

FORM –1 & 1 A

“PURANIK MEGATOWNS”

At

**Village Pimploli and Village Talwade at Tal. Karjat, Dist-
Raigad, State -Maharashtra**

By

M/S. PURANIK MEGATOWNS

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APPENDIX - I
(See paragraph - 6)
FORM 1

(I) Basic Information

Sr. No.	Item	Details																																													
1.	Name of the project/s	“Puranik Megatowns” at Neral																																													
2.	S. No. in the schedule	8 (b)																																													
3.	Proposed capacity/area/length/tonnage to be handled/command area/lease area/number of wells to be drilled	Total plot area: 5, 17,230.00 Sq. m. Built up area as per FSI: 4,53,759.07 Sq. m. Total Construction Built-up area: 5, 65,974.11 Sq. m. <table border="1"> <thead> <tr> <th>Phases</th><th>Building Details</th><th>Description</th></tr> </thead> <tbody> <tr> <td rowspan="3">Phase 1</td><td>Residential</td><td>56 Nos. of Building Ground + 4 Upper Floors Total Flats: 2011 nos. Shops: 53 nos.</td></tr> <tr> <td>Primary Health Care Centre</td><td>1 Building Ground + 1 Floor Beds: 10 nos.</td></tr> <tr> <td>Prayer Hall</td><td>--</td></tr> <tr> <td rowspan="5">Phase 2</td><td>Residential</td><td>48 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1680 nos.</td></tr> <tr> <td>School</td><td>1 Building Ground + 4 Upper Floors Classrooms: 96 nos.</td></tr> <tr> <td>Community Hall/Club House</td><td>--</td></tr> <tr> <td>Prayer Hall</td><td>--</td></tr> <tr> <td>Police chowky</td><td>--</td></tr> <tr> <td rowspan="2">Phase 3</td><td>Residential</td><td>30 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1064 nos. Shops: 27 nos.</td></tr> <tr> <td>Prayer Hall</td><td>--</td></tr> <tr> <td rowspan="4">Phase 4</td><td>Residential</td><td>36 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1260 nos. Shops: 16 nos.</td></tr> <tr> <td>Commercial Offices</td><td>1 Building : Ground + 2 Floors Area: 6240.00 sq. m.</td></tr> <tr> <td>Primary Health Care Centre</td><td>1 Building Ground + 1 Floor Beds: 10 nos.</td></tr> <tr> <td>Prayer Hall</td><td>--</td></tr> <tr> <td rowspan="2">Phase 5</td><td>Residential</td><td>39 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1232 nos.</td></tr> <tr> <td>Prayer Hall</td><td>--</td></tr> <tr> <td rowspan="2">Phase 6</td><td>Residential</td><td>37 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1456 nos. Shops: 54 nos.</td></tr> <tr> <td>Commercial Offices</td><td>1 Building</td></tr> </tbody> </table>	Phases	Building Details	Description	Phase 1	Residential	56 Nos. of Building Ground + 4 Upper Floors Total Flats: 2011 nos. Shops: 53 nos.	Primary Health Care Centre	1 Building Ground + 1 Floor Beds: 10 nos.	Prayer Hall	--	Phase 2	Residential	48 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1680 nos.	School	1 Building Ground + 4 Upper Floors Classrooms: 96 nos.	Community Hall/Club House	--	Prayer Hall	--	Police chowky	--	Phase 3	Residential	30 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1064 nos. Shops: 27 nos.	Prayer Hall	--	Phase 4	Residential	36 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1260 nos. Shops: 16 nos.	Commercial Offices	1 Building : Ground + 2 Floors Area: 6240.00 sq. m.	Primary Health Care Centre	1 Building Ground + 1 Floor Beds: 10 nos.	Prayer Hall	--	Phase 5	Residential	39 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1232 nos.	Prayer Hall	--	Phase 6	Residential	37 Nos. of Building Stilt + 7 Upper Floors Total Flats: 1456 nos. Shops: 54 nos.	Commercial Offices	1 Building
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				Ground + 2 Upper Floors Area: 8580.00 sq. m.
		Phase 7	Commercial Offices	1 Building Ground + 2 Upper Floors
4.	New/Expansion/Modernization	New		
5.	Existing Capacity/ Area etc.	Not applicable		
6.	Category of project i.e. 'A' or 'B'	(A)		
7.	Does it attract the general condition? If yes, please specify.	Not Applicable		
8.	Does it attract the specific condition? If yes, please specify.	Not Applicable		
9.	Location	Village Pimploli and Talwade, Neral		
	Plot/Survey/Khasra No.	Village Pimploli S. No. 1/1,1/2,1/3, 1/5b, 1/6, 42/4A, 43/1, 43/5, 44/2, 45/1, 45/4b, 45/5a, 45/6, 45/7, 45/8, 45/9, 56, 57, 60/2b, 60/5a, 60/5b, 60/7a, 60/8a, 60/8b, 62, 63/1a, 63/1b, 64/1, 64/2, 64/3, 64/4, 64/5, 64/8, 64/9, 60/7b part, 58, 60/6, 64/6, 64/10, 44/1, 45/4c, 45/5b, 64/7, Village Talwade, S.No. 17/10, 17/11a, 17/11b, 17/12, 17/13, 17/14, 17/15, and 19/7b		
	Villages	Pimploli and Talwade		
	Tehsil	Karjat		
	District	Raigad		
	State	Maharashtra		
10.	Nearest railway station Nearest airport	Neral Railway Station: 5.0 km (Road Distance) Chhatrapati Shivaji International Airport:87 km (Road Distance)		
11.	Nearest Town, city, District headquarters along with distance in kms.	Neral		
12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal address with telephone nos. to be given)	District Collector Raigad Standardized development control and promotion regulations for regional plans in Maharashtra. ('B' & 'C' class for Municipal Council)		
13.	Name of the applicant	M/s. Puranik Megatowns		
14.	Registered Address	Puranik One, Kanchan Pushpa, Ghodbunder Road, Kavesar, Thane (W) – 400 615		
15.	Address for correspondence	Puranik One, Kanchan Pushpa, Ghodbunder Road, Kavesar, Thane (W) – 400 615		
	Name	Mr. Shailesh Puranik		
	Designation (Owner/Partner/CEO)	Managing Director		
	Address	Puranik One, Kanchan Pushpa, Ghodbunder Road, Kavesar, Thane (W) – 400 615		
	Pin Code	400 615		
	E-mail	ameeta@puraniks.in		
	Telephone No.	91-22-25988888		
	Fax No.	--		
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a topo-sheet.	Not Applicable		
17.	Interlinked Projects	No		
18.	Whether separate application of interlinked project has been	Not Applicable		

	submitted?	
19.	If yes, date of submission	Not applicable
20.	If no, reason	Not applicable
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z Notification, 1991?	Not applicable Not applicable Not applicable
22.	Whether there is any Government Order/Policy relevant/ relating to the site?	LOI received from Town Planning and Valuation Department, Raigad – Alibaug is attached as Enclosure 1.
23.	Forest land involved (hectares)	Not applicable
24.	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Order /directions of the Court, if any and its relevance with the proposed project.	No

(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	Proposed site is an open land and shall be developed as Mixed Use Development. NA order received form District Collector Raigad office, Alibaug on dt. 17/12/2015. Copy is attached as Enclosure 2.
1.2	Clearance of existing land, vegetation and building?	No	--
1.3	Creation of new land uses?	No	--
1.4	Pre-construction investigation e.g. bore houses, soil testing?	Yes	Geotechnical Investigation has been carried out, it is referred as Enclosure 3.
1.5	Construction works?	Yes	Mixed Used Development
1.6	Demolition works?	No	--
1.7	Temporary sites used for construction works or housing of construction workers?	Yes	Provision of temporary hutments with facilities like drinking water, toilets etc.
1.8	Above ground building, structures or earthworks including linear	Yes	The excavated earth shall be reused on site only for levelling.

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	structures, cut and fill or excavations		Construction waste generated during construction activity shall be partly reused on site and partly shall be disposed to authorized landfill site with permission of local authority
1.9	Underground works including mining or Tunneling?	No	--
1.10	Reclamation works?	No	--
1.11	Dredging?	No	--
1.12	Offshore structures?	No	--
1.13	Production and manufacturing processes?	No	--
1.14	Facilities for storage of goods or materials?	Yes	Temporary storage facilities will be created to store the construction raw material.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	• Treatment of sewage by MBBR method followed by Phytotid technology • Provision of water holding pond having adequate space (8225 sq.mt.) for storage of excess treated sewage • Provision of adequate water purification system like aerators etc. to keep the optimum oxygen level and avoid breeding of the mosquitoes. • Stored excess treated sewage shall be used for watering of nearby reserved/protected forest. • Protected forests areas (Survey numbers 65, 70, 79) are at a distance of approximately 0, 750 m, 300 m respectively. Treated water will be used for watering forest land (2,72,700.00 sq.mt.) & for agriculture purpose. Pipeline will be laid till forest land from holding pond • Solid waste will be segregated into non biodegradable and biodegradable garbage • Biodegradable waste will be treated in biomethanation plant and the non-biodegradable waste will be segregated into recyclable & non recyclable. Recyclable waste shall be handed over to recyclers. and non recyclable waste will be handed over to local authority • Dried sludge from STP will be used as manure for gardening • E – Waste: Will be stored separately and disposed through authorized recyclers. • Bio-medical waste will be handled and disposed as per Bio-Medical Waste Management Rules, 2016.
1.16	Facilities for long term housing of operational workers?	No	--
1.17	New road, rail, or sea traffic during construction or operation?	No	--
1.18	New road, rail, air waterborne or	No	--

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	other transport infrastructure including new or altered routes and stations, ports, airports etc?		
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic Movements?	No	--
1.20	New or diverted transmission lines or pipelines?	Yes	Reliance Gas pipeline is passing from the plot. Reliance Gas Pipeline NOC is referred as Enclosure 4 .
1.21	Impoundment, damming, culver ting, realignment or other change o the hydrology of watercourses or aquifers?	No	--
1.22	Stream crossings?	No	--
1.23	Abstraction or transfers of water from ground or surface waters?	No	--
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	Yes	By considering the runoff before development and runoff after development there is some increment in runoff of storm water. Incremental Runoff = 6.09 m ³ /sec
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	Transport of construction materials. Precautions will be taken to reduce the impact of the vehicular movement by trying to avoid the vehicular trips during peak hours.
1.26	Long-term dismantling or decommissioning or restoration works?	No	--
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	--
1.28	Influx of people to an area in either temporarily or permanently?	Yes	There will be influx of ~ 51637 persons. (Including floating population)
1.29	Introduction of alien species?	No	--
1.30	Loss of native species or genetic diversity?	No	--
1.31	Any other actions?	No	--

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or ion short supply):

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	Yes	NA order received form District Collector Raigad office, Alibaug dt. 17/12/2015. Copy is attached as Enclosure 2.
2.2	Water (expected source & competing users) unit : KLD	Yes	During Construction Phase – • For Workers : From Tanker water of Potable quality: 23 KLD for each phase • For Construction: From Water Tankers: Depending upon

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data																																				
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2.3	Minerals (MT)	No	--																																				
2.4	Construction material – stone, aggregates, and / soil (expected source – MT)	Yes	Construction Materials Equipments and Machinery: - Fly Ash will be used in Concrete (12 - 15 %) - Pozzolana Cement containing up to 20% fly ash will be used for plaster, masonry, flooring. - BBC water proofing will be done with old bricks - Use of single glazed glass for windows - Use of china mosaic for roofing - Low VOC (volatile organic compound) paints will be used - Energy efficient materials and systems will be utilized <table><tr><th>No.</th><th>Equipment / Machinery</th><th>Quantity</th></tr><tr><td>1.</td><td>Excavator cum Loader</td><td>4</td></tr><tr><td>2.</td><td>JCB</td><td>4</td></tr><tr><td>3.</td><td>Breaker attached in Poclain</td><td>1</td></tr><tr><td>4.</td><td>Power roller</td><td>1</td></tr><tr><td>5.</td><td>Dumper/Tipper</td><td>10</td></tr><tr><td>6.</td><td>Concrete lifting pump</td><td>1</td></tr><tr><td>7.</td><td>Concrete mixer</td><td>40</td></tr><tr><td>8.</td><td>Welding machine</td><td>8</td></tr><tr><td>9.</td><td>Generator set (DG sets)</td><td>3</td></tr><tr><td>10.</td><td>Hoist</td><td>40</td></tr></table>	No.	Equipment / Machinery	Quantity	1.	Excavator cum Loader	4	2.	JCB	4	3.	Breaker attached in Poclain	1	4.	Power roller	1	5.	Dumper/Tipper	10	6.	Concrete lifting pump	1	7.	Concrete mixer	40	8.	Welding machine	8	9.	Generator set (DG sets)	3	10.	Hoist	40			
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2.5	Forests and timber (source – MT)	Yes	Timber will be required for doors. Timber will be sourced from local suppliers.																																				
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)		During Operational Phase: Source : MSEDCL (Maharashtra State Electricity Distribution Company Limited) <table><tr><th>Phases</th><th>Connected Load (KW)</th><th>Maximum Demand (KW)</th></tr><tr><td>Phase 1</td><td>5392</td><td>3595</td></tr><tr><td>Phase 2</td><td>8112</td><td>4742</td></tr><tr><td>Phase 3</td><td>4844</td><td>2770</td></tr><tr><td>Phase 4</td><td>6419</td><td>3727</td></tr><tr><td>Phase 5</td><td>6214</td><td>3166</td></tr><tr><td>Phase 6</td><td>7113</td><td>4506</td></tr></table>	Phases	Connected Load (KW)	Maximum Demand (KW)	Phase 1	5392	3595	Phase 2	8112	4742	Phase 3	4844	2770	Phase 4	6419	3727	Phase 5	6214	3166	Phase 6	7113	4506															
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			Phase 7	1760	1173
			Total Connected load	39.9 MW	
			Total Maximum demand	23.7 MW	
			D.G sets (For emergency back up during power failure)	For Phase 1: 3 DG sets of capacity 100 kVA For Phase 2: 4 DG sets of capacity 250 kVA For Phase 3: 3 DG sets of capacity 250 kVA For Phase 4: 4 DG sets of capacity 250 kVA For Phase 5: 4 DG sets of capacity 250 kVA For Phase 6: 4 DG sets of capacity 250 kVA For Phase 7: 1 DG set of capacity 200 kVA Total: 23 DG sets	
2.7	Any other natural resources(use appropriate standard units)	No	--		

3. Use, storage, transport, handling or production of substances or materials, which would be harmful to human health or the environment or raise concern about actual or perceived risks to human health.

