

MUNICIPAL CORPORATION OF GREATER MUMBAI

CHIEF ENGINEER (SOLID WASTE MANAGEMENT) DEPTT.

No. Dy.Ch.E./3770/SWM/Project, dtd. 25-01-2019

Office of the Chief Engineer (SWM)
Municipal Khatav Market building,
3rd floor, Khatav Wadi
Sleater Road, Grant Road (W),
Mumbai-400007

To,
The Member Secretary,
S.E.I.A.A.
Environment Department,
Government of Maharashtra,
15th floor, New Adm. Building,
Mantralaya,
Mumbai – 400 032.

Sub: Submission of hard copy of half yearly compliance reports in respect of the stipulated prior environment clearance terms & conditions and six monthly reports on the status of compliance of the General Conditions (vii) & (xii) for Construction Phase including results of monitored data as stipulated in the revised Environmental clearance (E.C.) dtd. 05.12.2014 accorded for modernization of MSW processing & disposal facility of capacity 4000 TPD - 7500 TPD at Kanjur, Mumbai.

And

Submission of hard copy of half yearly compliance reports in respect of the stipulated prior environment clearance terms & conditions and six monthly reports on the status of compliance of the General Conditions (XXI) & (XXIV) including results of monitored data as stipulated in the Environmental clearance (E.C.) dtd. 29.10.2018 accorded for scientific processing of MSW in 52.45 ha. area which is in CRZ –III area other than CRZ – I at Kanjur MSW Processing facility, Mumbai.

Ref: 1) Revised Environmental Clearance issued by State Level Environmental Impact Assessment Authority (SEIAA) vide no. SEAC-2014/CR-162/TC2 dtd 05.12.2014.
2) Half yearly compliance report submitted by MCGM vide letter U/No. No. Dy.Ch.E./1319/SWM/Project, Dated 12.07.2018.
3) Environment Clearance issued by State Level Environment Impact Assessment Authority (SEIAA) vide no. SEIAA-EC-0000000475, dtd. 29.10.2018.

Sir,

This has reference to the conditions of Environmental Clearances issued for scientific processing of MSW in 65.96 ha. non CRZ area and 52.45 ha. CRZ –III area at Kanjur MSW Processing facility, Mumbai vide reference No. 1 & 3 respectively.

In this context, MCGM is hereby submitting the hard copy of half yearly compliance reports in respect of the respective stipulated prior environment clearance terms & conditions and six monthly reports on the status of compliance of the respective General Conditions including results of monitored data as stipulated in the referred Environmental clearances accorded for Kanjur MSW Processing facility, Mumbai.

Half Yearly EC Compliance Report for December -2018

The half yearly compliance report on Environmental Clearance issued via letter Ref: SEAC-2014/CR-162/TC2, dated 5/12/2014 is as below:-

Sr.No	Conditions Under Environmental Clearance	Status of Compliance.
1.	The proposal under consideration has to be restricted within the area 65.96 ha. Outside the CRZ area. The PP shall maintain a buffer zone of 500 meters around the project perimeter which shall be incorporated as 'No Development Zone' in the Development Plan of MCGM.	MCGM has maintained a buffer zone of 500 meters around the project perimeter in existing Development Plan. MCGM is taking necessary steps for incorporation of the said buffer zone as 'No Development Zone' in the Development Plan of MCGM and the same will be incorporated after approval of Appropriate Authorities.
2.	The road leading to the dumping ground from the Eastern Express Highway shall be fully black topped/concretized so as to avoid generation of dust.	Complied.
3.	Generation of Green House Gases (GHG) like methane needs to be controlled so that it does not contaminate the atmosphere. It should be ensured that methane generated if fully utilized for power generation/flaring and not let into atmosphere.	Complied. The GH gas, Methane generated in BLF Cells is captured and flared through flaring stations installed at the site. Also, GH and Methane gas liberated from UAR at leachate treatment plant is flared off. Arrangements for gas collection and its utilization for power generation are installed and electricity generation from landfill gases generated from BLF Cells is used for captive power generation.
4.	The leachate generating from the cells will have to be systematically collected and treated to reduce BOD levels to allowable limits. Under no circumstances should the leachate be allowed to contaminate the surrounding	Arrangements for leachate collection in impervious HDPE lined ponds from BLF-Cells are already operational. Leachate Treatment Plant is operational. Leachate treatment comprises of two stage biological treatment anaerobic &, aerobic followed by clarification & filtration.

