

The telephone operator or ECC receives message regarding emergency and informs relevant authorities.

1. Inside the Factory to the Employees

Through the internal plant Announcement System.

2. To Key Personnel Outside Normal Working Hours

The detail of key personnel availability after working hours is made available at security gate as well as plants. Availability of emergency vehicle is ensured to fetch the key personnel residing outside.

3. To The Outside Emergency Services & The Authorities

Facilities such as phones, emergency vehicle, and security personnel are available to help in calling outside emergency services and authorities.

The emergency will be immediately communicated to the government officers and other authorities such as fire brigade, police, district emergency authority, factory inspectorate, hospital etc.

4. To Neighboring Firms & The General Public

In case of emergency public will be cautioned regarding the same. Co-ordination of police will be sought for speedy action.

Pl. refer Annexure-31 on page No. 130

CCHAPTER-V

ACTION ON SITE

1. CO-RELATED ACTIVITIES:

Following three stage co-related activities provide better points for emergency preparedness, emergency actions and subsequent follow up.

(a) Pre-emergency activities

- Internal safety survey with regard to identification of hazards, availability of protective equipment, checking for proper installation of safety devices is carried out periodically.
- Periodic pressure testing of equipment.
- Periodic non-destructive testing of lines.
- Periodic safety/relief valves testing.
- Periodic fire hydrant system testing.
- Mutual aid scheme with the neighboring organizations for getting / extending help to each other in emergency.
- Mock drill to check up level of confidence, extent of preparedness of personnel to face emergency is being contemplated.
- Regular training to all personnel to create awareness.
- Adequate safety equipments are made available.
- Internal/ external communication system is maintained in good working order.
- 5 kms. Range siren system is installed which can be operated in case of emergency.
- Wind-cocks/wind recorders are installed inside the plan areas as prominent locations to indicate wind direction and velocity.

- Periodic checkup of emergency lights.
- Emergency Control Center is identified
- Safe assembly points are identified.
- Storage of adequate first aids treatment facilities.
- Statutory information is imparted to workers

(b) Emergency Time activities

During emergency, all personnel will work with specific objective in consultation with Incident Controller to tackle the situation.

(c) Post Emergency Time activities

Post emergency activities comprise of steps taken after the emergency is over so as to establish the reasons of the emergency and preventive measures.

The steps involved are-

- ✓ Collection of records
- ✓ Conducting enquiries and concluding preventive measures
- ✓ Making insurance claims
- ✓ Preparation of inquiry reports and suggestion scheme.
- ✓ Implementation of inquiry report’s recommendations.
- ✓ Rehabilitate the affected persons within the plant and outside the plant.
- ✓ To restart the plant.

2. CONTROLLING EMERGENCY:

MODE OF EMERGENCY

Man made	Natural Calamities	Extraneous
Fire	Flood	Riots/Civil Disorder /Mob attack
Toxic Release	Earthquake	Terrorism
Spillage / Leakage of solid / liquid material during transportation	Cyclone	Bomb Threat
Unsafe act / condition		War

Some hazardous events and their control procedures are explained below in brief:

(A) Fire

- ✓ Inform Incident Controller at once when the fire is noticed.
- ✓ Put off electrical mains for the plant where in fire is observed, connected MCC's for the plant should be put off.
- ✓ Fire lighting crew to be directed for immediate actions in the area for extinguishing the fire by use of fire extinguishers and water from fire hydrant posts.
- ✓ Simultaneously put off the source of gas emission.
- ✓ Steps to be taken to evacuate non-essential persons.
- ✓ Use of portable fire extinguishers like foam type, ABC type to be made to contain the solvent fire.
- ✓ Use of water to be made to extinguish the fire and cooling off the equipment and storage surface till the fire extinguished and equipment are cooled.
- ✓ In case of Carbon dioxide do not allow the persons to enter into the area till the time, the carbon dioxide is dispersed and diluted to avoid any suffocation.
- ✓ To put off the fire due to solvents make use of excessive foam/DCP/ABC type fire extinguishers & water fog. Make use of excessive water to cool the surface area of equipment.
- ✓ Provide gas masks, Goggles, Aprons, Helmets and safety wears to the firefighting team.
- ✓ Keep people away from the danger area.
- ✓ Do not permit any naked flame and smoking in the area.
- ✓ Stop leakages and flush the leaky liquid, do not allow flow the leaky liquid in the drain.
- ✓ Give the first aid to the injured persons.
- ✓ If necessary induce vomiting, give artificial respiration and the effected person should be sent to the nearest doctor/clinic.
- ✓ Inform neighboring industries and population.
- ✓ Contact fire brigade, Police, Doctor/Hospital and other authorities.
- ✓ Contact statutory authorities and give information.
- ✓ Cordoned off whole area to restrict the entry by posting security personnel.

Action after Fire is Extinguished

The Incident Controller shall...

- a. Prepare immediate abnormal occurrence report as soon as possible and submit it to safety department/administration department.
- b. The affected department head shall carry out an investigation and prepare a detailed report mentioning any further requirement of facilities for tackling such type of emergencies.
- c. Before the plant is re-commissioned the mechanical/ electrical / instrumentation shall assess the danger to ensure equipment is safe for continued services.
- d. Make a note of the fire extinguisher used and need replacement

(B) Toxic Release

- Inform Incident Controller when vapors/gas leakage is noticed.
- Try to close the necessary valves to stop the gas leakage.
- Call the firefighting crew to take the immediate action to curtail the gas emission and spread up by use of water or appropriate medium (water in the form of fog will reduce the concentration of acidic vapors in the surrounding).
- Start putting water on the source of leakage to minimize gas emission.
- During above operation use longer duration sets of breathing apparatus and full body protective suits apart from plastic or rubber gloves, boots and goggles.
- Keep people away from the danger area.
- Do not permit naked flame or smoking in the area.
- After stopping the leakages flush the area with ample water if the leaked material does not react with water. For the material, which reacts with water, absorb in sawdust & incinerate.
- Give the first aid to the injured persons.
- Bring the patient to the fresh air, give the victim sufficient water and milk and transport to health care facility.
- In the event of a fire, the emergency plan must be executed on a timely basis.

In case of release of liquid/vapors in high concentration the Site Main Controller will co-ordinate the activities with incident controller. Under his direction, plant will be shut down. Non-essential workers will be sent to assembly points.

(C) Spillage of solid waste during transportation:

- On Noticing spillage, intimate safety officer and Plant Manager through Intercom/telephone system and clearly inform about
 - 1) The Location
 - 2) Manifest No.
 - 3) Characteristics of material
- Evacuate & barricade the Area
- Use following PPEs
 - Boiler suit
 - Hand Gloves
 - Apron
 - Face Mask or Safety goggles
 - Helmet
 - Multi gas cartridge mask
 - Gum Boot
- Check Wind Direction & monitor the surrounding environment.
- Reach to the place through the opposite way to wind direction
- Cover the spilled are by using dry soil or fly ash as absorbing inert media.
- Collect the material in plastic bags / drums and clean the floor.
- Send the material for proper disposal.

(D) Leakage of liquid material during transportation:

- On Noticing leakage, intimate safety officer and Plant Manager through Intercom/telephone system and clearly inform about
 - 4) The Location
 - 5) Manifest No.
 - 6) Characteristics of material
- Evacuate & barricade the Area
- Use following PPEs
 - Boiler suit
 - Hand Gloves

- Apron
 - Face Mask or Safety goggles
 - Helmet
 - Multi gas cartridge mask
 - Gum Boot
- Check Wind Direction & monitor the surrounding environment.
 - Reach to the place through the opposite way to wind direction
 - Roll the drum and take down from the palate
 - Put on other palates as such the leaky position of drum or container comes on upside, so the leakage of liquid can be stopped immediately.
 - Cover the leaky part by applying liner or plastic bag and tight by using plastic string
 - Use dry soil or fly ash as absorbing inert media and spray over the spilled liquid.
 - After solidification collect the material in a plastic bag and clean the floor
 - Send the material for proper disposal
 - Send the leaky container or drum to Incinerable waste treatment area

(E) Landfill slope failure:

- Inform Incident Controller when slope failure is noticed
- Implementation of onsite emergency plan
- Incoming waste to be stopped
- Slope failure may increase exposure risk to personnel and public so necessary PPEs to be provided. Relocation and covering of waste to be performed quickly and safely
- Perform mitigating activity to limit further contamination or damage
- Work to be done round the clock
- Primary report to be prepared and reviewed at regular intervals regarding the activities of waste shifting.

(F) Water accumulation in landfill due to heavy rain:

We are keeping four nos of Diesel pump of 40 m³/hr capacity and 5 Electric pump of 80 m³/hr capacity to pump out the accumulated water due to heavy rain. In the event of a landfill instability such as a slope failure the first concern is always safety, safety of site personnel, safety of site entrants, and safety of general public. The situation will need to be assessed concisely and necessary emergency procedures and precautions implemented as quickly as possible.

- Inform Incident Controller when water accumulation is noticed
- Implementation of onsite emergency plan
- Start pumps to pump out the water accumulated.
- Check the water quality, if contaminated send for treatment.
- Necessary PPEs like helmet, gum boot, hand gloves, rain coat to be provided. If required, relocation and covering of waste to be performed quickly and safely
- Perform mitigating activity to limit further contamination or damage
- Work to be done round the clock
- Primary report to be prepared and reviewed at regular intervals regarding the activities of waste shifting.

(G) Electric Shock:

- Electric shock results in irreversible damage to brain cells followed by deterioration of other organs.
- Rescue and first aid –
- Do first thing first, quickly and without fuss or panic.
- Switch off the supply if this can be done at once. If not possible, use a dry stick, dry cloth or other nonconductor to separate the victim of electrical contact. The rescuer must avoid receiving shock himself by wearing gloves or using a jacket to pull the victim. Always keep in mind that delay in rescue and resuscitation may be fatal. Every second counts.
- Artificial respiration
 - Give artificial respiration, if breathing has stopped. There are several methods of artificial respiration. If the victim is not injured over the face, try mouth to mouth. If the victim is injured over the face, use Silverster Brosch method.

(H) Snake Bite:

- Reassure the patient
- Do not allow the person to run or walk
- Apply a ligature above the wound (in between the heart and the wound) if the bite is in the leg or hand.
- Wash the wound with potassium permanganate solution or with soap and water.
- Allow free bleeding.
- Never suck the blood from the wound.
- Treat for shock.
- Arrange immediate hospitalization, by transporting the patient in a lying down position.

3. EVACUATION & TRANSPORT:

In case of emergency, evacuation and transportation of non-essential workers is carried out immediately after hearing Siren. The effected personnel will be transported for medical aid. Availability of transportation is always essential.

4. SAFE CLOSE DOWN:

During emergency, plant shut down will be carried out if you hear siren or instruction from SMC or Incident Controller.

5. USE OF MEDICAL AID:

The help from outside i.e. mutual aid will be taken if required by Site Main Controller.

6. USE OF EXTERNAL AUTHORITIES:

As and when necessary, statutory authorities, police, pollution control personnel, medical aid/center, ambulance etc. will be contacted.

7. MEDICAL TREATMENT:

The effected personnel will be brought to safer place immediately to give them first aid. Immediate medical attention will be sought.

8. ACCOUNTING FOR PERSONNEL:

Proper accounting for personnel as laid down in all the shifts. The number of persons present inside the plant premises, their duty etc. will be available with the security staff. This record will be regularly updated and will be made available.

9. ACCESS TO RECORD:

The relatives of affected personnel will be informed. The details regarding all employees are made available at Administration building.

10. PUBLIC RELATIONS:

A senior manager is appointed as the sole authoritative source of information to the news media. All other employees are instructed not to divulge information themselves which may, in the event, be misleading or inaccurate.

11. REHABILITATION:

The affected area will be cleared from emergency activities only after positive ascertaining of the system in all respects. The entry to affected area will have to be restricted until statutory authorities visit and inspect the spot of incident. Nothing should be disturbed from the area till their clearance. The Site Main Controller will be incharge of the activities to be undertaken.

The plan will cover emergencies, which can be brought under control by the works with the help of emergency team/fire services. Emergency Control Plan for gas leak & fire has been prepared for entire factory.

LEVEL OF EMERGACY

Level of emergency can be classified in three categories:

Level 1

The emergency, which is containable within the plant premises. Emergency may be due to

- A.** Small spot fire in the Incinerator plant or Landfill
- B.** Low quantity toxic gas leakage for short duration / small organic liquid leakage
- C.** Collapsing of small equipment's / line failure.
- D.** Electrical Shock
- E.** Snake bite

Level 2

The emergency, which is containable within the factory premises. Emergency may due to

- A.** Big fire in factory premises/Fall of structure/failure of line, vessel etc...
- B.** Medium scale explosion.
- C.** Heave leakage of toxic / flammable gas for short duration
- D.** Leakage from drum containing toxic hazardous liquid waste
- E.** Collapsing of heap of soil during construction of landfill

Level 3

1. Incinerator

Likelihood of cloud formation of toxic and / or flammable gases & drifting of such cloud affecting the general public and/or surrounding industries. The emergency may be due to

- A.** Explosion in high-pressure vessel containing toxic / flammable material.
- B.** Heavy leakage of toxic material or corrosive fumes for a long duration, from pipeline or storage tanks.
- C.** Fire/Explosion in storage areas causing heave radiation/fire balls etc.

2. Landfill

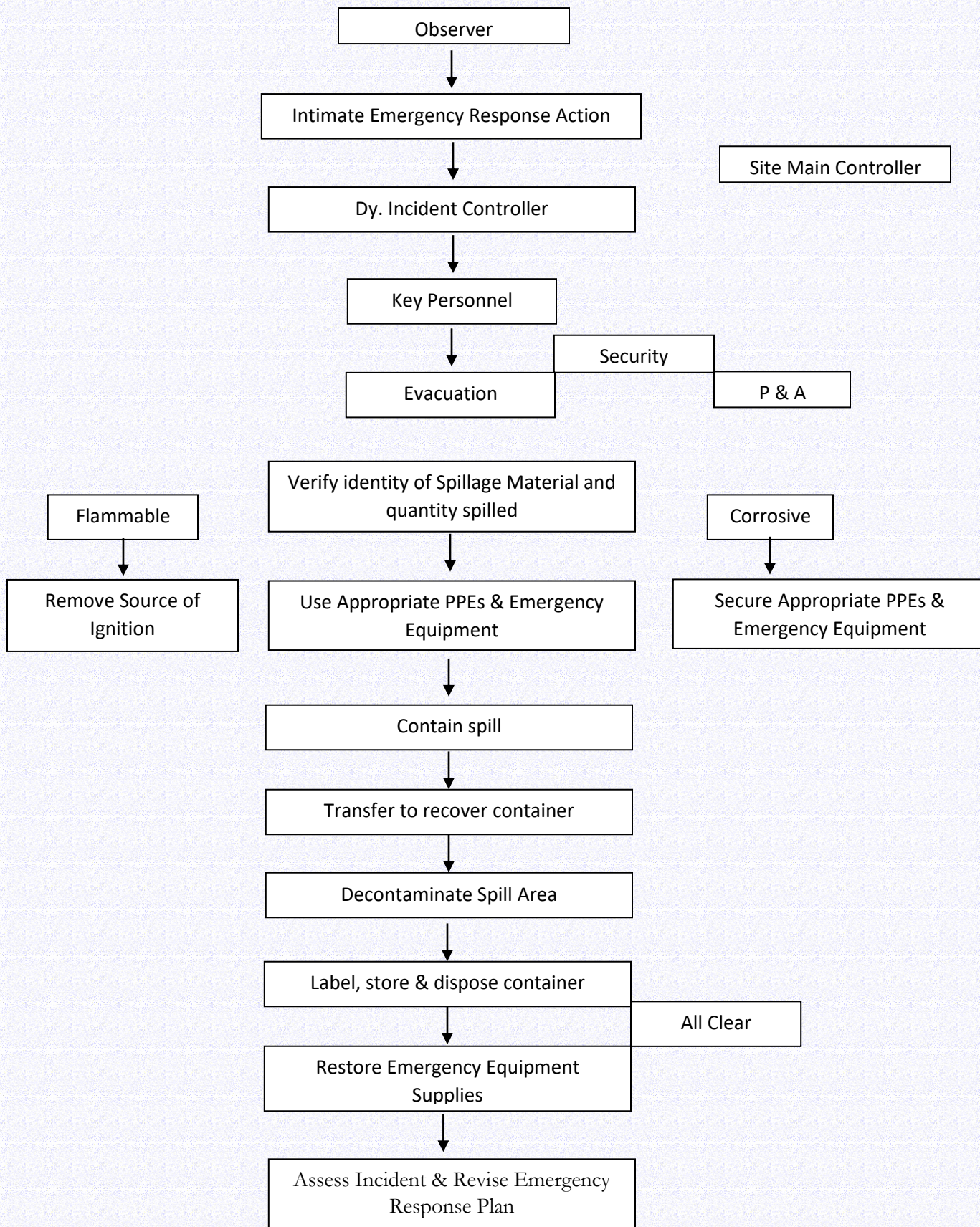
- A.** Slop failure of landfill
- B.** Flood hazards
 - Water accumulation due to heavy rain
 - Resulting from Dam and / or reservoir failure*
 - Resulting from seismic sea waves*

*BEIL is facility at Ankleshwar GIDC, Dist. Bharuch. Neither a dam nor reservoir near to the Facility, which failure can affect the TSDF. The Sea Mean level is below 32.78 Meter and highest flood level height is below 12.77 Meter from BEIL

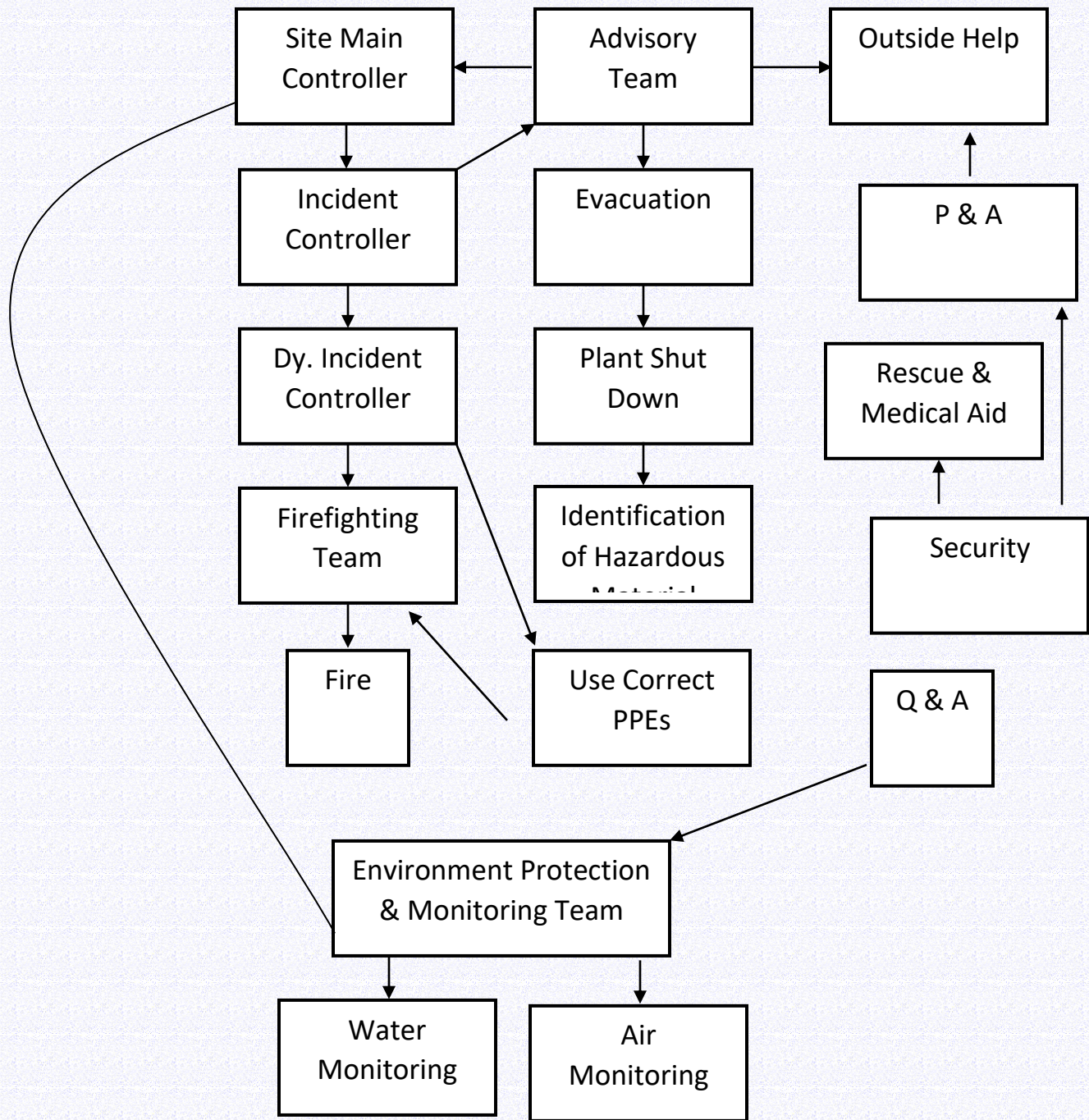
ON HEARING EMERGANCY SIREN

*Non-essential personnel shall follow safe route for evacuation.

Non-essential personnel will not rush towards incident site.



Emergency Response Flow Chart for Major Fire



CCHAPTER-VI

OFF-SITE EMERGENCY PLAN

1. NEED OF THE EMERGENCY PLAN:

Depending on the wind direction and velocity the effects of accident in factory may spread to outside its premises. To avoid major disaster, it is essential to seek guidance/assistance of statutory authorities, police, and health department. The movement of traffic may have to be restricted.

Required information will be given to the authority and consultation will be sought for remedial measures.

Purposes of the off-site emergency plan are:

- a) To provide the local/district authorities, police, fire brigade, doctors, surrounding industries and public the basic information of risk and environmental impact assessment and appraise them of the consequences and the protection/ prevention measures and to seek their help to communicate with public in case of major emergency.
- b) To assist district authorities for preparing the off-site emergency plan for district or particular area and to organize rehearsals from time to time and initiate corrective actions on experience.

2. STRUCTURE OF THE OFF-SITE EMERGENCY PLAN:

3. ROLE OF THE FACTORY MANAGEMENT:

The Emergency Controller will provide a copy of action plan to the statutory authorities in order to facilitate preparedness of district/area off-site emergency plan.

4. ROLE OF THE EMERGENCY CO-ORDINATION OFFICE (ECO):

He will be a senior police or fire officer co-ordinating with Emergency Controller. He will utilize emergency control center.

5. ROLE OF THE LOCAL AUTHORITY:

Preparation of off-site plan lies with local authorities. An emergency planning officer (EPO) works to obtain relevant information for preparing basis for the plan & ensures that all that organization involved in offsite emergency and to know their role and responsibilities.

Separation distances in respect of chemicals in BEIL is given in Annexure 32.

Pls. refer Annexure 32 on page no. 130

6. ROLE OF THE FIRE AUTHORITY:

The fire authorities will take over the site responsibility from incident controller after arrival. They will be familiarized with site of flammable materials water and foam applies points, firefighting equipment.

7. ROLE OF THE POLICE AND EVACUATION AUTHORITY:

Senior Police Officer designed as emergency coordinating officer shall take overall control of an emergency. The duties include protection of life, property and control of traffic movement.

Their functions include controlling standards, evacuating public, and identifying dead and dealing with casualties and informing relatives of dead or injured.

There may be separate authorities / agencies to carry out evaluation and transportation work.

Evacuation depends upon the nature of accident, in case of fire only neighboring localities shall be alerted. Whole areas have to be evacuated in case of toxic release.

8. ROLE OF THE HEALTH AUTHORITY:

After assessing the extent of effect caused to a person the health authorities will treat them

9. ROLE OF THE MUTUAL AID AGENCIES:

Various types of mutual aid available from the surrounding factories and other agencies will be utilized.

10. ROLE OF THE FACTORY INSPECTORATE:

In the event of an accident, the Factory Inspector will assist the District Emergency Authority for information and helping in getting Neighboring Industries / mutual aid from surrounding factories.

In the aftermath, Factory Inspector may wish to ensure that the affected areas are rehabilitated safely.

CHAPTER-VII

TRAINING, REHEARSAL AND RECORDS

1. NEED OF REHEARSAL & TRAINING:

Regular training and rehearsal program of emergency procedures shall be conducted with elaborate discussions and testing of action plan with mock drill. If necessary, the co-operation / guidance of outside agencies will be sought.

2. SOME CHECK POINTS:

Following check points are help-full in assessing the adequacy of the emergency plan, At the time of training these can be checked:

- ❖ The extent of realistic nature of incidents.
- ❖ Adequate assessment of consequences of various incidents.
- ❖ Availability of sufficient resources such as water, firefighting aids, personnel.
- ❖ The assessment of time scales.
- ❖ Logical sequences of actions.
- ❖ The involvement of key personnel in the preparation of plan.
- ❖ At least 24 hours cover to take account of absences due to sickness and holiday, minimum shift manning.
- ❖ Satisfactory co-operation with local emergency services and district or regional emergency planning offices.
- ❖ Adequacy of site.

3. RECORDS AND UPDATING THE PLAN:

All records of various on-site and off-site emergency plans of factory will be useful along with those of the factors by which statutory authorities draw a detailed plan for the whole area/district. The records of the activity is being updated regularly.

4. EMERGENCY BOOKLET:

The duties/functions of particular role are mentioned in the last annexure given as Emergency Instruction Booklet.

Pls. refer Annexure 33 on page no. 131

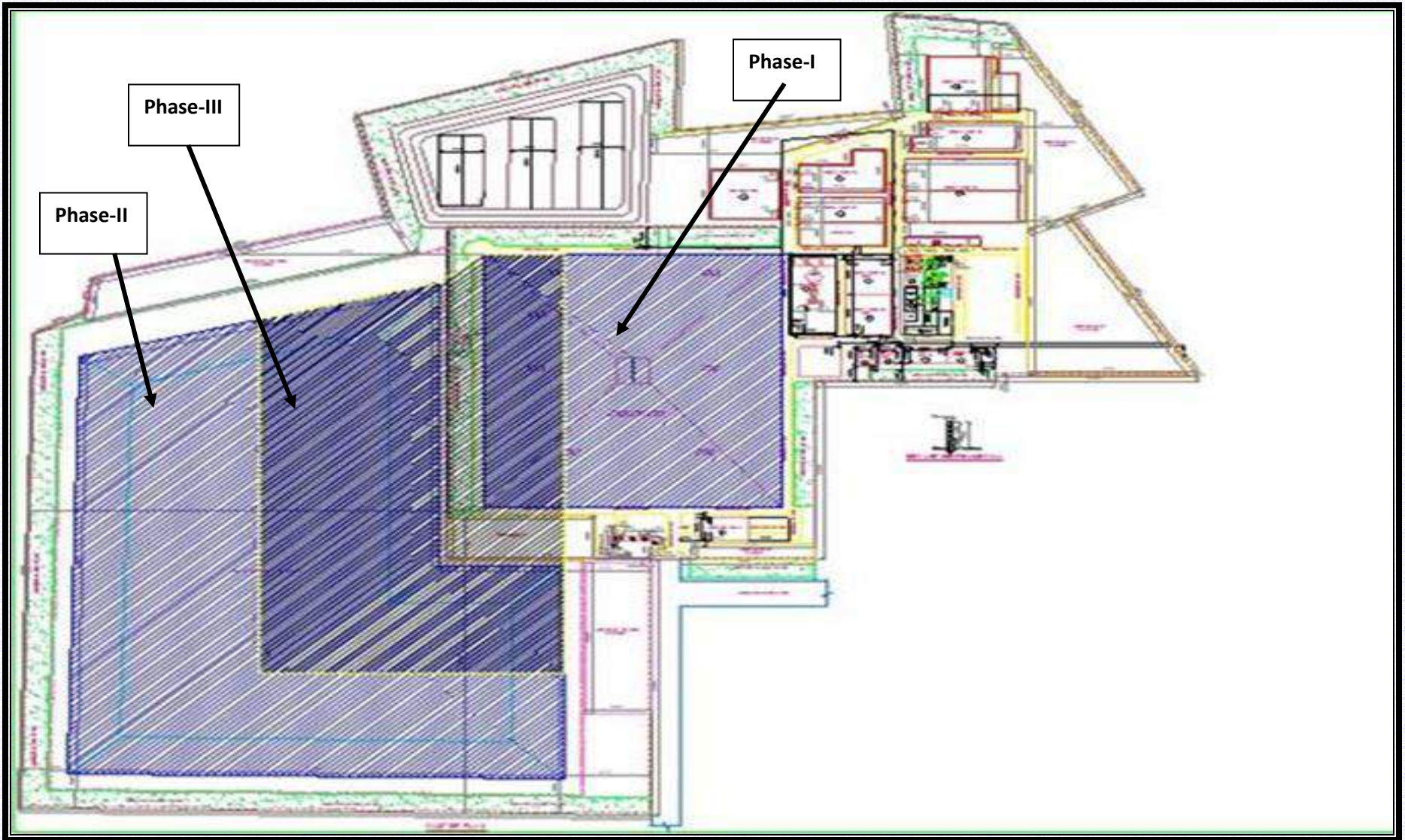
ANNEXURE-1

IDENTIFICATION OF FACTORY

1.	Name of the Factory	:	BEIL Infrastructure Ltd.	
2.	Address	:	Plot # 9701 – 9716, GIDC Estate, Ankleshwar – 393 002 Dist – Bharuch, Gujarat	
3.	Telephone No.	:	02646-253135/226591/225228	
4.	Fax No.	:	02646-222849/250707	
5.	E-mail I.D.	:	panjawania@uniphos.com	
6.	Full Name & Address of the Factory Occupier	:	Mr. Ashok Panjwani Near navsarjan bank, GIDC – Ankleshwar	
	Telephone No.	:	9909994902	
7.	Full Name & Address of the Factory Manager	:	Mr. B D Dalwadi 408/9, Sardar Patel Society, GIDC – Ankleshwar	
8.	Manufacturing process	:	TSDf of Hazardous waste	
9.	Shift details:	:		
Name of the Shift				
		Staff	Contract	Total
	General(G)	50	148	198
	First (A)	15	110	125
	Second (B)	15	60	75
	Third I	15	50	65
	TOTAL	95	368	463
First person to be contacted in case of emergency:				
Name of the shift	First person to be contacted in case of emergency			
	Name & Designation	Place of Availability	Phone No.	
			Office	Res.
General(G)	Mr. Atul Agarwal (GM – works)	Plant Office	02646-226591	9909994904

First (A)	Mr. Dinkar trivedi (Sr. Manager)	Plant Office	02646-226591	9978996347
Second (B)	Mr. Denish Patel (Executive)	Control Room	02646-226591	
Third I	Mr. Shailesh Patel (Officer)	Control Room	02646-226591	9727990047
On Holiday	Mr. Kevin (officer)	Control Room	02646-226591	8511043083
Any other information, if any:				