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	--
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	--
3.3	Affect the welfare of people e.g. by changing living conditions?	No	--
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	--
3.5	Any other causes	No	--

4. Production of solid wastes during construction or operation or decommissioning (MT/month)

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	--
4.2	Municipal waste (domestic and or commercial wastes)	Yes	The total quantities of solid waste: 20388 Kg /day. (Biodegradable and Non biodegradable)

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
			• Biomedical waste: From Primary Health care ○ Non Infectious: 6.0 kg/day ○ Infectious: 1.13 kg/day ○ Hazardous: 0.38 kg/day • E – waste: 2770 kg/annum
4.3	Hazardous wastes (as per Hazardous waste Management Rules)	Yes	Waste oil generated from D.G. shall be stored at separate location duly marked and will be sold to the authorized recyclers.
4.4	Other industrial process wastes	No	--
4.5	Surplus product	No	--
4.6	Sewage sludge or other sludge from effluent treatment.	Yes	Dried sludge from STP will be used as manure for the plants within the premises.
4.7	Construction or demolition wastes.	Yes	The excavated earth shall be reused on site only for levelling. Construction waste generated during construction activity shall be partly reused on site and partly shall be disposed to authorized landfill site with permission of local authority
4.8	Redundant machinery or equipment.	No	--
4.9	Contaminated soils or other materials.	No	--
4.10	Agriculture wastes.	No	--
4.11	Other solid wastes.	No	--

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	D.G. Sets will be used during power failure.
5.2	Emissions from production processes	No	--
5.3	Emissions from materials handling including storage or transport	Yes	Fugitive dust emission due to handling and loading-unloading activities is envisaged during construction. Frequent water sprinkling will be done to minimize the fugitive emissions.
5.4	Emissions from construction activities including plant and equipment	Yes / Marginal	The project may cause rise in dust levels during construction phase. Precautions would be taken to reduce dust generation during construction phase: • Use of water for dust suppression and polymeric dust suppression system (wherever possible) • Use of covering sheets shall be done for trucks carrying construction material to prevent air borne dust • All material storages shall be adequately covered to

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
			avoid dust / particulate emissions • Use of CPCB approved DG sets • Proper maintenance of DG sets • Adequate parking provision and proper traffic management for smooth traffic flow • Vehicles having valid pollution under control certificate shall be allowed to ply on site • Open burning of solid waste shall be prohibited • Regular health checkup of the workers • Use of the standard personal protective equipments like masks, goggles, etc.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	Dust generation will be controlled as described above. For odour control: Proper ventilation shall be provided around STP.
5.6	Emissions from incineration of waste	No	--
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	--
5.8	Emissions from any other sources	No	--

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers.	Yes but negligible	Noise levels may increase due to operation of machinery as well as transportation vehicles. This may cause nuisance to the nearby area. Following precautions shall be taken to control noise pollution: • During construction activities the noise will be monitored to ascertain the noise levels are within limit • All precautions for noise abatement shall be taken during the construction activities • It is recommended that Contractors to use well maintained & relatively newer equipments to mitigate noise generation in initial stages when excavation & earth removal is carried out • During high noise construction activity there will be provision of ear plugs for construction labour and staff • No noise polluting work in night shifts • Provision of barricades along the periphery of the site • Acoustic enclosure for DG sets

			It is recommended that Hydraulic pumps and compressors should be covered with Acoustical Enclosures with 20 dB Transmission Loss Rating in order to reduce the noise
6.2	From industrial or similar processes.	No	--
6.3	From construction or demolition.	Yes	Noise Pollution Control : - During construction activities the noise will be monitoring to ascertain the noise levels are within limit - All precautions for noise abatement shall be taken during the construction activities - It is recommended that Contractors to use well maintained & relatively newer equipments to mitigate noise generation in initial stages when excavation & earth removal is carried out - During high noise construction activity there will be provision of ear plugs for construction labour and staff - No noise polluting work in night shifts - Provision of barricades along the periphery of the site - Acoustic enclosure for DG sets - It is recommended that Hydraulic pumps and compressors should be covered with Acoustical Enclosures with 20 dB Transmission Loss Rating in order to reduce the noise
6.4	From blasting or piling.	No	--
6.5	From construction or operational traffic.	Yes	During Construction phase: Transport of materials for construction work. Precautions will be taken to reduce the impact of the vehicular movement such as vehicular trips will not be at peak traffic hours. Operation Phase : - Provision of proper parking arrangement, traffic management plan for smooth flow of a vehicle helps to abate noise pollution due to vehicular traffic - Plantation of around 6475 nos. of trees of various varieties shall be planted on ground that shall act as natural noise buffer and also will enhance air quality.
6.6	From lighting or cooling systems.	No	--
6.7	From any other sources.	No	During power failure to mitigate the noise of D.G. sets while in operation D.G. sets will be enclosed in acoustic enclosures.

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials.	No	--
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge).	No	• Treated sewage shall be reused for gardening (148 KLD) and flushing (2113 KLD) requirement • For fulfilling the construction water requirement of initial phase (Phase -1) proponents are planning to use water tankers. • After commissioning STPs of Phase -1, the excess treated sewage from Phase-1 shall be used for the construction activity of the subsequent phases. This will help to reduce the fresh water demand for construction activity and further reduce the quantity of excess treated sewage. • Provision of pond of adequate capacity for storage of excess treated sewage with water purification systems like aerators to keep the optimum oxygen level and avoid breeding of the mosquitoes is planned. • The Stored excess treated sewage shall be used for watering of nearby reserved/protected Forest
7.3	By deposition of pollutants emitted to air into the land or into water.	No	Dust will be generated during construction phase from earthworks and movement of vehicles. Appropriate fugitive dust control measures at exposed areas and dust covers for trucks will be provided to minimize any impacts. Stack height of DG sets shall be as per CPCB guidelines.
7.4	From any other sources.	No	--
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	--

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

Sr. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	No	--
8.2	From any other causes.	No	--
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides,	--	Detailed Disaster Management plan is referred as Enclosure -5

(III) Environmental Sensitivity

Sr. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) from Proposed project location boundary		
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Project site is located at Pimploli and Talwade village which is not listed under ESA as per list of villages prepared by High Level Working Group (HL WG) given in Annexure A of the directions by Ministry of Environment and Forests (MoEF) dt.13.11.2013. But in the study area few villages of Karjat Taluka, Khalapur Taluka and Panvel Taluka are listed under Eco Sensitive Areas (ESA) of Western Ghat. The details are given as follows:			
		Taluka – Karjat			
		Asal	5.00		
		Ashane	9.00		
		Bedisgaon	9.00		
		Bekare	5.00		
		Bhutiwali	6.00		
		Bhadval	5.00		
		Damat	4.00		
		Halivali	11.00		
		Kirwali	10.00		
		Koshane	8.00		
		Mamdapur	4.00		
		Mangaon Tarf Waredi	4.00		
		Matheran	7.00		
		Neral	4.00		
		Pali Tarf Waredi	8.00		
		Wanjale	11.00		
		Taluka – Khalapur			
		Borgaon Bk.	14.00		
		Borgaon Kh.	14.00		
		Sondewadi	11.00		
		Warose Tarf Wankhal	13.00		
		Wad Vihar	13.00		
		Wawarle	13.00		
		Taluka – Panvel			
		Deharang	13.00		
		Dhodani	10.00		
		Gadhe	14.00		
		Maldunge	10.00		
		Tamsai	13.00		
				Project site is located at Pimploli and Talwade village which is not listed under ESA of Matheran as per notification dt. 04.02.2003 and amended notification dt. 16.04.2004. Neral [Urbanizable Zone-1 (U-1 zone)] of Raigad District is exempted as per modification to the boundary of the ESZ i.e. in the 200m buffer zone of Matheran Eco-Sensitive Zone. But details of	

		nearest boundary of Eco sensitive zone of Matheran from project boundary is given as follows:	
		Nearest boundary of Eco-sensitive Zone of Matheran	Neral: 4.00
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Ulhas River Matheran Hills Poshir River	Approx 1.00 Km Approx 7.00 Km Approx 5.00 Km
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	Matheran Hills Nakhind Peb Fort (Wikatgad)	Approx 7.00 Km Approx 9.00 Km Approx 7.00 Km
4	Inland ,coastal, marine or underground waters	Bhivpuri Reservoir Karav Lake Avsare Lake Lake at Warai tarf Waredi Dhom Lake Jeejamata Bhosale Talav Saguna Baug Salokh Reservoir Kadav Lake Poshir Lake	Approx 6.00 Km Approx 8.00 Km Approx 2.00 Km Approx 4.00 Km Approx 6.00 Km Approx 4.00 Km Approx 3.00 Km Approx 7.00 Km Approx 8.00 Km Approx 6.00 Km
5	State, National boundaries	None	--
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	None	--
7	Defence installations	No	--
8	Densely populated or built-up area	Neral	
9	Areas occupied by sensitive man-made land uses (<i>hospitals, schools, places of worship, community facilities</i>)	Neral	
10	Areas containing important, high quality or scarce resources (<i>Ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals</i>)	No	--
11	Areas already subjected to pollution or environmental damage. (<i>those where existing legal environmental standards are exceeded</i>)	No	--
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (<i>Earthquakes, subsidence, landslides, erosion,</i>	No	--

	<i>flooding or extreme or adverse climatic conditions)</i>		
--	--	--	--

(IV) Proposed Terms of Reference for EIA studies:

The EIA Report addresses the environmental impacts of the project and proposes the mitigation measures for the same. The Report is prepared, based on the standard Terms of Reference (TOR) notified by Ministry of Environment & Forests (MOEF) on dt. 10.04.2015 and the project specific TOR received from SEAC - 2, Maharashtra in July 2015. Copy of ToR is attached in EIA report.

“I hereby give undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any to the project will be revoked at our risk and cost.”

Date: 18.09.2017

Place: Mumbai

For Puranik Megatowns

A handwritten signature in blue ink, appearing to read 'Ashutosh', with a horizontal line underneath.

(Name of applicant)

AUTHORIZED SIGNATORY

FORM – 1A

“PURANIK MEGATOWNS”

At

**Village Pimploli and Village Talwade at Tal. Karjat, Dist-
Raigad, State -Maharashtra**

By

M/S. PURANIK MEGATOWNS

APPENDIX II
(See paragraph 6)
FORM-1 A (only for construction projects listed under item 8 of the Schedule)

CHECK LIST OF ENVIRONMENTAL IMPACTS

(Project proponents are required to provide full information and wherever necessary attach explanatory notes with the Form and submit along with proposed environmental management plan & monitoring programme)

1.	LAND ENVIRONMENT (Attach panoramic view of the project site and the vicinity)												
1.1.	Will the existing land use get significantly altered from the project that is not consistent with the surroundings? (Proposed land use must conform to the approved Master Plan / Development Plan of the area. Change of land use if any and the statutory approval from the competent authority be submitted). Attach Maps of (i) site location, (ii) surrounding features of the proposed site (within 500 meters) and (iii) The site (indicating levels & contours) to appropriate scales. If not available attach only conceptual plans. Site Location: The project site under reference is located on land bearing village Pimploli & village Talwade, at Tal. Karjat, Dist- Raigad, State –Maharashtra. Pimploli and village Talwade are not listed under ESA as per list of villages prepared by High Level Working Group (HL WG) given in Annexure A of the directions by Ministry of Environment and Forests (MoEF) dt.13.11.2013. Project site is located at Pimploli and Talwade village which is not listed under ESA of Matheran as per notification dt. 04.02.2003 and amended notification dt. 16.04.2004. Neral [Urbanizable Zone-1 (U-1 zone)] of Raigad District is exempted as per modification to the boundary of the ESZ i.e. in the 200m buffer zone of Matheran Eco-Sensitive Zone. The project is Township Project located at plot bearing at village Pimploli and Talwade, Taluka Karjat, District Raigad to be developed by M/s. Puranik Megatown. Land Use Pattern: The site is surrounded by Open land from all the sides. The permission for use of the project site for non agriculture purpose has been obtained from Dist. Collector, Raigad. The permission is enclosed herewith as Enclosure -2. Site levels: Project site is gradually sloping from North- East to South -West direction with a level difference of 33 m. over a length of 1450 m. Agriculture / Livestock: There is agricultural activity in the vicinity of the proposed area. The following details are enclosed: <table border="1" style="width: 100%;"> <tr> <td style="width: 5%; text-align: center;">1.</td><td>Site Location Map</td><td style="text-align: center;">Enclosure 6</td></tr> <tr> <td style="text-align: center;">2.</td><td>Surrounding features of the proposed site</td><td style="text-align: center;">Enclosure 7</td></tr> <tr> <td style="text-align: center;">3.</td><td>Contour map</td><td style="text-align: center;">Enclosure 8</td></tr> <tr> <td style="text-align: center;">4.</td><td>Layout Plan</td><td style="text-align: center;">Enclosure 9</td></tr> </table>	1.	Site Location Map	Enclosure 6	2.	Surrounding features of the proposed site	Enclosure 7	3.	Contour map	Enclosure 8	4.	Layout Plan	Enclosure 9
1.	Site Location Map	Enclosure 6											
2.	Surrounding features of the proposed site	Enclosure 7											
3.	Contour map	Enclosure 8											
4.	Layout Plan	Enclosure 9											
1.2.	List out all the major project requirements in terms of the land area, built up area, water consumption, power requirement, connectivity, community facilities, parking needs etc. A. Connectivity and community facilities The project is Mixed Use Development and is located at village Pimploli and village Talwade. Site is												

abutting to 9.00 m. wide existing road and also 20.00 m. wide Lodhachiwadi Sugway Pimploli. The nearest railway station is Neral on main line of central railway of Mumbai. The project is Township development so the Basic amenities like shopping, schools hospitals etc. are being provided in the project site.