Sr.No	Conditions Under Environmental Clearance	Status of Compliance.
	areas, particularly the mangrove forest on the south western and eastern side of the cell.	At present leachate collected is re-circulated in BLF Cells under controlled condition.
5.	The PP shall take all out efforts to control odor nuisance. PP should take steps to measure odor levels using instruments which are currently available. The measurement of odor levels shall be taken at strategic locations depending on the wind direction and situation of habitats. Through regular monitoring it should be ensured that the odor levels are within the acceptable limits and remedial measures like applying odor controlling bacterial consortium to the garbage are taken up as and when necessary.	<p>Complied.</p> <p>On the basis of details of wind direction & wind speed from Wind Rose Diagrams of this project site, locations for monitoring odor levels in windward and leeward directions in nearby residential colonies are finalized and monitoring has been carried out for odor giving compounds like VOC, Mercaptans, ammonia, hydrogen sulfide etc.</p> <p>As regards, measurement of odor levels in the vicinity by using instrumental method, CSIR environmental research center, NEERI, Mumbai has been appointed.</p> <p>As per the agreement, calibration measurements, reporting of results will be done by NEERI, Mumbai. NEERI has established continuous air quality monitoring stations.</p> <p>Wind balloon system for guiding wind directions have been installed at BLF Cells and other noticeable places, so that wind direction can be seen easily by the operating staff and necessary arrangement for remedial measures like applying odor controlling bacterial consortium to the garbage and misting of deodorant are taken up as and when necessary.</p>
6	To save the mangroves on the South-Western side of the property which is starved of supply of sea water, the PP should ensure openings of sufficient cross section in the compound wall which are designed and provided in consultation with the Chief Conservator of Forests, Mangrove Cell.	Enough tidal water flows from the culvert provided and significant growth of healthy mangroves is visible. The Forest Officers through visits to project site are monitoring the protection & preservation of mangrove forest.
7	Mangrove regeneration efforts should be undertaken at the costs of the PP once regular tidal flushing is assured through measures suggested in point 6	
8	The staff handling the solid waste should be trained to ensure zero	The closed body vehicles are designed for handling & transportation of MSW to achieve zero spillage and

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	<p>spillage of the garbage during transport. The PP should ensure proper cleaning of the transport vehicles after unloading the garbage at the dumpsite.</p>	<p>training is given to staff for handling the Solid Waste. It is strictly observed that no tail gates of vehicles will be opened before reaching to the MSW unloading site.</p> <p>Arrangements are in place for Washing/cleaning of incoming waste collection trucks tyres if found with muck and dirt.</p> <p>Regular cleaning of roads is undertaken to collect spilled garbage if observed and cleanliness is maintained.</p>
9	<p>No land development / construction work preliminary or otherwise relating to the project shall be taken up without obtaining due clearance from respective authorities.</p>	<p>Noted.</p>
10	<p>No additional land shall be used / acquired for any activity of the project without obtaining proper permission.</p>	<p>Noted.</p>
11	<p>The project proponent should ensure that the transportation of the hazardous waste to the TSDF conforms to the norms laid down in the Hazardous Waste (Management & Handling) Rules 2013.</p>	<p>The said condition is not applicable to this project as the project involves processing of MSW.</p>
12	<p>The proponent should ensure that TSDF fulfills all the provision of Hazardous Waste (Management & Handling) Rules 2003 & the design of landfill is as per guidelines of CPCB with proper leachate collection arrangement.</p>	<p>The site is designed as per the guide lines of MSW (M&H) Rules-2000 as well as SWM Rules 2016 and the provisions for landfill design & execution of Biogas capturing & flaring arrangement, Leachate collection, treatment, leachate recirculation is taken into consideration.</p> <p>The provisions for HW(M&H) Rules 2003 are not applicable as site is not accepting any Hazardous Waste.</p>
13	<p>The TSDF should only handle the waste generated from the member units. A leachate collection system should be provided to collect the leachate at a collection point. Treatment facility for the collected leachate should be provided. The treated water should be reused as far as</p>	<p>Only MSW generated from human habitation area is transported to this site. No industrial hazardous waste is accepted for TSDF hence no member units contributing/generating hazardous waste are covered as member units. Leachate collection and treatment facility is provided and is in operation. However, at present the Leachate is re-circulated at BLF Cells for enhancing the Bio-degradation process for generation of Methane gas. The Leachate Treatment Plant with</p>