ANNEXURE-3
FACTORY LAY OUT



ANNEXURE-4

STORAGE HAZARDS AND CONTROLS

Name of the hazardous substance	Max. Storage Capacity	Place of its storage	State operating pressure & Temperature	Type of Hazards possible (fire, explosion toxic release, spill, etc.)	Control Measures provided
1	2	3	4	5	6
High CV liquid waste	25 KL	ST-3010	Liquid State, stored under N2 blanket with 150 mm WC pressure & ambient temp.	<ul style="list-style-type: none"> ➤ Causes irritation to skin & eyes. ➤ Inhalation causes dizziness, eye irritation & headache. ➤ Ingestion of liquid may become fatal to human life. ➤ Highly flammable fire & explosion hazard 	<ul style="list-style-type: none"> ➤ Mechanical seal for transferring pump. ➤ Personal protective equipments are being used ➤ Provision of Safety shower ➤ Breather Valve and venting line provided and line is connected with scrubbing system. ➤ Inter locking system provided. ➤ Provision of Fire Hydrant System & Extinguishers.
High CV liquid waste	35 KL	ST-3020			
Aqueous waste	35 KL	ST-3030	Liquid State, stored under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ Causes irritation to skin & eyes. ➤ Inhalation causes dizziness, eye irritation & headache. ➤ Ingestion of liquid may become fatal to human life. 	<ul style="list-style-type: none"> ➤ Grounding of storage vessel to earth pit. ➤ Declared as No Hot Work Zone. ➤ Tanks are provided with dip pipe. ➤ Proper Earthing & bonding before Loading/Unloading operations. ➤ N2 blanketing system. ➤ Automatic sprinkler system provided.
Aqueous waste	35 KL	ST-3040			

			pressure & ambient temp.	<p>eye irritation & headache.</p> <ul style="list-style-type: none"> ➤ Ingestion of liquid may become fatal to human life. ➤ Highly flammable fire & explosion hazard 	<p>are being used</p> <ul style="list-style-type: none"> ➤ Provision of Safety shower ➤ Breather Valve and venting line provided and line is connected with scrubbing system.
Aqueous waste	35 KL	ST-3060	Liquid State, stored under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ Causes irritation to skin & eyes. ➤ Inhalation causes dizziness, eye irritation & headache. ➤ Ingestion of liquid may become fatal to human life. 	<ul style="list-style-type: none"> ➤ Inter locking system provided. ➤ Provision of Fire Hydrant System & Extinguishers. ➤ Grounding of storage vessel to earth pit. ➤ Declared as No Hot Work Zone. ➤ Tanks are provided with dip pipe. ➤ Proper Earthing & bonding before Loading/Unloading operations. ➤ N2 blanketing system. ➤ Automatic sprinkler system provided.
Aqueous waste	25 KL	ST-4010			
Aqueous waste	25 KL	ST-4020			
Aqueous waste	25 KL	ST-4030			
Aqueous waste	25 KL	ST-4040			
Aqueous waste	25 KL	ST-4050			
Aqueous waste	25 KL	ST-4060			
Caustic Lye	30 MT	T-3030A	Liquid State, stored under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ Skin irritation due to material contact. ➤ Damage to eye due to direct contact. ➤ Ingestion may become fatal to human life. 	<ul style="list-style-type: none"> ➤ Mechanical seal for transferring pump. ➤ Personal protective equipments are being used ➤ Provision of Safety shower
Caustic Lye	30 MT	T-3030B			
Caustic Lye	40 MT	T-3030C			
Bleed Water	60 KL	T-3040	Liquid State, stored under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ Causes irritation to skin & eyes. ➤ Inhalation causes dizziness, eye irritation & headache. ➤ Ingestion of liquid may 	<ul style="list-style-type: none"> ➤ Mechanical seal for transferring pump. ➤ Personal protective equipments are being used ➤ Provision of Safety shower

				become fatal to human life.	
Aqueous Liquid waste	8 KL	T-2010	Liquid State, stored under N2 blanket with 150 mm WC pressure & ambient temp.	<ul style="list-style-type: none"> ➤ May Cause irritation to skin & eyes. ➤ Inhalation causes dizziness, eye irritation & headache. ➤ Ingestion may become fatal to human life. 	<ul style="list-style-type: none"> ➤ Mechanical seal for transferring pump. ➤ Personal protective equipments are being used ➤ Provision of Safety shower ➤ Breather Valve and venting line provided and line is connected with RK Blower system. ➤ Grounding of storage vessel to earth pit. ➤ Declared as No Hot Work Zone. ➤ Tanks are provided with dip pipe.
Aqueous Liquid waste	8 KL	T-2010A			
Aqueous liquid waste	6.8 KL	T-2030			
Aqueous liquid waste	8 KL	T-2030A			
High CV liquid waste	8 KL	T-2020A	Liquid State, stored under N2 blanket with 150 mm WC pressure & ambient temp.	<ul style="list-style-type: none"> ➤ Causes irritation to skin & eyes. ➤ Inhalation causes dizziness, eye irritation & headache. ➤ Ingestion of liquid may become fatal to human life. ➤ Highly flammable fire & explosion hazard 	<ul style="list-style-type: none"> ➤ Proper Earthing & bonding before Loading/Unloading operations
High CV liquid waste	8 KL	T-2040			
High CV liquid waste	8 KL	T-2040A			
High CV liquid waste	8 KL	T-2050			
High CV liquid waste	8 KL	T-2050A			
High CV liquid waste	8 KL	T-2020			
Hydrated Lime	50 TON	Old Storage yard	Solid Powder State, stored under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ Dust May Cause irritation to skin & eyes. 	<ul style="list-style-type: none"> ➤ Stored in a segregated & approved area. ➤ Personal protective equipments are being used
Hydrated Lime	70 TON	New Storage yard	Solid Powder State, stored under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ Dust May Cause irritation to skin & eyes. 	<ul style="list-style-type: none"> ➤ Stored in a segregated & approved area. ➤ Personal protective equipments are being used

Activated carbon	02 TON	Storage yard	Solid Powder State, stored under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ In case of contact, may Cause irritation to skin & eyes. ➤ Flammable. 	<ul style="list-style-type: none"> ➤ Store in a segregated, approved & ventilated area. ➤ Personal protective equipments are being used ➤ Fire extinguishers & Fire hydrant system provided
Incinerable hazardous waste	10529 MT	Storage sheds no. 1 to 10	Aqueous, Organic Liquid, Solid, Semi Solid & Tarry Waste stored under ambient pressure & temp	<ul style="list-style-type: none"> ➤ May Cause irritation to skin & eyes. ➤ Inhalation causes dizziness, eye irritation & headache. ➤ Ingestion may become fatal to human life. ➤ Fire hazard 	<ul style="list-style-type: none"> ➤ Provision of Fire Hydrant System & Extinguishers. ➤ Provision of Water sprinkler system ➤ Provision of heat & smoke detectors. ➤ Provision of Safety Shower.
High Effluent TDS	150 KL	ST-01	Liquid State, stored under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ May Cause irritation to skin & eyes. ➤ Inhalation causes dizziness, eye irritation & headache. ➤ Ingestion may become fatal to human life. 	<ul style="list-style-type: none"> ➤ Mechanical seal for transferring pump. ➤ Personal protective equipments are being used ➤ Provision of Safety shower
	150 KL	ST-02			
	150 KL	ST-03			
Condensate water	450 KL	CS Tank	Liquid State, stored under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ May Cause slight irritation to skin & eyes. ➤ Ingestion may become fatal to human life. 	<ul style="list-style-type: none"> ➤ Mechanical seal for transferring pump. ➤ Personal protective equipments are being used

ANNEXURE-5

MATERIAL SAFETY DATA SHEET

INDEX

MSDS of commonly used Volatile Organic Compounds (Solvents)

Acetone

Benzene

Dichloride Ethane

CCl₄

CH₂Cl₂

CHCl₃

EA

Ethyl Mercaptain

Ethanol

Ethyl dichloride

Phosphoric Acid

Phosphorous pent oxide

Iso propenol

MA

Methanol

Methyl ethyl Keton

n-Butyl alcohol

Toluene

Xylene

MSDS of Combustion product of Incinerable Hazardous Waste (Gases)

Chlorine

Carbon Monoxide

Carbon Dioxide

Hydrogen Sulphaid

Hydrogen Chloride

Nitrogen Dioxide

Phosgene

Sulphur dioxide

MSDS of Hazardous waste received from member industries

RPG life science limited (Petroleum Ether)

K. Patel chemopharma limited (Methyl violet, Chrysidine y, Victoria blue, Solvent black, and Ethyl Amine)

Trans Metal (Distillation residue of TCAC)

Panorama Aromatic Limited (Benzaldehyde)

Tatva chintan Pharma Limited (Distillation Residue(Mix solvents , EA, Toluene))

RPG life science limited (Methyl Chloride, Acetone)

UPL -2 (Low boiler MCP & DDVP)

Dishman Pharma (IPA & Toluene , Bromo , PCA)

Sanofi Aventis

PI industries

GACL (high Boiling Material)

UPL-2 (1- Nephthol, Methyl dichloride , Chloro propionil chloride , EA)

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 09.03.2006

Supersedes edition of 10.12.2004

1. Identification of the substance/preparation and of the company/undertaking *Identification of the product*

Catalogue No.: 100013

Product name: Acetone extra pure Ph Eur, BP, NF

Use of the substance/preparation

Pharmaceutical production and analysis

Solvent

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0

Emergency telephone No.: Please contact the regional Merck representation
in your country.

2. Composition/information on ingredients

Synonyms

Dimethyl ketone, Propanone

CAS-No.: 67-64-1

EC-Index-No.: 606-001-00-8

M: 58.08 g/mol

EC-No.: 200-662-2

Formula Hill: C₃H₆O

Chemical formula: CH₃COCH₃

3. Hazards identification

Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.

4. First aid measures

After inhalation: fresh air. Consult doctor if feeling unwell.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.

After swallowing: caution if victim vomits. Risk of aspiration! Keep
airways free. Immediately call in physicia

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100013

Product name: Acetone extra pure Ph Eur,BP,NF

5. Fire-fighting measures

Suitable extinguishing media: CO₂, foam, powder.

Special risks:

Combustible. Vapours heavier than air.

Forms explosive mixtures with air at ambient temperatures. Beware of backfiring. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for firefighting:

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:

Prevent fire-fighting water from entering surface water or groundwater. Cool container with spray water from a safe distance.

6. Accidental release measures

Person-related precautionary measures:

Avoid substance contact. Do not inhale vapours/aerosols. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:

Do not allow to enter sewerage system; risk of explosion!

Procedures for cleaning / absorption:

Take up with liquid-absorbent material (e.g. Chemizorb®). Forward for disposal. Clean up affected area.

7. Handling and Storage

Handling:

Notes for prevention of fire and explosion:

Keep away from sources of ignition. Take measures to prevent electrostatic charging.

Notes for safe handling:

Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Storage:

Tightly closed in a well-ventilated place, away from sources of ignition and heat.
At +15°C to +25°C.

8. Exposure control/personal protection

Specific control parameter

EC

Name	Acetone
Value	500 ml/m ³
	1210 mg/m ³

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100013

Product name: Acetone extra pure Ph Eur, BP, NF

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier

Respiratory protection: required when vapours/aerosols are generated. Filter AX (EN 371).

Eye protection: required

Hand protection: In full contact:

Glove material: butyl rubber

Layer thickness: 0.7mm

Breakthrough time: >480 min

In splash contact:

Glove material: natural latex

Layer thickness: 0.6mm

Breakthrough time: >10 min

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 898 Butoject® (full contact), 706 Lapren® (splash contact). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment: Flame-proof protective clothing.

Antistatic protective clothing.

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Work under hood. Do not inhale substance.

9. Physical and chemical properties

Form:		liquid			
Colour:		colourless			
Odour:		fruity			
pH value					
at 395 g/l H ₂ O		(20 °C)	5-6		
Viscosity dynamic		(20 °C)	0.32	mPa*s	
Melting point			-95.4	°C	
Boiling point		(1013 hPa)	56.2	°C	
Ignition temperature			465	°C	(DIN 51794)
Flash point			< -20	°C	c.c.
Explosion limits	lower		2.6	Vol%	
	upper		12.8	Vol%	
Vapour pressure		(20 °C)	233	hPa	
Relative vapour density			2.01		
Density		(20 °C)	0.79	g/cm ³	

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100013

Product name: Acetone extra pure Ph Eur,BP,NF

Solubility in water (20 °C) soluble

log Pow -0.24 (experimental) (Lit.)

10. Stability and reactivity

Conditions to be avoided

Warming.

Substances to be avoided

Risk of ignition or formation of inflammable gases or vapors with: Activated charcoal. chromosulfuric acid, chromyl chloride, CrO₃, ethanolamine, fluorine, strong oxidizing agents, strong reducing agents, nitric acid.

Risk of explosion with: nonmetallic oxyhalides, halogen-halogen compounds, chloroform, nitrating acid, nitrosyl compounds, hydrogen peroxide (Formation of peroxides possible.).

Exothermic reaction with: bromine, alkali metals, alkali hydroxides, halogenated hydrocarbons.

Hazardous decomposition products

no information available

Further information

light-sensitive; sensitive to air.

unsuitable working materials: various plastics, rubber.

Explosible with air in a vaporous/gaseous state.

11. Toxicological information

Acute toxicity

LC₅₀ (inhalation, rat): 76 mg/l /4 h (Lit.).

LD₅₀ (dermal, rabbit): 20000 mg/kg (IUCLID).

LD₅₀ (oral, rat): 5800 mg/kg (RTECS).

Specific symptoms in animal studies:

Eye irritation test (rabbit): Irritations (External MSDS).

Skin irritation test (rabbit): No irritation (External MSDS).

Subacute to chronic toxicity

Sensitization:

Sensitization test (guinea pig): negative. (Lit.)

Noncarcinogenic in animal experiments. (IUCLID)

Bacterial mutagenicity: Ames test: negative. (in vitro) (National Toxicology Program)

Mutagenicity (mammal cell test): chromosome aberration negative. (in vitro) (National Toxicology Program)

Mutagenicity (mammal cell test): micronucleus negative. (in vivo) (National Toxicology Program)

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100013

Product name: Acetone extra pure Ph Eur,BP,NF

Further toxicological information

After inhalation of vapours: mucosal irritations, drowsiness, dizziness, absorption.

After skin contact: Drying-out effect resulting in rough and chapped skin.

After eye contact: Irritations. Risk of corneal clouding.

After swallowing: gastrointestinal complaints, absorption.

After absorption: headache, salivation, nausea, vomiting, dizziness, narcosis, coma.

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Biologic degradation:

Biodegradation: 91 % /28 d (IUCLID);

Readily biodegradable.

Behavior in environmental compartments:

Distribution: log Pow: -0.24 (experimental) (Lit.).

No bioaccumulation is to be expected (log Pow <1).

Ecotoxic effects:

Biological effects:

Fish toxicity: *Onchorhynchus mykiss* LC₅₀: 5540 mg/l /96 h (Lit.).

Daphnia toxicity: *Daphnia magna* EC₅₀: 6100 mg/l /48 h (Lit.).

Maximum permissible toxic concentration:

Algal toxicity: *Sc.quadricauda* IC₅: 7500 mg/l /8 d (IUCLID);

Bacterial toxicity: *M.aeruginosa* EC₅: 530 mg/l /8 d (IUCLID); *Ps.putida* EC₅: 1700 mg/l /16 h (IUCLID);

Protozoa: *E.sulcatum* EC₅: 28 mg/l /72 h (Lit.).

Further ecologic data:

Degradability:

BOD₅: 1.85 g/g (IUCLID);

COD: 2.07 g/g (IUCLID);

TOD: 2.20 g/g (Lit.).

Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100013

Product name: Acetone extra pure Ph Eur,BP,NF

14. Transport information

Road & Rail ADR, RID
UN 1090 ACETON, 3, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 1090 ACETONE, 3, II
Ems F-E S-D

Air CAO, PAX

UN 1090 ACETONE, 3, II

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

15. Regulatory information

Labelling according to EC Directives

Symbol:	F	Highly flammable
	Xi	Irritant
R-phrases:	11-36-66-67	Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.
S-phrases:	9-16-26	Keep container in a well-ventilated place. Keep away from sources of ignition - No smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
EC-No.:	200-662-2	EC label

16. Other Information

Reason for alteration

Chapter 11: toxicological information.

Chapter 12: ecological information.

General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

Safety Data Sheet

According to EC Directive 91/155/EEC



Date of issue: 13.12.2004

Supersedes edition of 30.01.2004

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 101782

Product name: Benzene extra pure

Use of the substance/preparation

Chemical production

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0

Emergency telephone No.: Please contact the regional Merck representation in your country.

2. Composition/information on ingredients

Synonyms

Cyclohexatriene

CAS-No.:	71-43-2	EC-Index-No.:	601-020-00-8
M:	78.11g/mol	EC-No.:	200-753-7
Formula Hill:	C ₆ H ₆		

3. Hazards identification

May cause cancer. May cause heritable genetic damage. Highly flammable. Irritating to eyes and skin. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Harmful: may cause lung damage if swallowed.

Restricted to professional users. Attention -

Avoid exposure - obtain special instructions before use.

4. First aid measures

First-aid personnel: ensure self-protection!

After inhalation: fresh air.

If breathing stops: immediately apply mechanical ventilation, if necessary oxygen mask. Immediately call in physician

After skin contact: wash off with plenty of water. Dab with polyethylene glycol 400. Immediately remove contaminated clothing. Immediately call in physician.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.

After swallowing: immediately make victim drink plenty of water. Immediately call in physician.

In case of spontaneous vomiting: Risk of aspiration. Pulmonary failure possible. Call in physician.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 101782

Product name: Benzene extra pure

1. Fire-fighting measures

Suitable extinguishing media:
CO₂, foam, powder.

Special risks:

Combustible. Vapours heavier than air. Forms explosive mixtures with air at ambient temperatures. Beware of backfiring. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire fighting:

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:

Prevent fire-fighting water from entering surface water or groundwater. Cool container with spray water from a safe distance. Contain escaping vapours with water.

2. Accidental release measures

Person-related precautionary measures:

Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:

Do not allow to enter sewerage system; risk of explosion!

Procedures for cleaning / absorption:

Take up with liquid-absorbent material (e.g. Chemisorb). Forward for disposal. Clean up affected area.

7. Handling and storage *Handling:*

Notes for prevention of fire and explosion:

Keep away from sources of ignition. Take measures to prevent electrostatic charging.

Notes for safe handling:

Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Storage:

Tightly closed in a well-ventilated place, away from sources of ignition and heat. At +15°C to +25°C.

Accessible only for authorized persons.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 101782

Product name: Benzene extra pure

8. Exposure controls/personal protection

Specific control parameter

EC

Name	Benzene
Value	1 ml/m ³ 3.25 mg/m ³
Carcinogenic	C 1: known to be carcinogenic to man
mutagenic	M 2: substance which should be regarded as if mutagenic to man
Skin resorption	Risk of skin absorption

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when vapours/aerosols are generated. Filter A (acc. to DIN 3181) for vapours of organic compounds, Respirator.

Eye protection: required

Hand protection: In full contact:

Glove material: viton
Layer thickness: 0.70mm
Breakthrough time: > 480min

In splash contact:

Glove material: nitrile rubber
Layer thickness: 0.40mm
Breakthrough time: > 10min

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 890 Vitoject (full contact), 730 Camatril -Velours (splash contact). The breakthrough times stated above were determined by KCL

in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Under no circumstances eat or drink at workplace. Work under hood . Do not inhale substance.

9. Physical and chemical properties

Form:	liquid
Colour:	colourless
Odour:	characteristic
pH value	not available

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 101782

Product name: Benzene extra pure

Viscosity dynamic	(20 °C)	0.66	mPa*s	
Viscosity kinematic		0.75	mm ² /s	
Melting point		5.5	°C	
Boiling point		80.1	°C	
Ignition temperature		555	°C	(DIN 51794)
Flash point		-11	°C	(DIN 51755)
Explosion limits	lower	1.4	Vol%	
	upper	8.0	Vol%	
Vapour pressure	(20 °C)	101	hPa	
Density	(20 °C)	0.88	g/cm ³	
Solubility in water				
	(20 °C)	1.770	g/l	
log Pow:		2.13		
Bioconcentration factor		1-10		

10. Stability and reactivity

Conditions to be avoided

Warming.

Substances to be avoided

Exothermic reaction with: halogens, halogenated hydrocarbons (in the presence of: light metals), uranium hexafluoride.

Risk of explosion with: perchlorates, nitric acid, ozone, peroxi compounds.

Risk of ignition or formation of inflammable gases or vapors with: oxygen, halogen-halogen compounds, oxyhalogenic compounds, CrO₃.

Violent reactions possible with: mineral acids, sulfur, oxidizing agent.

Hazardous decomposition products
not known to date

Further information

steam-volatile;

incompatible with rubber, various plastics.

explosible with air in a vaporous/gaseous state

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 101782
Product name: Benzene extra pure

11. Toxicological information

Acute toxicity

LC₅₀ (inhalation, rat): 44 mg/l /4 h.

LD₅₀ (dermal, rabbit): >8260 mg/kg.

LD₅₀ (oral, rat): 930 mg/kg.

LDLo (oral, human): 50 mg/kg.

Specific symptoms in animal studies:

Eye irritation test (rabbit): Severe irritations.

Skin irritation test (rabbit): Irritations.

The literature data available to us do not conform with the labelling prescribed by the EC. The EC has dossiers which have not been published.

Subacute to chronic toxicity

Experience has shown this substance to be carcinogenic in man.

A mutagenic effect has been demonstrated in animal studies on mammals, justifying the assumption that exposure of humans to the substance produces hereditary damage.

Mutagenic effect in animal experiments.

Bacterial mutagenicity: Salmonella typhimurium: negative.

No teratogenic effect in animal experiments.

Further toxicological information

After inhalation: absorption, Irritation symptoms in the respiratory tract.

After skin contact: Irritations. Degreasing effect on the skin, possibly followed by secondary inflammation. Danger of skin absorption.

After eye contact: Severe irritations.

After swallowing: nausea. After accidental swallowing the substance may pose a risk of aspiration. Passage into the lung (vomiting)! can result in a condition resembling pneumonia (chemical pneumonitis).

After absorption: agitation, euphoria, headache, dizziness, inebriation, tiredness, CNS disorders, narcosis, respiratory arrest.

Subacute and chronic toxicity: After a latency period: changes in the blood picture, haemolysis.

Further data

This substance should be handled with particular care.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 101782
Product name: Benzene extra pure

12. Ecological information

Biologic degradation:

Readily biodegradable (reduction: DOC >70 %; BOD >60 %; BOD₅ to COD >50 %).

Behavior in environmental compartments:

Distribution preferentially in air.

Distribution: log p(o/w): 2.13;

No appreciable bioaccumulation potential is to be expected (log P(o/w) 1-3).

Henry constant: 450 Pa*m³/mol.

Ecotoxic effects:

Biological effects:

Toxic for aquatic organisms. Endangers drinking-water supplies if allowed to enter soil or water.

Fish toxicity: *Onchorhynchus mykiss* LC₅₀: 5.3 mg/l /96 h;

C. auratus LC₅₀: 34 mg/l /96 h.

Daphnia toxicity: *Daphnia magna* EC₅₀: 200 mg/l /48 h.

Algal toxicity: *Chlorella vulgaris* IC₅₀: 530 mg/l /24 h.

Bacterial toxicity: *Ps. putida* EC₁₀: 168 mg/l.

The literature data available to us do not conform with the labelling prescribed by the EC. The EC has dossiers which have not been published.

Further ecologic data:

Degradability:

BOD 71 % from TOD /5 d; COD 19 % from TOD; TOD: 3.10 g/g.

Do not allow to enter waters, waste water, or soil!

13. Disposal

considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID
UN 1114 BENZEN, 3, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 1114 BENZENE, 3, II

Ems F-E S-D

Air CAO, PAX
BENZENE, 3, UN 1114, II

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 101782
Product name: Benzene extra pure

15. Regulatory information

Labelling according to EC Directives

Symbol:	T	Toxic
	F	Highly flammable
R-phrases:	45-46-11-36/38-48/23/24/25-65	
		May cause cancer. May cause heritable genetic damage. Highly flammable. Irritating to eyes and skin. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Harmful: may cause lung damage if swallowed.
S-phrases:	53-45	Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
EC-No.:	200-753-7	EC label

Reduced labelling (1999/45/EC, Art. 10,4)

Symbol:	T	Toxic
	F	Highly flammable
R-phrases:	45-46-48/23/24/25-65	May cause cancer. May cause heritable genetic damage. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Harmful: may cause lung damage if swallowed.
S-phrases:	53-45	Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. Other information

Reason for alteration
Chapter 8: specific control parameter.
Chapter 15: labelling.

General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 28.02.2006

Supersedes edition of 20.08.2004

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 100955

Product name: 1,2-Dichloroethane extra pure

Use of the substance/preparation

Chemical production

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0

Emergency telephone No.: Please contact the regional Merck representation

in your country.

2. Composition/information on

ingredients *Synonyms*

Ethylene chloride, Ethylene dichloride

CAS-No.:	107-06-2	EC-Index-No.:	602-012-00-7
<i>M</i> :	98.97 g/mol	EC-No.:	203-458-1
Formula Hill:	C ₂ H ₄ Cl ₂		
Chemical formula:	ClCH ₂ CH ₂ Cl		

3. Hazards identification

May cause cancer. Highly flammable. Also harmful if swallowed. Irritating to eyes, respiratory system and skin.

Restricted to professional users. Attention -

Avoid exposure - obtain special instructions before use.

4. First aid measures

First-aid personnel: ensure self-protection!

After inhalation: fresh air.

If breathing stops: immediately apply mechanical ventilation, if necessary oxygen mask. Immediately call in physician.

After skin contact: wash off with plenty of water. Dab with polyethylene glycol 400. Immediately remove contaminated clothing.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.

After swallowing: immediately make victim drink plenty of water. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry). Laxative: Sodium sulfate (1 tablespoon/1/4 l water). Immediately call in physician.

Indications for the doctor: Gastric lavage. No milk. No castor oil. No alcohol.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100955

Product name: 1,2-Dichloroethane extra pure

5. Fire-fighting measures

Suitable extinguishing media:
powder, foam, water.

Special risks:
Combustible. Vapours heavier than air.
Forms explosive mixtures with air at ambient temperatures. Beware of backfiring.

Development of hazardous combustion gases or vapours possible in the event of fire. The following may develop in event of fire: hydrochloric acid.

Special protective equipment for fire fighting:

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:

Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater. Cool container with spray water from a safe distance.

6. Accidental release measures

Person-related precautionary measures:
Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:
Do not allow to enter sewerage system; risk of explosion!

Procedures for cleaning / absorption:
Take up with liquid-absorbent material (e.g. Chemisorb®). Forward for disposal. Clean up affected area.

7. Handling and storage

Handling:

Notes for prevention of fire and explosion:
Keep away from sources of ignition. Take measures to prevent electrostatic charging.

Notes for safe handling:
Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Storage:

Tightly closed in a well-ventilated place, away from sources of ignition and heat. Storage temperature: no restrictions.

Accessible only for authorized persons.

8. Exposure controls/personal protection

Specific control parameter

EC

Name 1,2-Dichloroethane

Carcinogenic C 2:should be regarded as if it is carcinogenic to man

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100955

Product name: 1,2-Dichloroethane extra pure

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection:	required when vapours/aerosols are generated. Filter A (acc. to DIN 3181) for vapours of organic compounds		
Eye protection:	required		
Hand protection:	In full contact:		
	Glove material:	viton	
	Layer thickness:	0.70	mm
	Breakthrough time:	>480	Min.
	In splash contact:		
	Glove material:	polychloroprene	
	Layer thickness:	0.65	mm
	Breakthrough time:	> 10	Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 890 Vitoject® (full contact), 720 Camapren® (splash contact). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell,)

Other protective equipment: Flame-proof protective clothing.
Antistatic protective clothing

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Under no circumstances eat or drink at workplace. Work under hood . Do not inhale substance.

9. Physical and chemical properties

Form:	liquid				
Colour:	colourless				
Odour:	of solvents				
pH value	not available				
Viscosity dynamic		(20 °C)	0.82-0.84	mPa*s	
Melting point			-35.5	°C	
Boiling point		(1013 hPa)	83.5-84.1	°C	
Ignition temperature			412.6-440	°C	
Flash point			13	°C	c.c
Explosion limits	lower		6	Vol%	
	upper		11.4	Vol%	
Vapour pressure		(20 °C)	87	hPa	
Relative vapour density	3.4				

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100955

Product name: 1,2-Dichloroethane extra pure

Density	(20 °C)	1.25	g/cm ³
Solubility in water	(20 °C)	8.7	g/l
log Pow		1.45	(OECD 107)
Evaporation rate		4.1	

10. Stability and reactivity

Conditions to be avoided

Warming.

Substances to be avoided

Risk of explosion with: / Exothermic reaction with: alkali metals, alkaline earth metals, aluminium in powder form, alkali amides, nitric acid, nitrogen oxides, oxidizing agent, chlorine, metals in powder form.

Hazardous decomposition products
in the event of fire: See chapter 5.

Further information

light-sensitive;

Solvent for: fats, resines.

unsuitable working materials: various plastics, light metals.

Explosible with air in a vaporous/gaseous state.

11. Toxicological information

Acute toxicity

LC₅₀ (inhalation, rat): 7.2 mg/l /4 h (RTECS).

LD₅₀ (dermal, rabbit): 2800 mg/kg (RTECS).

LD₅₀ (oral, rat): 670 mg/kg (RTECS).

Specific symptoms in animal studies:

Eye irritation test (rabbit): Severe irritations (RTECS).

Skin irritation test (rabbit): Slight irritations (RTECS).

Subacute to chronic toxicity

Animal experiments performed under conditions comparable with the workplace situation have shown the substance to be carcinogenic.

Bacterial mutagenicity: Salmonella typhimurium: positive. (National Toxicology Program)

Further toxicological information

After inhalation: Irritations of the mucous membranes, coughing, and dyspnoea.

After skin contact: Irritations. Danger of skin absorption.

After eye contact: Severe irritations.

After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Systemic effects: CNS disorders, dizziness, headache, tiredness, coma, respiratory paralysis, death.

Absorption may result in damage of the following: liver, kidneys.

Further data

This substance should be handled with particular care.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100955

Product name: 1,2-Dichloroethane extra pure

12. Ecological information

Behavior in environmental compartments: Distribution: log Pow: 1.45 (OECD 107).

No appreciable bioaccumulation potential is to be expected (log Pow 1-3).

Henry constant: 149 Pa*m³/mol (experimental) (IUCLID) (volatile).

Concentration in organisms is not to be expected.

Ecotoxic effects:

Biological effects:

Fish toxicity: *P.promelas* LC₅₀: 116 mg/l /96 h (in soft water) (IUCLID).

Daphnia toxicity: *Daphnia magna* EC₅₀: 155 mg/l /48 h (in soft water) (IUCLID).