B. Building Details:

Table No.1: Building details

Phases	Building Details
Phase 1	56 nos. of Residential Buildings: Ground + 4 Upper Floors Total Flats: 2011 nos. Shops: 53 nos.
	Primary Health Care Centre : Ground + 1 Floor Beds: 10 nos.
	Prayer Hall
Phase 2	48 nos. of Residential Buildings: Stilt + 7 Upper Floors Total Flats: 1680 nos.
	School: Ground + 4 Upper Floors Classrooms: 96 nos.
	Community Hall/Club House
	Prayer Hall
	Police chowky
Phase 3	30 nos. of Residential Buildings: Stilt + 7 Upper Floors Total Flats: 1064 nos. Shops: 27 nos.
	Prayer Hall
Phase 4	36 nos. of Residential Buildings: Stilt + 7 Upper Floors Total Flats: 1260 nos. Shops: 16 nos.
	Commercial Offices: Ground + 2 Floors
	Primary Health Care Centre : Ground + 1Floor Beds: 10 nos.
	Prayer Hall
Phase 5	39 nos. of Residential Buildings: Stilt + 7 Upper Floors Total Flats: 1232 nos.
	Prayer Hall
Phase 6	37 nos. of Residential Buildings: Stilt + 7 Upper Floors Total Flats: 1456 nos. Shops: 54 nos.
	Commercial Offices:

	Ground + 2 Upper Floors
Phase 7	Commercial Offices: Ground + 2 Upper Floors

C. Area Statement:

Table No. 2: Area Statement

No.	Description	Area (Sq. Mt.)							
		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Total
1.	Total Plot Area	5,17,230.00							
2.	Deductions	50,233.30							
3.	Balance Plot Area	4,67,006.70							
4.	Ground Coverage Area	16159.08	15523.36	8040.64	11465.47	10785.73	12675.59	3610	78259.87
5.	R.G. Area	14625.00	13765.00	20813.00	--	--	--	--	49203.00
6.	Built – up Area as per FSI	75934.08	83936.16	56848.42	72293.29	75500.11	78417.01	10830.00	453759.07
7.	Total Construction Built – up Area (FSI + NON FSI)	79042.54	122170.84	71650.96	90542.85	94506.91	97230.01	10830.00	565974.11

D. Parking Statement:

Table No. 3: Parking Statement

Phases	Parking required as per Local Norms(nos.)			Parking Provision (nos.)		
	4W	2W	Cycle	4W	2W	Cycle
Phase 1	18	2573	2573	20	2575	2575
Phase 2	262	1972	1972	265	1975	1975
Phase 3	150	1249	1249	150	1250	1250
Phase 4	251	1647	1647	251	1650	1650
Phase 5	298	1337	1337	300	1340	1340
Phase 6	169	2062	2062	170	2065	2065
Phase 7	108	325	325	108	325	325
Total	1256	11165	11165	1264	11180	11180

E. Occupancy load:

Table No.4: Occupancy Load

Sr. No.	Building	No. of flats/ Built Up Area (Sq.m.) / No. of Shops/ Beds / Classrooms	Criteria for Occupancy	Occupancy (Nos.)
I	Phase 1			
1.	Residential	2011 Flats	5 persons /Flat	10055
2.	Shops	53 Nos.	3 persons /Shops	159
3.	Primary Health care			
a.	Patients	10 Beds	1 Person/ Bed	10
b.	Staff	10	1 Person / 2 Beds	5
c.	Visitors	10	10% of Patient	1
Total occupancy for Phase 1				10230
II	Phase 2			
1.	Residential	1680 Flats	5 Persons /Flat	8400
2.	School			
a.	Students	96 classrooms	40 Students/ Classroom	3840
b.	Staff	3840	10% of Students	384
3.	Community Hall			
a.	Visitors	887.24 sq.m.	1 Person/1.5 sq. m.	591
4.	Police Chowky			
a.	Staff	36 sq. m.	1 Person/10 sq.m.	4
Total occupancy for Phase 2				13219
III	Phase 3			
1.	Residential	1064 Flats	5 Persons/ Flat	5320
2.	Shops	27 Nos.	3 Persons /Shop	81
Total occupancy for Phase 3				5401
IV	Phase 4			
1.	Residential	1260 Flats	5 Persons/ Flat	6300
2.	Shops	16 Nos.	3 Persons /Shop	48
3.	Commercial			
a.	Staff	6240 sq.m.	1 Person/10 sq.m.	624
b.	Visitors	624	10% of Staff	62
4.	Primary Health care			
a.	Patients	10 Beds	1 Person/ Bed	10
b.	Staff	10	1 Person / 2 Beds	5
c.	Visitors	10	10% of Patient	1
Total occupancy for Phase 4				7050
V	Phase 5			
1.	Residential	1232 Flats	5 Persons/ Flat	6160
Total occupancy for Phase 5				6160
VI	Phase 6			
1.	Residential	1456 Flats	5 Persons/ Flat	7280

2.	Shops	54 Nos.	3 Persons /Shop	162
3.	Commercial			
a.	Staff	8580 Sq.m.	1 Person/10 sq.m.	858
b.	Visitors	858	10% of Staff	86
Total occupancy for Phase 6				8386
VII	Phase 7			
1.	Commercial			
a.	Staff	10830 Sq.m.	1 Person/10 sq.m.	1083
b.	Visitors	1083	10% of Staff	108
Total occupancy for Phase 7				1191
Total occupancy for project (Phase I to VII)				51637

Reference: National Building Code (NBC) -2016

F. Water requirement for the project:

1. During Construction Phase –

- For workers : 23 KLD for each phase , Source : Tanker water of potable quality
- For construction of each phase (depending on construction activity): Source Water tankers/treated water available for recycling of respective phases

Table No. 5: Water requirement for the project during construction phase

Details	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Total
Domestic	9	9	9	9	9	9	9	63
Flushing	14	14	14	14	14	14	14	98
Construction	216	117	78	98	103	107	15	734

2. During Operational Phase –

Table No.6: Water requirement (Domestic and Flushing requirement)

Sr. No.	Components	Occupancy	Criteria for water requirement (lit/person/day)		Domestic & flushing Requirement (KLD)		
			Domestic	Flushing	Domestic	Flushing	Total
I	Phase 1						
1.	Residential	10055	90	45	905	452	1357
2.	Shops	159	25	20	4	3	7
3.	Primary Health Care						
a.	Patients	10	230	110	2	1	3
b.	Staff	5					
c.	Visitors	1					
	Total for Phase 1	10230			911	456	1367
II	Phase 2						
1.	Residential	8400	90	45	756	378	1134
2.	School						
a.	Students	3840	25	20	96	77	173
b.	Staff	384	25	20	10	8	18
3.	Community Hall						
a.	Visitors	591	5	10	3	6	9

4.	Police Chowky						
a.	Staff	4	25	20	0.1	0.1	0.2
	Total for Phase 2	13219			865	469	1334
III	Phase 3						
1.	Residential	5320	90	45	479	239	718
2.	Shops	81	25	20	2	2	4
	Total for Phase 3	5401			481	241	722
IV	Phase 4						
1.	Residential	6300	90	45	567	284	851
2.	Shops	48	25	20	1	1	2
3.	Commercial						
a.	Staff	624	25	20	16	12	28
b.	Visitors	62	5	10	0.3	0.6	0.9
4.	Primary Health Care						
a.	Patients	10	230	110	2	1	3
b.	Staff	5					
c.	Visitors	1					
	Total for Phase 4	7050			586	298	884
V	Phase 5						
1.	Residential	6160	90	45	554	277	831
	Total for Phase 5	6160			554	277	831
VI	Phase 6						
1.	Residential	7280	90	45	655	328	983
2.	Shops	162	25	20	4	3	7
3.	Commercial						
a.	Staff	858	25	20	21	17	38
b.	Visitors	86	5	10	0.4	1	1
	Total for Phase 6	8386			680	349	1029
VII	Phase 7						
1.	Commercial						
a.	Staff	1083	25	20	27	22	49
b.	Visitors	108	5	10	1	1	2
	Total for Phase 7	1191			28	23	51
	Grand Total	51637	--		4105	2113	6218

Reference: Criteria for water requirement: National Building Code (NBC) -2016

The amount of water demand is calculated based on the occupancy of the building and the per capita consumption as given by Manual on norms and standards for EC of large construction projects-MoEF: i.e. Total quantity of water used (LPCD) = Occupancy x Quantity (LPCD).

Then Total quantity of water used for Domestic and Flushing in KLD is calculated.

➤ **Total water requirement for the project and source:**

Table No. 7: Total water requirement for the project and source

Sr. No.	Description	Quantity of water required in KLD								Source of water supply																																				
I.	Construction phase																																													
1.	Workers	23								Tanker water of potable quality																																				
2.	Construction	<table><tr><th>Details</th><th>Phase 1</th><th>Phase 2</th><th>Phase 3</th><th>Phase 4</th><th>Phase 5</th><th>Phase 6</th><th>Phase 7</th><th>Total</th></tr><tr><td>Domestic</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>63</td></tr><tr><td>Flushing</td><td>14</td><td>14</td><td>14</td><td>14</td><td>14</td><td>14</td><td>14</td><td>98</td></tr><tr><td>Construction</td><td>216</td><td>117</td><td>78</td><td>98</td><td>103</td><td>107</td><td>15</td><td>734</td></tr></table>								Details	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Total	Domestic	9	9	9	9	9	9	9	63	Flushing	14	14	14	14	14	14	14	98	Construction	216	117	78	98	103	107	15	734	Tanker water/treated water available for recycling of respective phases
Details	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Total																																						
Domestic	9	9	9	9	9	9	9	63																																						
Flushing	14	14	14	14	14	14	14	98																																						
Construction	216	117	78	98	103	107	15	734																																						
II	Operation phase																																													
Sr. No.	Description	Quantity of water required (KLD)							Source of water supply																																					
		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7																																						
1.	Domestic	911	865	481	586	554	680	28	Irrigation Dept., Karjat Div. / RWH																																					
2.	Flushing	456	469	241	298	277	349	23	Treated sewage from STP																																					
3.	Gardening	148							Treated sewage from STP																																					
4.	Swimming Pool make up	7							Tanker water of potable quality																																					

*Water requirement for gardening purpose is considered as 3 litres per square meter of gardening area on ground

Total quantity of water used (LPCD) = Gardening Area (Sq. Mt.) x Quantity (Lit /Sq. Mt.).
Then total quantity of water for gardening in KLD is calculated.

G. Sewage Generation:

Table No.8: Sewage Generation

Sr. No	Description	Quantity of Sewage generated (KLD)	Treatment/ Disposal
1.	Construction Phase	22	Disposal of sewage generated to septic tanks and soak pits
2.	Operation phase	5397	•Treated sewage shall be reused for gardening (148 KLD) and flushing (2113 KLD) requirement •For fulfilling the construction water requirement of initial phase (Phase-1) proponents are planning to use water tankers. •After commissioning STPs of Phase -1, the

				excess treated sewage from Phase-1 shall be used for the construction activity of the subsequent phases. This will help to reduce the fresh water demand for construction activity and further reduce the quantity of excess treated sewage. • Provision of pond of adequate capacity for storage of excess treated sewage with water purification systems like aerators to keep the optimum oxygen level and avoid breeding of the mosquitoes is planned. • The Stored excess treated sewage shall be used for watering of nearby reserved/protected Forest
--	--	--	--	--

Reference: Manual on norms and standards for EC of large construction projects MoEF

H. Solid Wastes:

1) During Construction Phase:

Table No.9: Solid Wastes During Construction Phase

No. of workers	Criteria for Solid Waste Generation			Solid Waste Generation Kg /day		
	Total (Kg/Person/day)	Non-Biodegradable	Biodegradable	Non-Biodegradable	Biodegradable	Total
300	0.10	60%	40%	18	12	30

Segregation and disposal of the solid waste generation due to workers dwelling on the site suitably.

2) During Operation Phase:

Table No.10: Solid Wastes During Operation Phase

Sr. No	Components	Occupancy	Criteria for Solid Waste Generation			Solid Waste Generation (Kg/day)		
			Total Kg/Person /day	Non-Biodegradable	Biodegradable	Non-Biodegradable	Biodegradable	Total
I	Phase 1							
1.	Residential	10055	0.45	60%	40%	2715	1810	4525
2.	Shops	159	0.1	60%	40%	10	6	16
3.	Primary Health Care							
a.	Patients	10				--		
b.	Staff	5	0.1	60%	40%	0.3	0.2	0.5
c.	Visitors	1	0.1	60%	40%	0.06	0.04	0.1
	Total for Phase 1	10230				2725	1816	4541
II	Phase 2							
1.	Residential	8400	0.45	60%	40%	2268	1512	3780
2.	School							
a.	Students	3840	0.1	60%	40%	230	154	384
b.	Staff	384	0.1	60%	40%	23	15	38
3.	Community Hall							
a.	Visitors	591	0.1	60%	40%	35	24	59

4.	Police Chowky							
a.	Staff	4	0.1	60%	40%	0.2	0.1	0.4
	Total for Phase 2	13219				2556	1705	4261
III	Phase 3							
1.	Residential	5320	0.45	60%	40%	1436	958	2394
2.	Shops	81	0.1	60%	40%	5	3	8
	Total for Phase 3	5401				1441	961	2402
IV	Phase 4							
1.	Residential	6300	0.45	60%	40%	1701	1134	2835
2.	Shops	48	0.1	60%	40%	3	2	5
3.	Commercial							
a.	Staff	624	0.1	60%	40%	37	25	62
b.	Visitors	62	0.1	60%	40%	4	2	6
3.	Primary Health Care							
a.	Patients	10	--					
b.	Staff	5	0.1	60%	40%	0.3	0.2	0.5
c.	Visitors	1	0.1	60%	40%	0.06	0.04	0.1
	Total for Phase 4	7050				1746	1163	2909
V	Phase 5							
1.	Residential	6160	0.45	60%	40%	1663	1109	2772
	Total for Phase 5	6160				1663	1109	2772
VI	Phase 6							
1.	Residential	7280	0.45	60%	40%	1966	1310	3276
2.	Shops	162	0.1	60%	40%	10	6	16
3.	Commercial							
a.	Staff	858	0.1	60%	40%	51	34	85
b.	Visitors	86	0.1	60%	40%	5	3	8
	Total for Phase 6	8386				2032	1353	3385
VII	Phase 7							
1.	Commercial							
a.	Staff	1083	0.1	60%	40%	65	43	108
b.	Visitors	108	0.1	60%	40%	6	4	10
	Total for Phase 7	1191				71	47	118
	Grand Total	51637	--			12234	8154	20388

Considerations for solid waste generation:

- **For Residential** : 40% wet garbage and 60% dry garbage out of total 0.45 Kg/person /day
- **For Shops/Staff/Visitors/students/Primary health care:** 40% wet garbage and 60% dry garbage out of total 0.1 Kg/person /day

The total quantities of solid waste that will be generated from the project will be 20388 kg/day. Out of which 12234 kg/day will be non-biodegradable and 8154 kg/day will be biodegradable.