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	possible in the project.	arrangement of primary, Secondary with tertiary treatment is provided.
14	The proponent should obtain necessary clearance from the Ground Water authority before initiating the project.	Necessary clearance from the Ground Water Authority is already obtained before initiating the project. MCGM had also informed the Ground water Authority about the revised EC.
15	The depth of the landfill should be decided based on the ground water level at site.	While deciding the depth of landfill in design, ground water level data is taken into consideration. This condition is complied while designing the project & is being complied in execution.
16	Project Proponent should prepare and implement an onsite emergency management plan.	Emergency Management Plan is complied as per the EIA report (Chapter 6). On site "Emergency Plan and Disaster Management Plan" is prepared and is under implementation.
17	Project Proponent shall carryout periodical ground water/soil monitoring in and around the site to check the contamination, including TCLP test for heavy metals	Monthly ground water quality monitoring through Piezo-metric wells water samples locations are provided in drawing. Periodical ground water /soil monitoring in and around the site is carried out at intervals set out in the MSW(M&H) Rules, 2000/ SWM Rules, 2016 through the agency approved by MoEF. As regards to TCLP test the parameters which are necessary as per MSW rules are analyzed with the help of MoEF approved Lab.
18	Project Proponent shall carryout periodical air quality monitoring in and around the site including VOC, HC.	Monthly air monitoring is being carried out in and around the site as per the parameters stipulated in the Authorization granted and the results are displayed on website of the operator. Special parameters of VOC and HC are also monitored.
19	Project Proponent should develop Green Belt all along the periphery of the TSDF with plant species that are significant and used for the pollution abatement.	It is revealed that said condition is not applicable to the Kanjur project as the Kanjur project is only for treatment of Municipal Solid Waste (MSW). Plantation in green belt development is being done on progressive basis and majority plantation is already done.
20	The project proponent should not	Only MSW is received at Kanjur site, therefore

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	store the hazardous wastes more than the quantity that has been permitted by the CPCB / Maharashtra State Pollution Control Board.	question of receiving of Hazardous Waste does not arise.
21	Adequate firefighting facilities should be installed to handle the fire arising from hazardous chemicals/waste that are stored/processed.	<p>The said condition is not applicable to this project as the project involves processing of MSW Only. No HW /H Chemicals are received to this site.</p> <p>Adequate firefighting system is in place, comprising of water tankers and fire extinguishers which are placed at strategic locations for prevention of any fire incidence.</p>
22	For controlling fugitive natural dust, regular sprinkling of water & wind shields at appropriate distances in vulnerable areas of the plant shall be ensured	On leeward direction plantation is done as a wind barrier. The arrangement of water sprinkling on roads through tankers is in practice and water sprinkling operation is carried out regularly in summer & winter.
23	Necessary arrangement shall be made to adequate safety and ventilation arrangement in furnace area.	The said condition is not applicable to this project as the project involves processing of MSW only. There is no furnace area in the current project plan.
24	Proper housekeeping programs shall be implemented.	Dedicated team of trained workers is already deployed to ensure the good housekeeping & cleanliness.
25	<p>A stack of adequate height based on DG set capacity shall be provided for control and dispersion of pollutant from DG set. (if applicable)</p> <p>Arrangement shall be made that effluent and storm water does not get mixed.</p>	<p>At present the plant electricity requirement is fulfilled with captive power generation unit with backup power supply from MSEDCL &. Standby DG set of 125 KVA with adequate stack height.</p> <p>To operate MRF/Compost units on continuous power supply, application is made to the appropriate authority. However, continuous power supply is still awaited & at present to run MRF/Compost units arrangement of DG set on temporary basis has been made.</p> <p>Arrangement of separate leachate collection through HDPE pipeline into HDPE lined ponds is provided. It is controlled by re-circulation into the landfill BLF Cells. The excess leachate is treated in the leachate treatment plant and it is not allowed to mix with storm water.</p> <p>Storm water drainage galleries around the BLF Cells have been constructed for the management of rain</p>