Algal toxicity:

Maximum permissible toxic concentration: *Desmodesmus subspicatus* IC₅: 412 mg/l /7 d (IUCLID).

Bacterial toxicity:

Maximum permissible toxic concentration: *Ps.putida* EC₅: 135 mg/l /16 h (IUCLID).

Further ecologic data:

Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID

UN 1184 ETHYLENDICHLORID, 3 (6.1), II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

Ems F-E S-D

Air CAO, PAX

UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

The transport regulations are cited according to international regulations and in the form applicable in Germany . Possible national deviations in other countries are not considered.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 100955

Product name: 1,2-Dichloroethane extra pure

15. Regulatory information

Labelling according to EC Directives

Symbol:	T	Toxic
	F	Highly flammable
R-phrases:	45-11-22-36/37/38	May cause cancer. Highly flammable. Also harmful if swallowed. Irritating to eyes, respiratory system and skin.
S-phrases:	53-45	Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
EC-No.:	203-458-1	EC label

Reduced labelling (1999/45/EC, Art. 10,4)

Symbol:	T	Toxic
	F	Highly flammable
R-phrases:	45-22	May cause cancer. Also harmful if swallowed.
S-phrases:	53-45	Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. Other information

Reason for alteration

Chapter 8: personal protective equipment.

Chapter 10: stability and reactivity.

Chapter 11: toxicological information.

Chapter 12: ecological information.

General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 13.02.2006

Supersedes edition of 05.10.2004

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 102222

Product name: Carbon tetrachloride GR for analysis

Use of the substance/preparation

Reagent for analysis

Company/undertaking identification

Company: Merck KGaA * 64271 Darmstadt * Germany * Phone: +49 6151 72-0

Emergency telephone No.: Please contact the regional Merck representation
in your country.

2. Composition/information on ingredients

Synonyms

Tetrachloromethane

CAS-No.:	56-23-5	EC-Index-No.:	602-008-00-5
M:	153.82 g/mol	EC-No.:	200-262-8
Formula Hill:	CCl ₄		

3. Hazards identification

Toxic by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. Toxic: danger of serious damage to health by prolonged exposure through inhalation. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Dangerous for the ozone layer.

4. First aid measures

First-aid personnel: ensure self-protection!

After inhalation: fresh air.

If breathing stops: immediately apply mechanical ventilation, if necessary oxygen mask. Immediately call in physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing. Immediately call in physician.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Immediately call in physician.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 102222

Product name: Carbon tetrachloride GR for analysis

5. Fire-fighting measures

Suitable extinguishing media:

In adaption to materials stored in the immediate neighbourhood.

Special risks:

Non-combustible. Vapours heavier than air. Ambient fire may liberate hazardous vapours. The following may develop in event of fire: hydrochloric acid, phosgene.

Special protective equipment for fire fighting:

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:

Cool container with spray water from a safe distance. Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:

Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:

Do not allow to enter sewerage system.

Procedures for cleaning / absorption:

Take up with liquid-absorbent material (e.g. Chemizorb®). Forward for disposal. Clean up affected area. Do not inhale vapours.

7. Handling and storage

Handling:

Notes for safe handling:

Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Storage:

Tightly closed in a well-ventilated place. Accessible only for authorised persons. Storage temperature: no restrictions.

8. Exposure controls/personal protection

Specific control parameter

EC

Name	Carbon tetrachloride
Carcinogenic	C 3:owing possible carcinogenic effects for man

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 102222

Product name: Carbon tetrachloride GR for analysis

Respiratory protection:	required when vapours/aerosols are generated. Filter A (acc. to DIN 3181) for vapours of organic compounds.	
Eye protection:	required	
Hand protection:	In full contact:	
	Glove material:	viton
	Layer thickness:	0.70mm
	Breakthrough time:	>480Min.
	In splash contact:	
	Glove material:	nitrile rubber
	Layer thickness:	0.40mm
	Breakthrough time:	> 240Min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 890 Vitoject® (full contact), 730 Camatril® -Velours (splash contact). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Under no circumstances eat or drink at workplace. Work under hood. Do not inhale substance.

9. Physical and chemical properties

Form:	liquid		
Colour:	colourless		
Odour:	characteristic		
pH value	not available		
Viscosity dynamic	(20 °C)	0.96	mPa*s
Viscosity kinematic	(20 °C)	0.00061	mm ² /s
Melting point		-23	°C
Boiling point		76.7	°C
Ignition temperature		> 982	°C
Flash point	not applicable		
Explosion limits	lower		not available
	upper		not available
Vapour pressure	(20 °C)	120	hPa
Relative vapour density		5.3	
Density	(20 °C)	1.59	g/cm ³
Solubility in			
water	(20 °C)	0.8	g/l
Thermal decomposition		> 100	°C
log Pow	(23 °C)	2.75	(OECD 107)

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 102222

Product name: Carbon tetrachloride GR for analysis

10. Stability and reactivity

Conditions to be avoided

Strong heating (decomposition).

Substances to be avoided

Risk of explosion with: alkali metals, alkaline earth metals, aluminium in powder form, zinc in powder form, metals in powder form, calcium silicide, fluorine, silanes, silver- perchlorates / chlorates.

Violent reactions possible with: aluminium halides / triethylaluminium, alkali amides, boron triiodide, halogen-halogen compounds, sodium amide, nitrogen dioxide, air / oxygen / heat.

Hazardous decomposition products in the event of fire: See chapter 5.

Further information

unsuitable working materials: various plastics, light metals, metal alloys (iron, copper).

11. Toxicological information

Acute toxicity

LC₅₀ (inhalation, rat): 51.1 mg/l /4 h (RTECS).

LCLo (inhalation, human): 1000 ppm(V) (RTECS).

LD₅₀ (dermal, rat): 5070 mg/kg (RTECS).

LD₅₀ (oral, rat): 1770 mg/kg (Lit.).

Specific symptoms in animal studies:

Eye irritation test (rabbit): Slight irritations (IUCLID).

Skin irritation test (rabbit): Slight irritations (IUCLID).

The literature data available to us do not conform with the labelling prescribed by the EC. The EC has dossiers which have not been published.

Subacute to chronic toxicity

The carcinogenic potential requires further clarification.

Bacterial mutagenicity: Salmonella typhimurium: positive. (IUCLID)

Further toxicological information

After inhalation: mucosal irritations, headache, nausea, vomiting, dizziness, unconsciousness.

In high concentrations: narcosis, respiratory arrest.

After skin contact: Slight irritations. Danger of skin absorption.

After eye contact: Slight irritations.

After swallowing: gastric pain (bloody diarrhoea), nausea, vomiting, dizziness. After accidental swallowing the substance may pose a risk of aspiration. Passage into the lung (vomiting!) can result in a condition resembling pneumonia (chemical pneumonitis).

After a latency period: Damage of: liver, kidneys.

Further data

This substance should be handled with particular care.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 102222

Product name: Carbon tetrachloride GR for analysis

12. Ecological information

Abiotic degradation:
Slow degradation. (air and water).

Biologic degradation:
Slightly biodegradable (DOC or COD reduction <20 %).

Behavior in environmental compartments:
Distribution: log Pow: 2.75 (23 °C) (OECD 107).
No appreciable bioaccumulation potential is to be expected (log Pow 1-3).

Ecotoxic effects:

Biological effects: Harmful effect on aquatic organisms. Hazard for drinking water supplies. Concentration in organisms is not to be expected. May cause long-term adverse effects in the aquatic environment.

Fish toxicity: *L.macrochirus* LC₅₀: 27 mg/l /96 h (IUCLID).

Daphnia toxicity: *Daphnia magna* EC₅₀: 29 mg/l /48 h (IUCLID).

Bacterial toxicity: *Photobacterium phosphoreum* EC₅₀: 5.6 mg/l /5 min (Lit.).

Maximum permissible toxic concentration:

Algal toxicity: *M.aeruginosa* IC₅: 105 mg/l /8 d (IUCLID).

Further ecologic data:

Substance which may present a danger to the structure and/or the functioning of the stratospheric ozone layer according to EC Regulation No 2037/2000 (listed in Annex I, Group IV).

Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

14. Transport information

Road & Rail ADR, RID

UN 1846 TETRACHLORKOHLENSTOFF, 6.1, II

Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 1846 CARBON TETRACHLORIDE, 6.1, II, Marine Pollutant: P

Ems F-A S-A

Air CAO, PAX

UN 1846 CARBON TETRACHLORIDE, 6.1, II

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 102222

Product name: Carbon tetrachloride GR for analysis

15. Regulatory information

Labelling according to EC Directives

Symbol:	T	Toxic
	N	Dangerous for the environment
R-phrases:	23/24/25-40-48/23-52/53-59	
	Toxic by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. Toxic: danger of serious damage to health by prolonged exposure through inhalation. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Dangerous for the ozone layer.	
S-phrases:	23-36/37-45-59-61	
	Do not breathe vapour. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Refer to manufacturer/supplier for information on recovery/recycling. Avoid release to the environment. Refer to special instructions/Safety data sheets.	
EC-No.:	200-262-8	EC label
Additional labelling	Only to be used in industrial processes. For use in research and analysis.	

Reduced labelling (1999/45/EC, Art. 10,4)

Symbol:	T	Toxic
	N	Dangerous for the environment
R-phrases:	23/24/25-40-48/23-52/53	
	Toxic by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. Toxic: danger of serious damage to health by prolonged exposure through inhalation. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	
S-phrases:	36/37-45-59	
	Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Refer to manufacturer/supplier for information on recovery/recycling.	

16. Other information

Reason for alteration

Chapter 9: change/addition in physical/chemical properties.

Chapter 10: stability and reactivity.

Chapter 15: labelling.

General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.

Safety Data Sheet

According to EC Directive 91/155/EEC

Date of issue: 16.09.2005

Supersedes edition of 05.10.2004

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No.: 822265
 Product name: Chloroform (stabilized) for synthesis

Use of the substance/preparation

Chemical for synthesis

Company/undertaking identification

Company: Merck Schuchardt OHG * 85662 Hohenbrunn * Germany *
 Tel: +49 8102/802-0

Emergency telephone No.: Please contact the regional Merck representation in your country.

2. Composition/information on ingredients

Synonyms

Trichloromethane

CAS-No.:	67-66-3	EC-Index-No.:	602-006-00-4
M:	119.38 g/mol	EC-No.:	200-663-8
Formula Hill:	CHCl ₃		

3. Hazards identification

Harmful if swallowed. Irritating to skin. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

4. First aid measures

After inhalation: fresh air.

If breathing stops: mouth-to-mouth respiration or mechanical ventilation. Oxygen mask if necessary!
 Immediately call in physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophtalmologist if necessary.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free.

Immediately call in physician.

Laxative: Sodium sulfate (1 tablespoon/1/4 l water). Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

In case of spontaneous vomiting: Risk of aspiration. Pulmonary failure possible. Call in physician.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 822265

Product name: Chloroform (stabilized) for synthesis

5. Fire-fighting measures

Suitable extinguishing media:

In adaption to materials stored in the immediate neighbourhood.

Special risks:

Non-combustible. Ambient fire may liberate hazardous vapours. The following may develop in event of fire: hydrochloric acid.

Special protective equipment for fire fighting:

Do not stay in dangerous zone without self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Other information:

Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:

Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental-protection measures:

Do not allow to enter sewerage system.

Procedures for cleaning / absorption:

Take up with liquid-absorbent material (e.g. Chemizorb®). Forward for disposal. Clean up affected area. Do not inhale vapours.

7. Handling and storage *Handling:*

Notes for safe handling:

Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Improper storage for a longer period may lead to the formation of phosphene due to the escape of stabilizer.

Storage:

Tightly closed. At +15°C to +25°C.

8. Exposure controls/personal protection *Specific control parameter*

EC

Name	Chloroform
Value	2 ml/m ³
	10 mg/m ³
Carcinogenic	C 3:owing possible carcinogenic effects for man
Skin resorption	Risk of skin absorption

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 822265

Product name: Chloroform (stabilized) for synthesis

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when vapours/aerosols are generated. Filter AX (EN 371).

Eye protection: required

Hand protection: In full contact:
Glove material: viton
Layer thickness 0.70 mm
Breakthrough time >480min

In splash contact:
Glove material: butyl rubber
Layer thickness 0.7 mm
Breakthrough time >10 min

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 890 Vitoject® (full contact), 898 Butoject® (splash contact). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Industrial hygiene:

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Work under hood. Do not inhale substance.

9. Physical and chemical properties

Form:	liquid			
Colour:	colourless			
Odour:	characteristic			
pH value	not available			
Viscosity dynamic		(20 °C)	0.56	mPa*s
Melting point			-63	°C
Boiling point		(1013 hPa)	61	°C
Ignition temperature	not combustible			
Flash point	not flammable			
Explosion limits	low		not applicable	
	upper		not applicable	
Vapour pressure		(20 °C)	213	hPa
Relative vapour density			4.25	
Density		(20 °C)	1.47	g/cm ³
Solubility in water		(20 °C)	8	g/l
log Pow		(25 °C)	2	(experimental) (IUCLID)

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 822265

Product name: Chloroform (stabilized) for synthesis

10. Stability and reactivity

Conditions to be avoided
Strong heating.

Substances to be avoided

alkali metals, alkaline earth metals, metals (in powder form), peroxi compounds, fluorine, alcoholates, strong alkalis, ketones / alkalis, alkali hydroxides / alcohols, organic nitro compounds, alkali amides, oxygen, oxygen / alkalis, nitrogen oxides, nonmetallic hydrogen compounds, bis(dimethylamino)dimethyl tin, amines, ammonia, alcohols / strong alkalis, phosphines.

Hazardous decomposition products in the event of fire: See chapter 5.

Stabilizer
2-methyl-2-butene (amylene).

Further information
heat-sensitive, light-sensitive.

11. Toxicological information

Acute toxicity

LC₅₀ (inhalation, rat): 47.7 mg/l /4 h (IUCLID).
LCLo (inhalation, human): 25000 ppm(V) /5 min (RTECS).
LD₅₀ (oral, rat): 908 mg/kg (HSDB).

Specific symptoms in animal studies:
Eye irritation test (rabbit): Slight irritations (IUCLID).
Skin irritation test (rabbit): Slight irritations (IUCLID).

The literature data available to us do not conform with the labelling prescribed by the EC. The EC has dossiers which have not been published.

Subacute to chronic toxicity

The carcinogenic potential requires further clarification.

Bacterial mutagenicity: Ames test: negative. (IUCLID)

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 822265

Product name: Chloroform (stabilized) for synthesis

Further toxicological information

After inhalation of vapours: coughing, dyspnoea, absorption.

After skin contact: Irritations. Drying-out effect resulting in rough and chapped skin. Danger of skin absorption.

After eye contact: Slight irritations.

After swallowing: nausea, vomiting, absorption. After accidental swallowing the substance may pose a risk of aspiration. Passage into the lung (vomiting!) can result in a condition resembling pneumonia (chemical pneumonitis).

Systemic effects:

After absorption: agitation, spasms, narcosis.

After long-term exposure to the chemical: drop in blood pressure, headache, ataxia (impaired locomotor coordination), gastrointestinal complaints, cardiovascular disorders. Damage of: liver, kidneys, heart.

Effect potentiated by: ethanol

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Biologic degradation: Not degradable in water.

Behavior in environmental compartments:

Distribution: log Pow: 2 (25 °C) (experimental) (IUCLID);

No appreciable bioaccumulation potential is to be expected (log Pow 1-3).

Distribution preferentially in air. Henry constant: 14084 Pa*m³/mol (experimental) (IUCLID).

Ecotoxic effects:

Biological effects: Harmfull effect on aquatic organisms. Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities.

Fish toxicity: *L.macrochirus* LC₅₀: 18 mg/l /96 h (IUCLID).

Daphnia toxicity: *Daphnia magna* EC₅₀: 79 mg/l /48 h (IUCLID).

Bacterial toxicity: activated sludge EC₅₀: 1010 mg/l /3 h (OECD 209); Maximum permissible toxic concentration: *Ps.putida* EC₅: 125 mg/l /16 h (IUCLID).

Algal toxicity: Maximum permissible toxic concentration: *Sc.quadricauda* IC₅: 1100 mg/l /8 d (IUCLID).

Protozoa: Maximum permissible toxic concentration: *E.sulcatum* EC₅: >6560 mg/l /72 h (IUCLID).

Further ecologic data:

Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Product:

Chemicals must be disposed of in compliance with the respective national regulations. Under www.retrologistik.de you will find country- and substance-specific information as well as contact partners.

Packaging:

Merck product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system. Under www.retrologistik.de you will find special information on the respective national conditions as well as contact partners.

Merck Safety Data Sheet

According to EC Directive 91/155/EEC

Catalogue No.: 822265

Product name: Chloroform (stabilized) for synthesis

14. Transport information

Road & Rail ADR, RID

UN 1888 CHLOROFORM, 6.1, III
Inland waterway ADN, ADNR not tested

Sea IMDG-Code

UN 1888 CHLOROFORM, 6.1, III
Ems F-A S-A

Air CAO, PAX
UN 1888 CHLOROFORM, 6.1, III

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

15. Regulatory information

Labelling according to EC Directives

Symbol:	Xn	Harmful
R-phrases:	22-38-40-48/20/22	Harmful if swallowed. Irritating to skin. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
S-phrases:	36/37	Wear suitable protective clothing and gloves.
EC-No.:	200-663-8	EC label

Reduced labelling (1999/45/EC, Art. 10, 4)

Symbol:	Xn	Harmful
R-phrases:	22-40-48/20/22	Harmful if swallowed. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
S-phrases:	36/37	Wear suitable protective clothing and gloves.

16. Other information

Reason for alteration

Chapter 7: handling. General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.

Material Safety Data Sheet

Chlorine

Section 1. Chemical product and company identification

Product name	: Chlorine
Supplier	: AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
Product use	: Synthetic/Analytical chemistry.
Synonym	: Cl ₂ ; Bertholite; Chloor; Chlor; Chlore; Chlorine mol.; Cloro; Molecular chlorine; UN 1017
MSDS #	: 001015
Date of	: 4/26/2010.
Preparation/Revision	: 1-866-734-3438
In case of emergency	

Section 2. Hazards identification

Physical state	: Gas. [GREENISH-YELLOW GAS WITH SUFFOCATING ODOR]
Emergency overview	: DANGER! OXIDIZER. CAUSES SEVERE RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL IF INHALED. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE. CONTENTS UNDER PRESSURE. Do not puncture or incinerate container. Do not breathe gas. Do not get on skin or clothing. May cause target organ damage, based on animal data. Use only with adequate ventilation. Keep container closed. Do not get in eyes, on skin or on clothing. Avoid breathing gas. Wash thoroughly after handling. Store in tightly-closed container. Avoid contact with combustible materials. Contact with rapidly expanding gases can cause frostbite.

Target organs	: May cause damage to the following organs: lungs, upper respiratory tract, skin, eyes.
Routes of entry	: Inhalation Dermal Eyes
Potential acute health effects	
Eyes	: Severely corrosive to the eyes. Causes severe burns. Contact with rapidly expanding gas may cause burns or frostbite.
Skin	: Severely corrosive to the skin. Causes severe burns. Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	: Toxic by inhalation. Severely corrosive to the respiratory system.
Ingestion	: Ingestion is not a normal route of exposure for gases
Potential chronic health effects	: CARCINOGENIC EFFECTS: A4 (Not classifiable for humans or animals.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.
Medical conditions aggravated by over-exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

Section 3. Composition, Information on Ingredients

Name	CAS number	% Volume	Exposure limits
Chlorine	7782-50-5	100	<p>ACGIH TLV (United States, 1/2009).</p> <p>STEL: 2.9 mg/m³ 15 minute(s). STEL: 1 ppm 15 minute(s). TWA: 1.5 mg/m³ 8 hour(s). TWA: 0.5 ppm 8 hour(s).</p> <p>NIOSH REL (United States, 6/2009).</p> <p>CEIL: 1.45 mg/m³ 15 minute(s). CEIL: 0.5 ppm 15 minute(s).</p> <p>OSHA PEL (United States, 11/2006).</p> <p>CEIL: 3 mg/m³ CEIL: 1 ppm</p> <p>OSHA PEL 1989 (United States, 3/1989).</p> <p>STEL: 3 mg/m³ 15 minute(s). STEL: 1 ppm 15 minute(s). TWA: 1.5 mg/m³ 8 hour(s). TWA: 0.5 ppm 8 hour(s).</p>

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Frostbit: Try to warm up the frozen tissues and seek medical attention.

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion: As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

Flammability of the product: Non-flammable.

Products of combustion : Decomposition products may include the following materials:
halogenated compounds

Fire hazards in the presence of various substances :Extremely flammable in the presence of the following materials or conditions:
reducing materials, combustible materials, organic materials and alkalis.

Fire-fighting media and Instructions : Use an extinguishing agent suitable for the surrounding fire.

Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk. Contains gas under pressure. Contact with combustible material may cause fire. This material increases the risk of fire and may aid combustion. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions	: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Eliminate all ignition sources if safe to do so. Do not touch or walk through spilled material. Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
Environmental precautions	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for cleaning up	: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Handling	: Use only with adequate ventilation. Wash thoroughly after handling. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Do not get in eyes, on skin or on clothing. Keep container closed. Do not get on skin or clothing. Store in tightly-closed container. Avoid contact with combustible materials. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Storage	: Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalis, reducing agents and combustibles. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Engineering controls	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Personal protection	
Eyes	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

Hands	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Personal protection in case of a large spill	: Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product. Full chemical-resistant suit and self-contained breathing apparatus should be worn only by trained and authorized persons.

Product name

Chlorine

ACGIH TLV (United States, 1/2009).

STEL: 2.9 mg/m³ 15 minute(s).

STEL: 1 ppm 15 minute(s).

TWA: 1.5 mg/m³ 8 hour(s).

TWA: 0.5 ppm 8 hour(s).

NIOSH REL (United States, 6/2009).

CEIL: 1.45 mg/m³ 15 minute(s).

CEIL: 0.5 ppm 15 minute(s).

OSHA PEL (United States, 11/2006).

CEIL: 3 mg/m³

CEIL: 1 ppm

OSHA PEL 1989 (United States, 3/1989).

STEL: 3 mg/m³ 15 minute(s).

STEL: 1 ppm 15 minute(s).

TWA: 1.5 mg/m³ 8 hour(s).

TWA: 0.5 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight	70.9 g/mole
Molecular formula	Cl ₂
Boiling/condensation point	-33.9°C (-29°F)
Melting/freezing point	-101.1°C (-150°F)
Critical temperature	143.9°C (291°F)
Vapor pressure	85.3 (psig)
Vapor density	2.4 (Air = 1)
Specific Volume (ft³/lb)	5.4054
Gas Density (lb/ft³)	0.185

Section 10. Stability and reactivity

Stability and reactivity	The product is stable.
Incompatibility with various substances	Extremely reactive or incompatible with the following materials: reducing materials, combustible materials, organic materials and alkalis.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Toxicity data				
Product/ingredient name	Result	Species	Dose	Exposure
chlorine	LC50 Inhalation Gas.	Rat	293 ppm	1 hours
	LC50 Inhalation Gas.	Rat	293 ppm	1 hours
	LC50 Inhalation Gas.	Mouse	137 ppm	1 hours
IDLH	10 ppm			
Chronic effects on humans	CARCINOGENIC EFFECTS: A4 (Not classifiable for humans or animals.) by ACGIH. May cause damage to the following organs: lungs, upper respiratory tract, skin, eyes.			
Other toxic effects on humans	Hazardous by the following route of exposure: of skin contact (irritant), of eye contact (irritant), of inhalation (lung irritant).			
Specific effects				
Carcinogenic effects	No known significant effects or critical hazards.			
Mutagenic effects	No known significant effects or critical hazards.			
Reproduction toxicity	No known significant effects or critical hazards.			

Section 12. Ecological information

Ecotoxicity data

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
chlorine	-	Acute LC50 0.75 mg/L Marine water	Crustaceans - Blue crab – Callinectes sapidus - Adult	48 hours
	-	Acute LC50 838 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days
	-	Acute LC50 752 to 33400 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days
	-	Acute LC50 380 to 3390 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days
	-	Acute LC50 354 to 488 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days
	-	Acute LC50 150 ug/L Fresh water	Daphnia – Water flea – Daphnia magna	48 hours
	-	Acute LC50 136 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days
	-	Acute LC50 130 ug/L Fresh water	Daphnia – Water flea – Daphnia magna	48 hours
	-	Acute LC50 120 ug/L Fresh water	Daphnia – Water flea – Daphnia magna	48 hours
	-	Acute LC50 116 ug/L Fresh water	Daphnia – Water flea – Daphnia magna	48 hours
	-	Acute LC50 110 ug/L Fresh water	Daphnia – Water flea – Daphnia pulex	48 hours
	-	Acute LC50 107 to 110 ug/L Fresh water	Fish - Brook trout – Salvelinus fontinalis - Juvenile (Fledgling, Hatchling, Weanling) - 7.5 to 10 cm	96 hours
	-	Acute LC50 102 to 124 ug/L Fresh water	Fish - Brook trout – Salvelinus fontinalis - Juvenile (Fledgling,	96 hours

			Hatchling, Weanling) - 10 to 15 cm	
	-	Acute LC50 91 ug/L Fresh water	Daphnia – Water flea – Daphnia pulex	48 hours
	-	Acute LC50 90 ug/L Marine water	Fish - Spot Leiostomus xanthurus	96 hours
	-	Acute LC50 85 to 5670 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days
	-	Acute LC50 85 ug/L Fresh water	Daphnia – Water Fresh water magna	48 hours
	-	Acute LC50 75 ug/L Fresh water	Daphnia – Water flea – Daphnia pulex	48 hours
	-	Acute LC50 40 ug/L Fresh water	Daphnia – Water flea – Daphnia pulex	48 hours
	-	Acute LC50 37 ug/L Marine water	Fish – Atlantic silverside - Menidia menidia	96 hours
	-	Acute LC50 37 to 220 ug/L Marine water	Fish – Northern pipefish – Syngnathus fuscus	96 hours
	-	Acute LC50 30 ug/L Fresh water	Daphnia – Water flea – Daphnia pulex	48 hours
	-	Acute LC50 29 ug/L Fresh water	Fish – Rainbow trout, Donaldson trout – Oncorhynchus mykiss	96 hours
	-	Acute LC50 13.6 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days
	-	Acute LC50 40 ug/L Fresh water	Daphnia – Water flea – Daphnia pulex	48 hours
	-	Acute LC50 37 ug/L Marine water	Fish – Atlantic silverside - Menidia menidia	96 hours
	-	Acute LC50 37 to 220 ug/L Marine water	Fish – Northern pipefish – Syngnathus fuscus	96 hours
	-	Acute LC50 30 ug/L Fresh water	Daphnia – Water flea – Daphnia pulex	48 hours
	-	Acute LC50 29 ug/L Fresh water	Fish – Rainbow trout, Donaldson Oncorhynchus mykiss	96 hours

-	Acute LC50 14 ug/L Fresh water	Fish – Rainbow trout, Donaldson trout Oncorhynchus mykiss	96 hours
-	Acute LC50 13.6 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days
-	Acute LC50 2.03 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days
-	Acute LC50 4720 ug/L Fresh water	Crustaceans Aquatic sowbug Asellus racovitzai	2 days

Environmental fate : Not available

Environmental hazards : Water polluting material. May be harmful to the environment if released in large







Toxicity to the environment: Not available


Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group		Additional information
DOT Classification	UN1017	CHLORINE	2.3	Not applicable (gas).		Marine Pollutant

					  	<p>Reportable quantity 10lbs(4.45kg)</p> <p>Limited quantity Yes</p> <p>Packaging Instruction</p> <p>Passenger aircraft Quantity Limitation: Forbidden:</p> <p>Cargo aircraft Quantity Limitation : Forbidden:</p> <p>Special provision 2,B9,B14,T50,T P19</p>
TDG Classification	UN1017	CHLORINE	2.3	Not applicable	  	<p>Marine Pollutant</p> <p>Explosive limit and limited quantity index 0</p> <p>ERP index 500</p> <p>Passenger Carrying ship Index Forbidden</p> <p>Passenger carrying Road or Rail Index Forbidden</p>

<p>Mexico Classification</p>	<p>UN 1017</p>	<p>Chlorine</p>	<p>2.3</p>	<p>Not applicable(gas)</p>		<p>-</p>
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“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Section 15. Regulatory information

United States

U.S. regulations	Federal	<p>TSCA 8(a) CAIR: chlorine</p> <p>United States inventory (TSCA 8b): This material is listed or exempted.</p> <p>SARA 302/304/311/312 extremely hazardous substances: chlorine</p> <p>SARA 302/304 emergency planning and notification: chlorine</p> <p>SARA 302/304/311/312 hazardous chemicals: chlorine</p> <p>SARA 311/312 MSDS distribution - chemical inventory - hazard identification: chlorine: Fire hazard, Sudden release of pressure, Immediate (acute) health hazard</p> <p>Clean Water Act (CWA) 307: No products were found.</p> <p>Clean Water Act (CWA) 311: chlorine</p> <p>Clean Air Act (CAA) 112 accidental release prevention: chlorine</p> <p>Clean Air Act (CAA) 112 regulated flammable substances: No products were found.</p> <p>Clean Air Act (CAA) 112 regulated toxic substances: chlorine</p>	
SARA 313			
	Product name	CAS number	Concentration
Form R - Reporting requirements	Chlorine	7782-50-5	100
Supplier notification	Chlorine	7782-50-5	100

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

<p>State regulations</p>	<p>Connecticut Carcinogen Reporting: This material is not listed.</p> <p>Connecticut Hazardous Material Survey: This material is not listed.</p> <p>Florida substances: This material is not listed.</p> <p>Illinois Chemical Safety Act: This material is not listed.</p> <p>Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.</p> <p>Louisiana Reporting: This material is not listed.</p> <p>Louisiana Spill: This material is not listed.</p> <p>Massachusetts Spill: This material is not listed.</p> <p>Massachusetts Substances: This material is listed.</p> <p>Michigan Critical Material: This material is not listed.</p> <p>Minnesota Hazardous Substances: This material is not listed.</p> <p>New Jersey Hazardous Substances: This material is listed.</p> <p>New Jersey Spill: This material is not listed.</p> <p>New Jersey Toxic Catastrophe Prevention Act: This material is listed.</p> <p>New York Acutely Hazardous Substances: This material is listed.</p> <p>New York Toxic Chemical Release Reporting: This material is not listed.</p> <p>Pennsylvania RTK Hazardous Substances: This material is listed.</p> <p>Rhode Island Hazardous Substances: This material is not listed.</p>
<p>Canada</p>	
<p>WHMIS (Canada)</p>	<p>Class A: Compressed gas.</p> <p>Class D-1A: Material causing immediate and serious toxic effects (Very toxic).</p> <p>Class E: Corrosive material</p> <p>CEPA Toxic substances: This material is not listed.</p> <p>Canadian ARET: This material is not listed.</p> <p>Canadian NPRI: This material is listed.</p> <p>Alberta Designated Substances: This material is not listed.</p> <p>Ontario Designated Substances: This material is not listed.</p> <p>Quebec Designated Substances: This material is not listed.</p>

Section 16. Other information


United States

<p>Label requirements</p>	<p>OXIDIZER. CAUSES SEVERE RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL IF INHALED. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE. CONTENTS UNDER PRESSURE.</p>
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Canada

<p>Label requirements</p>	<p>Class A: Compressed gas. Class D-1A: Material causing immediate and serious toxic effects (Very toxic). Class E: Corrosive material</p>
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<p>Hazardous Material Information System (U.S.A.)</p>	<table border="1"> <tr> <td style="background-color: #00B0F0; width: 100px; height: 20px;"></td> <td style="text-align: center; width: 20px;">*</td> <td style="text-align: center; width: 20px;">3</td> </tr> <tr> <td style="background-color: #D62728; width: 100px; height: 20px;"></td> <td></td> <td style="text-align: center;">0</td> </tr> <tr> <td style="background-color: #FFD700; width: 100px; height: 20px;"></td> <td></td> <td style="text-align: center;">0</td> </tr> </table>		*	3			0			0	
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<p>National Fire Protection Association (U.S.A.)</p>	
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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Material Safety Data Sheet

Carbon Monoxide

Section 1. Chemical product and company identification

Product name	Carbon Monoxide
Supplier	AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
Product use	Synthetic/Analytical chemistry.
Synonym	Carbon oxide (CO); CO; Exhaust Gas; Flue gas; Carbonic oxide; Carbon oxide; Carbone; Carbonio; Kohlenmonoxid; Kohlenoxyd; Koolmonoxyde; NA 9202; Oxyde de carbone; UN 1016; Wegla tlenek; Flue gasnide; Carbon monooxide
MSDS #	001014
Date of Preparation/Revision	12/3/2012.
In case of emergency	: 1-866-734-3438

Section 2. Hazards identification

Physical state	Gas. [[COLORLESS GAS, MAY BE A LIQUID AT LOW TEMPERATURE OR HIGH PRESSURE.]]
Emergency overview	: WARNING! FLAMMABLE GAS. MAY CAUSE FLASH FIRE. MAY BE FATAL IF INHALED. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. CONTENTS UNDER PRESSURE. Keep away from heat, sparks and flame. Do not puncture or incinerate container. Avoid breathing gas. May cause target organ damage, based on animal data. Use only with adequate ventilation. Keep container closed. Contact with rapidly expanding gases can cause frostbite.
Target organs	May cause damage to the following organs: blood, lungs, the nervous system, heart, cardiovascular system, central nervous system (CNS).