The project proponents have proposed provision for segregation and collection of biodegradable & non-biodegradable waste within the premises. Biodegradable waste will be treated in bio-methanation plant and the non-biodegradable waste will be segregated into recyclable & non recyclable. Slurry and other dry organic waste generated from Biogas plant shall be reused for landscaping and remaining shall be disposed through an authorized agency. Recyclable waste shall be handed over to recyclers and non recyclable waste will be handed over to local authority

Table 11: Primary Health Care - Bio Medical Waste

Occupancy	Criteria for Bio Medical Waste Generation (Kg/day/bed)				Total (Kg/ day)			
	Total	Non Infectious	Infectious	Hazardous	Non Infectious	Infectious	Hazardous	Total
20	0.375 Kg/day/bed	80%	15%	5%	6.0	1.13	0.38	7.5

Estimated generation of total waste @ 1.5 kg/bed

Estimated generation of bio-medical waste @ 25% of the total waste generated

Reference: Manual on Solid Waste Management (CPHEEO) – Chapter 7, Page 148, Waste Management System- Biomedical waste

(Web link : http://moud.gov.in/sites/upload_files/moud/files/pdf/uidssmt/swm/chap7.pdf)

Power requirement:

During Construction Phase -

Source: MSEDCL (Maharashtra State Electricity Distribution Company Limited)

D.G. Sets: As per requirement

During Operational Phase -

Source: MSEDCL (Maharashtra State Electricity Distribution Company Limited)

Table No. 12: Power Requirement

Connected load	39.9 MW
Maximum demand	23.7 MW
D.G sets (For emergency back up during power failure)	For Phase 1: 3 DG sets of capacity 100 kVA For Phase 2: 4 DG sets of capacity 250 kVA For Phase 3: 3 DG sets of capacity 100 kVA For Phase 4: 4 DG sets of capacity 250 kVA For Phase 5: 4 DG sets of capacity 250 kVA For Phase 6: 4 DG sets of capacity 250 kVA For Phase 7: 1 DG set of capacity 200 kVA Total: 23 DG sets

1.3. What are the likely impacts of the proposed activity on the existing facilities adjacent to the proposed site? (Such as open spaces, community facilities, details of the existing land use, disturbance to the local ecology).

There shall have some impacts on water, air environment, power requirement but it shall be mitigated by providing proper pollution control facilities. STP shall be provided for treatment of recycling of sewage there by reducing fresh water demand. Also for water conservation, rain water harvesting shall be done. Power consumption shall be reduced by using energy saving practices. Impact on air quality shall be reduced by plantation of trees on green cover area. This project will generate employment and there by

	shall have positive impact on socio economy. Detailed impact assessment and mitigation measures for each attribute are given in Chapter-4 of the EIA report.																																				
1.4.	Will there be any significant land disturbance resulting in erosion, subsidence & instability? (Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc. may be given).																																				
	Raigad district sits on a seismically active zone. The area is classified as a Seismic Zone III region.																																				
1.5.	Will the proposal involve alteration of natural drainage systems? (Give details on a contour map showing the natural drainage near the proposed project site)																																				
	No. Assessment of storm water disposal system of proposed project and adjoining areas has been carried out. Catchment based approach has been considered in designing rather than isolated individual plot/area based approach. Coefficient of runoff has been considered as 1.0 for computation of runoff by rational method for impervious and pervious areas respectively. Drain sizes has been worked considering the rainfall intensity of 100 mm/h. Carrying capacity of an existing road culverts in which project storm water to be disposed has been computed and found to be adequate to carry the runoff contributing from the plot. The detailed report of Storm water disposal system of proposed project and adjoining areas is given in EIA report. Storm water drainage layout is attached as Enclosure .																																				
1.6.	What are the quantities of earthwork involved in the construction activity-cutting, filling, reclamation etc. (Give details of the quantities of earthwork involved, transport of fill materials from outside the site etc.)																																				
	The excavated earth shall be reused on site only for levelling. Construction waste generated during construction activity shall be partly reused on site and partly shall be disposed to authorized landfill site with permission of local authority																																				
1.7.	Give details regarding water supply, waste handling etc during the construction period.																																				
	Water Requirement during Construction Phase: • For workers : 23 KLD for each phase, Source : Tanker water of potable quality • For construction of each phase (depending on construction activity):Source Water tankers <table border="1"> <thead> <tr> <th>Details</th><th>Phase 1</th><th>Phase 2</th><th>Phase 3</th><th>Phase 4</th><th>Phase 5</th><th>Phase 6</th><th>Phase 7</th><th>Total</th></tr> </thead> <tbody> <tr> <td>Domestic</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td><td>63</td></tr> <tr> <td>Flushing</td><td>14</td><td>14</td><td>14</td><td>14</td><td>14</td><td>14</td><td>14</td><td>98</td></tr> <tr> <td>Construction</td><td>216</td><td>117</td><td>78</td><td>98</td><td>103</td><td>107</td><td>15</td><td>734</td></tr> </tbody> </table> Sewage generated approximately 22 KLD: Treatment in sewage treatment plant.	Details	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Total	Domestic	9	9	9	9	9	9	9	63	Flushing	14	14	14	14	14	14	14	98	Construction	216	117	78	98	103	107	15	734
Details	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Total																													
Domestic	9	9	9	9	9	9	9	63																													
Flushing	14	14	14	14	14	14	14	98																													
Construction	216	117	78	98	103	107	15	734																													
1.8.	Will the low lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified from the proposed activity)																																				
	No																																				
1.9.	Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labour and the means of disposal)																																				
	The excavated earth shall be reused on site only for levelling. Construction waste generated during construction activity shall be partly reused on site and partly shall be disposed to authorized landfill site with permission of local authority Biodegradable garbage = 12 kg/day Non-biodegradable garbage = 18 kg/day Total = 30 kg/day Proper segregation of the wastes shall be done and shall be handed over to Grampanchayat Pimploli.																																				
2.	WATER ENVIRONMENT																																				
2.1.	Give the total quantity of water requirement for the proposed project with the breakup of requirements for various uses. How will the water requirement be met? State the sources &																																				

quantities and furnish a water balance statement.

Water Requirement & Source:

During Construction Phase –

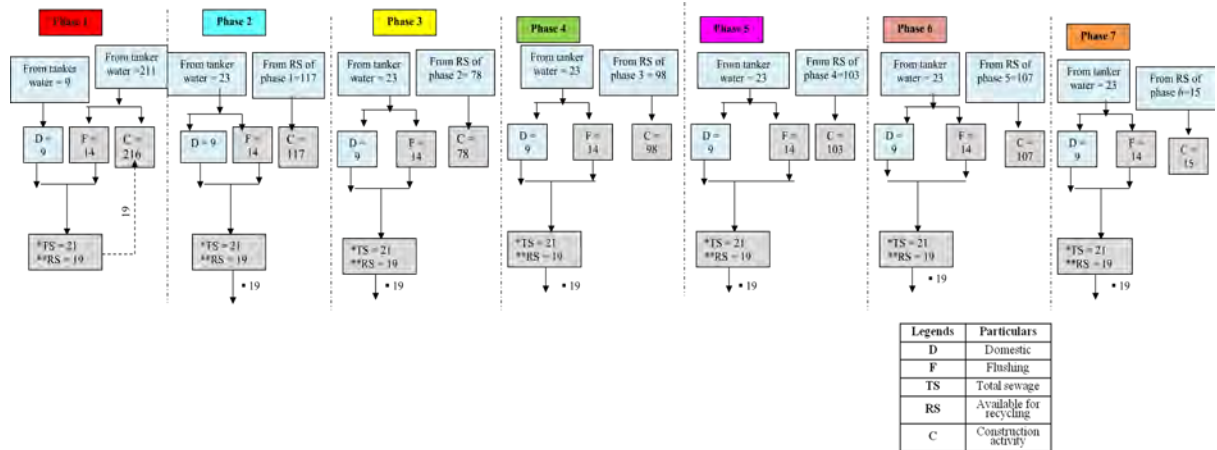
- For workers : 23 KLD for each phase, Source : Tanker water of potable quality
- For construction of each phase (depending on construction activity): Source Water tankers/treated sewage available for recycling of respective phases

Table No. 13 : Total water requirement for the project during construction phase

Details	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Total
Domestic	9	9	9	9	9	9	9	63
Flushing	14	14	14	14	14	14	14	98
Construction	216	117	78	98	103	107	15	734

WATER BALANCE PER DAY BASIS DURING CONSTRUCTION PHASE

All Quantities are in KLD



Treated sewage: 19 KLD (from each phase) shall be used for water sprinkling, road washing and watering nursery plants

During Operational Phase –

Table No.14: Total Water Requirement & Source

Sr. No.	Description	Quantity of water required in KLD							Source of water supply
		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	
1.	Domestic	911	865	481	586	554	680	28	Irrigation Dept., Karjat Div. / RWH
2.	Flushing	456	469	241	298	277	349	23	Treated sewage from STP
3.	Gardening	148							Treated sewage from STP
4.	Swimming Pool make up	7							Tanker water of potable quality

Reference: This is in agreement National Building Code (NBC) -2016

Considerations for water requirement:

Residential:

90 Liter/Person/day for domestic and 45 Liter/Person/day for flushing

Commercial, School, police station & Shops:

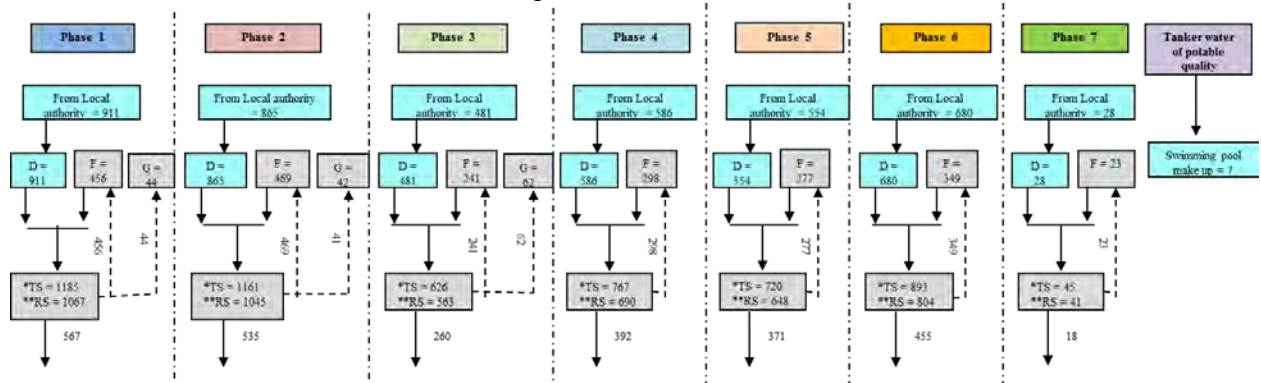
25 Liter/Person/day for domestic and 20 Liter/Person/day for flushing

Visitors & community hall:

5 Liter/Person/day for domestic and 10 Liter/Person/day for flushing

WATER BALANCE PER DAY BASIS DURING NON MONSOON

All Quantities are in KLD



Legends	Particulars
D	Domestic
F	Flushing
G	Gardening
* TS	Total sewage
** RS	Available for recycling

Please Note:

*Considered 80 % sewage of total of domestic and 100 % of flushing requirement hence total sewage generation is 5397 KLD

**Considered 10 % less availability of sewage for recycling considering losses of sewage in evaporation and sludge formation hence sewage available for recycling is 4858 KLD

- For fulfilling the construction water requirement of initial phase (Phase -1) proponents are planning to use water tankers.
- Reuse of excess treated sewage for construction activity of subsequent phases: After commissioning STPs of Phase -1, the excess treated sewage from Phase-1 shall be used for the construction activity of the subsequent phases. This will help to reduce the fresh water demand for construction activity and further reduce the quantity of excess treated sewage.
- Provision of pond of adequate capacity for storage of excess treated sewage with water purification systems like aerators to keep the optimum oxygen level and avoid breeding of the mosquitoes is planned.
- The stored excess treated sewage (2598 KLD): Shall be used for construction activity and watering forest land

Total water requirement = 6373 KLD

Recycling of treated Sewage (2261 KLD) shall be done for gardening (148 KLD) and flushing (2113 KLD)

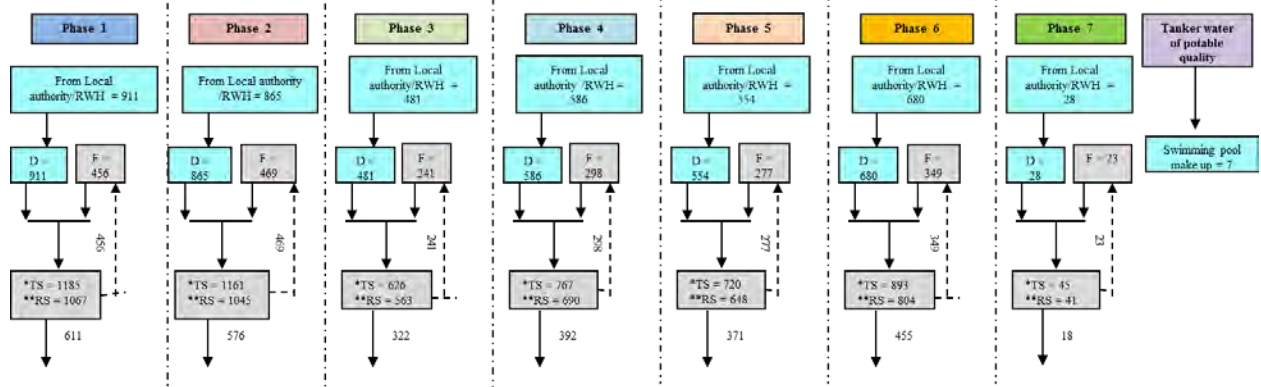
Hence Net water requirement: 6373 – 2261 = 4112 KLD [i.e. For Domestic purpose = 4105 KLD]

(Source: Irrigation Department, Karjat Division) + For Swimming pool = 7 KLD (From: Tanker Water of Potable Quality)]

Reduction in Net water demand = 35%

WATER BALANCE PER DAY BASIS DURING MONSOON

All Quantities are in KLD



Legends	Particulars
D	Domestic
F	Flushing
* TS	Total sewage
** RS	Available for recycling

Please Note:

*Considered 80 % sewage of total of domestic and 100 % of flushing requirement hence total sewage generation is 5397 KLD

**Considered 10 % less availability of sewage for recycling considering losses of sewage in evaporation and sludge formation hence sewage available for recycling is 4858 KLD