Routes of entry	: Inhalation
Potential acute health effects	
Eyes	Contact with rapidly expanding gas may cause burns or frostbite.
Skin	Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	Toxic by inhalation.
Ingestion	Ingestion is not a normal route of exposure for gases
Potential chronic health effects	
Chronic effects	May cause target organ damage, based on animal data.
Target organs	May cause damage to the following organs: blood, lungs, the nervous system, heart, cardiovascular system, central nervous system (CNS).
Medical conditions aggravated by over-exposure	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Section 3. Composition, Information on Ingredients

Name	CAS number	% Volume	Exposure limits
Carbon Monoxide	630-08-0	100	<p>ACGIH TLV (United States, 2/2010). TWA: 29 mg/m³ 8 hour(s). TWA: 25 ppm 8 hour(s).</p> <p>NIOSH REL (United States, 6/2009). CEIL: 229 mg/m³ CEIL: 200 ppm TWA: 40 mg/m³ 10 hour(s). TWA: 35 ppm 10 hour(s).</p> <p>OSHA PEL (United States, 6/2010). TWA: 55 mg/m³ 8 hour(s). TWA: 50 ppm 8 hour(s).</p> <p>OSHA PEL 1989 (United States, 3/1989). CEIL: 229 mg/m³ CEIL: 200 ppm TWA: 40 mg/m³ 8 hour(s). TWA: 35 ppm 8 hour(s).</p>

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

Flammability of the product: Flammable.

Auto-ignition temperature : 605°C (1121°F)

Flammable limits : Lower: 12.5% Upper: 74.2%

Products of combustion : Decomposition products may include the following materials carbon dioxide carbon monoxide

Fire hazards in the presence of various substances Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.

Fire-fighting media and instructions : In case of fire, use water spray (fog), foam or dry chemical.

In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.

Contains gas under pressure. Flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions	Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for cleaning up	Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Handling	Use only with adequate ventilation. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Keep container closed. Keep away from heat, sparks and flame. To avoid fire, eliminate ignition sources. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Storage	Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Segregate from oxidizing materials. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperature should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Engineering controls	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Personal protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Eyes	
Skin	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

Hands	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Personal protection in case of a large spill	Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product. Full chemical-resistant suit and self-contained breathing apparatus should be worn only by trained and authorized persons.

Product name

carbon monoxide

ACGIH TLV (United States, 2/2010).

TWA: 29 mg/m³ 8 hour(s).

TWA: 25 ppm 8 hour(s).

NIOSH REL (United States, 6/2009).

CEIL: 229 mg/m³

CEIL: 200 ppm

TWA: 40 mg/m³ 10 hour(s).

TWA: 35 ppm 10 hour(s).

OSHA PEL (United States, 6/2010).

TWA: 55 mg/m³ 8 hour(s).

TWA: 50 ppm 8 hour(s).

OSHA PEL 1989 (United States, 3/1989).

CEIL: 229 mg/m³

CEIL: 200 ppm

TWA: 40 mg/m³ 8 hour(s).

TWA: 35 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight	28.01 g/mole
Molecular formula	C-O
Boiling/condensation point	-191°C (-311.8°F)
Melting/freezing point	-205°C (-337°F)
Critical temperature	-140.1°C (-220.2°F)
Vapor density	0.97 (Air = 1)
Specific Volume (ft³/lb)	13.8889
Gas Density (lb/ft³)	0.072

Section 10. Stability and reactivity

Stability and reactivity	The product is stable.
Incompatibility with various substances	Extremely reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Toxicity data

Product/ingredient name	Result	Species	Dose	Exposure
carbon monoxide	TDLo Intraperitoneal	Rat	35 mL/kg	-
	LC50 Inhalation Vapor	Rat	13500 mg/m ³	15 minutes
	LC50 Inhalation Vapor	Rat	1900 mg/m ³	4 hours
	LC50 Inhalation Gas.	Rat	6600 ppm	30 minutes
	LC50 Inhalation Gas.	Rat	3760 ppm	1 hours

	LC50 Inhalation Gas.	Mouse	2444 ppm	4 hours
	LC50 Inhalation Gas.	Rat	1807 ppm	4 hours
IDLH	1200 ppm			
Chronic effects on humans	TERATOGENIC EFFECTS: Classified 1 by European Union. May cause damage to the following organs: blood, lungs, the nervous system, heart, cardiovascular system, central nervous system (CNS).			
Other toxic effects on humans	No specific information is available in our database regarding the other toxic effects of this material to humans.			
Specific effects				
Carcinogenic effects	No known significant effects or critical hazards.			
Mutagenic effects	No known significant effects or critical hazards.			
Reproduction toxicity	No known significant effects or critical hazards.			

Carbon Monoxide

Section 12. Ecological information

Aquatic ecotoxicity

Not available.

Products of degradation : Products of degradation: carbon oxides (CO, CO₂).

Environmental fate : Not available.



Environmental hazards : No known significant effects or critical hazards.





Toxicity to the environment : Not available.

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1016	CARBON MONOXIDE, COMPRESSED	2.3	Not applicable (gas).	 	Inhalation hazard zone D Limited quantity Yes. Packaging Instruction Passenger aircraft Quantity limitation: Forbidden

						Cargo aircraft Quantity limitation: Forbidden <u>Special provision</u> 4
TDG Classification	UN1016	CARBON MONOXIDE, COMPRESSED	2.3	Not applicable (gas).	 	<u>Explosive limit and Limited quantity Index</u> 0 <u>ERAP Index</u> 500 <u>Passenger carrying ship Index</u> Forbidden <u>Passenger carrying Road or Rail Index</u> Forbidden
Mexico Classification	UN1016	CARBON MONOXIDE, COMPRESSED	2.3	Not applicable (gas).	 	-

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Section 15. Regulatory information

United States

<p>U.S. regulations</p> <p>Federal</p>	<p>TSCA 8(a) IUR: Not determined</p> <p>United States inventory (TSCA 8b): This material is listed or exempted.</p> <p>SARA 302/304/311/312 extremely hazardous substances: No products were found.</p> <p>SARA 302/304 emergency planning and notification: No products were found.</p> <p>SARA 302/304/311/312 hazardous chemicals: carbon monoxide</p> <p>SARA 311/312 MSDS distribution - chemical inventory - hazard identification:</p> <p>carbon monoxide: Fire hazard, Sudden release of pressure, Immediate (acute) health hazard, Delayed (chronic) health hazard</p>
<p>State regulations</p>	<p>Connecticut Carcinogen Reporting: This material is not listed.</p> <p>Connecticut Hazardous Material Survey: This material is not listed.</p> <p>Florida substances: This material is not listed.</p> <p>Illinois Chemical Safety Act: This material is not listed.</p> <p>Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.</p> <p>Louisiana Reporting: This material is not listed.</p> <p>Louisiana Spill: This material is not listed.</p> <p>Massachusetts Spill: This material is not listed.</p> <p>Massachusetts Substances: This material is listed.</p> <p>Michigan Critical Material: This material is not listed.</p> <p>Minnesota Hazardous Substances: This material is not listed.</p> <p>New Jersey Hazardous Substances: This material is listed.</p> <p>New Jersey Spill: This material is not listed.</p> <p>New Jersey Toxic Catastrophe Prevention Act: This material is listed.</p> <p>New York Acutely Hazardous Substances: This material is not listed.</p> <p>New York Toxic Chemical Release Reporting: This material is not listed.</p> <p>Pennsylvania RTK Hazardous Substances: This material is listed.</p> <p>Rhode Island Hazardous Substances: This material is not listed.</p>

California Prop. 65	WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.			
Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Carbon Monoxide	No.	Yes.	No.	No.

Canada

WHMIS (Canada)

: Class A: Compressed gas.
 Class B-1: Flammable gas.
 Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
 Class D-2A: Material causing other toxic effects (Very toxic).

CEPA Toxic substances: This material is not listed.

Canadian ARET: This material is not listed.

Canadian NPRI: This material is listed.

Alberta Designated Substances: This material is not listed.

Ontario Designated Substances: This material is not listed.

Quebec Designated Substances: This material is not listed.

Section 16. Other information

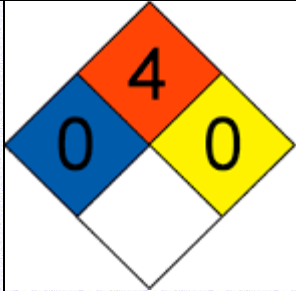
United States

Label requirements	<p>: FLAMMABLE GAS.</p> <p>MAY CAUSE FLASH FIRE.</p> <p>MAY BE FATAL IF INHALED.</p> <p>MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.</p> <p>CONTENTS UNDER PRESSURE.</p>
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Canada

Label requirements	<p>Class A: Compressed gas.</p> <p>Class B-1: Flammable gas.</p> <p>Class D-1A: Material causing immediate and serious toxic effects (Very toxic).</p> <p>Class D-2A: Material causing other toxic effects (Very toxic).</p>
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Hazardous Material Information (U.S.A.)	Health	*	2
	Flammability		4
	Physical hazards		0

National Fire Protection Association (U.S.A.)	
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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Material Safety Data Sheet

Hydrogen Sulfide

Section 1. Chemical product and company identification

Product name	Hydrogen Sulfide
Supplier	AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
Product use	Synthetic/Analytical chemistry.
Synonym	Dihydrogen monosulfide; Dihydrogen sulfide; Hydrosulfuric acid; Stink damp; Sulfur hydride; Sulfureted hydrogen; H ₂ S; Sulfuretted hydrogen; Hydrogen-sulphide-; Hydrogen sulfide (H ₂ S); Acide sulfhydrique; Hydrogene sulfure; Idrogeno solforato; Rcra waste number U135; Schwefelwasserstoff; Siarkowodor; UN 1053; Zwavelwaterstof; Hepatic gas; Hepatic acid; Hydrogen monosulfide; Sewer gas; Sour gas; Sulfur hydroxide
MSDS #	001029
Date of	5/7/2013.
Preparation/Revision In case of emergency	1-866-734-3438

Section 2. Hazards identification

Physical state : Gas. [COLORLESS LIQUEFIED COMPRESSED GAS WITH A ROTTEN EGG ODOR, BUT ODORLESS AT POISONOUS CONCENTRATIONS. [NOTE: SENSE OF SMELL BECOMES RAPIDLY FATIGUED AND CAN NOT BE RELIED UPON TO WARN OF THE CONTINUOUS PRESENCE OF H₂S.]]

Emergency overview: DANGER!

FLAMMABLE GAS. MAY CAUSE FLASH FIRE. MAY BE FATAL IF INHALED. MAY CAUSE EYE AND SKIN IRRITATION. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. CONTENTS UNDER PRESSURE.

Keep away from heat, sparks and flame. Do not puncture or incinerate container. Do not breathe gas. Avoid contact with eyes, skin and clothing. May cause target organ damage, based on animal data. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed.

Contact with rapidly expanding gases can cause frostbite.

Target organs : May cause damage to the following organs: lungs, upper respiratory tract, eyes, central nervous system (CNS).

Routes of entry : Inhalation Dermal Eyes

Potential acute health effects

Eyes : Moderately irritating to eyes. Contact with rapidly expanding gas may cause burns or frostbite.

Skin : Moderately irritating to the skin. Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : Very toxic by inhalation.

Ingestion : Ingestion is not a normal route of exposure for gases

Potential chronic health effects

Chronic effects : Can cause target organ damage.

Target organs : May cause damage to the following organs: lungs, upper respiratory tract, eyes, central nervous system (CNS).

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Hydrogen Sulfide

Section 3. Composition, Information on Ingredients

Name	CAS number	% Volume	Exposure limits
Hydrogen Sulfide	7783-06-4	100	ACGIH TLV (United States, 3/2012) STEL: 5 ppm 15 minute(s). TWA: 1 ppm 8 hour(s). NIOSH REL (United States, 1/2013). CEIL: 15 mg/m ³ 10 minute(s). CEIL: 10 ppm 10 minute(s). OSHA PEL 1989 (United States, 3/1989). STEL: 21 mg/m ³ 15 minute(s). STEL: 15 ppm 15 minute(s). TWA: 14 mg/m ³ 8 hour(s). TWA: 10 ppm 8 hour(s). OSHA PEL Z2 (United States, 11/2006). AMP: 50 ppm 10 minute(s). CEIL: 20 ppm

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Inhalation** : Call medical doctor or poison control center immediately. Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

Flammability of the product : Flammable.

Auto-ignition temperature : 259.85°C (499.7°F)

Flammable limits : Lower: 4% Upper: 44%

Products of combustion : Decomposition products may include the following materials:
sulfur oxides

Fire-fighting media and Instructions : In case of fire, use water spray (fog), foam or dry chemical.
In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.

Contains gas under pressure. Flammable gas. In a fire or if heated, a pressure increase will occur, and the container may burst, with the risk of a subsequent explosion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode

Section 6. Accidental release measures

Personal precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drain tools and explosion-proof equipment. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Handling	Use only with adequate ventilation. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Keep container closed. Avoid contact with skin and clothing. Avoid contact with eyes. Keep away from heat, sparks and flame. To avoid fire, eliminate ignition sources. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Storage	Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Segregate from oxidizing materials. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Engineering controls	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Personal protection Eyes	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93
Hands	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Personal protection in case of a large spill	Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product. Full chemical-resistant suit and self-contained breathing apparatus should be worn only by trained and authorized persons.

Product name

hydrogen sulphide

ACGIH TLV (United States, 3/2012).

STEL: 5 ppm 15 minute(s).

TWA: 1 ppm 8 hour(s).

NIOSH REL (United States, 1/2013).

CEIL: 15 mg/m³ 10 minute(s).

CEIL: 10 ppm 10 minute(s).

OSHA PEL 1989 (United States, 3/1989).

STEL: 21 mg/m³ 15 minute(s).

STEL: 15 ppm 15 minute(s).

TWA: 14 mg/m³ 8 hour(s).

TWA: 10 ppm 8 hour(s).

OSHA PEL Z2 (United States, 11/2006).

AMP: 50 ppm 10 minute(s).

CEIL: 20 ppm

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight	34.08 g/mole
Molecular formula	H ₂ S
Boiling/condensation point	-60°C (-76°F)
Melting/freezing point	-82.8°C (-117°F)
Critical temperature	100.5°C (212.9°F)
Vapor pressure	252 (psig)
Vapor density	1.19 (Air = 1)
Specific Volume (ft³/lb)	11.236
Gas Density (lb/ft³)	0.089

Section 10. Stability and reactivity

Stability and reactivity	The product is stable.
Incompatibility with various substances	Extremely reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Toxicity data

Product/ingredient name	Result	Species	Dose	Exposure	
hydrogen sulphide	LD50 Intraperitoneal	Rat	2300 ug/kg	-	
	LD50 Intravenous	Rat	270 ug/kg	-	
	LC50 Inhalation Vapor	Rat	820 mg/m3	3 hours	
	LC50 Inhalation Vapor	Rat	700 mg/m3	4 hours	
	LC50 Inhalation Vapor	Rat	470 mg/m3	6 hours	
	LC50 Inhalation Gas.	Rat	712 ppm	1 hours	
	LC50 Inhalation Gas.	Mouse	634 ppm	1 hours	
	LC50 Inhalation Gas.	Rat	444 ppm	4 hours	
	IDLH	100 ppm			
	Chronic effects on humans	May cause damage to the following organs: lungs, upper respiratory tract, eyes, central nervous system (CNS).			
	Other toxic effects on humans	No specific information is available in our database regarding the other toxic effects of this material to humans.			
	Specific effects				
	Carcinogenic effects	No known significant effects or critical hazards.			
Mutagenic effects	No known significant effects or critical hazards.				

Reproduction toxicity	No known significant effects or critical hazards.
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Section 12. Ecological information

Aquatic ecotoxicity


Product/ingredient name	Test	Result	Species	Exposure
hydrogen sulphide	-	Acute EC50 770 ug/L Fresh water	Crustaceans - Amphipod - Crangonyx richmondensis ssp. lauren - 10 mm	48 hours
	-	Acute EC50 540 ug/L Fresh water	Crustaceans - Amphipod - Crangonyx richmondensis ssp. lauren - 10 mm	48 hours
	-	Acute EC50 95 ug/L Fresh water	Crustaceans - Scud - Gammarus pseudolimnaeus -11 mm	2 days
	-	Acute EC50 71 ug/L Fresh water	Crustaceans - Scud - Gammarus pseudolimnaeus -11 mm	2 days
	-	Acute EC50 62 ug/L Fresh water	Crustaceans - Scud - Gammarus pseudolimnaeus -11 mm	2 days





	-	Acute LC50 4 ug/L Fresh water	Fish - Lake whitefish - Coregonus clupeaformis - Yolk-sac fry	96 hours
	-	Acute LC50 3.2 ug/L Fresh water	Fish - Asian redbtail catfish - Hemibagrus nemurus	96 hours
	-	Acute LC50 3 ug/L Fresh water	Fish - Lake whitefish - Coregonus clupeaformis - Yolk-sac fry	96 hours
	-	Acute LC50 2 ug/L Fresh water	Fish - Lake whitefish - Coregonus clupeaformis - Yolk-sac fry	96 hours
	-	Acute LC50 <2 ug/L Fresh water	Fish - Yellow perch - Perca flavescens Yolk-sac fry	96 hours
Products of degradation				
Environmental fate	Not available.			
Environmental hazards	No known significant effects or critical hazards.			
Toxicity to the environment	Not available.			

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
<p>DOT Classification</p>	<p>UN1053</p>	<p>HYDROGEN SULFIDE</p>	<p>2.3</p>	<p>Not applicable (gas).</p>		<p>Reportable quantity 100 lbs. (45.4 kg)</p> <p>Limited quantity Yes.</p> <p>Packaging instruction Passenger aircraft Quantity limitation: Forbidden.</p> <p>Cargo aircraft Quantity limitation: Forbidden:</p> <p>Special provision 2,B9,B14</p>

TDG Classification	UN1053	HYDROGEN SULFIDE	2.3	Not applicable (gas).	 	<u>Explosive Limit and Limited Quantity Index</u> 0 <u>ERAP Index</u> 0 <u>Passenger Carrying Ship Index</u> Forbidden <u>Passenger Carrying Road or Rail Index</u> Forbidden
Mexico Classification	UN1053	HYDROGEN SULFIDE	2.3	Not applicable (gas).	 	-

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Section 15. Regulatory information

United States

U.S. Federal regulations : **United States inventory (TSCA 8b)**: This material is listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: hydrogen sulphide

SARA 302/304 emergency planning and notification: hydrogen sulphide

SARA 302/304/311/312 hazardous chemicals: hydrogen sulphide

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: hydrogen sulphide: Fire hazard, Sudden release of pressure, Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: hydrogen sulphide

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Hydrogen Sulfide	7783-06-4	100
Supplier notification	Hydrogen Sulfide	7783-06-4	100

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

<p>State regulations</p>	<p>Connecticut Carcinogen Reporting: This material is not listed.</p> <p>Connecticut Hazardous Material Survey: This material is not listed.</p> <p>Florida substances: This material is not listed.</p> <p>Illinois Chemical Safety Act: This material is not listed.</p> <p>Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.</p> <p>Louisiana Reporting: This material is not listed.</p> <p>Louisiana Spill: This material is not listed.</p> <p>Massachusetts Spill: This material is not listed.</p> <p>Massachusetts Substances: This material is listed.</p> <p>Michigan Critical Material: This material is not listed.</p> <p>Minnesota Hazardous Substances: This material is not listed.</p> <p>New Jersey Hazardous Substances: This material is listed.</p> <p>New Jersey Spill: This material is not listed.</p> <p>New Jersey Toxic Catastrophe Prevention Act: This material is listed.</p> <p>New York Acutely Hazardous Substances: This material is listed.</p> <p>New York Toxic Chemical Release Reporting: This material is not listed.</p> <p>Pennsylvania RTK Hazardous Substances: This material is listed.</p> <p>Rhode Island Hazardous Substances: This material is not listed.</p>
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Canada

<p>WHMIS (Canada)</p>	<p>Class A: Compressed gas.</p> <p>Class B-1: Flammable gas.</p> <p>Class D-1A: Material causing immediate and serious toxic effects (Very toxic).</p> <p>Class D-2B: Material causing other toxic effects (Toxic).</p>
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CEPA Toxic substances: This material is not listed.

Canadian ARET: This material is not listed.

Canadian NPRI: This material is listed.

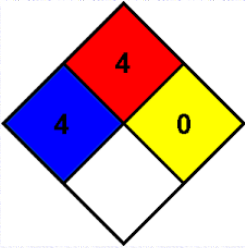
Alberta Designated Substances: This material is not listed.

Ontario Designated Substances: This material is not listed.

Quebec Designated Substances: This material is not listed.

Section 16. Other information

United States

<p>Label requirements</p>	<p>FLAMMABLE GAS. MAY CAUSE FLASH FIRE. MAY BE FATAL IF INHALED. MAY CAUSE EYE AND SKIN IRRITATION. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. CONTENTS UNDER PRESSURE.</p>										
<p>Canada</p>											
<p>Label requirements</p>	<p>Class A: Compressed gas. Class B-1: Flammable gas. Class D-1A: Material causing immediate and serious toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).</p>										
<p>Hazardous Material Information (U.S.A.)</p>	<p>System</p> <table border="1" data-bbox="472 856 846 1108"> <tr> <td data-bbox="472 856 808 919">Health</td> <td data-bbox="808 856 846 919">4*</td> </tr> <tr> <td data-bbox="472 919 808 974">Flammability</td> <td data-bbox="808 919 846 974">4</td> </tr> <tr> <td data-bbox="472 974 808 1041">Physical hazards</td> <td data-bbox="808 974 846 1041">0</td> </tr> <tr> <td data-bbox="472 1041 808 1108"></td> <td data-bbox="808 1041 846 1108"></td> </tr> </table>	Health	4*	Flammability	4	Physical hazards	0				
Health	4*										
Flammability	4										
Physical hazards	0										
<p>National Fire Protection Association (U.S.A.)</p>	 <p>The image shows a diamond-shaped hazard label with four colored segments: top (red) with '4', left (blue) with '4', right (yellow) with '0', and bottom (white) with no number.</p>										

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: PHOSGENE

1. Chemical Product and Company Identification

BOC Gases,
Division of
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974

BOC Gases
Division of
BOC Canada Limited
5975 Falbourne Street, Unit 2
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (908) 464-8100

TELEPHONE NUMBER: (905) 501-1700

24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300

24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802

EMERGENCY RESPONSE PLAN NO: 20101

PRODUCT NAME: PHOSGENE

CHEMICAL NAME: Phosgene

COMMON NAMES/SYNONYMS: Carbon Oxychloride; Carbonyl Chloride; Carbonyl Dichloride; Diphosgene

TDG (Canada) CLASSIFICATION: 2.3 (8)

WHMIS CLASSIFICATION: A, E, F, D1A

PREPARED BY: Loss Control (908)464-8100/(905)501-1700

PREPARATION DATE: 6/1/95

REVIEW DATES: 6/7/96

2. Composition, Information on Ingredients

INGREDIENT	% VOLUME	PEL-OSHA¹	TLV-ACGIH²	LD₅₀ or LC₅₀ Route/Species
Phosgene FORMULA: CCl ₂ O CAS: 75-44-5 RTECS #: SY5600000	100 .0	0.1 ppm TWA	0.1 ppm TWA	LC ₅₀ 800 ppm (human)

As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

As stated in the ACGIH 1994-95 Threshold Limit Values for Chemical Substances and Physical Agent

3. Hazards Identification+

EMERGENCY OVERVIEW

Corrosive to exposed tissues. Inhalation of vapors may result in pulmonary edema and chemical pneumonitis. Nonflammable. Reacts violently and decomposes to toxic compounds, including chlorine, on contact with moisture.

ROUTE OF ENTRY:

Skin Contact	Skin Absorption	Eye Contact	Inhalation	Ingestion
Yes	No	Yes	Yes	No

HEALTH EFFECTS:

Exposure Limits	Irritant	Sensitization
Yes	Yes	No
Teratogen	Reproductive Hazard	Mutagen
No	No	No
Synergistic Effects None Reported		
Carcinogenicity: -- NTP: No ARC: No OSHA: No		

EYE EFFECTS:

None known.

SKIN EFFECTS:

None known.

INGESTION EFFECTS:

None known.

INHALATION EFFECTS:

Immediate symptoms from inhalation are choking, coughing, tightness of the chest, catching of the breath, lacrimation, difficulty in and painful breathing and eventual cyanosis. Serious symptoms are pulmonary edema and asphyxiation which may not be manifested for several hours after overexposure. Long lasting (several months) symptoms may be coughing, bloody sputum and general malaise.

NFPA HAZARD CODES	HMIS HAZARD CODES	RATINGS SYSTEM
Health:4	Health:4	0 = No Hazard
Flammability: 0	Flammability: 0	1 = Slight Hazard
Reactivity:1	Reactivity:1	2 = Moderate Hazard
		3= Serious Hazard
		4= Severe Hazard

4. First Aid Measures

EYES:

None required.

SKIN:

None required.

INGESTION:

None required.

INHALATION:

Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Unconscious persons should be moved to an uncontaminated area, and given artificial resuscitation and supplemental oxygen. Keep the victim warm and quiet. Assure that mucous does not obstruct the airway by positional drainage. Delayed pulmonary edema may occur. Keep patient under medical observation for at least 48 hours. Treatment should be symptomatic and supportive.

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PHOSGENE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

5. Fire Fighting Measures

Conditions of Flammability: Nonflammable			
Flash point:	Method:		Autoignition
None	Not Applicable		Temperature: None
LEL(%): None		UEL(%): None	
Hazardous combustion products: None			
Sensitivity to mechanical shock: None			
Sensitivity to static discharge: None			

FIRE AND EXPLOSION HAZARDS:

Nonflammable.

FIRE FIGHTING INSTRUCTIONS:

NONE. Material is not flammable. See spill and leaks information for protective equipment when fighting a spill.

6. Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

7. Handling and Storage

Moist phosgene is corrosive to most metals. Hastelloy A or B as well as tantalum, platinum and gold show good corrosive resistance to moist phosgene.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130°F (54°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time.

Use only in well-ventilated areas. Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (less than 75 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

For additional storage and handling recommendations, consult Compressed Gas Association's Pamphlet P-1.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

EXPOSURE LIMITS¹:

INGREDIENT	%VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
Phosgene FORMULA: CCl ₂ O CAS: 75-44-5 RTECS #: SY5600000	100.0	0.1 ppm TWA	0.1 ppm TWA	LC ₅₀ 800 ppm (human)

¹ Refer to individual state of provincial regulations, as applicable, for limits which may be more stringent than those listed here.

² As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

³ As stated in the ACGIH 1994-1995 Threshold Limit Values for Chemical Substances and Physical Agents.

IDLH: 2 ppm

ENGINEERING CONTROLS:

Use a laboratory hood with forced ventilation for handling small quantities. Use local exhaust to prevent accumulation above the exposure limits.

EYE/FACE PROTECTION:

Gas tight chemical goggles or full-face piece respirator.

SKIN PROTECTION:

Rubber or Teflon ® protective gloves.

RESPIRATORY PROTECTION:

Positive pressure air line with full-face mask and escape bottle or self-contained breathing apparatus should be available for emergency use and routine use when exposures are above set limits.

OTHER/GENERAL PROTECTION:

Safety shoes, safety shower, eyewash "fountain".

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	Gas	
Vapor pressure	22.6	psia
Vapor density (Air = 1)	3.41	
Evaporation point	Not Available	
Boiling point	45.6	F
	7.55	C
Freezing point	-198	F
	-127	C
Ph	Not Available	
Specific gravity	Not Available	
Oil/water partition coefficient	Not Available	
Solubility (H ₂ O)	Decomposes	
Odor threshold	Not Available	
Odor and appearance	Colorless gas with sweet odor in low concentrations, becoming suffocating in high concentrations	

10. Stability and Reactivity**STABILITY:**

Stable at temperatures below 572°F (300°C).

INCOMPATIBLE MATERIALS:

May react violently with water, ammonia, primary amines.

HAZARDOUS DECOMPOSITION PRODUCTS:

Hydrochloric acid and carbon dioxide. Carbon monoxide, chlorine.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. Toxicological Information

No chronic effects data unrelated to phosgene's corrosivity given in the Registry of Toxic Effects of Chemical Substances (RTECS) or Sax, Dangerous Properties of Industrial Materials, 7th ed.

12. Ecological Information

No data given.

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Phosgene	Phosgene
HAZARD CLASS:	2.3	2.3 (8)
IDENTIFICATION NUMBER:	UN 1076	UN 1076
SHIPPING LABEL:	POISON GAS, CORROSIVE	POISON GAS, CORROSIVE

Additional Marking Requirement: "Inhalation Hazard"

If net weight of product \geq 10 pounds, the container must be also marked with the letters "RQ".

Additional Shipping Paper Description Requirement: "Poison Inhalation Hazard, Zone A"

If net weight of product \geq 10 pounds, the shipping papers must be also marked with the letters "RQ".

15. Regulatory Information

Phosgene is listed under the accident prevention provisions of section 112(r) of the Clean Air Act (CAA) with a threshold quantity (Q) of 500 pounds

SARA TITLE III NOTIFICATIONS AND INFORMATION

Phosgene is listed as an extremely hazardous substance (EHS) subject to state and local reporting under Section 304 of SARA Title III (EPCRA).

The presence of phosgene in quantities in excess of the threshold planning quantity (TPQ) of 10 pounds requires certain emergency planning activities to be conducted.

Releases of phosgene in quantities equal to or greater than the reportable quantity (RQ) of 10 pounds are subject to reporting to the National Response Center under CERCLA, Section 304 SARA Title III.

SARA TITLE III - HAZARD CLASSES:

- Acute Health Hazard
- Chronic Health Hazard
- Sudden Release of Pressure Hazard
- Reactivity Hazard
- Fire Hazard

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

CAS NUMBER	INGREDIENT NAME	PERCENT BY VOLUME
75-44-5	PHOSGENE	~ 100.0

This information must be included on all MSDSs that are copied and distributed for this material.

16. Other Information

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

ANNEXURE-6

PROCESS & VESSEL HAZARDS & CONTROLS

Hazardous process & operation	Materials in the process / operation	Name of the vessel & its location	Operating parameters	Type of hazards possible	Control measures	Incharge Person with designation
1	2	3	4	5	6	7
Charging Area						
Charging & Mixing of Hazardous Liquid waste	Hazardous Liquid waste	T-1010 at charging area	Atmospheric temp. & pressure	➤ Pressure develop in case of material incompatibility	<ul style="list-style-type: none"> ➤ Mechanical seal for transferring pump. ➤ Personal protective equipments are being used ➤ Provision of Safety shower ➤ Breather Valve and venting line provided. Vent line is connected with scrubbing system. ➤ Inter locking system provided. ➤ Provision of Fire Hydrant System & Extinguishers. ➤ Grounding of storage vessel to earth pit. ➤ Declared as No Hot Work Zone. ➤ Tanks are provided with dip pipe. ➤ N2 blanketing system. 	Mr. Dinkar Trivedi Manager
T-1020 at charging area						
T-1030 at charging area						
T-1040 at charging						

Incinerator Plants						
Incineration of hazardous waste	-Natural Gas -Hazardous solid waste -Hazardous Liq. Waste	Rotary incinerator plant 1 & 2	Pressure⊕ (ve) 2 mm wc Temp.: 850 ± 50°C	<ul style="list-style-type: none"> ➤ Fire explosion & in case of positive pressure 	<ul style="list-style-type: none"> ➤ Interlocking system is provided ➤ Auto control DCS system is provided 	Mr. M G Gami Sr. Manager
Incineration of hazardous waste	-Natural Gas -Hazardous Lig. Waste	SCC incinerator plant 1 & 2	Pressure⊕ (ve) 10 mm wc Temp.: 1100°C to 1160°C	<ul style="list-style-type: none"> ➤ Toxic release gas 	<ul style="list-style-type: none"> ➤ Regular preventive maintenance 	
Multi Effect Evaporator Plant						
Evaporation of Liquid waste	-Liquid waste -Steam	VLSS Calandrias	Pressure: (-ve) 660 to 710 mm/Hg Temp. 45°C to 95°C	<ul style="list-style-type: none"> ➤ Fire explosion & in case of positive pressure ➤ Toxic release gas 	<ul style="list-style-type: none"> ➤ Auto control SCADA system is provided ➤ Pressure gauges are provided ➤ Regular preventive maintenance 	Mr. Bhavesh Pancholi Manager
Centrifugation	-Waste water slurry	CF	40°C to 45°C	<ul style="list-style-type: none"> ➤ Human injury due to disoperation 	<ul style="list-style-type: none"> ➤ VFD is provided ➤ Trained operating staff 	
	Slurry of Hyflow charged	Centrifuge	under ambient pressure & temp.	<ul style="list-style-type: none"> ➤ Dust May Cause skin & eyes irritation. 	<ul style="list-style-type: none"> ➤ Personal protective equipments are being used 	

ANNEXURE-7

OTHER HAZARDS AND CONTROLS

Sr. No.	Name of the possible hazard / emergency	Its source & reason	Its effect on persons, property & environment	Place of effect	Control measures provided	In charge person
1	2	3	4	5	6	7
Utilities						
A	Electrical					
i	Fire	<ul style="list-style-type: none"> ➤ Loose connections ➤ Weak earthing ➤ Short circuit ➤ Improper Insulation 	<ul style="list-style-type: none"> ➤ Electrical power failure ➤ Production Hindrance ➤ Loss of transformer 	<ul style="list-style-type: none"> ➤ Transformer ➤ MCC panel 	<ul style="list-style-type: none"> ➤ Firefighting equipment's ➤ Gravel bed for oil spillage/soaking ➤ Isolated area for MCC panel & Transformer. ➤ Lightning arrester provided. ➤ Proper Earthing to Electrical Equipment. ➤ Alternate power source by D.G. Set ➤ Periodic checking of joints ➤ Proper insulation 	Mr. Mahesh Panchal Manager
ii	Electrical Shock		<ul style="list-style-type: none"> ➤ Electric shock can cause death ➤ Electric short circuit can cause damage to property 	<ul style="list-style-type: none"> ➤ Power points ➤ Live wires ➤ Electric Equipments 	<ul style="list-style-type: none"> ➤ Skilled manpower ➤ Proper insulation ➤ Proper earthing ➤ PPEs 	

iii	Burning		<ul style="list-style-type: none"> ➤ Serious injury or death 	<ul style="list-style-type: none"> ➤ Power points ➤ Live wires ➤ Electric Equipments 	<ul style="list-style-type: none"> ➤ Skilled manpower ➤ Proper insulation ➤ Proper earthing ➤ PPEs 	
B	Compressed Air					
i	Injury/Death Due to High Pressure	<ul style="list-style-type: none"> ➤ Air Compressor 	<ul style="list-style-type: none"> ➤ Serious injury or death can be caused by quite a small pressure of air especially on delicate parts such as eyes, ear & nose 	<ul style="list-style-type: none"> ➤ Compressor house ➤ Service air point 	<ul style="list-style-type: none"> ➤ It is ensured that compressed air is not used for cleaning itself. ➤ Direct air is not being used through hose 	Mr. A. Hinsu Sr. Manager
C	Boiler					
i	Explosion	<ul style="list-style-type: none"> ➤ Boiler 	<ul style="list-style-type: none"> ➤ Potential damage to property ➤ Can cause severe injury/death to person. 	<ul style="list-style-type: none"> ➤ Boiler House 	<ul style="list-style-type: none"> ➤ Continuous monitoring of operating pressures. ➤ Provision of safety valves ➤ Provision of high pr. Alarms & trips for the boiler. 	Mr. A. Hinsu Sr. Manager
D	Structural Failure					
i	Structural failure	<ul style="list-style-type: none"> ➤ Structure 	<ul style="list-style-type: none"> ➤ Potential damage to property ➤ Can cause severe injury/death to person. 	<ul style="list-style-type: none"> ➤ Within the factory 	<ul style="list-style-type: none"> ➤ Regular cleaning & painting ➤ Periodic structure stability inspection by competent person 	Mr. Rajesh Nikose Asst. Manager
E	Natural Disasters					

v	<ul style="list-style-type: none"> ➤ Natural Disaster. ➤ Earthquakes ➤ Lightning, storms, ➤ Man-made War. ➤ Sabotage & fire in neighboring industries 	➤ Natural	<ul style="list-style-type: none"> ➤ Production hindrance ➤ Trapping under debris. ➤ Death due to toxic releases. ➤ Chemical burn. 	<ul style="list-style-type: none"> ➤ Whole factory ➤ Population nearby 	<ul style="list-style-type: none"> ➤ Lightning arrester at highest point. ➤ Auto fire hydrant system. ➤ Respiratory protection equipment's. ➤ Siren, Evacuation, rescue & shelter/welfare facility 	SMC
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ANNEXURE-8

TRADE-WASTE DISPOSALS

Sr. No.	Name of the trade waste	Its generation per day	Place of its generation	Place of its safe disposal	Treatment method of safe disposal	Monitoring & control measures provided	In charge person
1	2	3	4	5	6	7	8
1	Incineration ash	10 to 20 ton	Incinerator plants	Land filling site of BEIL	NR	<ul style="list-style-type: none"> ➤ Immediate disposal to landfill ➤ Waste analyzed ➤ Ground water analysis 	Mr. M G Gami Sr. Manager
2	MEE Salt	13 to 17 ton	MEE plant	Land filling site of BEIL	NR	<ul style="list-style-type: none"> ➤ Immediate disposal to landfill ➤ Waste analyzed ➤ Ground water analysis 	Mr. Bhavesh Pancholi Manager
3	Leachate	70 to 80 KL	Landfill site	<ul style="list-style-type: none"> ➤ CETP/ETL ➤ MEE plant-BEIL 	Treatment Plant	<ul style="list-style-type: none"> ➤ Separate leachate collection & transferring arrangement is provided ➤ Waste analyzed ➤ Ground water analysis 	Mr. Rajesh Nikose Asst. Manager
4	Discarded Empty Decontaminated Containers	7 to 8 nos.	All Plant	Approved scrap vendor	NR	<ul style="list-style-type: none"> ➤ GPCB approved Scrap Vendor ➤ On -Site Drum Cleaning Facility before selling to scrap vendor. ➤ AEPS inspection prior to disposal. 	Mr. Dinkar Trivedi Manager
5	Discarded Empty	2 to 3 MT	All plant	Approved scrap	Treatment	<ul style="list-style-type: none"> ➤ GPCB approved Scrap Vendor 	Mr. Dinkar

	Contaminated Containers			vendor	Plant	➤ Separate storage shed is provided	Trivedi Manager
6	Used oil	0.5 to 0.8 Ltr	All Plant	Used for lubrication/ Registered recycler	NR	Stored in packed drum	Mr. A. Hinsu Sr. Manager

ANNEXURE-9

RECORDS OF PAST INCIDENTS

Sr. No.	Type of incident (Major accident, emergency or disaster)	Date and time of Occurrence	It's place	Duration	Time required in controlling it	Nos. of workers working at that time	Persons affected		Persons died		Subsequent safety measures provided
							Inside factory	Outside factory	Inside factory	Outside factory	
1	2	3	4	5	6	7	8	9	10	11	12
1	Fire	3-04-2008 17:45	Shed no 7	08 Hrs.	08 Hrs	05	Nil	Nil	Nil	Nil	<ul style="list-style-type: none"> ➤ Separate storage sheds with impervious flooring & roofing ➤ Provision of fire extinguishers ➤ Provision of fire hydrant line ➤ Provision of water sprinkler system with Heat & Smoke detectors

2	Fall from height	13-01-2012 13:05	Drum cutting shed	--	--	05	01	Nil	01	Nil	<ul style="list-style-type: none"> ➤ Work permit system implemented strictly ➤ Refresher Training imparted to all contract workers ➤ Strict monitoring
3	Toxic Gas Release	07-12-2015 11:00	Storage tank area	15 min.	15 min.	06	06	Nil	02	Nil	<ul style="list-style-type: none"> ➤ SOP has been revised ➤ Scrubbing system is provided. All storage tank vents connected to the scrubbing system. ➤ Airline respirators provided ➤ HAZOP study has been carried out & implemented all the recommendations

ANNEXURE-10

GAS DISPERSION CONCENTRATION

Assuming leak rate (Q) = 3 kg / sec. i.e. 3 x 10 ⁶ mg/sec. And velocity (u) = 2 and 5 M/sec. Downwind concentrations of some gases at various distances are calculated and tabulated as follows:											
Maximum concentration (PPM) IN DOWNWIND DIRECTION AT DISTANCE X. Wind velocity = 2 M/Sec. for most unstable after-noon weather Condition (A)											
Product	100 M	200 M	300 M	400 M	500 M	700 M	1 KM	2 KM	3 KM	4 KM	5 KM
Chlorine	439	110	41	27	21	11	4.11	1.03	0.45	0.26	0.16
Phosgene	315	79	29	20	15	7	2.95	0.74	0.33	0.18	0.12

SO ₃	389	97	36	24	19	11	3.65	0.91	0.41	0.23	0.15
Ammonia	1832	458	171	115	89	50	17.18	4.29	1.91	1.07	0.69
PCl ₃	254	64	24	16	13	-	2.39	0.60	0.27	0.15	0.09
CSA	279	70	26	17	14	-	2.50	0.63	0.28	0.16	0.10

Note: For other weather condition respective curve should be chosen

Maximum concentration (PPM) IN DOWNWIND DIRECTION AT DISTANCE X. Wind velocity = 5 M/Sec. for most unstable after-noon weather
Condition (B)

Product	100 M	200 M	300 M	400 M	500 M	700 M	1 KM	2 KM	3 KM	4 KM	5 KM
Chlorine	175	44	16	11	9	5	1.64	0.41	0.18	0.18	0.06
Phosgene	125	31	12	8	6	8	1.18	0.30	0.13	0.07	0.05
SO ₃	156	39	15	10	8	4	1.46	0.36	0.16	0.09	0.09
Ammonia	132	183	69	46	36	20	6.87	1.72	0.76	0.43	0.24
PCl ₃	111	28	10	7	5	3	0.96	0.24	0.11	0.06	0.04
CSA	112	28	10	7	5	3	1.00	0.25	0.11	0.06	0.04

Note: For other weather condition respective curve should be chosen

ANNEXURE-11**EVACUATION TABLE**

EVACUATION TABLE BASED ON PREVAILING WIND OF 6 TO 12 mps (2.7 TO 5.4 m/s)			
Material	Radius of immediate danger area (KM)	Dimension of evaluation area	
		Downwind (Km)	Crosswind (Km)
Acrolein	0.69	8.05	4.83
Acrylonitrile	0.03	0.32	0.16
Ammonia	0.08	0.64	0.48
Carbon disulfide	0.04	0.32	0.16
Chlorine	0.31	3.22	2.41
Dimethylamine	0.14	1.13	1.29
Epichlorohydrin	0.05	0.32	0.32
Ethylene oxide	0.04	0.32	0.16
Fluorine	0.20	1.61	1.61
Hydrogen chloride	0.24	2.41	1.61
Hydrogen cyanide	0.12	1.13	0.44
Hydrogen fluoride	0.30	3.22	1.61
Hydrogen sulfide	0.15	1.61	0.81
Methyl mercaptan	0.09	1.29	0.48
Monomethylamine	0.14	1.13	1.29
Nitric acid	0.13	1.13	0.64
Nitrogen tetroxide	0.14	1.13	1.29
Oleum	0.35	3.22	1.61
Phosgene	0.75	8.05	4.83
Phosphorous trichloride	0.14	1.21	0.81
Sulfur dioxide	0.13	1.21	0.81
Sulfur trioxide	0.35	3.22	1.61
Sulfuric acid	0.35	3.22	1.61
Trimethylamine	0.35	3.22	2.41

Source: Emergency Action Guide for selected Hazardous Materials, U.S. Dept. of Transportation, 1978

ANNEXURE-12

ENVIRONMENTAL IMPACT ASSESSMENT

Sr. No	Distance (radius) from the factory	Environment	Population	Possible consequence & Assessment			Control measures Provided
				Type of risk & effect possible	Duration of risk	Risk assessment	
						Frequency of the hazard (i.e. one such incident in what time)	
1	2	3	4	5	6	7	9
1	Upto 1000 Mt.	GIDC Area	3000	Gas exposure due to fire	1 to 4 hrs.	Rarely	<ul style="list-style-type: none"> ➤ All the storage sheds are covered with fire hydrant system, automatic sprinkler system is provided in all the sheds, Smoke & heat detectors are installed in all the sheds, Fire extinguishers are also provided. ➤ Mechanical seal for transferring pump. ➤ N2 blanketing system for high CV liquid storage tanks. ➤ Provision of Fire Hydrant System & Extinguishers. ➤ Proper Grounding of storage vessel to earth pit. ➤ Safety work permit system is in place. ➤ Tanks are provided with dip pipe. ➤ Proper Earthing & bonding before Loading/Unloading operations.
2	1.9 Km	Jitali	3900	Gas exposure due to fire	1 to 4 hrs.	Rarely	
3	2.5 Km	Dadhali	3100	Gas exposure due to fire	1 to 4 hrs.	Rarely	
4	2.6 Km	Sarangpur	12600	Gas exposure due to fire	1 to 4 hrs.	Rarely	
5	3.4 Km	Motali	700	Gas exposure due to fire	1 to 3 hrs.	Rarely	
6	3.6 Km	Kosamdi	5400	Gas exposure due to fire	1 to 3 hrs.	Rarely	
7	4.2 Km	Gadkhol	1100	Gas exposure due to fire	1 to 2 hrs.	Rarely	

ANNEXURE-13

WEATHER CONDITIONS

Sr. No.	Period of the year		Temp. °C		Wind Vel. KM/Hrs.	Wind Direction		Weather Conditions	Pasquill Classification A TO F
	Dates		Max.	Min.		Day	Night		
	From	To							
1	2	3	4	5	6	7	8	9	10
1	1 st Jan.	31 st Jan.	26.7	11.9	1.19	SE/NE	NE/NW	Cold & Stable	D
2	1 st Feb.	28/29 Feb	31.0	14.5	1.19	SE/NE	W/NW	Dry & Stable	D
3	1 st Mar.	31 st Mar.	35.7	18.6	1.19	NE/NW	W/NW	Dry & Stable	D
4	1 st Apr.	30 th Apr.	39.0	23.6	1.19	NW/W	W/NW	Dry & Stable	D
5	1 st May	31 st May	44.0	26.0	1.19	NW/W	SW/W	Hot	D
6	1 st Jun.	31 st Jun.	43.0	27.0	1.19	SW/W	SW/W	Moist & Hot	D
7	1 st July.	31 st July	35.0	25.0	1.19	SW/W	SW/W	Hot & Rainy	D-F
8	1 st Aug.	31 st Aug.	31.0	24.0	1.19	SW/W	SW/W	Hot & Rainy	D-F
9	1 st Sep.	30 th Sep.	33.0	24.0	1.19	S/NW	SW/W	Hot & Rainy	D-F
10	1 st Oct.	31 st Oct.	35.0	21.0	1.19	NE/W	NE/NW	Moist	D
11	1 st Nov,	30 th Nov	33.0	16.0	1.19	NE/E	NE/E	Dry	D
12	1 st Dec.	31 st Dec.	29.0	12.0	1.19	NE/E	NE/NW	Cold & Stable	D

ANNEXURE-14

INCIDENT CONTROLLERS

Shift	Incident Controller's				
	Name	Designation	Qualification	Place of availability	Res. Add.
1	2	3	4	5	6
First & General	Mr. Dinkar Trivedi	Sr. Manager	B.Sc	Plant Office	Ankleshwar
	Mr. Jagdish Taral	Manager	B.Sc.	Control Room	Ankleshwar
Second	Mr. Denish Patel	Executive	B.Sc.	Control Room	Ankleshwar
Third	Mr. Shailesh Patel	Officer	B.Sc.	Control Room	Ankleshwar
Holiday	Mr. Kevin	officer	M.E	Inci Control Room	Ankleshwra

ANNEXURE-15

DEPUTY INCIDENT CONTROLLERS

Shift	Deputy Incident Controller's				
	Name	Designation	Qualification	Place of availability	Res. Add.
1	2	3	4	5	6
First & General	Mr. Jagdish Taral	Manager	B.Sc.	Inci Control Room	Ankleshwar
	Mr. Kevin	Officer	M.E	Inci. Control Room	Ankleshwra
Second	Mr. Denish	Officer	Diploma chemical Engineer	Inci Control Room	Ankleshwar
Third	Mr. Janak Prajapati	Officer	B.E.	MEE Plant	B-302, Amidhara complex, Nr. ragini cinema, Bhadkodra, Ankleshwar
Holiday	Mr. Viral patel	Executive	DME	Plant Office	Ankleshwar

ANNEXURE-16**SITE MAIN CONTROLLERS**

Sr. No.	Site Main Controller's						
	Name	Designation	Qualification	Place of availability	Res. Add.	Phone No.	
						Factor y	Resi.
1	2	3	4	5	6	7	8
1	Mr.B D Dalwadi	CEO	B.E.	ADM	408/9, Sardar Patel Society, GIDC, Ankleshwar	02646-226591	9909994959
2	Mr. Manoj Patel	G.M.	B.E.	ADM	Shantiniketan Society, Ankleshwar.	02646-226591	9909994907

ANNEXURE-17**KEY PERSONNEL**

Sr. No.	KEY PERSON'S				NEXT PERSON'S	
	Dept.	Name	Designation	Phone No.	Name & Designation	Phone No.
1	2	3	4	5	6	7
1	Safety	Mr. Sanjay Joshi	Sr. Manager	7575001962	Mr. Parth Jani	7575008116
2	Security	Mr. Manoranjan Das	Incharge	9558091288		
3	Pollution control	Mr. Sathish Gaddam	Sr. Manager	8238088363	Mr. Dipak Meghapara	990999161
4	Medical	Mr. Arjun	Nurse	7041563584	Mr. Tiwari	8511318648
5	Engineering	Mr. A.Hinsu	Sr. Manager	9909994944	Mr. Dharmesh Patel	
6	Production	Mr. Dinkar Trivedi	Sr. Manager	9978996347	Mr. Jagdish Taral	9909994993
7	Technical Services	Mr. B R Trivedi	GM	9979997106		
8	Stores	Mr. Anant Raval	Manager	9909992978		
9	Ware House	Mr. Viral Patel	Executive	9925497837	Mr. Nikung Rana	

10	Civil	Mr. Rajesh Nikose	Manager	9909994933	Mr. Pratik Shah	7567146695
11	Electrical	Mr. Mahesh Panchal	Manager	9978447294	Mr. Manish Parekh	9909994988
12	Instrument	Mr. Bhavin Modi	Assistant Manager	9879141402		

ANNEXURE-18

ESSENTIAL WORKERS

Sr. No.	Name & Designation	Trained for work	Place of availability	Phone No.
1	2	3	4	5
1	Mr. Naresh Patel	Gas Leakage	Maint. room	241
2	Mr. Jigar Trivedi	Gas Leakage	Instrument Office	222
3	Mr. Nitin Patel	Gas Leakage	ADM	104
4	Mr. Mahendra Solanki	Fire Fighting	Safety Office	100
5	Mr. Chetan Tadvi	Fire Fighting	Safety Office	100
6	Mr. Dharmendra Chavda	Fire Fighting	Safety Office	100
7	Mr. Pravin Patel	Fire Fighting	Safety Office	100
8	Mr. Sanjay Mistry	Fire Fighting	Safety Office	100
9	Mr. Javed Patel	Building Collapse	Plant	219
10	Mr. Chirag Patel	Building	Instrument	222

		Collapse	Office	
11	Mr. Arjun Patel	First Aid	OHC	108
12	Mr. Laxminarayan Tiwari	First Aid	OHC	108
13	Mr. Parth Jani	Evacuation & Search Operation	Safety Office	100
14	Mr. Samim Khan	Evacuation & Search Operation	Ware House	239
15	Mr. Hetal Shah	Spill & Leak control	Main Gate	9727433160
16	Mr. Patil	Spill & Leak control	Shed No. 04	9727675348
17	Mr. DG Patel	Heavy vehicle arrangement	-	9825060239

ANNEXURE-19

ASSEMBLY POINTS

Sr. No.	Location	Accommodation Capacity	At the time of emergency		
			Person incharge's		
			Name & Designation	Place of availability	Phone No.
1	2	3	4	5	6
1	Main Gate	200	Mr. Ashish Gurjar	ADM	Ext. 106
2	Incinerator plant Office	100	Mr. Janak Prajapati	MEE Plant	Ext. 136
3	New Land filling behind Phase III	200	Mr. Rajesh Nikose	ADM	Ext. 107

ANNEXURE-20

EMERGENCY CONTROL CENTRE

Location of Centre: Main Adm.		Telephone No. of the ECC: 105	
Sr. No.	Items kept in the center	Quantity	Notes
1	2	3	4
1	SCBA set	01	
2	Cartridge mask	05	
3	Rubber hand gloves	10 Pairs	
4	PVC Hand Gloves	20 pairs	
5	Dust mask	100	
6	Gum Boot	05 pairs	
7	Safety Helmet	05	
8	Safety Goggles	10	
9	Onsite Emergency Plan	01	
10	List of Emergency Phone No.	01	
11	Plant Lay out copy	01	

ANNEXURE-21

FIRE AND TOXICITY CONTROL ARRANGEMENTS

➤ **TAC APPROVED FIRE HYDRANT SYSTEM**

➤ **WATER STORAGE CAPACITY : 1000 K L**

➤ **FIRE PUMPS**

Primary electricity driven pump : 273 M3/Hr

Diesel Driven pump : 273 M3/Hr

Secondary electricity driven pump : 173 M3/ Hr

Jockey pump : 03 M3/Hr

➤ **DETAIL OF FIRE HYDRANT POSTS & MONITORS**

SHP : 57 Nos.

Monitors : 26 Nos.

➤ **DETAIL OF FIRE EXTINGUISHERS**

Sr. No.	Location	Type	Capacity
1	2	3	4
1	ADM OFFICE	CO ₂	09 Kg.
2	ADM OFFICE	CO ₂	4.5 Kg.
3	ADM OFFICE	CO ₂	4.5 Kg.
4	OHC	CO ₂	4.5 Kg.
5	NEW LAB	CO ₂	4.5 Kg.

6	NEW LAB	CLEAN AGENT	02 Kg.
7	NEW LAB	CO ₂	02 Kg.
8	NEW LAB	CLEAN AGENT	02 Kg.
9	NEW LAB	CO ₂	02 Kg.
10	D.G. ROOM	CO ₂	4.5 Kg.
11	D.G. ROOM	CO ₂	4.5 Kg.
12	D.G. ROOM	CO ₂	4.5 Kg.
13	D.G. ROOM	CO ₂	09 Kg.
14	D.G. ROOM	M.FOAM	45 LIT.
15	PUMP HOUSE	CO ₂	4.5 Kg.
16	CHARGING AREA	DCP	05 Kg
17	CHARGING AREA	DCP	05 Kg
18	CHARGING AREA	M.FOAM	45 LIT.
19	CHARGING AREA	DCP	05 Kg
20	CHARGING AREA	DCP	05 Kg
21	BUNKR AREA INCI PLANT 01	DCP	05 Kg
22	MCC ROOM INCI PLANT 01	CO ₂	09 Kg.
23	MCC ROOM INCI PLANT 01	CO ₂	4.5 Kg.
24	INCI PLANT 01 GF	M.FOAM	45 LIT.
25	INCI PLANT 01 GF	DCP	05 Kg
26	INCI PLANT 01 GF	DCP	05 Kg
27	INCI PLANT 01 GF	DCP	10 Kg

28	INCI PLANT 01 FF	DCP	05 Kg
29	INCI PLANT 01 FF	DCP	10 Kg
30	INCI PLANT 01 FF	DCP	05 Kg
31	INCI PLANT 01 SF	DCP	05 Kg
32	INCI PLANT 01 SF	DCP	10 Kg
33	INCI PLANT 01 SF	DCP	05 Kg
34	INCI PLANT 01 TF	DCP	10 Kg
35	INCI PLANT 01 TF	DCP	10 Kg
36	INCI PLANT 01 TF		
37	SCRUBBER INCI PLANT 01 GF	DCP	05 Kg
38	SCRUBBER INCI PLANT 01 FF	DCP	05 Kg
39	SCRUBBER INCI PLANT 01 FF	DCP	05 Kg
40	SCRUBBER INCI PLANT 01 SF	DCP	05 Kg
41	SCRUBBER INCI PLANT 01 SF	DCP	05 Kg
42	SCRUBBER INCI PLANT 01 TF	DCP	05 Kg
43	MCC ROOM INCI PLANT 02	CO ₂	4.5 Kg.
44	MCC ROOM INCI PLANT 02	DCP	05 Kg
45	CONTROL ROOM INCI PLANT 02	CO ₂	4.5 Kg.
46	CONTROL ROOM INCI PLANT 02	CO ₂	4.5 Kg.
47	CONTROL ROOM INCI PLANT 02	CLEAN AGENT	02 Kg.
48	CONTROL ROOM INCI PLANT 02	CO ₂	4.5 Kg.
49	CONTROL ROOM INCI PLANT 02	CO ₂	4.5 Kg.