- For fulfilling the construction water requirement of initial phase (Phase -1) proponents are planning to use water tankers.
- Reuse of excess treated sewage for construction activity of subsequent phases : After commissioning STPs of Phase -1, the excess treated sewage from Phase-1 shall be used for the construction activity of the subsequent phases. This will help to reduce the fresh water demand for construction activity and further reduce the quantity of excess treated sewage.
- Provision of pond of adequate capacity for storage of excess treated sewage with water purification systems like aerators to keep the optimum oxygen level and avoid breeding of the mosquitoes is planned.
- The stored excess treated sewage (2745 KLD): Shall used for watering forest land, agriculture purpose and gardening of plot RG during non rainy days

Daily rain water availability is calculated as per Av. 20 mm rainfall/day considering only 50 rainy days (half of season)

Total water requirement = 6225 KLD

Recycling of treated Sewage (2113 KLD) shall be done for flushing (2113 KLD)

From RWH Tanks = 703 KLD (For domestic purpose)

Hence Net water requirement: 6225 – 2113 - 703 = 3409 KLD [i.e. For Domestic purpose = 3402 KLD (Source: Irrigation Department, Karjat Division) + For Swimming pool = 7 KLD (From: Tanker Water of Potable Quality)]

	Reduction in Net water demand = 45%																																
2.2.	What is the capacity (dependable flow or yield) of the proposed source of Water?																																
	Domestic Water Supply from Irrigation Department Karjat Division																																
2.3.	What is the quality of water required, in case, the supply is not from a municipal source? (Provide physical, chemical, biological characteristics with class of water quality)																																
	Drinking water shall be obtained from Irrigation Department Karjat Division. This water shall be treated in Water Treatment Plant (WTP) to achieve IS standards. This WTP will be placed on land owned by Project Proponents nearby to Ulhas river.																																
2.4.	How much of the water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage)																																
	• For fulfilling water requirement for secondary uses during operation phase : Treated sewage shall be reused for gardening (148 KLD) and flushing (2113 KLD) requirement • For fulfilling the construction water requirement of initial phase (Phase -1) proponents are planning to use water tankers. • Reuse of excess treated sewage for construction activity of subsequent phases: After commissioning STPs of Phase -1, the excess treated sewage from Phase-1 shall be used for the construction activity of the subsequent phases. This will help to reduce the fresh water demand for construction activity and further reduce the quantity of excess treated sewage. • Provision of pond of adequate capacity for storage of excess treated sewage with water purification systems like aerators to keep the optimum oxygen level and avoid breeding of the mosquitoes is planned. • The Stored excess treated sewage shall be used for watering of nearby reserved/protected Forest • Protected forests areas (Survey numbers 65, 70, 79) are at a distance of approximately 0, 750 m, 300 m respectively. Treated water will be used for watering forest land (2,72,700.00 sq.mt.) & for agriculture purpose. Pipeline will be laid till forest land from holding pond																																
2.5.	Will there be diversion of water from other users? (Please assess the impacts of the project on other existing uses and quantities of consumption)																																
	No.																																
2.6.	What is the incremental pollution load from wastewater generated from the proposed activity? (Give details of the quantities and composition of wastewater generated from the proposed activity)																																
	Sewage generation will be 5397 KLD and will be treated in full-fledged Sewage Treatment Plants adequate capacity as follows: <table border="1"> <thead> <tr> <th>Phases</th><th>Sewage (KLD)</th><th>Total STP capacity (KL)</th><th>Number of STPs and capacity of each STP</th></tr> </thead> <tbody> <tr> <td>Phase 1</td><td>1185</td><td>1200</td><td>5 STPs of 150KL, 230KL, 470KL, 210KL and 140KL</td></tr> <tr> <td>Phase 2</td><td>1161</td><td>1170</td><td>5 STPs of 170KL, 280KL, 380KL, 190 KL and 150 KL</td></tr> <tr> <td>Phase 3</td><td>626</td><td>660</td><td>3 STPs of 310KL, 150KL and 200KL</td></tr> <tr> <td>Phase 4</td><td>767</td><td>770</td><td>2 STPs of 300KL and 470KL</td></tr> <tr> <td>Phase 5</td><td>720</td><td>730</td><td>3 STPs of 280KL, 220KL and 230KL</td></tr> <tr> <td>Phase 6</td><td>893</td><td>900</td><td>3 STPs of 400KL, 380KL and 120KL</td></tr> <tr> <td>Phase 7</td><td>45</td><td>50</td><td>1 STP of 50KL</td></tr> </tbody> </table>	Phases	Sewage (KLD)	Total STP capacity (KL)	Number of STPs and capacity of each STP	Phase 1	1185	1200	5 STPs of 150KL, 230KL, 470KL, 210KL and 140KL	Phase 2	1161	1170	5 STPs of 170KL, 280KL, 380KL, 190 KL and 150 KL	Phase 3	626	660	3 STPs of 310KL, 150KL and 200KL	Phase 4	767	770	2 STPs of 300KL and 470KL	Phase 5	720	730	3 STPs of 280KL, 220KL and 230KL	Phase 6	893	900	3 STPs of 400KL, 380KL and 120KL	Phase 7	45	50	1 STP of 50KL
Phases	Sewage (KLD)	Total STP capacity (KL)	Number of STPs and capacity of each STP																														
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Phase 7	45	50	1 STP of 50KL																														

UNTREATED AND TREATED SEWAGE QUALITY:				
Table No.15: Untreated & Treated Sewage Quality				
SR. NO.	DETAILS	VALUES		UNITS
		UNTREATED	TREATED	
1.	pH	7.0 – 8.0	7.0 – 7.5	--
2.	Total Suspended solids	250	≤ 1	mg/lit
3.	Chemical Oxygen Demand	400	≤ 30	mg/lit
4.	BOD,3days,27 ⁰ C	250	<5	mg/lit
5.	Oil & Grease	50	<5	mg/lit

2.7. Give details of the water requirements met from water harvesting? Furnish details of the facilities created.

Provision of Rain Water Harvesting system.

Phases	RWH tanks
Phase 1	5 RWH tanks of 80KL, 60KL, 145KL, 55KL and 140KL capacities
Phase 2	4 RWH tanks of 106KL, 232KL, 60KL and 70KL capacities
Phase 3	3 RWH tanks of 90KL, 100 KL and 100 KL capacities
Phase 4	2 RWH tanks of 170KL and 90KL capacities
Phase 5	3 RWH tanks of 65KL, 100KL and 80KL capacities
Phase 6	3 RWH tanks of 192KL, 100KL and 52KL capacities
Phase 7	1 RWH tank of 85KL capacity
Total	21 RWH tanks of 2172 KL capacity

Plan showing location of rain water harvesting tank is attached as Enclosure

2.8. What would be the impact of the land use changes occurring due to the proposed project on the runoff characteristics (quantitative as well as qualitative) of the area in the post construction phase on a long term basis? Would it aggravate the problems of flooding or water logging in any way?

Total Runoff from the project site: Prior to development = 6.095 m³/sec
Total Runoff from the project site: After development = 12.189 m³/sec
(Considering different coefficients for paved area, unpaved area and terrace)
Hence Incremental Run off = 12.189 – 6.095 = 6.094 m³/sec
Capacity of storm water drains is sufficient to take the runoff from the site.

Carrying capacity of Storm water Drainage:

Details	Capacity(m ³ /sec)
Carrying Capacity of Internal Storm water drains to cater runoff from plot	15.74
Carrying Capacity of all existing culverts located at different catchment	22.77

Precaution to avoid water logging on site:

- Minimizing the incremental runoff from the site with the help of 21rain water harvesting tanks of capacity 2172 KL
- Provision of internal Storm water drainage system with adequate capacity i.e.15.74 m³/sec
- Use of screens and silt traps to SWD
- These drains shall have silt and oil and grease traps to avoid pollution of water in drains outside the plot.
- Carrying capacity of external drain is sufficient to take the runoff and there will be no flooding on and around project site.

The detailed report of Storm water disposal system of proposed project and adjoining areas is given in

	EIA report.																																
2.9.	What are the impacts of the proposal on the ground water? (Will there be tapping of ground water; give the details of ground water table, recharging capacity, and approvals obtained from competent authority, if any)																																
	Ground water recharging is not proposed.																																
2.10.	What precautions/measures are taken to prevent the run-off from construction activities polluting land & aquifers? (Give details of quantities and the measures taken to avoid the adverse impacts).																																
	• Proper management of channelization of storm water • Designing storm water drainage with adequate capacity to cater the total runoff from site and outside catchment area and avoid flooding on site or surrounding • Proper maintenance of storm water drainage to avoid choking of drains and flooding on site • Surface rainwater to be passed through oil & grease trap & desilting chamber and then transferred to municipal storm water drain • Prompt completion of works relating to drainage and sediment control																																
2.11.	How is the storm water from within the site managed?(State the provisions made to avoid flooding of the area, details of the drainage facilities provided along with a site layout indication contour levels).																																
	Storm water drains will be constructed strictly in accordance to the governing authority regulations. Peak runoff after development = 12.189 m³/sec • Proper management of channelization of storm water • Designing storm water drainage with adequate capacity to cater the total runoff from site and outside catchment area and avoid flooding on site or surrounding • Proper maintenance of storm water drainage to avoid choking of drains and flooding on site • Surface rainwater to be passed through oil & grease trap & desilting chamber and then transferred to municipal storm water drain • Prompt completion of works relating to drainage and sediment control SWD layout & detailed report of Storm water disposal system of proposed project and adjoining areas is given in EIA report.																																
2.12.	Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)																																
	• During construction phase, provision of STP for treatment of sewage. Hence there will not be unsanitary conditions around the project site • Regular segregation and disposal of solid waste generated by the workers • First aid and medical facilities will be provided to all the concerned people working on the site • Proper housekeeping will be maintained throughout the premises • Regular site sanitation																																
2.13.	What on-site facilities are provided for the collection, treatment & safe disposal of sewage? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal).																																
	Design Basis of Treatment plant –MBBR (Moving Bed Bio Reactor) Table No.16: Untreated & Treated Sewage Quality <table><tr><th rowspan="2">SR. NO.</th><th rowspan="2">DETAILS</th><th colspan="2">VALUES</th><th rowspan="2">UNITS</th></tr><tr><th>UNTREATED</th><th>TREATED</th></tr><tr><td>1.</td><td>pH</td><td>7.0 – 8.0</td><td>7.0 – 7.5</td><td>--</td></tr><tr><td>2.</td><td>Total Suspended solids</td><td>250</td><td>≤ 10</td><td>mg/lit</td></tr><tr><td>3.</td><td>Chemical Oxygen Demand</td><td>400</td><td>≤ 30</td><td>mg/lit</td></tr><tr><td>4.</td><td>BOD,3days,27⁰C</td><td>25</td><td><5</td><td>mg/lit</td></tr><tr><td>5</td><td>Oil & Grease</td><td>50</td><td><5</td><td>mg/lit</td></tr></table>	SR. NO.	DETAILS	VALUES		UNITS	UNTREATED	TREATED	1.	pH	7.0 – 8.0	7.0 – 7.5	--	2.	Total Suspended solids	250	≤ 10	mg/lit	3.	Chemical Oxygen Demand	400	≤ 30	mg/lit	4.	BOD,3days,27 ⁰ C	25	<5	mg/lit	5	Oil & Grease	50	<5	mg/lit
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Design Basis of Treatment plant – MBBR (Moving Bed Bio Reactor)

➤BAR SCREEN:-

- A bar screen is a mechanical filter used to remove large objects, such as rags and plastics, from wastewater. It is part of the primary filtration flow and typically is the first, or preliminary, level of filtration, being installed at the influent to a wastewater treatment plant. They typically consist of a series of vertical steel bars spaced between 1 to 3 inches apart.
- Bar screens come in many designs. Some employ automatic cleaning mechanisms using electric motors and chains, some must be cleaned manually by means of a heavy rake. Items removed from the influent are collected in dumpsters and disposed of in landfills. As a bar screen collects objects, the water level will rise, and so they must be cleared regularly to prevent overflow.

➤OIL & GREASE TRAP:-

- A grease trap is a device used for removing oil and grease from wastewaters. Grease traps perform this function very well, provided they are constructed and maintained properly. Provide sufficient capacity to slow down the passing wastewater, giving greasy waste the opportunity to separate out. A grease trap should be able to hold all the kitchen wastewater entering it during times of maximum water use for a period of 20 minutes.

➤EQUALISATION / COLLECTION TANK:-

- A Collection tank which is simply a well - mixed vessel with fluctuating input flow rates and / or concentration with fairly constant output flow rates and/or concentrations. Processes for waste treatment work best with uniform conditions. Shocks to the bioprocesses in the form of sudden changes in concentrations of nutrients can cause upsets. If the input flow increases suddenly, the settling patterns will be upset to lower collection efficiency. Equalization dampens fluctuations. Flow equalization can improve performance of subsequent steps significantly. Often the rest of the plant can be designed with smaller equipment (less capital investment) because of this improvement in performance. Equalization allows reactions in the equalization tank. There may be aeration both to keep the fluid from becoming anaerobic and smelly and to biodegrade some of the organic compounds present.

➤MBBR REACTOR:-

- Moving Bed Biofilm Reactor (MBBR) processes improve reliability, simplify operation, and require less space than traditional wastewater treatment systems.
- MBBR technology employs thousands of polyethylene biofilm carriers operating in mixed motion within an aerated wastewater treatment basin. Each individual bio carrier increases productivity through providing protected surface area to support the growth of bacteria within its cells. It is this high-density population of bacteria that achieves high-rate biodegradation within the system, while also offering process reliability and ease of operation. This technology provides cost-effective treatment with minimal maintenance since MBBR processes self-maintain an optimum level of productive biofilm.

➤SETTLING TANK (TUBE SETTLER):-

- Suspended/settable solids present in water having specific gravity greater than that of water tend to settle down by gravity as soon as the turbulence is retarded by offering storage. Basin in which the flow is retarded is called settling tank. Theoretical average time for which the water is detained in the settling tank is called the detention period. The PVC tube settler media provides more surface area for settling.

➤ **PHYTORID ZONE /AREA:-**

- In this process the treated waste water is brought in contact with the roots of the plants which are selected and capable of utilising/absorbing the organic matter present in the treated waste water. This zone with plantation ensures proper removal of dissolved BOD and degradation of fine suspended particles which may tend to escape from the system after secondary biological treatment.

➤ **SUPERNATANT TANK:-**

- This sump is used to store the treated water before passing it through the filtration system. Here the disinfectants can be dosed and a contact time can be given which shall ensure proper disinfection.

➤ **FILTRATION SYSTEM (PRESSURE SAND FILTER AND ACTIVATED CARBON FILTER):-**

- Filtration is commonly the mechanical or physical operation which is used for the separation of solids from fluids (liquids or gases) by interposing a medium through which only the fluid can pass. The fluid that passes through is called the filtrate. Oversize solids in the fluid are retained, but the separation is not complete; solids will be contaminated with some fluid and filtrate which will contain fine particles (depending on the pore size and filter thickness). Filtration is also used to remove undesirable constituents by absorption into a carbon layer provided in the Activated Carbon Filter.

➤ **FILTRATION SYSTEM (ULTRAFILTRATION UNIT):-**

- Ultra filtration (UF) is a variety of membrane filtration in which forces like pressure or concentration gradients lead to a separation through a semipermeable membrane. Suspended solids and solutes of high molecular weight are retained in the so-called retentate, while water and low molecular weight solutes pass through the membrane in the permeate. UF can be used for the removal of particulates and macromolecules from raw water to produce cleaner water.

➤ **SLUDGE DEWATERING UNIT (FILTER PRESS):-**

- Sludge dewatering is, as the name clearly implies, removing water from sludge. Sludge dewatering is typically the final step for wastewater treatment processes and plants. After wastewater treatment the sludge remaining is very high in water content that can be reclaimed through sludge dewatering.
- This depends on the evaluation of your specific needs including the final disposition of your sludge cake including whether you will be applying the sludge to land applications, landfill disposal, alternative fuels, further processing and so on. Analysing each situation is critical to optimise the wastewater sludge aspect of your wastewater treatment processes. Here we have suggested filter press for sludge dewatering as we are going to use it as manure for gardening.

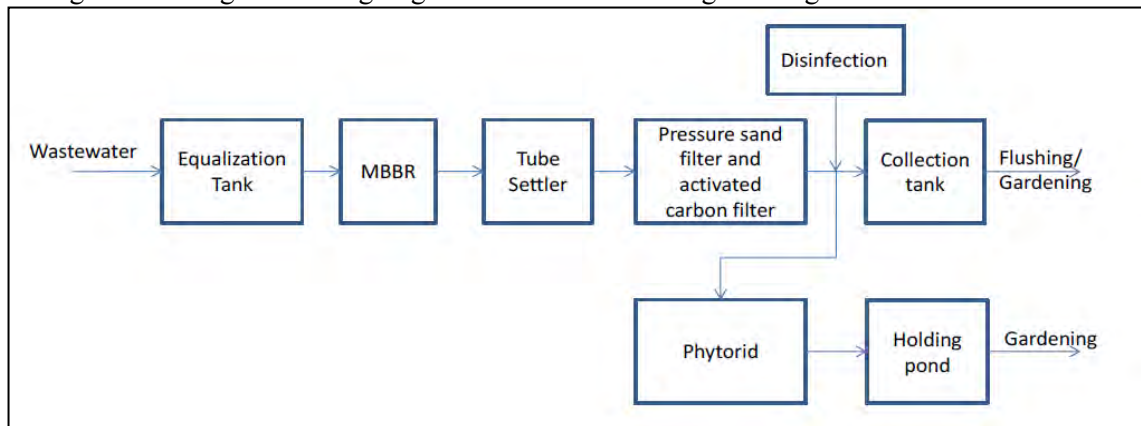


Fig 1: Scheme for treatment of sewage (MBBR process followed by Phytorid Technology)

➤ **ANAEROBIC BAFFLE REACTOR:-**

- The reactor consists of a series of chambers, in which the wastewater flows up stream as shown in Figure 4.5. Activated sludge is located at the bottom of each chamber.
- The inflowing effluent is mixed with the sludge and is inoculated with bacterial mass which decompose the Pollutants.
- At this stage the BOD reduction rate is 90 %. The pathogen reduction is in the range between 40 – 75 %.

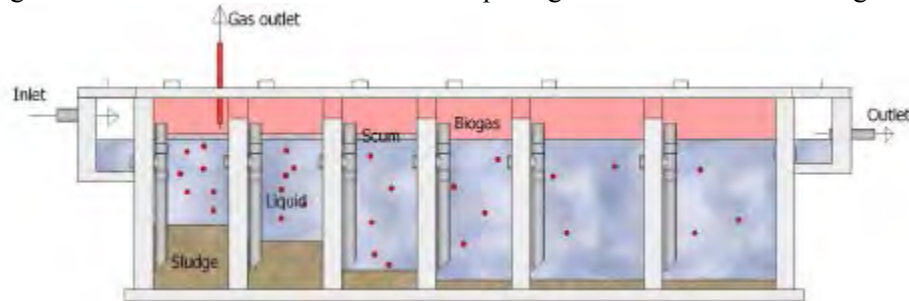


Fig 2: Anaerobic Baffle Reactor

➤ **ANAEROBIC BAFFLE FILTER:-**

- The anaerobic filter has a similar flow pattern like the Fluidized Bed Reactor as shown in Figure 4.6. Filter materials such as gravel, rocks or specially formed plastic components are used to provide additional surface area for bacteria to settle.
- Non-settleable and dissolved solids are treated by bringing them in close contact with a surplus of active bacterial mass fixed on filter material.
- The BOD removal rate at this stage is in the range of 70- 90%. The surplus of activated sludge produced has to be removed in intervals of 1 to 3 years.

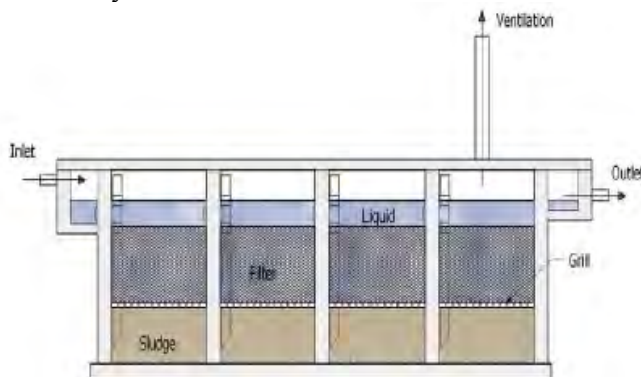


Fig 3: Anaerobic Baffle Filter (ABF)

➤ **PLANTED GRAVEL FILTER (PGF):**

- The Planted Gravel Filter (PGF) is built of reed planted filter bodies consisting of fine gravel as shown in Figure 4.7. The main removal mechanisms are biological conversion, physical filtration and chemical adsorption.
- Reduction rate of BOD is between 75 - 90 %. Reduction of infective organisms is over 95 %. Operation and maintenance of the system is simple (mainly garden work). The spatial requirements are compensated by integrating it with the landscapes.

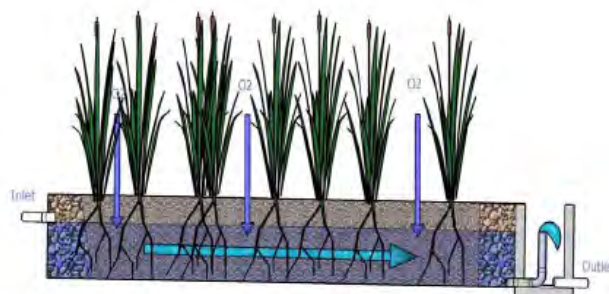


Fig 4: Planted Gravel Filter (PGF)

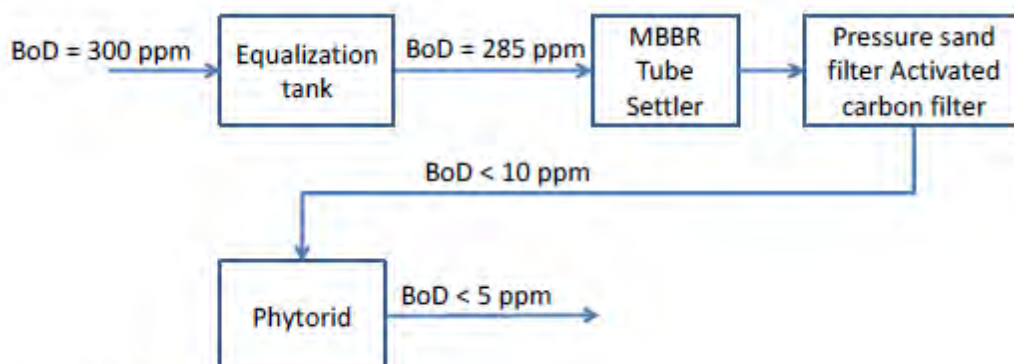


Fig 5: BOD reduction in STP component

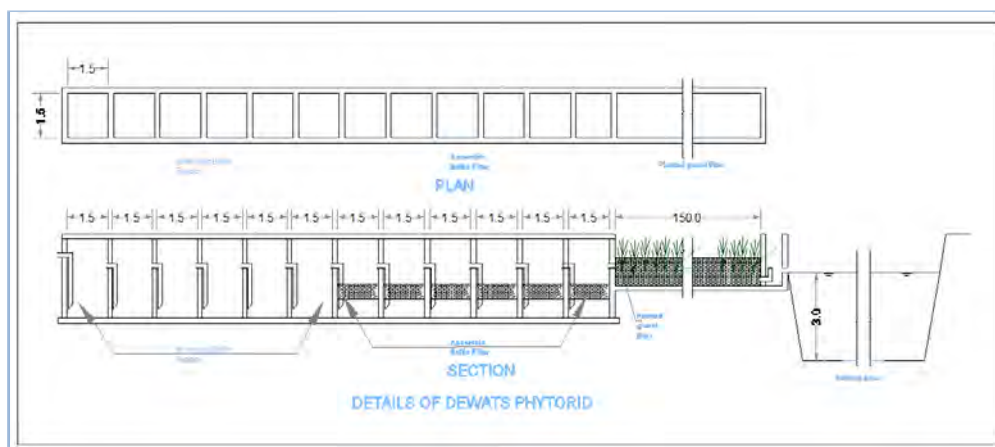


Fig 6: Schematic of DEWATS Phytoid and holding pond

Adequate water purification systems like aerators etc. shall be provided to keep the optimum oxygen level and avoid breeding of the mosquitoes

Plan showing water holding pond is attached as **Enclosure 9**.

2.14. Give details of dual plumbing system if treated waste used is used for flushing of toilets or any other use.

Recycling of treated sewage for flushing and gardening.

Color coding for dual plumbing system shall be done as per standard practices.

3. VEGETATION :

3.1 Is there any threat of the project to the biodiversity? (Give a description of the local ecosystem with its unique features, if any)

	No. The detailed report are given in Chapter 3 of EIA report
3.2	Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project)
	Total 28 nos. of existing trees of which Trees to be Cut: 3 Nos. Trees to be Retained: 25 Nos. Details of trees found on project site given in Chapter 3 of EIA report.
3.3	What are the measures proposed to be taken to minimize the likely impacts on important site features (Give details of proposal for tree plantation, landscaping, creation of water bodies etc along with a layout plan to an appropriate scale)
	6475 nos. of new trees of various varieties shall be planted on ground. Plantation shall be done as per flowering and fruiting season of trees. Details of timeframe of flowering and fruiting season of trees along with Landscape plan is attached as Enclosure 11 .
4	FAUNA
4.1	Is there likely to be any displacement of fauna- both terrestrial and aquatic or creation of barriers for their movement? Provide the details.
	No
4.2	Any direct or indirect impacts on the avifauna of the area? Provide details.
	Prediction of impacts & mitigation measures is as follows: • Sprinkling of water and fine spray from nozzles at regular interval to suppress the dust. • Use of covering sheets to prevent dust dispersion from the vehicles used for carrying construction materials at site. • Use of covering sheets for covering construction materials stored at site. • Vehicles having pollution under control certificate should be allowed to ply in the site. • Dusts may lead to partial clogging of respiratory tracts in insects and other fauna in nearby areas. Since animals are not sedentary, they are likely to move at nearby areas. • Additional plantation within the site will enhance biodiversity and aesthetical status of the area. • Since no wild animals found within the project site and surrounding areas, no adverse impact is envisaged.
4.3	Prescribe measures such as corridors, fish ladders etc to mitigate adverse impacts on fauna.
	Not Applicable
5	AIR ENVIRONMENT
5.1	Will the project increase atmospheric concentration of gases & result in heat islands? (Give details of background air quality levels with predicted values based on dispersion models taking into account the increased traffic generation as a result of the proposed constructions)
	All the predicted values of the pollutants in the operation scenario are within permissible limits of National Ambient Air Quality Standards (NAAQS) issued by Central Pollution Control Board (CPCB) dated November 18, 2009.
5.2	What are the impacts on generation of dust, smoke, odorous fumes or other hazardous gases? Give details in relation to all the meteorological parameters.
	During Construction Phase: Anticipated Impacts – • Increased level of dust and other air pollutants due to building construction and other related activities • Emissions from vehicles carrying the construction materials • Emissions from DG sets • Open burning of solid wastes can cause air pollution

Mitigation Measures-

- Use of water for dust suppression and polymeric dust suppression system (wherever possible)
- Use of covering sheets shall be done for trucks carrying construction material to prevent air borne dust
- All material storages shall be adequately covered to avoid dust / particulate emissions
- Use of CPCB approved DG sets
- Proper maintenance of DG sets
- Adequate parking provision and proper traffic arrangement for smooth traffic flow
- Vehicles having valid pollution under control certificate shall be allowed to ply on site
- Open burning of solid waste shall be prohibited
- Regular health checkup of the workers
- Use of the standard personal protective equipments like masks, goggles, etc.