50	INCI PLANT 02 GF	DCP	10 Kg
51	INCI PLANT 02 GF	DCP	05 Kg
52	INCI PLANT 02 GF	M.FOAM	45 LIT.
53	INCI PLANT 02 FF	DCP	05 Kg
54	INCI PLANT 02 FF	DCP	05 Kg
55	INCI PLANT 02 FF	DCP	10 Kg
56	INCI PLANT 02 SF	DCP	05 Kg
57	INCI PLANT 02 SF	DCP	10 Kg
58	INCI PLANT 02 SF	DCP	10 Kg
59	INCI PLANT 02 TF	DCP	05 Kg
60	INCI PLANT 02 TOP	DCP	10 Kg
61	SCRUBBER INCI PLANT 02 GF	DCP	05 Kg
62	SCRUBBER INCI PLANT 02 GF	DCP	05 Kg
63	SCRUBBER INCI PLANT 02 FF	DCP	05 Kg
64	SCRUBBER INCI PLANT 02 SF	DCP	05 Kg
65	SCRUBBER INCI PLANT 02 TF	DCP	05 Kg
66	BOILER	DCP	05 Kg
67	BOILER	CO ₂	02 Kg.
68	BOILER	M.FOAM	45 LIT.
69	MEE PLANT GF	CO ₂	4.5 Kg.
70	MEE PLANT GF	M.FOAM	45 LIT.
71	MEE PLANT GF	DCP	05 Kg

72	MEE PLANT FF	DCP	05 Kg
73	MEE PLANT SF	DCP	05 Kg
74	MEE PLANT TF	DCP	05 Kg
75	MEE PLANT PANEL ROOM	CO ₂	4.5 Kg.
76	COMPRESSOR ROOM	CO ₂	09 Kg.
77	COMPRESSOR ROOM	DCP	05 Kg
78	SHED NO. 01	DCP	10 Kg
79	SHED NO. 01	M.FOAM	45 LIT.
80	SHED NO. 01	DCP	05 Kg
81	SHED NO. 01	M.FOAM	135 LIT.
82	SHED NO. 02	M.FOAM	45 LIT.
83	SHED NO. 03	M.FOAM	45 LIT.
84	SHED NO. 03	DCP	10 Kg
85	SHED NO. 04	DCP	05 Kg
86	SHED NO. 04	DCP	05 Kg
87	SHED NO. 04	DCP	05 Kg
88	SHED NO. 05	M.FOAM	45 LIT.
89	SHED NO. 05	M.FOAM	45 LIT.
90	SHED NO. 06	M.FOAM	45 LIT.
91	SHED NO. 06	M.FOAM	45 LIT.
92	SHED NO. 07	M.FOAM	135 LIT.
93	SHED NO. 07	DCP	05 Kg

94	SHED NO. 07	M.FOAM	45 LIT.
95	SHED NO. 07	ABC	10 Kg
96	SHED NO. 08	DCP	10 Kg
97	SHED NO. 08	M.FOAM	45 LIT.
98	SHED NO. 08	M.FOAM	45 LIT.
99	SHED NO. 09	M.FOAM	45 LIT.
100	SHED NO. 09	DCP	10 Kg
101	SHED NO. 09	M.FOAM	45 LIT.
102	SHED NO. 10	M.FOAM	45 LIT.
103	SHED NO. 10	DCP	10 Kg
104	SHED NO. 10	M.FOAM	45 LIT.
105	SHED NO. 10	M.FOAM	45 LIT.
106	CANTEEN	CO ₂	02 Kg.
107	CANTEEN	CO ₂	4.5 Kg.
108	GAS STATION	DCP	10 Kg
109	STABILIZATION PLANT	ABC	4.0 Kg
110	STABILIZATION PLANT	ABC	4.0 Kg
111	STABILIZATION PLANT	ABC	9.0 Kg
112	STABILIZATION PLANT	ABC	9.0 Kg
113	STABILIZATION PLANT	CO ₂	4.5 Kg
114	CONCRET PAD	ABC	4.0 Kg
115	CONCRET PAD	ABC	4.0 Kg

116	CONCRET PAD	ABC	9.0 Kg
117	HELIPAD	CO ₂	4.5 Kg
118	PLASTIC PLANT	ABC	4.0 Kg
119	PLASTIC PLANT	ABC	4.0 Kg
220	PLASTIC PLANT	ABC	4.0 Kg
221	PLASTIC PLANT	ABC	9.0 Kg
222	PLASTIC PLANT	ABC	4.0 Kg
223	PLASTIC PLANT	ABC	4.0 Kg
224	PLASTIC PLANT	CO ₂	2.0 Kg
225	PLASTIC PLANT	CO ₂	4.5 Kg
226	STORE	CO ₂	4.5 Kg
227	AMBULANCE VAN	ABC	1.0 Kg

➤ **Two nos. of mobile foam trolley having 200 Lit. capacity are also available**

ANNEXURE-22

MEDICAL ARRANGEMENTS

Sr. No.	Name & Location	Incharge Person		Facilities & Equipment	Anti-dotes available	First aiders available	Ambulance van or alternate arrangement		
		Name	Phone No.				Place of availability	Capacity	Incharge
1	2	3	4	5	6	7	8	9	10
1	OHC Nr. Main Gate	Mr. Parth Jani	116	First Aid treatment facility	Atropin Avil Methelene Blue Snake bite PAM DNS TT	Mr. Arjun Mr. Tiwari	Main Gate	Ambulance-2 Maruti Van-2 person Car-2 person	Mr. Ashish Gurjar

Mutual Aid Arrangements

Name & address of the factories & Hospitals	Approximate distance	Phone No.	Facilities available				
			Accommodation	Doctors	Equipments	Antidotes	Ambulance
11	12	13	14	15	16	17	18
Patel Multi specialty Hospital	7 KM	246535	50	Available	All type	Available	1
Jayaben Modi Hospital	5 KM	222220	100	Available	All type	Available	2

UPL Unit # 1	5 KM	251223	-	Available	First aid	Available	1
UPL Unit # 2	3 KM	250578	-	Available	First aid	Available	1
UPL Unit # 3	2 KM	251189	-	Available	First aid	Available	1
Rallis (Agro)	1 KM	251284	-	Available	First aid	Available	1
Asian Paints (Paints Division)	2 KM	220218	-	Available	First aid	Available	1
Coromandel	1 KM	222471	-	Available	First aid	Available	1

ANNEXURE-23**TRANSPORT & EVACUATION ARRANGEMENTS**

Sr. No.	Type of vehicle	Capacity	Place of availability	Incharge	Phone No.
1	2	3	4	5	6
1	Ambulance van	2 persons	Main Gate	Mr. Ashish Gurjar	107
1	Maruti Van	2 persons	Main Gate	Mr. Ashish Gurjar	107
2	Car	2 persons	Main Gate	Mr. Ashish Gurjar	107

ANNEXURE-24

POLLUTION CONTROL ARRANGEMENTS

Water Pollution Controls					Air Monitoring					
Type & capacity of effluent treatment plant	No. of sample monitoring centers & its frequency	Other control measures	Log book & records	Incharge person's name address & phones	No. and place of sample monitoring centers	Type parameters & frequency of tests	Wind direction & velocity meters	Instruments available	Log Book & records	In charge person's name address & phones
1	2	3	4	5	6	7	8	9	10	11
MEE Plant 15 MT/Hr.	01 Daily	Pumping system for W/W transferring	Available	Mr. Janak Prajapati	Nr. Laboratory	As per CCA	Weather monitoring system	Available	Form No. 37	Sathish
Waste water sent to CETP (ETL) for treatment					Nr. Bore well No. HB 05	As per CCA	Weather monitoring system	Available	Form No. 37	Sathish

STACK MONITORING				SCRUBBERS			Pollution control Board	
No. & Location of sample places	Type Parameters & frequency of tests	Instruments provided	Log book & records	Location	Type capacity &	Incharge person	Permission obtained?	Conditions fulfilled
12	13	14	15	16	17	18	19	20
Incinerator-1 & 2	As per CCA	Online continuous monitoring system	Available	Incinerator-1 & 2	Packed bed 75 m3/hr.	Mr. Gami	Yes	Yes

ANNEXURE-25**OTHER ARRANGEMENTS**

Sr. No.	Type and name of arrangements available	Qty.	Place of availability	Incharge person's	
				Name & designation	Phone
1	2	3	4	5	6
1	JCB / Dozzer	05	Landfill site	Mr. Rajesh Nikose Manager	9909994933
2	Forklift	06	Plant	Mr. Dinkar Trivedi Sr. Manager	9978996347
3	Transporters for Material	03	Landfill Site	Mr. Rakesh Rohit Sr. Manager	9099064266
4	DG Sets	02	Plant	Mr. Mahesh Panchal Manager	9978447294
5	Fire Trailer Pump	01	Plant	Mr. Sanjay Joshi Sr. Manager	7575001962
6	Mechanical Foam	1 KL	Plant	Mr. Sanjay Joshi Sr. Manager	7575001962
7	Mobile Foam Trolley	02	Plant	Mr. Sanjay Joshi Sr. Manager	7575001962
8	NABL & MoEF approved Test Facilities	01	QC	Mr. Sathish Gaddam Sr. Manager	8238088363

ANNEXURE-26**ALARMS & SIRENS**

Sr. No.	Location of Sirens	Type of the alarm or siren	Period of checking	Type of emergency	Type of Siren	Duration Of sounding
1	2	3	4	5	6	7
1	Main adm	Electrical	Weekly	Fire or Other	Interrupted	10 sec. ON & 5 sec. OFF three times
				Gas leak	Interrupted	15 Sec. ON & 15 Sec. OFF four times
2	Incinerator Plant	Electrical	Weekly	All clear	continuous	1 min. continuous
				Testing	continuous	1 Min. Continuous on every Wednesday

ANNEXURE-27**INTERNAL PHONES**

Sr. No.	Name of the plant / department	Intercom number	Person available on this phone		
			Name	Designation or duty under On-site / off-site emergency plan, if any	Residence Phone No.
1	2	3	4	5	6
1	ADM	101	Mr. B D Dalwadi	SMC	9909994959
2	ADM	104	Mr. Manoj Patel	SMC	9909994907
3	Production	121	Mr. Atul Agrawal	IC	9909994908
4	Incinerator	129	Mr. Dinkar Trivedi	IC	9978996347
5	MEE	136	Mr. Janak Prajapati	Key Personnel	7016795874
6	Ware House	120	Mr. Viral Patel	Dy. IC	9925497837
7	QC	114	Mr. Sathish Gaddam	Key Personnel	8238088363

8	Maintenance	117	Mr. A. Hinsu	Dy. IC	9909994906
9	Electrical	123	Mr. Mahesh Panchal	Key Personnel	9978447294
10	Safety	116	Mr. Sanjay Joshi	Key Personnel	7575001962
11	Instrument	141	Mr. Bhavin Modi	Key Personnel	9879141402
12	HR	106	Mr. Ashish Gurjar	Key Personnel	9913064336
13	Civil/Landfill	142	Mr. Rajesh Nikose	Key Personnel	9909994933
14	Marketing	140	Mr. Rajeev Mathur	Key Personnel	8238040998
15	Security	112	Mr. Manoranjan Das	Key Personnel	8758201814
16	OHC	118	Mr. Arjun Patel	Key Personnel	7041563584
17	Store	119	Mr. Anant Raval	Key Personnel	9909992978

ANNEXURE-28**EXTERNAL PHONES**

Sr. No	Name	Office Phone No
1	2	3
1	UPL Unit # 1	251223 / 250336
2	UPL Unit # 2	250578 / 250563
3	UPL Unit # 3	251189
4	Fire Station	220229 / 226101 / 257201
5	UPL Unit # 5 Jhagadia Fire Station	02645 - 226012 / 226014
6	GPCB Local Office, Ankleshwar	02646 - 222932 / 222933
7	Rallis (Agro)	251284
8	Asian Paints (Paints Division)	220218 / 220268
9	Coromandal International	222471
10	GIL	251472 / 222271
11	Agrevo India (Hoechst)	221113 / 221358
12	Gujarat Lyka	222785
13	GEB	256703
14	Railway Station, Ankleshwar	131
15	State Transport Office	257030
16	Dr A K Patel	256535
17	Dr Mahesh Mistry	9825282789
18	Smt Jayaben Modi Hospital	222220 / 224550
19	GIDC Police Station	225551
20	Mamlatdar Ankleshwar	246603
21	Sub Divisional Magistrate	242649
22	DPMC	226101 / 220229
23	AEPS	253802
24	Ankleshwar Nagar Palika	247137
25	District Collector, Bharuch	02642 - 244500 / 240600
26	Ankleshwar Industries Association	221000 / 222000

Sr. No	Name	Office Phone No
1	2	3
27	Enviro Technology Ltd	223569 / 252768
28	President, Ankleshwar Industries Association	251155
29	District Industries Center	02642 - 240981 / 243478
30	Senior Inspector of Factories, Bharuch	02642 - 240421 / 225838
31	Industrial Solvent	251173 / 239551
32	GGCL	246121 / 246122 / 246125

ANNEXURE-29

NOMINATED PERSONS TO DECLARED MAJOR EMERGENCY

Sr. No.	Name of the plant/ location	Name & designation of the nominated persons to declare major emergency	Duty of designation given if any under the on-site/off-site emergency plan	Phone No.	Residence	
					Phone No.	Address
1	2	3	4	5	6	7
1	ADM	Mr. B D Dalwadi (CEO)	SMC	252768/ 223569	9909994959	408/9 Sardar Patel Society, GIDC Ankleshwar
2	ADM	Mr. Manoj Patel (GM)	SMC	226591/ 225228	9909994907	11-Shantiniketan Society, GIDC Ankleshwar

ANNEXURE-30

A FORM TO RECORD EMERGENCY TELEPHONE CALLS

PART A: ESSENTIAL INFORMATION		
Details of call as reported		
Caller's Name & designation _____		Date _____ Time _____
phone No. _____		
Purpose of call Is any particular advice required immediately?		
Name _____ of _____ Chemicals		
To be spelt out clearly		
Brief description of incident		
Fire / Explosion / Liquid Spill / Gas release		
Quantity involved		
Packaging / storing / handling / using details		
Location of incident		
Cause, if known, in brief		
PART B: INFORMATION TO BE OBTAINED IF READILY AVAILABLE		
Has anyone been injured?		Yes / No If yes, how many?
Affected by chemicals?		Yes / No If yes, how many?
What first-aid had been given?		
Has anyone been taken to hospital?		Yes / No
If yes, address of the hospital		
Is the road blocked?		Yes / No
Closed to		
Who owns the chemicals?		
Has the owner been informed?		Yes / No

If caused by vehicle,

Vehicle Number _____

Name & address of the Owner _____

Has the owner been informed? Yes / No

To whom was the load consigned?

ANNEXURE-31

STATUTORY COMMUNICATION

Statutory information to be given to:	Periodicity of such information to be given (statutory or self-decided)	Date of last information given	Suggestions received if any
1	2	3	5
The workers	Regular through training, leaflets etc.	Regular training and information	--
The general public & neighboring firms	As & when required	02.05.2017	--
District Emergency Authority	As & when asked for	--	--
Factory Inspectorate	a) Prior approval for Construction, production b) During expansion c) Change of process/ Organization structure d) Updated information As & When Required	02.05.2017	--

ANNEXURE-32

SEPERATION DISTANCES

Sr. No.	Substance	Tank / Storage shed		Separation Distance (M)
		Capacity (T)	Nos.	
1	2	3	4	5
1	Hazardous Waste	--	10	15

ANNEXURE-33

EMERGENCY INSTRUCTION BOOKLET

Sr. No.	Role to be played as	His emergency duties / functions	Also refer	He should report at
1	2	3	4	5
1	Incident Controller	<ol style="list-style-type: none"> 1. Assess the scale of the emergency and decide if a major emergency exists or is likely. On his decision, he will activate the on-site emergency plan and if necessary the off-site emergency plan 2. Assume the duties of the Site Main Controller pending the latter's arrival. For this purpose, he will depute his deputy on the scene and he will go to the control center. Particularly he will- <ol style="list-style-type: none"> a) Direct the shutting down and evacuation of the plant and areas likely to be affected by the emergency. b) Ensure that the outside emergency services, including mutual aid, have been called in. c) Ensure that key personnel have been called in. 3. Direct all operations within the affected area with the following priorities: <ol style="list-style-type: none"> a) Secure the safety of the personnel. b) Minimize damage to plant, property and the environment. c) Minimize loss of material. 4. Direct rescue and firefighting operations until the arrival of 	Emergency Duty Card	The Incident Place

		<p>the outside Fire Brigade, when he will relinquish control to the Fire Brigade.</p> <ol style="list-style-type: none"> 5. Search for casualties. 6. Evacuate non-essential workers to the assembly points. 7. Set up a communications point and establish radio/telephone/messenger contact as appropriate with the Emergency Control Centre. 8. Give advice and information as requested to the Head of the Fire Brigade and other Emergency Services. 9. Brief the site main controller and keep informed of developments. 10. Preserve evidences that will be necessary for subsequent inquiry in to the cause of the emergency and concluding preventive measures. 		
2	Site Main Controller	<ol style="list-style-type: none"> 1. Relieve the incident controller of responsibility for overall main control. 2. On consultation with the incident controller decide whether major emergency exist and on declaration of a major emergency, ensure that the outside emergency services and mutual help are called, the off-site plan activated and if necessary, nearby factories and population are informed. 3. Ensure that the key personnel are called in. 4. Exercise direct operational control of those parts of the works outside the affected area. 5. Continually review and assess possible developments to 	Emergency Duty Card	Emergency Control Center

		<p>determine the most probable course of events.</p> <ol style="list-style-type: none"> 6. Direct the safe close down and evacuation of plants in consultation with the incident controller and key personnel. If necessary, arrange for evacuation of neighboring population. 7. Ensure that casualties are receiving adequate attention. Arrange for hospitalization of victims and additional help, if required. Ensure that the relatives are advised. 8. Inform and communicate with the chief officers of the fire and police service. District emergency authority and with the factory inspectorate and experts on health and safety. Provide advice on possible effects on areas outside the factory. 9. In case of prolonged emergencies involving risk to outside areas by windblown materials. Contact the local meteorological office to receive early notification of impending changes in weather conditions. 10. Ensure the accounting for personnel and rescue of missing persons. 11. Control traffic movement within the factory. 12. Arrange for a chronological record of the emergency to be maintained. 13. Where the emergency is prolonged, arrange for the relief of personnel and the provision of catering facilities. 14. Issue authorized statements to the news media. Where necessary, inform head office. 		
--	--	---	--	--

		<p>15. Ensure that proper consideration is given to the preservation of evidence. Arrange for photographs/videos.</p> <p>16. Control rehabilitation of affected areas and victims on cessation of the emergency. Do not restart the plant unless it is ensured safe to start and cleared by authorities.</p>		
3	Key Personnel	As necessary, they will decide the actions needed to shut down plants, evacuate personnel, carry out emergency engineering work, arrange for supplies of equipment, utilities (fuel, water, power, etc.) carry out atmospheric tests, provide catering facilities, liaise with police, fire brigade, emergency planning authority, factory inspectorate, hospitals, neighboring industries find population, assembly points, outside shelters, mutual aid centers, relatives of casualties, press and so on, under the direction of the site main controller.	Emergency Duty Card	Emergency Control Center
4	Essential workers	<ol style="list-style-type: none"> 1. Firefighting, gas leak and spill control till a fire brigade takes the charge. 2. To help to the fire brigade and mutual aid teams, if it is so required. 3. Shutting down plant and making it safe. 4. Emergency engineering work e.g. isolating equipment, materials, process, providing temporary by-pass lines, safe transfer of material, urgent repairing or replacement, electrical work etc. 5. Provision of emergency power, water, lighting, instruments, equipments, material etc. 6. Movement of equipment, special vehicle and transport to or 	Emergency Duty Card	The Incident Place

		<p>from the site of the incident.</p> <ol style="list-style-type: none"> 7. Search evacuation, rescue, and welfare. 8. First-aid and medical help. 9. Moving tankers or other vehicles from areas of risk. 10. Carrying out atmospheric test and pollution control. 11. Manning of assembly points to record the arrival of evacuated personnel. Manning for outside shelters and welfare of evacuated persons there. 12. Assistance at casualties' reception areas to record details of casualties. 13. Assistance at communication centers to handle outgoing and incoming calls and to act as messengers if necessary. 14. Manning of works entrances in liaison with the police to direct emergency vehicles entering the work, to control traffic leaving the works and to turn away or make alternative safe arrangements for visitors, contractors and other traffic arriving at the works. 15. Informing surrounding factories and the public as directed by the site main controller. 16. Any special help required. 		
--	--	---	--	--

BUREAU VERITAS
Certification



BEIL INFRASTRUCTURE LIMITED



PLOT NO. 9601 - 04, 9701-16, 10001-3, GIDC INDUSTRIAL ESTATE,
ANKLESHWAR - 393 002, DIST.BHARUCH, GUJARAT, INDIA.

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System standards detailed below.

Standards

ISO 14001:2015 & BS OHSAS 18001:2007

Scope of certification

OPERATION & MAINTENANCE OF COMMON HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITY (SECURE LANDFILL AND COMMON INCINERATION & MEE) & RELATED ANALYTICAL SERVICES

Original cycle start date: **28 March 2015**

Expiry date of previous cycle: **27 March 2018**

Recertification Audit date: **14 March 2018**

Recertification cycle start date: **27 March 2018**

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on:

For EMS: **27 March 2021**

For OHSAS: **11 March 2021**

Certificate No. **IND18.8597U/E/HS**

Version: **2**

Revision date: **19 September 2019**

Signed on behalf of BVCH SAS UK Branch
Jagdheesh N. MANIAN
Head - CERTIFICATION, South Asia
Commodities, Industry & Facilities Division



0008

Certification body
address:

5th Floor, 66 Prescott Street, London, E1 8HG, United Kingdom.

Local office:

Bureau Veritas (India) Private Limited (Certification Business)
72 Business Park, Marol Industrial Area, MIDC Cross Road "C",
Andheri (East), Mumbai - 400 093, India.

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization.
To check this certificate validity please call: **+91 22 6274 2000**.



**TEST CERTIFICATE FOR SOIL**

QF/7.8/37-EX

Customer's Name and Address :

Page: 1 of 1

M/s. BEIL INFRATSTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. :	PL/BL 0018
	Issue Date :	06/06/2019
	Customer's Ref. :	W.O.No. 8519200040 Dated:19.04.2019


Description of Sample :	Soil Sample		
Date of Sampling :	17/05/2019	Quantity/No. of Samples :	02 Kg/Four
Sampling By :	Pollucon Laboratories Pvt. Ltd.	Sampling Procedure :	USEPA/IS 2720 etc.
Sample Receipt Date :	18/05/2019	Protocol (purpose) :	USEPA/IS 2720 etc.
Packing/ Seal :	Sealed	Lab ID :	BL/1905/21 to 24
Date of Starting of Test :	18/05/2019	Test Parameters :	As per table
Test Method :	USEPA/IS 2720 etc.	Date of Completion of Test :	28/05/2018

TEST RESULT

SR. NO.	TEST PARAMETERS	UNIT	RESULT			
			Near Shed No.2	Near Drum Cutting Area	Near Shed No.10	Near EB -3
1	pH	--	8.61	8.85	9.12	8.72
2	Conductivity	mmho/cm	1.8	0.41	0.32	0.37
3	TDS	gm/kg	13	2.8	2.2	2.6
4	TOC	%	0.36	0.38	0.20	0.41
5	Fluoride	mg/kg	15.62	14.67	13.12	15.85
6	Lead	mg/kg	13.29	19.01	1.82	11.4
7	Cadmium	mg/kg	ND*	1.49	0.545	3.11
8	Copper	mg/kg	65.73	95.16	102	116
9	Chromium	mg/kg	41.5	41.98	36.72	35.53
10	Mercury	mg/kg	0.334	0.411	0.394	0.403
11	Nickel	mg/kg	95.12	87.35	96.95	98.11
12	Cyanide	mg/kg	ND*	ND*	ND*	ND*
13	Arsenic	mg/kg	1.4	1.39	1.5	1.24
14	Manganese	mg/kg	1342	1017	850	914
15	Zinc	mg/kg	85.82	113	108	166
16	PAH	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

ND*: Not Detected


Macky Suraliwala
 Sr. Scientist


Dr. Arun Bajpai
 Lab Manager (Q)

● PSSAI Approved Lab ● Recognised by MoEF, New Delhi Under Sec. 12 of the Environmental Protection Act, 1986 ● GPCB approved ● ISO 14001 ● OHSAS 18001 ● ISO 9001

Note: This report is subject to terms & conditions mentioned overleaf.

"Pollucon House", Plot No. 5 & 6, Opp. Balaji Industrial Society, Old Shantinath Silk Mill Lane, Near Gaytri Farsan Mart, Navjivan Circle, Udhana Magdalla Road, Surat-395007, Gujarat, India.

Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com

**TEST CERTIFICATE FOR SOIL**

QF/7.8/37-EX

Customer's Name and Address :

Page: 1 of 1

M/s. BEIL INFRASTRUCTURE LTD, PLOT NO.9701-16, GIDC ESTATE POST BOX NO.82, ANKLESHWAR, 393002	Test Report No. :	PL/BL 0019
	Issue Date :	06/06/2019
	Customer's Ref. :	W.O.No. 8519200040 Dated:19.04.2019

Description of Sample :	Soil Sample		
Date of Sampling :	17/05/2019	Quantity/No. of Samples :	02 Kg/Four
Sampling By :	Pollucon Laboratories Pvt. Ltd.	Sampling Procedure :	USEPA/IS 2720 etc.
Sample Receipt Date :	18/05/2019	Protocol (purpose) :	USEPA/IS 2720 etc.
Packing/ Seal :	Sealed	Lab ID :	BL/1905/25 to 28
Date of Starting of Test :	18/05/2019	Test Parameters :	As per table
Test Method :	USEPA/IS 2720 etc.	Date of Completion of Test :	28/05/2018

TEST RESULT

SR. NO.	TEST PARAMETERS	UNIT	RESULT			
			Near HB - 7	Near Stabilization Plant	Near HB - 1	Near Industrial Solvent Side
1	pH	--	8.41	8.37	8.11	8.32
2	Conductivity	mmho/cm	1.089	0.391	0.857	0.739
3	TDS	gm/kg	7.5	3.33	5.8	5.07
4	TOC	%	0.43	0.56	0.53	1.45
5	Fluoride	mg/kg	ND*	20.82	16.92	4.22
6	Lead	mg/kg	57.65	12.43	5.6	186
7	Cadmium	mg/kg	1.32	ND*	0.35	1.2
8	Copper	mg/kg	178	98.1	52.4	166
9	Chromium	mg/kg	32.73	40.46	3.71	48.31
10	Mercury	mg/kg	0.77	0.624	0.543	0.415
11	Nickel	mg/kg	97.14	115	84.14	128
12	Cyanide	mg/kg	ND*	ND*	ND*	ND*
13	Arsenic	mg/kg	1.67	1.001	1.15	1.34
14	Manganese	mg/kg	1270	958	668	1136
15	Zinc	mg/kg	290	107	97.57	685
16	PAH	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

ND*: Not Detected

Macky Suraliwala
Sr. Scientist**Dr. Arun Bajpal**
Lab Manager (Q)

● FSSAI Approved Lab ● Recognized by MoEF, New Delhi Under Sec. 12 of Environmental Protection Act, 1986 ● ISO 14001 ● ISO 9001 ● ISO 18001 ● ISO 9001

Note: This report is subject to terms & conditions mentioned overleaf.

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Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com

**TEST CERTIFICATE FOR SOIL**

QF/7.8/37-EX

Customer's Name and Address :

Page: 1 of 1

**M/s. BEIL INFRASTRUCTURE LTD,
PLOT NO.9701-16, GIDC ESTATE
POST BOX NO.82, ANKLESHWAR, 393002**

Test Report No. : **PL/BL 0021**
Issue Date : **06/06/2019**
Customer's Ref. : **W.O.No. 8519200040
Dated:19.04.2019**

Description of Sample : **Soil Sample**
Date of Sampling : **17/05/2019** Quantity/No. of Samples : **02 Kg/Three**
Sampling By : **Pollucon Laboratories Pvt. Ltd.** Sampling Procedure : **USEPA/IS 2720 etc.**
Sample Receipt Date : **18/05/2019** Protocol (purpose) : **USEPA/IS 2720 etc.**
Packing/ Seal : **Sealed** Lab ID : **BL/1905/29 to 31**
Date of Starting of Test : **18/05/2019** Test Parameters : **As per table**
Test Method : **USEPA/IS 2720 etc.** Date of Completion of Test : **28/05/2018**

TEST RESULT

SR. NO.	TEST PARAMETERS	UNIT	RESULT		
			Near Deep Enterprise	Near Incinerator Plant side	Jitali Road
1	pH	--	8.16	8.08	8.29
2	Conductivity	mmho/cm	0.525	0.641	0.75
3	TDS	gm/kg	3.88	4.43	5.16
4	TOC	%	0.7002	1.009	0.88
5	Fluoride	mg/kg	18.81	ND*	18.99
6	Lead	mg/kg	11.24	12.12	5.5
7	Cadmium	mg/kg	ND*	ND*	ND*
8	Copper	mg/kg	94.45	91.6	108
9	Chromium	mg/kg	32.13	31.34	29.35
10	Mercury	mg/kg	0.473	0.663	0.367
11	Nickel	mg/kg	113	125	96.83
12	Cyanide	mg/kg	ND*	ND*	ND*
13	Arsenic	mg/kg	1.25	1.34	1.42
14	Manganese	mg/kg	924	943	1233
15	Zinc	mg/kg	103	102	267
16	PAH	mg/kg	< 0.1	< 0.1	< 0.1

ND*: Not Detected

Macky Suraliwala
Sr. Scientist

Dr. Arun Bajpai
Lab Manager (Q)

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Phone : 0261-2635750, 0261-2635751, 0261-2635775, 07016605174, WEB: www.polluconlab.com, E. mail: pollucon@gmail.com, info@polluconlab.com

ક્રમાંક/ડીઆઈએસએચ/એફ-નકશા/૨૦૧૯/૧૮૫૨
ડાયરેક્ટર ઇન્ડસ્ટ્રીયલ સેફ્ટી એન્ડ હેલ્થની કચેરી
શ્રમ ભવન ત્રીજો માળ ગળ હાઉસની બાજુમાં
રૂસ્તમકામા માર્ગ ખાનપુર અમદાવાદ-૦૧
તા.૧૯/૭/૨૦૧૯

પતિ,

કન્વેક્ટરશ્રી,

BHARUCH ENVIRO INFRASTRUCTURE LTD
PLOT NO. 7905/E TO 7925/H, 7924 TO 7927, 940 TO G/6,
TO 9601 TO 9604, G/7, 10001 TO 10003, 9701 TO 9716,
9801 TO 9828, 9901 TO 9906 & 9923 TO 9928, GIDC
ANKLESHWAR, DIST. BHARUCH.

વિષય:- સને ૧૯૪૮ના કારખાનાના અધિનિયમ અન્વયે વિસ્તૃતીકરણ નકશા મંજૂર કરવા અંગે.

મહાશય

ઉપરોક્ત વિષયના સંદર્ભના આપના કારખાનાના નકશાની નકલ- નકલો નીચેની શરતોને આધીન રહીને મંજૂર કરી પરત કરવામાં આવે છે.

- (૧) મકાન કે વિસ્તૃતીકરણનો કારખાના તરીકે ઉપયોગ કરતા પહેલા મંજૂર થયેલ નકશામાં બતાવેલ કારખાનાનું વિસ્તૃતીકરણનું બાંધકામ, પ્લાન્ટ તથા મશીનરી અંગે સ્ટ્રક્ચરલ એન્જીનીયરીંગનું કારખાનાની મજબૂતાઇ ચકાસ્યા અંગેનું સ્ટેબિલિટી સર્ટીફિકેટ ગુજરાત કારખાનાના નિયમ-૧૯૬૩ના નિયમ-૩(ગ) હેઠળ નક્કી કરેલ નમૂના-૧(એ)માં આપવું. સાથે બાંધકામની સ્ટ્રક્ચરલ ડીટેઇલ, ડીઝાઇન અને ડ્રોઇંગ રજૂ કરવું. ઉપરાંત કારખાનાનું મકાન તેના ફ્લોર સહિત એક ચોરસમીટર ક્ષેત્રફળમાં કેટલું વજન સહન કરી શકશે અને તેની સામે મુકવા ધારેલ વજન એક ચો.મી.માં કેટલું છે. ત્યાં કઇ રીતે બાંધકામ સલામત છે. તેની ગણતરી સહિતની વિગત સ્ટેબિલિટી સર્ટીફિકેટ સાથે રજૂ કરવી. ઉપરાંત બાંધકામની તાકાત લેબોરેટરી ટેસ્ટ કરાવીને તેના પરિણામ સાથે ગણતરીને સરખાવીને રજૂ કરી તે અંગેની જાણ ડાયરેક્ટર ઓફ ઇન્ડસ્ટ્રીયલ સેફ્ટી એન્ડ હેલ્થશ્રીની (કારખાનાના મુખ્ય નિરીક્ષકશ્રી) સ્વિકૃતિ મેળવવી.
- (૨) નવું તથા વધારાનું બાંધકામ કરતા અગાઉ સ્થાનિક સત્તાવાળા જેવા કે નગરપાલિકા/નગરપંચાયત/જીલ્લા પંચાયત/ગ્રામ પંચાયત/જાહેર બાંધકામ ખાતું/જી.આઇ.ડી.સી વિગેરેની પાસેથી મંજૂરી મેળવી લેવાની રહેશે.
- (૩) તમામ કારખાનામાંથી નીકળતા વ્યવસાયિક બગાડ જેવા કે, ગંદુ પાણી, ધુમાડો, ધૂળ કે ગેસ વિગેરેના નિકાલ અંગેની જળ વાયુ પ્રદૂષણ પાસેથી મંજૂરી મેળવવી.
- (૪) રીવાઇઝ્ડ/એક્સ્ટેન્શન/ રીવાઇઝ્ડ વીથ એક્સ્ટેન્શન કારખાના માટે નવું બાંધકામ હોય તો BOCW CESS ACT ની જોગવાઈ મુજબ બાંધકામની કુલ કિંમતના ૧ ટકા લેખે સેસની રકમ સેસ કલેક્ટર સમક્ષ જમા કરાવવાની રહેશે.
- (૫) સક્ષમ અધિકારી દ્વારા મંજૂર કરેલ પ્લાન પ્રમાણે બાંધકામ કરવાનું રહેશે. તથા કારખાનામાં બતાવેલ ખુલ્લી રાખવાપાત્ર જગ્યાને ખુલ્લી જ રાખવાની રહેશે.