During Operation Phase:**Anticipated Impacts –**

- Vehicular emissions
- Emissions from DG sets

Mitigation Measures –

- Adequate parking provision: 4W: 1264 Nos., 2W: 11180 Nos. and cycle: 11180 Nos. Proper traffic management for smooth traffic flow (detailed traffic report is enclosed)
- DG sets with acoustic enclosures is to be installed and stacks height to be kept as per Central Pollution Control Board (CPCB) norms to allow effective dispersion of pollutants
- Periodic monitoring of SPM and SO₂ concentration and thereby schedule and implement proper maintenance of DG sets
- Plantation of 6475 nos. of trees of various varieties shall be planted on ground

Metrological Data of one full year, 2016 from Indian Metrological Department (IMD)

Average/ maximum and minimum meteorological data for period January to December 2016 is represented in Table 3.15

AVERAGE/ MAXIMUM AND MINIMUM METEOROLOGICAL DATA**Period: Year 2016****Table No.17: Average/ Maximum and Minimum Meteorological Data**

Study period	Temp (°C)		Predominant Wind direction	Wind speed (km/h)		Relative Humidity (%)	
	Max.	Min		Max	Min	Max	Min.
January	34.6	14.6	SE	14	0	94	15
February	32.6	16.0	SE	16	0	94	19
March	37.6	21.0	S	26	0	93	24
April	37.8	23.8	SSW	24	0	91	21
May	35.0	25.8	SSW	22	0	90	55
June	35.0	24.8	SSW	24	0	98	55
July	30.4	24.4	E	22	0	95	71
August	31.8	25.0	SW	26	0	97	66
September	31.8	24.2	SSE	18	0	97	64
October	35.8	19.6	ESE	14	0	95	34
November	35.4	17.4	ENE	12	0	91	18
December	36.0	17.2	NE	16	0	96	24

	Source: Generally for EIA studies of construction/township projects we use secondary data from nearest base station of Indian Metrological Department (IMD). Nearest weather station of IMD to the project site is situated in Alibaug at a distance of 66 km (aerial distance) from the project site for which metrological data was not available. Hence metrological data available from IMD, Mumbai that is used for EIA reports of Mumbai region has been included. To ascertain the site specific metrological conditions monitoring at the project site has been carried out once in a month for three months during the study period i.e. March 2015 to May 2015 The parameters for which data have been collected are: • Wind speed • Wind direction • Temperature • Relative humidity Table No. 18: Meteorological data on Project Site March 2015 to May 2015 <table><tr><th rowspan="2">Study period</th><th colspan="2">Temp (⁰C)</th><th rowspan="2">Predominant Wind direction</th><th colspan="2">Wind speed (km/h)</th><th colspan="2">Relative Humidity(%)</th></tr><tr><th>Max.</th><th>Min</th><th>Max</th><th>Min</th><th>Max</th><th>Min.</th></tr><tr><td>March</td><td>39.0</td><td>15</td><td>North West</td><td>22</td><td>0</td><td>92</td><td>16</td></tr><tr><td>April</td><td>40.5</td><td>20.5</td><td>West</td><td>24</td><td>0</td><td>92</td><td>25</td></tr><tr><td>May</td><td>40.0</td><td>23.0</td><td>South West</td><td>26</td><td>0</td><td>95</td><td>35</td></tr></table> The proposed project will not have any direct impact on air environment after completion.	Study period	Temp (⁰ C)		Predominant Wind direction	Wind speed (km/h)		Relative Humidity(%)		Max.	Min	Max	Min	Max	Min.	March	39.0	15	North West	22	0	92	16	April	40.5	20.5	West	24	0	92	25	May	40.0	23.0	South West	26	0	95	35
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5.3	Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site. Detailed Traffic report explaining present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site is given in EIA report.																																						
5.4	Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category. The project proponents have proposed to provide adequate well organized parking arrangement. • The project proponents have proposed to provide adequate well organized parking arrangement. • Adequate parking provision and proper traffic management for smooth traffic flow • Provision of one entry & exit • Proper directional arrows used in parking bays • Width of driveway is 4.50 to 18.00 m. Traffic movement plan explaining movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc is given in detailed traffic report.																																						
5.5	Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above. During Construction Phase: ➤ Anticipated Impacts – • Noise due to construction activities • Impact due to transportation activities • Nuisance to nearby areas due to noise polluting work at night • Noise generated due to DG sets																																						

	➤ Mitigation Measures – • During construction activities the noise will be monitoring to ascertain the noise levels are within limit • All precautions for noise abatement shall be taken during the construction activities • It is recommended that Contractors to use well maintained & relatively newer equipments to mitigate noise generation in initial stages when excavation & earth removal is carried out • During high noise construction activity there will be provision of ear plugs for construction labour and staff • No noise polluting work in night shifts • Provision of barricades along the periphery of the site • Acoustic enclosure for DG sets • It is recommended that Hydraulic pumps and compressors should be covered with Acoustical Enclosures with 20 dB Transmission Loss Rating in order to reduce the noise During Operation Phase: ➤ Anticipated Impacts – • Impact of noise due to vehicular traffic • Noise generated due to DG sets ➤ Mitigation Measures – • Provision of proper parking arrangement, traffic management plan for smooth flow of a vehicle helps to abate noise pollution due to vehicular traffic • Plantation of around 6475 nos. of trees of various varieties shall be planted on ground that shall act as natural noise buffer • Acoustic enclosure for DG sets Noise modeling details for both construction and operation phase are reported in EIA
5.6	What will be the impact of DG sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details.
	D.G. Sets will be operated only in case of power failures during operational phase. The Pollutants like RSPM, SO₂ that may arise from emissions from D.G. Sets will be discharged through vent of proper height. D.G. sets are with inbuilt acoustic enclosures to reduce the noise of D.G. sets while in operation. Plantation of trees would act as noise barrier and will reduce the noise level. Noise modeling details for both construction and operation phase considering impact of DG sets, vehicular movement is given in chapter 4 of the EIA report.
6	AESTHETICS
6.1	Will the proposed constructions in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?
	No.
6.2	Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?
	All precautions will be taken to mitigate the impact due to water, air and noise pollution during construction and operation phase. Environmental Management plan is prepared and shall be implemented along with Environmental Monitoring Programme.
6.3	Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.
	No
6.4	Are there any anthropological or archaeological sites or artifacts nearby? State if any other significant features in the vicinity of the proposed site have been considered.

	Archaeological site	Nakhind: Within 9 km Peb Fort (Wikatgad): Within 7 km	
7	SOCIO-ECONOMIC ASPECTS:		
7.1	Will the proposal result in any changes to the demographic structure of local population? Provide the details.		
	There will be influx of about ~ 51637 people (Including floating population) during operation phase.		
7.2	Give details of the existing social infrastructure around the proposed project.		
	• The construction of project is in 7 phases and would require 300 skilled and unskilled labour in each phase. In all the 7 phases about a total of 2100 workers would benefit from project the employment opportunities. • Civil works for the construction of buildings may require local sub-contractors, hardware and raw material suppliers thus benefitting and providing small business opportunities to few in the nearby villages. • Two Primary Health care centre (10 bedded each) with Doctor and other supporting staff has been planned in the project. The area with poor health care facility would benefit from this small hospital as it has capacity to cater to the population. • A primary and Secondary school of 96 class rooms with a capacity of 3840 students and 384 staff would benefit the nearby village population. • The completion of project will eventually lead to permanent job opportunities to the local & nearby villagers as there would be increased demand for security, kitchen help, etc. • There would be about 150 shops which could provide livelihood opportunity to 450 persons after completion. The total commercial space in the project would need a staff of about 2565 persons. • A multiplier effect will be felt on the creation of indirect employment through the local community establishing small shops like tea stalls, supply of intermediate raw materials, repair outlets, hardware stores etc. However, these are likely to be temporary. The detailed Socio-economic study report is given Chapter 3 & 4 of EIA report.		
7.3	Will the project cause adverse effects on local communities, disturbance to sacred sites or other cultural values? What are the safeguards proposed?		
	No.		
8.	BUILDING MATERIALS		
8.1	May involve the use of building materials with high-embodied energy. Are the construction materials produced with energy efficient processes? (Give details of energy conservation measures in the selection of building materials and their energy efficiency)		
	The conservation material & resources strategy will be achieved through the following: • Reducing and Reusing of Waste • Using recycled material in construction • Use of Regional Material in construction • Pozzolana Cement containing up to 20% fly ash will be used for plaster, masonry, flooring • Old bricks will be used for water proofing • Low VOC (volatile organic compound) paints will be used. • Use of china mosaic for roofing • Energy efficient materials and systems will be utilized.		
8.2	Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?		
	The material required for construction activities shall be procured from company's authorized / approved vendors only. The vendor's performance is monitored periodically. In case of urgency or non-availability of materials from authorized/approved vendors, it will be procured from the open market to maintain the pace of the work. The mode of transport for above materials will be by trucks and / or by trailers. • The construction material shall be carried in properly covered vehicles.		

	• All the contractors / Vendors shall be instructed to use vehicles having PUC certificates. • Security staff presents at site will supervise loading and unloading of material at site. • Construction material shall be stored at identified site/ temporary godowns at site. • Provision of Suitable construction platform						
8.3	Are recycled materials used in roads and structures? State the extent of savings achieved?						
	Construction Materials Equipments: • Fly Ash will be used in Concrete (12 - 15 %) • Pozzolana Cement containing up to 20% fly ash will be used for plaster, masonry, flooring. • BBC water proofing will be done with old bricks • Use of single glazed glass for windows • Use of china mosaic for roofing • Low VOC (volatile organic compound) paints will be used • Energy efficient materials and systems will be utilized						
8.4	Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.						
	• Solid waste will be segregated into non biodegradable and biodegradable garbage • Biodegradable waste will be treated in biomethanation plant and the non-biodegradable waste will be segregated into recyclable & non recyclable. Recyclable waste shall be handed over to recyclers. and non recyclable waste will be handed over to Grampanchayat, Pimploli. • Slurry and other dry organic waste generated from Biogas plant shall be reused for landscaping and remaining shall be disposed through an authorized agency • Dried sludge from STP will be used as manure for gardening • E – Waste: Will be stored separately and disposed through authorized recyclers. • Bio-medical waste will be handled and disposed as per Bio-Medical Waste Management Rules, 2016.						
9	ENERGY CONSERVATION						
9.1	Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?						
	Power requirement: During Construction Phase - Source: From MSEDCL (Maharashtra State Electricity Distribution Company Limited) D.G. Sets: As per requirement During Operational Phase - Source: MSEDCL (Maharashtra State Electricity Distribution Company Limited) Table No. 20: Power Requirement <table border="1"> <tr> <td>Connected load</td><td>39.9 MW</td></tr> <tr> <td>Maximum demand</td><td>23.7 KW</td></tr> <tr> <td>D.G sets (For emergency back up during power failure)</td><td> For Phase 1: 3 DG sets of capacity 100 kVA For Phase 2: 4 DG sets of capacity 250 kVA For Phase 3: 3 DG sets of capacity 100 kVA For Phase 4: 4 DG sets of capacity 250 kVA For Phase 5: 4 DG sets of capacity 250 kVA For Phase 6: 4 DG sets of capacity 250 kVA For Phase 7: 1 DG set of capacity 200 kVA Total: 23 DG sets </td></tr> </table>	Connected load	39.9 MW	Maximum demand	23.7 KW	D.G sets (For emergency back up during power failure)	For Phase 1: 3 DG sets of capacity 100 kVA For Phase 2: 4 DG sets of capacity 250 kVA For Phase 3: 3 DG sets of capacity 100 kVA For Phase 4: 4 DG sets of capacity 250 kVA For Phase 5: 4 DG sets of capacity 250 kVA For Phase 6: 4 DG sets of capacity 250 kVA For Phase 7: 1 DG set of capacity 200 kVA Total: 23 DG sets
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	Following Energy conservation measures are proposed to reduce to Energy: • Use of solar water heater for each building • Use of solar lights for external road lighting • Use of 250W Lights for street area based on Biogas Generator • Use of bulkhead light for building external lighting • Use of tube light for building staircase and lobby lighting • Use of tube light for school, community hall and stilt parking																
9.2	What type of, and capacity of, power back-up to you plan to provide? DG sets are provided for emergency backup during power failure: <table border="1"> <thead> <tr> <th>Phases</th><th>Capacities of DG sets</th></tr> </thead> <tbody> <tr> <td>Phase 1</td><td>3 DG sets of capacity 100 kVA each</td></tr> <tr> <td>Phase 2</td><td>4 DG sets of capacity 250 kVA each</td></tr> <tr> <td>Phase 3</td><td>3 DG sets of capacity 250 kVA each</td></tr> <tr> <td>Phase 4</td><td>4 DG sets of capacity 250 kVA each</td></tr> <tr> <td>Phase 5</td><td>4 DG sets of capacity 250 kVA each</td></tr> <tr> <td>Phase 6</td><td>4 DG sets of capacity 250 kVA each</td></tr> <tr> <td>Phase 7</td><td>1 DG set of capacity 200 kVA</td></tr> </tbody> </table>	Phases	Capacities of DG sets	Phase 1	3 DG sets of capacity 100 kVA each	Phase 2	4 DG sets of capacity 250 kVA each	Phase 3	3 DG sets of capacity 250 kVA each	Phase 4	4 DG sets of capacity 250 kVA each	Phase 5	4 DG sets of capacity 250 kVA each	Phase 6	4 DG sets of capacity 250 kVA each	Phase 7	1 DG set of capacity 200 kVA
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9.3	What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation? Glass shall be used only for windows.																
9.4	What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project. • Maximize the use of natural lighting though design. • The roof shall be insulated so that there will not be direct heat gain due to sunlight																
9.5	Does the layout of streets & buildings maximize the potential for solar energy devices? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex? Substantiate with details. • Provision of solar water heater system for each building • Solar Lights for External Area • Use of 250W Lights for street area based on Biogas Generator																
9.6	Is shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof? How much energy saving has been effected? It is proposed to insulate the roofs of these buildings to minimize the heat gain and intern saving the electricity.																
9.7	Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions? Are you using CFC and HCFC free chillers? Provide specifications. No																
9.8	What are the likely effects of the building activity in altering the micro-climates? Provide a self assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects? It will not alter the microclimate. The construction will not cause inversion.																
9.9	What are the thermal characteristics of the building envelope? (a) roof; (b) external walls; and (c) fenestration? Give details of the material used and the U-values or the R values of the individual components. It shall be proposed to insulate the roofs of these buildings to minimize the heat gain and intern save the																