આપનો વિશ્વાસુ

P. H. Shah

ડાયરેક્ટર

ઇન્ડસ્ટ્રીયલ સેફ્ટી એન્ડ હેલ્થ
ગુજરાત રાજ્ય અમદાવાદ

ક્રમાંક/ડીઆઈએસએચ/એફ-નકશા/૨૦૧૯/૧૮૫૨
ડાયરેક્ટર ઇન્ડસ્ટ્રીયલ સેફ્ટી એન્ડ હેલ્થની કચેરી
શ્રમ ભવન ત્રીજો માળ ગળ હાઉસની બાજુમાં
રૂસ્તમકામા માર્ગ ખાનપુર અમદાવાદ-૦૧
તા.૧૯/૭/૨૦૧૯

નકલ રવાના:-

આસી./ડેપ્યુટી ડાયરેક્ટરશ્રી, ઇન્ડસ્ટ્રીયલ સેફ્ટી એન્ડ હેલ્થ, BHARUCHને મંજૂર થયેલ નકશાની નકલ દસ્તાવેજ સહિત જે તા:- 03/06/2019 ના પત્ર ક્રમાંક 959 થી મોકલેલ તે આ સાથે દસ્તાવેજ સહિત પરત કરેલ છે.

S. K.

ડાયરેક્ટર

ઇન્ડસ્ટ્રીયલ સેફ્ટી એન્ડ હેલ્થ
ગુજરાત રાજ્ય અમદાવાદ



ગુજરાત ઓદ્યોગિક વિકાસ નિગમ

GUJARAT INDUSTRIAL DEVELOPMENT CORPORATION
(A GOVT. OF GUJARAT UNDERTAKING)

OFFICE OF THE EXECUTIVE ENGINEER
624/B, G.I.D.C. Administrative Office Building,
GIDC, Ankleshwar-393002
Phone : (02646) 221351

No./GIDC/XEN/ANK/PB / 1217

Date : -201
17 MAY 2017

To,

M/s Bharuch Enviro Infra.

Structure Ltd

Plot No- 7905/E TO 9929

GIDC

Ankleshwar

**Sub.: Approval of drawing of the proposed / Revised, Extension & Alteration
Factory Building / Residential Building / Commercial Building on Plot/Shed
No. 7905/E TO 9929**

at G.I.D.C., Ankleshwar.

Ref : (1) Your letter No. on line Dtd. 15/4/17
(2) Your letter No. — Dtd. —

Dear Sir,

Gujarat Industrial Development Corporation is pleased to inform you that the plans sent by you are approved by this office for construction subject to the following conditions

1. The drawings are subject to approval by the Dy. Director, Industrial Safety & Health. You have to submit within one month to this office.
2. The drawings are subject to checking of structural soundness and safety by your Engineers.
3. The drawings will be subject to revision under regulation formulated by the Corporation from time to time.
4. The full plot is allotted to you and the possession is taken by you.
5. The drawings are subject to the approval by local bodies such as GEB, PWD, PANCHAYAT, MUNICIPALITY etc before starting of construction activities and also as per requirement. GIDC B CON SANT.
6. Effluent shall be treated as per ISS 3088/1965 and plans for the same should be submitted before commencement of the factory.
7. Septic tank, Control Manhole etc should be provided with C.I heavy cover as per requirements.
8. All gates of compound should open inward and be provided with stop which will prevent the gate from opening outwards towards the front part of the road.
9. Barbed wire fencing or compound wall shall be within the plot boundaries of owners own plot.
10. You are requested to obtain the completion certificate from Executive Engineer GIDC, Ankleshwar, after completing the construction work on site.
11. The time limit extension orders, for utilisation of plot/ shed shall be obtained from Regional Manager, GIDC, Ankleshwar.
12. The work shall be executed at your own risk and cost. All the structural changes shall have to checked and supervised by your authorised Engineer.
13. You are requested to provide 3 Nos of tree per 200.00 sq. mts plot area.

14. The shed _____ is constructed with ream pile foundation hence no excavation upto one meter either side (inside or outside) of wall of sheds shall be done otherwise piles will be exposed and the foundation of sheds may be structurally affected causing damage to shed.
15. Payment of all outstanding dues if any of the Corporation shall be cleared & other concern department.
16. The fact of approval of the plan shall not be prejudicial of the Corporation, right to take any action under the provisions of disposal of property regulation, disposal of land regulations, lease deed, conveyance deed, from the agreement, agreement for sale, offer letter, allotment letter as well as recovery of dues of action under any act in force.
17. This approval is valid for two years only from the date of approval of plan.
18. If the underground drainage collection system is already laid near your plot, please ensure that the effluent from your premises will flow into the nearest GIDC manhole.
19. You shall have provided fire fighting provision as per national building code.
20. You are requested to provide _____ Nos. of Rain water Harvesting with percolating borewell as per Total plot area.
21. You will have to carry out construction activity strictly as per Circular No. GIDC/O&M/CIR/ENG/ HQ/34/99 dated 25/6/99 (copy enclosed) for checks of building construction activity in plot & issuing building completion certificate.
22. Plans approval subject to condition Regarding height Between two floor more than 4.00 mt & total height more than 13.00 mt for which permission from Dy. Director/ Industrial safety & health may be obtained and produce the same to this office.
23. **IMPORTANT NOTE :**
STRUCTURAL SAFETY AND SAFETY MEASURE AGAINST ALL NATURAL CLAIMANTS ARE TO BE TAKEN BY YOU AND ARE NOT CHECKED BY THIS OFFICE GIDC ANKLESHWAR.

Important Note :-
 Structural safety and Safety measures against all natural calamities are to be taken by you and are not checked by this office
 GIDC, Ankleshwar Division

Gujarat Industrial Development Corporation is looking forward towards completion of your factory and its successful functioning within a year.

With best wishes,

Yours faithfully


 EXECUTIVE ENGINEER
 GIDC, ANKLESHWAR.

- Encl: 1. Drawings two sets
 2. Booklet Circular No. GIDC/O&M/CIR/ENG/HQ/34/00 dated 25/6/99.

Copy to :

1. Asstt Manager GIDC Ankleshwar along with one copy of approved drawings for information and record Please.
2. Dy Ex. Engineer GIDC, Ankleshwar along with one copy of approved drawings
3. Chief Officer (NA), GIDC Ankleshwar along with one copy of approved drawings
4. COPY OF S.W.R TO SR. A.T.P GIDC Gandhinagar for along with upper layout plan.



BHARUCH ENVIRO INFRASTRUCTURE LTD.



B. E. I. L.

SITE OFFICE : 9701-15, P.B. NO. 82, GIDC, ANKLESHWAR - 393 002., DIST. BHARUCH
PHONE : (02646) 253135, 226228

March 24, 2008

Paryavaran Suraksha Samiti
Vadodara

Kind attn :- Mr Rohit Prajapat

Dear Sir:

Sub :- Environmental Clearance for our TSD Facility

Ref :- Environmental Clearance No. 10-48/2007-IA.III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSD Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

We are enclosing herewith copy of above Environmental Clearance for your kind perusal.

We hope that you will find the same in order.

Thanking you.

Yours faithfully

For, Bharuch Enviro Infrastructure Ltd

DR P N PARAMESWARAN
Sr General Manager (Environment)

Encl : a/a



BHARUCH ENVIRO INFRASTRUCTURE LTD.



SITE OFFICE : 8731-16, P.P. NO. 82, GIDC, ANKLESHWAR - 393 002., DIST. BHARUCH
* PHONE : (02646) 253135, 225928

March 24, 2008

Centre for Environment, Science & Community
CESCOM
Vadodara

Kind attn :- Mr Jayesh Patel

Dear Sir,

Sub :- Environmental Clearance for our TSDF Facility

Ref :- Environmental Clearance No. 10-48/2007-IA.III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSDF Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

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We hope that you will find the same in order.

Thanking you

Yours faithfully
For, Bharuch Enviro Infrastructure Ltd

DR P N PARAMESWARAN
Sr General Manager (Environment)

Encl : a/a



BHARUCH ENVIRO INFRASTRUCTURE LTD.



SITE OFFICE : 9/01-16, P.S. NO. 82, GIDC, ANKLESHWAR - 393 002., DIST. BHARUCH
PHONE : (02646) 253135, 225228

March 24, 2008

Safety Health & Environment Association
Kasak Fuvara
Bharuch

Kind attn. :- Mr Yogesh Pandya

Dear Sir,

Sub :- Environmental Clearance for our TSD Facility

Ref :- Environmental Clearance No. 10-48/2007-IA.III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSD Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

We are enclosing herewith copy of above Environmental Clearance for your kind perusal.

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Thanking you

Yours faithfully
For, Bharuch Enviro Infrastructure Ltd

DR. P. N. PARAMESWARAN
Sr General Manager (Environment)

Encl : a/a



BHARUCH ENVIRO INFRASTRUCTURE LTD.



SITE OFFICE : 9701-16, P.S. NO. 82, GIDC, ANKLESHWAR - 383 002., DIST. BHARUCH

PHONE : (02646) 253135, 225228

Mr Pravinbhai P Sheth
Senior Citizen
Ankleshwar

Dear Sir,

Sub :- Environmental Clearance for our TSD Facility

Ref :- Environmental Clearance No. 10-48/2007-IA,III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSD Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

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We hope that you will find the same in order.

Thanking you.

Yours faithfully

For, Bharuch Enviro Infrastructure Ltd

DR. P. N. PARAMESWARAN
Sr General Manager (Environment)

Encl : a/a



BHARUCH ENVIRO INFRASTRUCTURE LTD.



SITE OFFICE : 3701-16, P.E. NO. B2, GIDC, ANKLESHWAR - 393 002., DIST. BHARUCH

PHONE : (02646) 253135, 225228

Paryavaran Mitra
Ahmedabad

Kind attn :- Mr Mahesh Pandya

Dear Sir,

Sub :- Environmental Clearance for our TSD Facility

Ref :- Environmental Clearance No. 1D-48/2007-IA.III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSD Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

We are enclosing herewith copy of above Environmental Clearance for your kind perusal.

We hope that you will find the same in order.

Thanking you

Yours faithfully

For, Bharuch Enviro Infrastructure Ltd

DR. P. N. PARAMESWARAN
Sr General Manager (Environment)

Encl : a/a



BHARUCH ENVIRO INFRASTRUCTURE LTD.



SITE OFFICE : 9701-16, P.B. NO. 82, GIDC, ANKLESHWAR - 389 002., DIST. BHARUCH
PHONE : (02646) 253130, 225028

March 24, 2008

Brackish Water Research Center
Olpad
Dist - Surat

Kind attn - Mr. M.S.H. Sheikh

Dear Sir,

Sub :- Environmental Clearance for our TSDF Facility

Ref :- Environmental Clearance No. 10-48/2007-IA. III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSDF Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

We are enclosing herewith copy of above Environmental Clearance for your kind perusal.

We hope that you will find the same in order.

Thanking you

Yours faithfully
For, Bharuch Enviro Infrastructure Ltd

DR. P. N. PARAMESWARAN
Sr General Manager (Environment)

Encl : a/a



BHARUCH ENVIRO INFRASTRUCTURE LTD.

SITE OFFICE : 9701-15, P.B. NO. 82, GIDC, ANKLESHWAR - 393 002., DIST. BHARUCH
PHONE : (02646) 253136, 225228



March 24, 2008

Mr Bipin Upadhyay
Ankleshwar

Dear Sir,

Sub :- Environmental Clearance for our TSD Facility

Ref :- Environmental Clearance No. 10-48/2007-IA.III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSD Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

We are enclosing herewith copy of above Environmental Clearance for your kind perusal.

We hope that you will find the same in order.

Thanking you

Yours faithfully,
For, Bharuch Enviro Infrastructure Ltd

DR P N PARAMESWARAN
Sr General Manager (Environment)

Encl : a/a



BHARUCH ENVIRO INFRASTRUCTURE LTD.



SITE OFFICE : 9701-16, P.S. NO. 82, GIDC, ANKLESHWAR - 383 002, DIST. BHARUCH
PHONE : (02646) 253135, 225228

March 24, 2008

Mr Sandeep Jaguwala, Advocate
Ankleshwar

Dear Sir,

Sub :- Environmental Clearance for our TSDF Facility

Ref :- Environmental Clearance No. 10-48/2007-1A.III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSDF Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

We are enclosing herewith copy of above Environmental Clearance for your kind perusal.

We hope that you will find the same in order.

Thanking you

Yours faithfully

For, Bharuch Enviro Infrastructure Ltd

DR P N PARAMESWARAN
Sr General Manager (Environment)

Encl : a/a



BHARUCH ENVIRO INFRASTRUCTURE LTD.



SITE OFFICE : S701-16, P.S. NO. 82, GIDC, ANKLESHWAR - 383 002, DIST. BHARUCH
PHONE : (02646) 253135, 225228

March 24, 2008

The Ankleshwar Scrap Dealers' Association
Ansar Market
NH # 8
Ankleshwar

Dear Sir,

Sub :- Environmental Clearance for our TSD Facility

Ref :- Environmental Clearance No. 10-48/2007-IA.III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSD Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

We are enclosing herewith copy of above Environmental Clearance for your kind perusal.

We hope that you will find the same in order.

Thanking you

Yours faithfully

For, Bharuch Enviro Infrastructure Ltd

DR P N PARAMESWARAN
Sr General Manager (Environment)

Encl : a/a



BHARUCH ENVIRO INFRASTRUCTURE LTD.



SITE OFFICE : 9701-16, P.S. NO. 02, GIDC, ANKLESHWAR - 393 002, DIST. BHARUCH
PHONE : (02646) 253135, 225228

March 24, 2008

Gir Nature Club
Junagadh

Kind attn :- Mr Amit Jethwa

Dear Sir,

Sub :- Environmental Clearance for our TSD Facility

Ref :- Environmental Clearance No: 10-48/2007-IA.III dated 04.03.2008

Kindly refer the Environmental Public Hearing held by Gujarat Pollution Control Board for expansion of our TSD Facility, held on 30.08.2005. We would like to thank you for your participation in the Environmental Public Hearing.

We are enclosing herewith copy of above Environmental Clearance for your kind perusal.

We hope that you will find the same in order.

Thanking you

Yours faithfully
For, Bharuch Enviro Infrastructure Ltd

DR P N PARAMESWARAN
Sr General Manager (Environment)

End : a/a

૧ એપ્રિલથી પાલિકાઓમાં કારપેટ એરિયા આધારિત મિલકતવેરો

- રાજ્યની ૧૫૯ નગરપાલિકાઓમાં થનારો અમલ
- રાજ્ય સરકારે ગત વિધાનસભામાં ખરડો પસાર કર્યો હતો

અમદાવાદ, દુબઈ

રાજ્યની ૧૫૯ નગરપાલિકાઓમાં ૧ એપ્રિલ-૦૮થી કારપેટ એરિયા આધારિત મિલકતવેરો વસુલ કરાશે. રાજ્ય સરકારે ગત વિધાનસભામાં આ અંગે ખરડો પસાર કર્યો હતો. કારપેટ એરિયા તરીકે અહારની કે અંદરની હોવાલ જેના પર ઊભી કરાઈ હોય તે વિસ્તાર સિવાયનો ઉંમારતનો વિસ્તાર ગણાશે. આ નવી કોમ્પ્લેક્સ પ્રમાણે દર બે વર્ષે મિલકતવેરામાં ૧૦ ટકાનો વધારો કરાશે. મિલકત વેરાની વસુલાત માટે ૧૫૯ નગરપાલિકાઓને ૪ વિભાગમાં વહેંચી દેવાઈ છે અને દરેક

વિભાગમાં મિલકતવેરાની ગણતરી માટે અલગ અલગ દર નક્કી કરાશે. કારપેટ એરિયા આધારિત મિલકતવેરો નક્કી કરતી વખતે મિલકતનું સ્થળ સીધી પહેલાં જોવાશે. રહેણાંક જો 'સમૂહ વિસ્તાર'માં હશે તો તેનો ભારાંક (લિટિંગ રેટ) રૂ. ૧.૨૫, 'મધ્યમ' વિસ્તાર માટે રૂ. ૧.૦૦ અને 'નબળા' વિસ્તાર માટે ૦.૭૫ પૈસા રખાયો છે. કોમર્શિયલ હેતુની મિલકત જો 'સમૂહ' વિસ્તારમાં હશે તો ભારાંક રૂ. ૧.૫૦, 'મધ્યમ' વિસ્તારમાં હશે તો રૂ. ૧.૨૫ અને 'નબળા' વિસ્તારમાં હશે તો રૂ. ૧.૦૦ રખાશે. બીજા પરિભવ તરીકે બાંધકામનું આયુષ્ય જોવાશે, જેમાં ૨૦ વર્ષ સુધી રૂ. ૧.૦૦, ૨૦થી વધુ પરંતુ ૪૦થી ઓછા વર્ષ માટે ૦.૭૫ પૈસા અને ૪૦ વર્ષથી વધુ જુની ઉંમારત માટે ૦.૫૦ પૈસાનો દર વસુલાશે. જો મિલકત માલિકના તાબે હશે તો ભારાંક રૂ. ૧.૦૦ અને ભાડુઆતના તાબે (ટેનેન્ટ) હશે તો રૂ. ૧.૨૫નો

મિલકતવેરો કેવી રીતે ગણાશે ?

મિલકત વેરાની રકમ = જુનું છે અને મકાનમાલિક પોતે મિલકતનું કોન્ટ્રાક્ટ (ચો.મી.) ઉપયોગમાં લે છે.
 ચો.મી. દીઠ વેરાનો દર (+૧) પારો કે મિલકતવેરાનો દર પ્રતિ
 ટ મિલકતનું સ્થળ (+૨) ચો.મી. રૂ. ૫ રાંખવામાં આવે તો
 મિલકતનું આયુષ્ય (+૩) ટ ચો.મી. દીઠ રૂ.૫ ટ ૭૫ =
 મિલકતનો પ્રકાર (+૪) રૂ.૩૭૫
 ગણતરી મુકવાથી જે રકમ હવે નવી કોમ્પ્લેક્સ મુજબ,
 આવશે તે જે તે મિલકતપારકની ૩૭૫ ટ ૧.૨૫ (+૧) ટ ૧
 મિલકતનો વાર્ષિક મિલકતવેરો (મિલકતની ઉંમર) (+૨) ટ ૧
 ગણાશે. (ઉપયોગ) (+૩) ટ ૦.૭૫
 પારો કે કોઈ એક (બાંધકામનો પ્રકાર) (+૪) = ૩૭૫
 નગરપાલિકામાં ૭૫ ચો.મી.નું ટ ૧.૨૫ ટ
 રહેણાંકનું મકાન (ફ્લેટ પ્રકારનું) ૧.૦૦ ટ ૦.૭૫ = ૩૫૧.૫૧
 સમૂહ વિસ્તારમાં છે. તે ૧૦ વર્ષ મિલકતવેરો.

ભારાંક રહેશે. બાંધકામ જો સ્વતંત્ર પ્લોટનાં બાંધકામ માટે ભારાંક અંગલો હશે તો રૂ. ૧.૨૫, ૦.૫૦ પૈસા રહેશે. કોમર્શિયલ ટેનામેન્ટ-રોહાઉસ હશે તો ઉપયોગ માટે રૂ. ૪.૦૦નો ભારાંક રૂ. ૧.૦૦, ફ્લેટ હશે તો ૦.૭૫ પૈસા, પોલ- શહેરી વિસ્તારમાં વેરહાઉસ વગેરે) જ્યારે કુકાન-રહેઠાણનાં મકાનો હશે તો ૦.૭૫ હોટેલ, રેસ્ટોરન્ટ, શિપ્ટર વગેરે પૈસા તથા ચાલી તથા ખુલ્લા માટે રૂ. ૩.૦૦નો ભારાંક રહેશે.

ભરૂચ એન્વીરો ઇન્ફ્રાસ્ટ્રક્ચર લી.

પ્લોટ નં. ૯૬૦૧ થી ૯૬૦૪, ૧૦૦૧ થી ૧૦૦૩ જી-૭ અને ૮, ૭૯૨૪ થી ૭૯૨૭, ૯૪૦૧ થી ૯૪૧૨, ૯૫૦૧ થી ૯૫૦૬, ૭૯૦૫ થી ૭૯૦૮ અને ૯૯૨૩ થી ૯૯૨૮ જીઆઇડીસી અંકલેક્ષ્વર ૩૯૩૦૦૨, જી. ભરૂચ, ગુજરાત

ટી.એસ.ડી. એફ સુવિધા માટે પર્યાવરણીય મંજુરી વિસ્તુતીકરણ અને કોમન ઇન્શીઅરેન્સ સુવિધાઓ

આ સાથે જણાવવામાં આવે છે કે ભારત સરકારના વન અને પર્યાવરણ મંત્રાલયે પત્ર ક્રમાંક 10-4 B/2007 IA.III તા. ૦૪-૦૩-૨૦૦૮ દ્વારા મે. ભરૂચ એન્વીરો ઇન્ફ્રાસ્ટ્રક્ચર લી., અંકલેક્ષ્વરને ટી.એસ.ડી.એફ. સુવિધાના વિસ્તુતીકરણ માટે પર્યાવરણીય મંજુરી પ્રદાન કરેલ છે. મંજુરી પત્રની પ્રતી ગુજરાત પ્રદુષણ નિયંત્રણ બોર્ડ તથા વન અને પર્યાવરણ મંત્રાલયની વેબ સાઇટ www.envfor.nic.in પર પણ જોઈ શકાય છે.

SARFAESI Act 2002 and S I E Rules 2002 હેઠળ ઍકના કલખા વાળી સ્થાપર મિલકતની વેચાણની જાહેર હરાજી

નીચે શીકમુલ માં જણાવેલ ખાતેદારની તેમા જણાવેલ મિલકત ઍકે શીકમુલકારોએ કન્ટ્રીકલન ઍકે કલખાવનીવલ એસેટ એકઠ-૨૦૦૨ તમા કલખોએએએકે ઍકે શીકમુરી કન્ટ્રીકલ કલ્લ ૧૦૦૨ હેઠળની નોટીસ તારીખ ૩-૧૦-૦૭ ના રોજ વલખુ કરેલ છે. આધારે તેઓએ રૂપિયા ૨૧૪૨૩૪૭.૦૦ તમા વ્લાજ તમા કલખા ખર્ચે સક્રિતની રકમ કલખાની ઠાલી નીકળી છે. તેઓ આ રકમ ભરવા ઠાલ સક્રીલ થયા ન હોવાથી શીકમુ વાળી કોર્ટીજ કરેલી મિલકત તારીખ ૨૦-૦૩-૦૮ ના રોજ તેનું પડેરાન ઍકે કલખા વાળી જાહેરત તા.૨૧-૦૩-૦૮ કલ્લે ૨૨-૦૩-૦૮ ના રોજ ટેલિઠ પેરામાં પ્રગટ થઈ છે.

સદર હું મિલકતનું વેચાણ "એ છે, જ્યાં છે કલ્લે જેમ છે." તે ઘોરણે જાહેર હરાજી તારીખ ૨૨-૦૪-૦૮ ના રોજ ઠાપોરમા ૨.૦૦ ઠાપોરે કીચે સક્રિ કરનારની ઍકેથી કોઈ ખાતે વેચાણ કરવામાં આવશે. સદર હું હરાજીમાં ઠાગ લેનારે શીલકલ્લ કલખામાં કોઈ નીચે સક્રિ કરનારને તે દિવસ ના ઠાપોરેમા ૧.૦૦ ઠાગ સુધીમાં આપવાની રહેશે. કોર્ટ કરનારને કોર્ટર સાથે પોતાની ઠાપોરખની સહીતી સાથે રૂપિયા ૧,૨૫,૦૦૦.૦૦ ની કિર્મતનો ઍકે કોર્ટ બરોડા ઍકાધા શાખાના લખનો ક્રાફ્ટ પેપરોએ દ્વારા જ હરાવાના રહેશે. કોર્ટર સ્વિઠરજ સચેલી ખરીદ કિર્મતની ૫૦% રકમ ઠે દિવસમાં જ હરાવાવાની રહેશે તેમજ ઠાપોરની ૫૦% રકમ કોર્ટર સ્વિઠર સચાલા ૧૦ દિવસ

1. હરાજી/પ્રમાણપત્ર સામેલ કરવામાં આવે. ૦૨. ખાનગી વ્યક્તિઓના પ્રમાણપત્ર જેના માટે આ



To,
Member Secretary,
Gujarat Pollution Control Board
Paryavaran Bhavan,
Sector-10, Gandhinagar.

Date: 9.01.2016

Subject: EC for Common Hazardous Waste Secured Landfill Phase-III vide letter F.No.10-10/2014-IA.III dated 31/12/2015.

Dear Sir,

BEIL is operating a Common facility consisting of secured land filling and Incinerator system and located at plot No # 9701-9716, 9801-9828, 9901-9928, 9601-9604, 10001-10008, G-7 & 8, 7924-7927, 9401-9412, 9501-9506, 7905 E To H, GIDC estate, Ankleshwar-393002, Dist. Bharuch, Gujarat.

We have received **Environmental Clearance** vide letter **F.No.10-10/2014-IA.III** dated **31/12/2015** form Ministry of Environment Forest and climate Change for the Common Hazardous waste Secured Landfill.

With Respect to General Condition no. vii of the said Environmental clearance letter, we request you to display this copy at your website www.gpcb.gov.in, for 30 days.

The Copy of the same is attached herewith for your kind Information and records.

Thanking You,

For, Bharuch Enviro Infrastructure Ltd

B.D. Dalwadi

Chief Executive Officer

Copy to:

- ✓ Mr. K.C. Mistry, Sr. Environment Scientist
Gujarat Pollution Control Board
Paryavaran Bhavan,
Sector-10, Gandhinagar.

Environmental Management Plan Compliance

Discipline	Environmental hazard	Mitigation Measures and Action plan	Compliance Status
Secured Landfill Facility			
Temporary storage of Hazardous waste	Leachate Generation	Collection of leachate and treatment	Complied. Temporary storage of hazardous waste is provided for monsoon period. Leachate generating from the temporary storage is being collected and treated in MEE or sent to ETL.
Loading the hazardous waste in dumper	Fugitive emission	Coverage of the dumper to prevent dusting	Complied. Secured authorized dedicated closed dumpers are being used.
	Spillage of waste on the the floor	Avoid spillages by careful handling of the solid waste Clean the floor regularly and collect the waste & dispose in landfill	Complied. Handling has been carried out to avoid spillage of the solid waste. Regular cleaning is also done.
	Leakage/spillage during transportation	inspection of the dumpers and ensuring that there is no leakage/spillage	Complied. Regular inspection carried out of dumpers for detecting any leakages or spillage.
	Health impacts on the workers	Usage of Hydraulic dumpers/hook loaders to prevent manual handling Usage of PPEs by all Employees Medical checkup - pre employment and routine	Complied. Hydraulic dumpers are used for transporting waste. Appropriate PPEs are provided to the workers while manual handling of the waste. Pre-employment and routine medical checkups are being carried out.
Transportation			

Transportation of Waste	Littering the waste on the road	Inspect the dumpers and ensure that there is no leakage/spillage from the vehicle Loaded dumpers/trucks with waste should be fully covered. Impart training to the drivers Dumpers/trucks should be leak proof	Complied. Regular inspection of the dumpers in also done to ensure that there is no leakage/spillage from the vehicle. Loaded dumpers/ vehicles are being covered, leak proof as well. Drivers are given training also.
	Disposal of waste at non designated place	Manifest System	Complied. We are following valid manifest system according to new hazardous and other waste (Handling and management) rules 2016.
	Contamination of the tyres of vehicles entering landfill area	After loading/unloading the waste, tyres should be washed and washed water shall be sent for treatment	Complied. After loading/ unloading the tires are washed and waste water is sent for treatment.
Final Disposal			
Final Disposal of the hazardous waste into secured landfill facility	Violent reaction/ fire	Strictly to follow the acceptance criteria Check the reactivity of the wastes prior to disposal	Complied. Comprehensive and fingerprint analysis are carried out before accepting the waste to strictly following acceptance criteria for landfill.
	Excessive leachate generation in monsoon season	Cover the sub-cells of the facility with tarpaulin to prevent entry of rain water Close monitoring of the site round the clock during monsoon	Complied. Adequate covering of the sub cells with tarpaulin is done during monsoon.
	Blowing away of the waste dust with the wind	Spray water during summer season Cover the waste layer with fresh soil and compact it.	Complied. Water is being sprayed for dust suppression. And daily coverage of waste with clay layer is being done.

	Disposal of waste at the wrong place in the premises leachate handling	Provide indicators and sign boards for systematic operation. Properly designed leachate collection wells Daily monitoring of levels in the wells Transfer of leachate from the wells to storage for treatment	Complied. Necessary sign board are provided. Adequate numbers of leachet collection wells are constructed, daily level monitoring is being done and transferred to MEE plant or sent to ETL for further processing.
Monitoring Activity (Monitoring activity should continue even after closure of the facility)			
Water Quality	Ground water pollution Contamination of ground water	Monitoring groundwater at upstream and downstream of the site Groundwater monitoring surrounding the site as per pre designed plan Proper barrier systems like impermeable liners, gravity slope and gravel packed channels are constructed for natural flow of leachate and contact water The leachate generated has to be collected in an underground tank from where it can be pumped out to the treatment unit. Thus the chances of ground water contamination can be minimized.	Complied. There are bore wells, which are used to monitor ground water on regular basis. Adequate numbers of leachate collection wells are provided and leachate is being collected and send to MEE or ETL for further treatment.
Air Quality	Air pollution (Fugitive, Dust and gaseous emissions)	Ambient Air Monitoring for various parameters at the site and surroundings Water Dumpers, sprinklers are deployed for water spraying. Tree plantation around the facility area and along the roads. Respirable dust samples are collected and analyzed periodically to ensure that the dust concentration limit is contained within the allowable limits.	Complied. Ambient air monitoring is being done on regular basis for various parameters at the site and surrounding. Tree plantation surrounding the plant area is done. Though it is an ongoing process. Respirable dust samples are being collected and analyzed periodically to ensure that the dust concentration limit is contained within the allowable limits.
Soil Quality	Soil Pollution	Soil Sampling from various locations and	Complied.