	electricity. Glass shall be used only for window															
9.10	What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans.															
	Fire Fighting Measures: • Fire and Gas detection system • Provision of Portable Fire Extinguishers and Sand buckets • Provision of fire hydrant system • Overhead & underground fire fighting tank has been provided • Provision of fire control room															
9.11	If you are using glass as wall material provides details and specifications including emissivity and thermal characteristics.															
	Glass shall be used only for windows.															
9.12	What is the rate of air infiltration into the building? Provide details of how you are mitigating the effects of infiltration.															
	This is not a centrally air conditioned building hence it has not been studied.															
9.13	To what extent the non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.															
	• Provision of solar water heater system for each building • Solar Lights for External Area • 250W Lights for street area based on Biogas Generator															
10	Environment Management Plan Adequate environmental management measures will be incorporated during the entire planning, construction and operating stages of the project to minimize any adverse environmental impact and assure sustainable development of the area. Project specific EMP with location and design specific details shall include the following elements for construction phase and operation phase <table><tr><th>Sr. No.</th><th>Environmental Issues/Impacts</th><th>Mitigation measures</th><th>Responsibility</th><th>Legal & Other requirements</th></tr><tr><td colspan="5">LOCATION SPECIFIC</td></tr><tr><td>1.</td><td>Disposal of excess treated sewage</td><td> • Provision of Sewage treatment facilities. Treated sewage shall be reused for gardening (148 KLD) and flushing (2113 KLD) requirement • For fulfilling the construction water requirement of initial phase (Phase -1) proponents are planning to use water tankers. • Reuse of excess treated sewage for construction activity of subsequent phases: After commissioning STPs of Phase -1, the excess treated sewage from Phase-1 shall be used for the construction activity of the subsequent phases. This will help to reduce the fresh water demand for construction activity and further reduce the quantity of excess treated sewage. • Provision of water holding pond for storage of excess treated sewage with adequate area (8225 sq.mt.) for storage of excess treated sewage • Provision of 200 CFM, 3 nos. of air </td><td>Project Proponents</td><td>Stringent discharge standards for STP outlet as per the EPA Act</td></tr></table>	Sr. No.	Environmental Issues/Impacts	Mitigation measures	Responsibility	Legal & Other requirements	LOCATION SPECIFIC					1.	Disposal of excess treated sewage	• Provision of Sewage treatment facilities. Treated sewage shall be reused for gardening (148 KLD) and flushing (2113 KLD) requirement • For fulfilling the construction water requirement of initial phase (Phase -1) proponents are planning to use water tankers. • Reuse of excess treated sewage for construction activity of subsequent phases: After commissioning STPs of Phase -1, the excess treated sewage from Phase-1 shall be used for the construction activity of the subsequent phases. This will help to reduce the fresh water demand for construction activity and further reduce the quantity of excess treated sewage. • Provision of water holding pond for storage of excess treated sewage with adequate area (8225 sq.mt.) for storage of excess treated sewage • Provision of 200 CFM, 3 nos. of air	Project Proponents	Stringent discharge standards for STP outlet as per the EPA Act
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1.	Disposal of excess treated sewage	• Provision of Sewage treatment facilities. Treated sewage shall be reused for gardening (148 KLD) and flushing (2113 KLD) requirement • For fulfilling the construction water requirement of initial phase (Phase -1) proponents are planning to use water tankers. • Reuse of excess treated sewage for construction activity of subsequent phases: After commissioning STPs of Phase -1, the excess treated sewage from Phase-1 shall be used for the construction activity of the subsequent phases. This will help to reduce the fresh water demand for construction activity and further reduce the quantity of excess treated sewage. • Provision of water holding pond for storage of excess treated sewage with adequate area (8225 sq.mt.) for storage of excess treated sewage • Provision of 200 CFM, 3 nos. of air	Project Proponents	Stringent discharge standards for STP outlet as per the EPA Act												

			blower with perforated PVC piping inside the pond for aeration of pond water • The Stored excess treated sewage shall be used for watering of nearby reserved/protected Forest		
	2.	Gas pipe line passing in between the plot	• No Construction of building or other structure (tank, reservoir etc.) in the said area • No Excavation to be done in the said area • No tree plantation in the said area • In the said land shall not do any act to cause any damage to pipeline • No excavation or lay underground or above ground utilities or make any temporary or permanent obstruction in the said RoU area without written permission of M/s. RGTIL • To leave clear distance 3 m. from the outer surface of the pipeline on either side and the ground/plinth beam does not rest on the pipeline or soil above the pipeline • In the RoU portion barbed wire fencing /chain link fencing is allowed and if PP wishes to construct boundary wall. Height of such boundary wall shall not exceed 5 feet from ground level in RoU portion for purpose of inspection of pipeline RoU • Storm water or any other surface drains shall not be allowed strictly along the pipeline RoU corridor • Poles meant for over head electric and telephone cables shall not be allowed in RoU corridor but the over head electric/telephone cables shall be allowed to cross the RoU corridor provided the over head cables are run minimum 5 m above the ground level • Parking of light vehicles (LMV) and internal roads along the RoU corridor shall be permitted provided the space for parking and the carriage way of internal roads does not fall exactly on pipeline. • Carriage way crossing the pipeline RoU corridor shall be allowed • Culvert shall be constructed above the pipeline on the portion on internal road or carriageways crossing the pipeline • Since the pipeline carries natural gas (Inflammable) at high pressure, blasting within the pipeline corridor is strictly prohibited. Also no blasting for	Architect/ Project Proponent	NOC from Reliance Gas Transportation Infrastructure Limited

		excavation of founding structure of any construction or what so ever reason/purpose beyond RoU and within 100 m. from the pipeline shall be done with out prior written permission from RGTIL		
Sr. No.	Environmental Issues/Impacts	Mitigation measures	Responsibility	Legal & Other requirements
DESIGN SPECIFIC				
1.	Building Height	Height of the building is in accordance with the local planning permissions	Architects	Permission from Local Authority
2.	- Increment in runoff due to Increase in paved areas - Flooding on site or in the surrounding low lying areas	- Minimizing the incremental runoff from the site with the help of rain water harvesting - Provision of SWD of adequate capacity to cater the runoff and avoid flooding on site	Architects and MEP consultants	--
3.	Heat gain due to building materials or design	- Use of natural light and ventilation in building design - Use of local building materials in construction	--	ASHRAE 90.1 2007
Sr. No.	Environmental Issues/Impacts	Mitigation measures	Responsibility	Legal & Other requirements
CONSTRUCTION PHASE				
1.	Increase in water demand due water usage for construction, dust suppression and for workers	- Use of polymeric spray for dust suppression instead of water wherever possible - Curing water should be sprayed on concrete structures, free flow of water will not be allowed for curing - Use of wet jute cloth/gunny bags instead of water spray for curing activity	Contractor & Project Manager	--
2.	Sewage generation (22 KLD) and disposal	- Provision of STP for treatment of sewage - Site sanitation & good housekeeping	Contractor & Project Proponents	Water (P & CP) Act 1974 as amended
3.	Municipal solid waste generation (30 kg/day) by workers	- Segregation of wet (12 kg/day) and dry garbage(18 kg/day) - Segregated garbage shall be handed over to Grampanchayat, Pimploli	Contractor & Project Manager	--
4.	Site preparation or construction activity may lead to : Water logging or flooding on site & in surrounding	- Computation of the runoff from the catchment areas outside the plot and runoff within the plot. - Proper management of channelization of storm water - Designing storm water drainage with adequate capacity to cater the total runoff from site and outside catchment area and avoid flooding on site or	Contractor & Project Manager	--

		• Unsanitary conditions and mosquito breeding on site • Sedimentation of outside drains	• surrounding • Use of screens and silt traps in advance of earthworks • Proper maintenance of storm water drainage to avoid choking of drains and flooding on site • Prompt completion of works relating to drainage and sediment control • Ensure discharge of storm water from the site or inflow to the site due to contributing catchment is clear of sediment and pollution		
	5.	Excavation/construction activity		Excavation contractor/Project Proponents	--
	a.	Dust generation	• Use of polymeric spray for dust suppression instead of water wherever possible • Provision of barricades along the periphery of the site • Use of covering sheets while transporting the material		--
	b.	Noise & Vibration	• Provision of barricades along the periphery of the site • Use of Hitech equipment which will generate minimal noise and vibrations • Use of ear plugs, to workers • Use of high efficiency mufflers • Ensure activities are restricted during day time • Regular noise monitoring to be scheduled to maintain the noise level within the levels prescribed by MPCB during day and night time		--
	c.	Disruption of soil & runoff	• Sedimentary controls to be implemented		--
	d.	Oil leaks	• Regular maintenance of excavation machineries to prevent and repair leaks • Contaminated soil to authorized CHWTSDF		--
	e.	Generation of Excavated material /Construction waste	• Designated storage for all type of waste • Proper segregation of construction waste and preparation of item wise quantification and management plan and ensuring its effective implementation • Reuse of excavated earth on site only • Polymer bags used for cement and gypsum, cardboard boxes and other packaging material will be handed over to authorized recyclers. • Disposal of hazardous waste to CHWTSDF		Excavation permission from Local Authority
	f.	Water logging in excavated areas	• Preparation of dewatering plan • Provision of dewatering pumps with adequate capacity • Proper drainage channel with connection		

			to external SWD • Sedimentation controls measures shall be followed • Regular pest control • Water will be allowed to settle overnight to ensure sedimentation and minimize the silt in discharge • Suction points of the pump shall be equipped with silt screens, appropriate filters		
	6.	Vehicular movement leads to • Increase in traffic • Air emissions & Noise • Oil leaks	• Proper traffic management • Entry to vehicles with valid PUC certificate • Provision of oil and grease traps to the Storm water drains • Contaminated soil found if any to authorized CHWTSDF • Regular maintenance of vehicles with suitable enclosures and intake silencers • Preparation of bar charts for excavation activity • Planning and ensuring effective implementation of the waste movement plan for loading and offsite movement in non traffic hours	Project Manager	--
	7.	Use of DG sets	• DG sets with inbuilt acoustic enclosures • Site barricading • Regular maintenance	Project Manager	
	8.	Impact on health of workers Accidents, Hazards injuries to workers	• Adequate drinking water, toilet and bathing facilities. • First aid facility • Regular health check up of workers • Risk assessment and preparation of disaster management plan • Provision of temporary water tank for fire fighting and appropriate fire suppression measures. • Safety educational and awareness programme • Proper security arrangements	Safety officer	--
OPERATION PHASE					
Sr. No.	Environmental Issues/Impacts	Mitigation measures	Responsibility	Legal & Other requirements	
1.	Increase in water demand (6372 KLD)	• Use of treated sewage for flushing (2113 KLD) and gardening (148 KLD) • Rain water collection from terraces into 21 RWH tanks of total capacity 2172 KL and its reuse thereby reducing the fresh water demand in monsoon season up to 45% • Use of harvested rain water (703 KLD) for domestic purpose with the help of treatment unit will further reduce the	Project Proponents/ Facility Management system	Water Act 1974 as amended	

			demand		
	2.	Sewage generation (5397 KLD) and disposal of sewage	• Provision of 22 STPs of total capacity 5480 KL for treatment of sewage by MBBR method followed by DEWATS Phytotrid technology • Proper operation and maintenance of STP and Daily analysis of general parameters like pH, BOD, COD and TSS & O & G of the STP outlet to ensure good treatment of waste water • Use of treated sewage for flushing and gardening • Provision of water holding pond for storage of excess treated sewage also provision of aerators in water pond to avoid mosquito breeding. • This stored excess treated sewage shall be used for construction activity and watering nearby forest land. • Disposal of treated sewage shall be as per Stringent discharge standards for STP outlet as per the EPA Act • Provision of adequate ventilation around the STP • Proper arrangements for sludge handling and reusing it as manure	Project Proponents/ Society/Facility Management system	Stringent discharge standards for STP outlet as per the EPA Act
	3.	Increment in Runoff (6.094 m ³ /sec) from site	• Minimizing the incremental runoff from the site with the help of rain water harvesting tank of capacity 2172 KL • Proper management of channelization of storm water from site by using proper internal SWD system and discharge point of having adequate capacity (15.74 m³/sec) • Use of screens and silt traps to SWD • Proper maintenance of storm water drainage to avoid choking of drains and flooding on site • Ensure discharge of storm water from the site is clear of sediment and pollution • Existing external drain of adequate capacity (22.77 m³/sec)	Project Proponents/ Facility Management system	--
	4.	Increase in power consumption	• Use of solar water heater for each building • Use of solar lights for external area lighting • 250 W Street area lights are based on Biogas generator. • Use of bulkhead light for building external lighting • Use of tube light for building staircase and lobby lighting • Use of tube light for school, community hall and stilt parking	Project Proponents/ Facility Management system	ECBC norms

	5.	Use of DG sets may lead to Air & Noise pollution	• Stack height as per CPCB norms • Around 6475 nos. of new trees shall be planted • DG sets with inbuilt acoustic enclosures	Project Proponents/ Facility Management system	CPCB norms
	6.	Vehicular movement leads to • Increase in traffic • Air emissions & Noise • Contamination of soil leads to Oil leaks	• Proper traffic management for the vehicles • Provide adequate traffic signs and signages to notify residents • Install safety mirrors to aid visibility in conflict points • Prevent parking near the Entry and Exit Gate • Provide speed humps to regulate speed of vehicles • Provide pedestrian crossings and dedicated footpath to cater to the walking population • Assign traffic wardens to regulate flow of project traffic during peak hours • Adequate width of internal driveway • Good Landscaping with retention of existing trees (25 nos.) and proposed trees (i.e. 6475 nos. of trees) to mitigate dust and noise • Provision of oil and grease traps to the Storm water drains	Project Proponents/ Facility Management system	--
	7.	Odour and unsanitary conditions due to STP and Composting of biodegradable garbage	• Proper ventilation around STP and Garbage room • Proper housekeeping and maintenance • Regular monitoring of stack/s	Project Proponents/ Society/Facility Management system	Air act 1981 as Amended
	8.	Municipal waste & other solid waste generation	• Informing and educating occupants for solid waste management • Provision of adequate space (1334 sq.m.) for solid waste management • Proper segregation on site to biodegradable and non biodegradable. • Recyclable waste (4037 kg/day): To be Handed over to recyclers • Non-recyclable waste (8197 kg/day): To be handed over to Grampanchayat • Biodegradable waste (8154 kg/day) shall be treated by Biomethanation Plant • Slurry and other dry organic waste generated from Biogas plant shall be reused for landscaping and remaining shall be disposed through an authorized agency • E-waste (2770 Kg/annum) from commercial portion of Phase 3 and Phase 4 and will be stored separately and disposed through authorized recyclers	Project Proponents/ Society/Facility Management system	--

			• Bio Medical Waste (7.5 Kg/ day) from Primary Health care and same will be handled and disposed as per Bio-Medical Waste Management Rules, 2016		
	9.	Disaster like Fire, Earthquake, lightning etc.	• Preparation of Disaster Management Plan • Provision of Safety officer , Security and First aid team • Regular review of DMP and mock drill • Effective implementation of DMP	Safety Officer	--

LIST OF ENCLOSURES		
No.	Enclosures	Not possible to upload due to size limitation but submitted in EIA report. However same shall be submitted in hard copy of Form 1 & 1A
1	Letter of Intent (LOI)	
2	NA Order	
3	Geotechnical Investigation Report	
4	Reliance Gas Pipeline NOC	
5	Disaster Management Plan	
6	Site Location Map	
7	Surrounding features of the proposed site (within 500 meters)	
8	Contour map	
9	Layout Plan	
10	Storm water drainage layout	
11	Landscape Plan	
12	Parking layout	
13	Services layout	
14	Fire engine movement and fire evacuation plan	
15	Disclosure of Consultants	