	<p>(Project site will undergo a major transformation during landfilling. The waste is to be compacted in layers with proper sloping. Contamination of soil is possible if the lining system is improper. Also littering of the waste while transportation to the disposal facility, blowing of waste particles due to wind shall lead to soil contamination. Spillage of leachate during pumping also will lead to soil pollution localized)</p>	<p>analysis. After landfilling is complete, the liner system consisting of soil cover, HDPE liner and vegetative cover shall be immediately constructed to avoid any contamination of soil</p>	<p>Soil sampling and monitoring is being done on regular basis. Daily coverage and final coverage is done according to GPCB/CPCB criteria and guidelines to avoid any contamination of soil.</p>
<p>Noise</p>	<p>Noise pollution (Noise levels during construction phase will be high during operational phase due to instrumental work, increased truck movement earth movers etc.</p>	<p>These negative impacts are short term. Equipment to be kept and maintained in proper condition to keep the noise level within 75 dB(A) Workers will be provided with necessary protective equipment e.g. ear plug, earmuffs. Provision of green belt and plantation would further help in attenuating noise.</p>	<p>Complied. Noise level monitoring is done on regular basis, adequate green belt is also provided. And employees are provided with suitable PPEs to avoid any short term or long term negative impacts of noise pollution. .</p>

Traffic	Traffic Impacts	BEIL is situated towards one corner of industrial estate of GIDC, as there is no much traffic on this road, no traffic overcrowding is expected and the impact will be insignificant.	Complied. BEIL is situated towards one corner of industrial estate of GIDC, as there is no much traffic on this road, no traffic overcrowding is expected and the impact will be insignificant.
Socio-Economic	Socio-Economic Impacts	The site selected for the disposal of hazardous wastes in Ankleshwar industrial Estate, is not having any visible adverse impact on human populations well as live stock as this site is excluded from any agriculture, forest, ecological sensitive or animal grazing land. Moreover, the site is within the industrial estate and land already meant for that purpose. With the expansion of TSDF phase-III proposed, there will be additional employment Opportunities for about 100 persons (Construction phase) and about 15 persons (Operational Phase). In general, the project is to have positive environmental impacts by collecting and disposing the hazardous waste in the scientific manner, this will reduce the future health hazard.	Complied. The site selected for the disposal of hazardous wastes in Ankleshwar industrial Estate, is not having any visible adverse impact on human populations well as live stock as this site is excluded from any agriculture, forest, ecological sensitive or animal grazing land. Moreover, the site is within the industrial estate and land already meant for that purpose. With the expansion of TSDF phase-III proposed, there will be additional employment Opportunities for about 100 persons (Construction phase) and about 15 persons (Operational Phase). In general, the project is to have positive environmental impacts by collecting and disposing the hazardous waste in the scientific manner, this will reduce the future health hazard.
Fire and Safety	Accidents/disasters related to fire and safety	Since the TSDF site is already operational, this is an expansion of TSDF phase-III Disaster management plan (DMP) is in place A well-laid fire fighting system and fire extinguishers are already installed as per fire safety norms Regular fire safety training will be conducted. Road/Fire	Complied. Since the TSDF site is already operational, this is an expansion of TSDF phase-III Disaster management plan (DMP) is in place A well-laid fire fighting system and fire extinguishers are already installed as per fire safety norms Regular fire safety training will be conducted.

Health and Safety	Injury	<p>Since the TSDf site is already operational, this is an expansion of TSDf phase III; Pre Placement and periodical medical examination of the TSDf site workers Use of personal protective equipment BEIL shall continue the health monitoring program for the employees. It should focus especially on workers who are handling the hazardous waste</p>	<p>Complied. Since the TSDf site is already operational, this is an expansion of TSDf phase III; Pre Placement and periodical medical examination of the TSDf site workers Use of personal protective equipment BEIL shall continue the health monitoring program for the employees. It should focus especially on workers who are handling the hazardous waste</p>
Impact on Agriculture and Livestock	No Impact	<p>This is an expansion of TSDf phase-III, area between phase I and Phase II portion of land for setting up of secured Landfill. The area is a barren land without significant vegetation. Hence no impact on the agriculture is envisaged.</p>	<p>Complied. This is an expansion of TSDf phase-III, area between phase I and Phase II portion of land for setting up of secured Landfill. The area is a barren land without significant vegetation. Hence no impact on the agriculture is envisaged.</p>
Storm Water	-	<p>BEIL is providing coverage system with storm water collection and drainage for the utilized area as per the CPCB guidelines. The first coverage system has been provided in the year 2001. Since the top coverage system is provided with proper liner system including HDPE liner, the rainwater is taken care of properly. The rainwater is going through the drainage system without any contamination The rainwater harvesting system is provided based on the technology given by the Center for Science & Environment, New Delhi. Schematic diagram of rainwater harvesting system is given in figure</p>	<p>Complied.</p>

Green Belt		Adequate green belt will be provided by BEIL around the existing site. Area which has been brought under green belt is to the tune of 41,00 sq. m. Green belt will be properly maintained resulting in formation of a thick canopy of trees around the project site.	Complied. Green belt is developed to a tune of 40,500 sq. mt with thick canopy trees around the project site and 2440 sq. mt. in middle area to mitigate the impacts on the overall air quality at the site.
Operation, Maintenance and Closure of the Facility	Contamination of Environment	The site will be operated, maintained and closure of the facility will be done as per approved plan by SPCB and in accordance with guidelines published by CPCB	Complied. The site is being operated, maintained and closure of the facility will be done as per approved plan by SPCB and in accordance with guidelines published by CPCB
Post Closure Phase	Ambient air Quality	Monitoring of ambient air quality for various parameters	Complied. Monitoring of ambient air quality for various parameters is being done.
	Emission from landfill vents	Monitoring of vents for HCs, VOCs, monthly	Complied. Monitoring of vents for HCs, VOCs is being done.
	Leachate Generation	Sampling and analysis of leachate for various parameters, monthly Treatment of generated leachate in Multiple Effect Evaporator	Complied. Sampling and analysis of leachate for various parameters is being done. Treatment of generated leachate is done in Multiple Effect Evaporator or sent to ETL.
	Ground water Monitoring	Monitoring of Ground Water	Complied. Monitoring of Ground Water on regular basis is being conducted.
	Soil contamination	Monitoring of soil samples	Complied. Monitoring of soil samples on regular basis is being conducted.
	Stability of the landfill	Regular inspection and maintenance of the coverage system	Complied. Regular inspection and maintenance of the coverage system is being done.



o/c

BEIL INFRASTRUCTURE LIMITED
(formerly known as Bharuch Enviro Infrastructure Limited)

Ref: BEIL/ES/2018-19

Date: 29.06.2019

PCB ID # 14983

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

16/7/19
Gujarat Pollution Control Board
Sector No. 10 A,
Gandhinagar - 382 010

Dear Sir,

Sub: - Environmental Statement for the year 2018- 2019

We are forwarding herewith Environmental Statement for our TSDF Facility (Common Secured Landfill Facility & Common Incinerator Facility) situated at BEIL INFRASTRUCTURE LIMITED, Plot No. 9701-9716, G.I.D.C. Estate, Ankleshwar - 393 002, Dist. Bharuch, for the year 2018-19

We are receiving waste from member industries through online manifest system only. We are also submitting quarterly protocol to CPCB & MoEF office New Delhi, GPCB office Gandhinagar and Ankleshwar.

BEIL Infrastructure Limited has got CCA for landfill site phase III & put the site in operation from May 2016. BEIL Infrastructure Limited has also got CCA to send high calorific value hazardous waste for co-processing to valid authorized cement industry.

We got CCA renewal vide order no. AWH-89137 on date 02.11.2017 included Incineration facility with heat recovery system. CC&A is valid up to 31.07.2022.

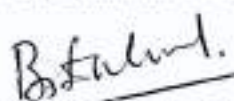
We are having various infrastructure facilities like MoEF / NABL accredited laboratory, stabilization system, waste blending facilities etc.

We hope that the above is in order.

Kindly acknowledge receipt.

Thanking you.

Yours faithfully,
For, Bharuch Enviro Infrastructure Ltd


Mr. B. D. Dalwadi
(Chief Executive Officer)

Encl : a/a
CC : The Regional Officer
Gujarat Pollution Control Board
Ankleshwar

RECEIVED
Gujarat Pollution Control Board
RO Ankleshwar
15-7-19



BEIL-PH-III/MoEF/03

Date: 19.12.2014

To;
 Ministry of Environment, Forest and Climate Change
 Indira Paryavaran Bhawan
 Jal Block, 2nd Floor.
 Jor Bagh Road; Aliganj, New Delhi-110003

Recd. on 19.12.14
 Received by Mr. [Signature]
 Ministry of Environment, Forest and Climate Change
 Indira Paryavaran Bhawan
 Jal Block, 2nd Floor, Jor Bagh Road, Aliganj, New Delhi-110003

Subject: Submission of Compliance status of EC for expansion of TSDF and common incinerator facility

Ref: MoEF, RO-Bhopal, letter No. 5-28/2008(ENV)/356 dated 19.11.2014 regarding certification of compliance

R/Sir,

Kindly refer letter No. 5-28/2008(ENV)/356, dated 19.11.2014. We are submitting herewith our comments (explanation regarding Compliance to EC conditions which are mentioned as not complied and partially complied.

Conditions	Compliance status as per MOEF Letter No. 5-28/2008(ENV)/356, dated 19.11.2014	BEIL Comments / Explanation
A. Specific Condition		
5. All the conditions stipulated in the letter of Gujarat PCB vide their letter dated 22.05.2007 should be strictly implemented along with hazardous (Management and Handling) Rules 2003	Partially Complied 1) No consistency in submission of half yearly report along with compliance status	1) We have obtained EC in March, 2008. We have set up second incinerator in 2012. As the project was not implemented, we have not submitted report earlier. We are regularly submitting half yearly compliance report from January, 2012. The first half yearly report was submitted for July to Dec, 2011. Copies of acknowledgements are attached as Annexure:1

CIN No.: U45300GJ1887PLC032696

Works Office : Plot No. 9701-18 GIDC Estate, Post Box No. 82, Ankleshwar 393 002, Dist. : Bharuch (Gujarat)

Phone: (02848) 253136, 225228 - Fax : (02848) 222649 - E-mail : panjwani@uniphos.com

Ragd. Office : Plot No. 117-118, GIDC Estate, Ankleshwar 393 002, Dist: Bharuch. (Gujarat)

		application is attached as Annexure :2
7. A copy of the clearance letter shall be marked to the concerned panchayat/local NGO, if any, from whom any suggestion/representation has been received while processing the proposal	Partially Complied No documentary evidence was submitted	1) We have marked EC copy to concerned, local NGO's from whom suggestions representation have received during processing of the proposal. Copies of letters are attached as Annexure :6
9. The project proponent should advertise at least in two local newspapers widely circulated in the region around the project one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the Gujarat State Pollution Control Board and may also be seen at website of the ministry of environment & forests at http://www.envfor.nic.in	Partly Complied Only one copy of advertisement submitted	1) We have given advertisement in papers SANDESH dated 22.03.2008, THE INDIAN EXPRESS dated 22.03.2008 Copy advertisements are attached as Annexure: 7(a) and Annexure: 7(b)

		<p>loss as per the acceptance criteria for landfill. (Copy of comprehensive analysis report is attached as Annexure :4 (a))</p> <p>(Copy of analysis report is available in our Half yearly Environmental Audit (Jan- 2014 to June-2014) carried out by Schedule-1 Auditor is attached as Annexure:4(b))</p>
<p>11.</p> <p>Project proponent shall carry out periodical/groundwater/soil monitoring in and around the site to check the contamination including TCLP test for heavy metals</p>	<p>Partly Complied</p> <p>1) Water quality analytical reports of May 2012, November 2012 and May-2014 are showing higher concentration of Nickel and Chromium</p> <p>2) No consistency in submission of half yearly report along with compliance status</p>	<p>1) We have checked the analytical reports of May 2012, November 2012 and May-2014. The limit of in Chromium is 0.05 mg/L. & For Nickel we could not find any specific limit. Our results during the period are found within permissible limit. Copy of the analytical reports are attached as Annexure :5</p> <p>2) We have obtained EC in March,2008. We have set up second incinerator in 2012. As the project was not implemented, we have not submitted report earlier. We are regularly submitting half yearly compliance report from January, 2012. The first half yearly report was submitted for July to Dec,2011. Copies of acknowledgements are attached as Annexure:1</p>
<p>13</p> <p>Green belt development to a tune of 41,000 sq mts with thick canopy trees around the project site should be taken up to mitigate the impacts on the overall air quality at the site</p>	<p>Partly Complied</p> <p>1) 12,285 saplings have been grown covering an area of 50,000 Sq. Meters. Includes part of greenbelt and plantation over capped cells.</p>	<p>1) We have developed greenbelt in total area of 50,000 Sq. Meters. Approx 12485 Nos. of Plantation done. Development of greenbelt is a continuous process as long as site is operational.</p>

As per the END NOTE maximum conditions are complied and we are given details regarding specific point No. 6 and 7.

Pt No. 6: We have successfully uploaded our Compliance report on our website at http://www.tatvaglobal.com/about_tatva.php

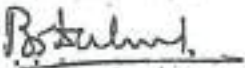
Copy of the Website page is attached as *Annexure: 9*

Pt No. 7: Minutes of Public hearing conducted, are attached as *Annexure: 10* for your ready reference.

We hope that the above is in order. We humbly request you to make correction in the above certificate

Thanking You

Yours faithfully,
For, Bharuch Enviro Infrastructure Ltd.


B. D. Dalwadi
Chief Executive Officer

C.C to

Dr. A. Mehrotra , Director(S)
Ministry of Environment and Forests
Regional Office , Western Region,
Kendriya Paryavaran Bhawan
Link Road No.3
E-5 , RavishankarNagar
Bhopal- 462016

Annexure: 8 (b)



श्री ३१११ एम्स बैंक ऑफ़ बरोडा

BARODA ANNEXURE 172

Date: 22/04/2011

M/s. Anandee Exports Infrastr. Corp. Ltd.
 Plot No. 177 G/DG
 Anandnagar, 393002

Dear Sir,

Re: Sanction of various credit facility

We refer to your request for review with increase sanction of various credit facility Rs. 31.31 Crore as per detail given in copy given hereunder and are pleased to inform that we have considered your request favourably and Reviewed with increase sanction of various credit facility for a period of 12 months on 22/04/2011 (subject to compliance of all the terms and conditions and securities in the enclosed ANNEXURE 8 (b) copy 1) for

review with increase sanction the following (in Crores):

S. No.	Nature of facilities	Existing	Proposed
1	Working Capital	0.00	0.00
2	Term Loan / Capital Expenditure	3.50	3.17
3	Term Loan / Capital Expenditure	2.39	6.00
4	Demand Loan Against Inventory	2.00	14.14
	Total Fund Based	5.89	13.31
	Non Fund Based		
	Letter of Credit (LC) Facility	0.00	0.00
	Trade Non Fund Based	0.00	0.00
	Total Term Loan	5.89	13.31

and we are pleased to inform you that we have reviewed your request and we are pleased to sanction the credit facilities as per the details given above and the terms and conditions of the facilities.

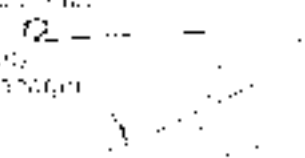
The bank reserves the right to discontinue the facilities and to withdraw the credit facilities at any time if the borrower fails to comply with the terms and conditions of the facilities.

The above facilities are subject to the borrower's compliance with the terms and conditions of the facilities and the bank's approval of the facilities. The bank reserves the right to discontinue the facilities and to withdraw the credit facilities at any time if the borrower fails to comply with the terms and conditions of the facilities.

The above facilities are subject to the borrower's compliance with the terms and conditions of the facilities and the bank's approval of the facilities. The bank reserves the right to discontinue the facilities and to withdraw the credit facilities at any time if the borrower fails to comply with the terms and conditions of the facilities.

Yours faithfully,

For Bank of Baroda,


 Mr. R. S. Singh
 Chief Manager

- a) At each 30th of September, the borrower shall pay to the lender out of any and all of the bank's funds available for the purpose the sum of Rs. 10000/-
- b) The borrower is to ensure that the entire amount payable here as scheduled. In case of total default, the lender's matter is to be referred to the appropriate authority for the required measures.

a) Nature of Facility : Demand Loan (Against Government Subsidy)

	Existing	Proposed
Amount	Rs. 200000000	Rs. 140000000
Purpose	To fill the Gap of Subsidy (equity) to be provided by Govt. for the Construction and Purchase of New & second hand Motor Vehicle expenditure.	
Interest Rate	14%	14%
Period	24 Months	24 Months
Security	Movable and Immovable property owned by the borrower and a PPF letter.	

Nature of Facility	Performance, Index of Third Party
Amount	Rs. 100000000
Period	24 Months
Security	Performance Guarantee, Advice payment from the Govt. of capital subsidy, guarantee to be provided to the borrower by 100% Govt. of India.
Other Conditions	Interest @ 14% per annum for the period of 24 months. The borrower shall be required to pay the interest on the loan as and when due.

Handwritten signature and date.

8. The Borrower is to pay up front fee, processing charges, stamp charges, the inspection charges, non-mortgage charges, stamp charges, inspection charges as applicable at the sanctioned rate as stated in the Bank form time to time.
9. The proper books of accounts, stock register and records of machinery to be maintained as per the Bank's requirements and to be made available to the Bank's representative during inspection.
10. The secured assets charged to the Bank are to be inspected on a monthly / quarterly / half yearly intervals, as per Bank's guidelines. Inspection charges for the verification of stocks / machinery / securities are to be borne by the Company.
11. The Bank will have the right to examine the books of account and to conduct inspection or valuation of assets of the Company, which are charged to the Bank from time to time by Bank's office / technical experts / external agencies / firms / management consultants / or valuers. The repetition of such charges so incurred will be borne by the Company.
12. Bank's name are to be displayed prominently at the place of office, on hypocausted machineries and also at the place of stockpile by other charged goods.
13. All money advanced to be advanced by the Bank will be subject to the terms and conditions set forth in the sanction letter. The Borrower shall not attempt to cash the advance, to all or a part thereof to be drawn by the Borrower, without the Bank's approval or has reasons to believe that the said advance is to be used for any other purpose. The Bank shall have the right to withdraw the advance if the same is not used for the purpose without satisfying the conditions of the sanction letter.
14. The Company shall maintain a separate ledger account for the following:
 - (a) Public liability insurance, fire, theft, burglary, etc.
 - (b) Motor vehicle insurance, fire, theft, burglary, etc.
 - (c) Fire, theft, burglary, etc. insurance for the stockpile.
 - (d) Fire, theft, burglary, etc. insurance for the machinery.
 - (e) Fire, theft, burglary, etc. insurance for the stockpile.
 - (f) Fire, theft, burglary, etc. insurance for the machinery.
 The insurance policy shall be provided to the Bank.
15. Valuation Reports in respect of the secured assets to be submitted to the Bank charged to the Bank and to be made available to the Bank's approved Architect/Engineer/ Valuer once in every 12 months. In every 12 months, the assets should be valued by the Bank's approved Architect/Engineer/ Valuer or other professional and all the insurance policy should be provided to the Bank.
16. The Company shall maintain a separate ledger account for the following:
 - (a) Public liability insurance, fire, theft, burglary, etc.
 - (b) Motor vehicle insurance, fire, theft, burglary, etc.
 - (c) Fire, theft, burglary, etc. insurance for the stockpile.
 - (d) Fire, theft, burglary, etc. insurance for the machinery.
 - (e) Fire, theft, burglary, etc. insurance for the stockpile.
 - (f) Fire, theft, burglary, etc. insurance for the machinery.
17. The facilities provided in a period of 12 months shall be subject to satisfactory conditions and performance of the Borrower. The Borrower shall submit a report on the progress and financial performance of the Company to the Bank every 12 months. The report shall be submitted to the Bank every 12 months. The report shall be submitted to the Bank every 12 months.
18. The Company shall provide a good management of the Company and to be maintained as per the Bank's requirements and to be made available to the Bank's representative during inspection.



29. Can you be sure that the value of $\frac{dy}{dx}$ at any point (x, y) on the curve is the same as the slope of the tangent line to the curve at that point? Why or why not? (The demand curve on the graph is a straight line.)

30. Use the data in the table to find $\frac{dy}{dx}$ from the data of velocity.





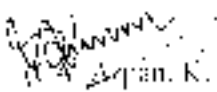
CERTIFICATE

We have verified the relevant records and project report as shown to us by Bhavnagar Environ Infrastructure Ltd. having registered office at Plot No. 9701, GIDC, Ankleshwar, Dist. Bhavnagar, Gujarat and based on that we hereby certify that the projected source of fund towards expenditure proposed to be incurred to complete the expansion of existing landfill and 2nd Common Incinerator plant at GIDC, Ankleshwar was as under:

Sr. No.	Particulars	Amount (Rs. in Lacs)
1.	Own Fund (Internal Accruals)	110.75
2.	Subsidy (State and Central Government)	10.00
3.	Bank Loan	10.00
	Total	130.75

This certificate is issued at the request of the concerned S.O. in the context of the Environment and Forests (MOEF), Regional Office, Bhavnagar.

For, Surti & Talati
 Chartered Accountants
 FRN - 141997-W


 Arjun K. Surti
 Partner
 Membership No. 127136
 Ankleshwar, dated 18th December 2014

ABOUT

About tatva

Tatva is one of India's largest and most diversified provider of waste management services, committed to the growing challenge of protecting our environment. Tatva provides comprehensive management solutions for cities, corporates, public places, industrial estates, commercial, industrial, and residential customers across the country.



During our corporate evolution, we have added over a dozen new services to our Tatva range of services. Industry leaders in waste recycling & disposal, water and wastewater treatment, storm water management, and air quality management. Our business model is based on a pay-per-use model.



Tatva's range of services are provided to a wide range of customers, commercial and municipal. The services include waste management, air quality management, water and wastewater treatment, storm water management, and air quality management.



Our services are provided to a wide range of customers, commercial and municipal. The services include waste management, air quality management, water and wastewater treatment, storm water management, and air quality management.

Environmental Compliance

Sample copy is available on request. Contact: info@tatva.com | Tel: 020-26111111

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Tatva Logo

100% Green Energy. 100% Pure.



Knowledge

Group Companies

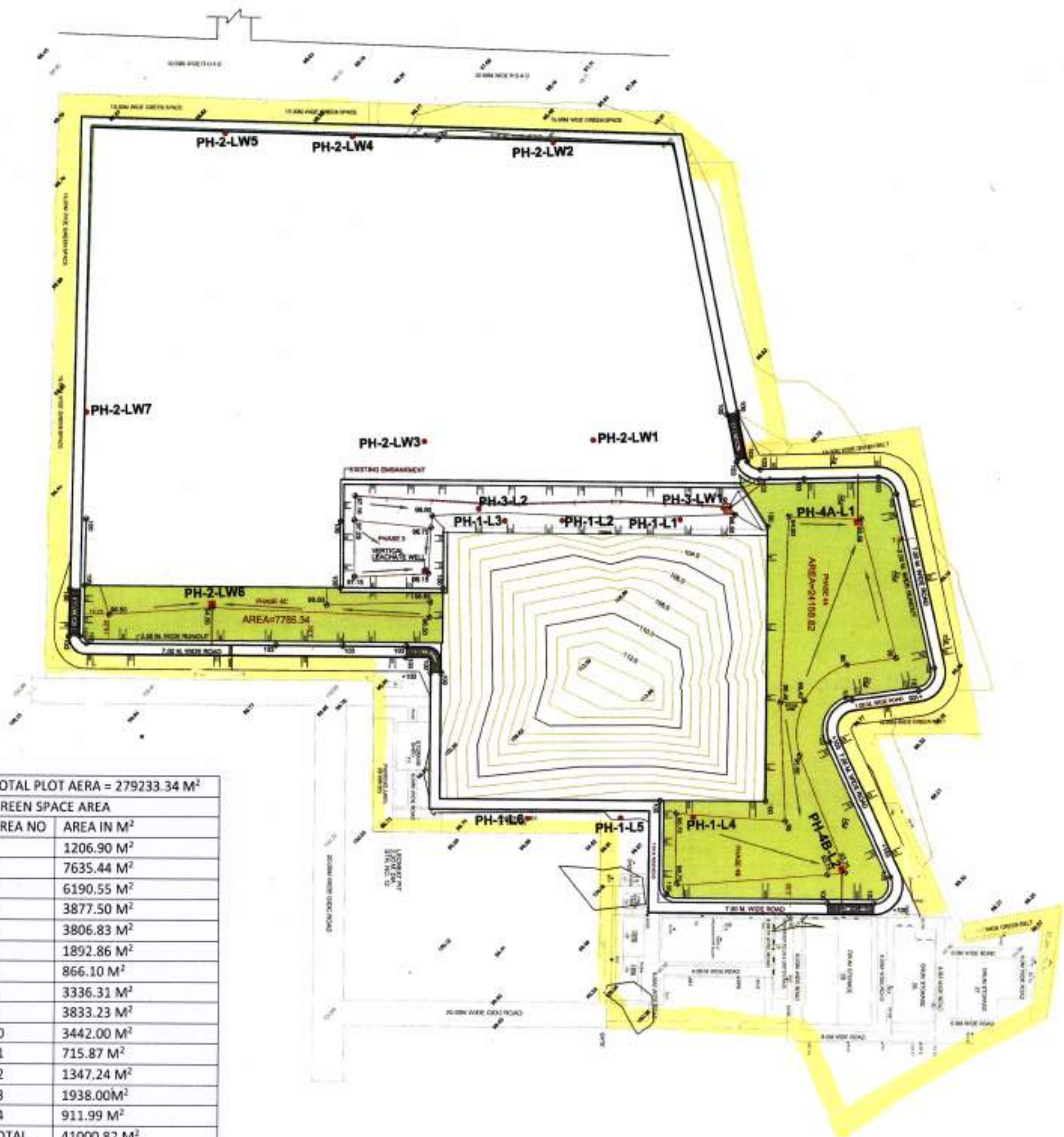
100% Green Energy. 100% Pure. Tatva Group of Companies provides a range of services to its customers.

Services

Our Services

100% Green Energy. 100% Pure. Tatva Group of Companies provides a range of services to its customers.

100%



LEGEND

97.11	EXISTING GROUND LEVELS
98.0	EXISTING GROUND CONTOURS
110.0	PROPOSED FINAL CONTOURS - PHASE 2

BASE AREA OF PHASE-4
 PHASE-4 A/B = 24,158.82 m²
 PHASE-4 C = 7,785.34 m²
31,944.16 m²

TOTAL PLOT AREA = 279233.34 M ²	
GREEN SPACE AREA	
AREA NO	AREA IN M ²
1	1206.90 M ²
2	7635.44 M ²
3	6190.55 M ²
4	3877.50 M ²
5	3806.83 M ²
6	1892.86 M ²
7	866.10 M ²
8	3336.31 M ²
9	3833.23 M ²
10	3442.00 M ²
11	715.87 M ²
12	1347.24 M ²
13	1938.00 M ²
14	911.99 M ²
TOTAL	41000.82 M ²

PROJECT
ANKLESHWAR HAZARDOUS WASTE FACILITY - PHASE 4 CONSTRUCTION



BHARUCH ENVIRO INFRASTRUCTURE LTD

CONSULTANT:
BEIL RESEARCH & CONSULTANCY PVT. LTD.
 9701-16, GIDC, ANKLESHWAR 393 002,
 DIS. BHARUCH (GUJARAT), INDIA
 TEL: (02646) - 253135, 225228, FAX: (02646) 222849

SPECIALIST CONSULTANT
NICK CAWTHORNE & ASSOCIATES

APPROVED BY
INDIAN INSTITUTE OF TECHNOLOGY, NEW DELHI
 Dr. Manoj Datta
 Professor

NAME OF DRAWING
PROPOSED BASE AREA OF PHASE-4
 Civil Engineering Department
 Indian Institute of Technology Delhi
 New Delhi - 110016

DRAWING NO.	009	REV	0
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SCALE	1:2700 @ A3	DATE	28.03.2019
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Ref.:BEIL/ANK/MoEF/2017

Date: 12.08.2017
PCB ID: 14983

To,
Mr. B. B. Barman, Scientist F
Ministry of Environment, Forest & Climate Change
Western Region Office,
Kendriya Paryavaran Bhavan,
Link Road No.3, E-5 Ravishankar Nagar
Bhopal-462016

Sub: Environmental Clearance received for Proposed Enhancement of Capacity change in configuration of Incinerator Plant at BEIL, Ankleshwar unit.
Ref: Environmental Clearance F. No. 10-10/2014-IA-III dated 1st August, 2017.

Dear Sir,

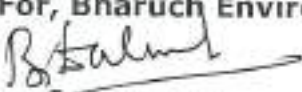
With Reference to the aforesaid Environmental Clearance F. No. 10-10/2014-IA-III dated 1st August, 2017, which we have received on 08-August-2017 for enhancement of capacity change in configuration of the incinerator installed at Common Hazardous Waste Treatment, Storage and Disposal Facilities (TSDF) at BEIL, Ankleshwar unit.

As mentioned in the EC condition No. 6, it has to be published in newspaper within 7 days from the date of receipt of the clearance letter in at least two local newspapers. We would like to inform that we have published in English (Times of India) on 11th Aug, 2017 and a vernacular language, Gujarati (SANDESH & Divya Bhaskar) Newspapers on 10th Aug, 2017.

The copies of the stated three newspapers are attached herewith for your reference and record.

Thanking you,

Yours Faithfully,
For, Bharuch Enviro Infrastructure Ltd.


B. D. Dalwadi
Chief Executive Officer

C.C: (1) Member Secretary
Gujarat Pollution Control Board
Paryavaran Bhavan, Sector-10/A, Gandhinagar-382010
(2) Regional Officer
Gujarat Pollution Control Board
Ankleshwar

Received
Gujarat Pollution Control Board
RQ Ankleshwar
15/8/17

CIN No.: U45300GJ1997PLC032696

Works Office : Plot No. 9701-16 GIDC Estate, Post Box No. 82, Ankleshwar 393 002, Dist. : Bharuch (Gujarat)
Phones (02648) 253135, 225228 • Fax : (02646) 222849 • E-mail : panjwani@uniphos.com
Regd. Office : Plot No. 117-118, GIDC Estate, Ankleshwar 393 002, Dist.: Bharuch. (Gujarat)