Sr.No	Conditions Under Environmental Clearance	Status of Compliance.
		water.
26	Periodic monitoring of ground water shall be undertaken, and results analyzed to ascertain any change in the quality of water. Results shall be regularly submitted to the Maharashtra Pollution Control Board.	Monthly Ground water quality is monitored as prescribed in MSW (M&H) Rules, 2000/ SWM Rules, 2016. The results analyzed indicate that the quality of ground water is found same as compared to previous year. The results are regularly submitted to MPCB by the operator. The sampling & analysis is carried out with the help of Accredited laboratory and having MoEF approval.
27	Leq.of noise level shall be maintained as per standards. For people working in the high noise area, requisite personal protective equipment like earplugs etc. shall be provided.	Due care is taken to avoid noise nuisance.
28	The overall noise levels in and around the plant shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures, etc. on all sources.	Noise levels are arising from movements of trucks, dozers. These machineries are fitted with silencer for noise control. All efforts as per EIA are made to ensure that noise levels do not exceed the permissible values.
29	PP has to abide by the conditions stipulated by SEAC & SEIAA	Noted.
30	"Consent for Establishment" shall be obtained from Maharashtra Pollution Control Board under Air and Water Act and a copy shall be submitted to the Environment Department before start of any construction work at the site.	MPC Board has granted Authorization under MSW (M&H) Rules-2000 as per the decision in Consent Appraisal Committee meeting & issued letter for non- requirement of separate Consent to Establishment/ operate for this activity.
31	All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.	All required sanitation arrangements such as WC/Urinals/Bathrooms with adequate water are available at site. Also safe, filtered, disinfected drinking water is provided to staff/ workers. Required facilities are being maintained throughout the construction period.
Report on compliance of General Conditions stipulated in Environment Clearance.		
Sr. No	General Conditions for Construction Phase	Proposed action plan
(i)	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets,	All required arrangements such as housing, sanitation & safe drinking water requirements are in place. Medical checkup has been taken to check the health of workers.

Sr.No	Conditions Under Environmental Clearance	Status of Compliance.
	mobile STP, safe drinking water, medical health care, crèche and First Aid Room etc.	
	Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.	All required provisions are in place.
(iii)	The solid waste generated should be properly collected and segregated. Dry/inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.	All required provisions are in place.
(iv)	Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.	All necessary guide lines shall be followed for disposal of muck (if any) generated during construction.
(v)	Arrangement shall be made that waste water and storm water do not get mixed.	Necessary drainage is made to ensure that no waste water and storm water is mixed. Storm water drainage galleries have been constructed for the management of rain water.
(vi)	All the top soil excavated during construction activities should be stored for use in horticulture / landscape development within the project site.	In case of landfill site, mostly the construction activity involves filling & compaction of soil and not excavation. However necessary precaution to preserve top soil for reuse will be taken.
(vii)	Additional soil for leveling of the proposed site shall be generated within the site (to the extent possible) so that natural drainage system of the area is protected and improved.	There is no additional soil filling material available on the present site, as the site is situated in low lying area. As per the technical requirement, soil from various locations is transported for the purpose of filling the embankments.
(viii)	Green Belt Development shall be carried out considering CPCB	The plantation program for Green Belt development is already undertaken & it is under progressive

Sr.No	Conditions Under Environmental Clearance	Status of Compliance.
	guidelines including selection of plant species and in consultation with the local DFO/Agriculture Dept.	implementation.
(ix)	Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.	HDPE Liners are spread at landfill base as per design & provisions of MSW (M&H) Rules,2000 and MSW, Rules 2016 to prohibit percolation of leachate into the ground/soil. Ground water and surface water samples are tested regularly through laboratory, approved by the MoEF and results show that there is no contamination due to heavy metals and toxic contaminants.
(x)	Construction spoils, including bituminous material and other hazardous materials must not be allowed to contaminate watercourses and the dumpsites for such material must be secured so that they should not leach into the ground water.	Necessary due care is taken for not accepting such hazardous material at site.
(xi)	Any hazardous waste generated during construction phase should be disposed off as per applicable rules and norms with necessary approvals of the Maharashtra Pollution Control Board.	No hazardous waste is generated during construction phase.
(xii)	The diesel generator sets to be used during construction phase should be low Sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards.	Diesel generator sets are not used during construction phase, as regular electricity is available at site. DG set at site as standby unit and temporarily used is confirming noise & air emissions standards under EP Rules.
(xiii)	The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from concern authority shall be taken.	Noted.
(xiv)	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak	Necessary and due care is being taken.

Sr.No	Conditions Under Environmental Clearance	Status of Compliance.
	hours	
Action plan for compliance to General Conditions for Post Construction/Operation Phase of Environment Clearance.		
Sr.No	General Condition for Post Construction/Operation Phase	Proposed Action Plan
(i)	Project proponent shall ensure completion of green belt development prior to functioning of MSW processing. Prior certification from appropriate authority shall be obtained.	Plantation in green belt development is being done on progressive basis and majority of the same is already done.
(ii)	A complete set of all the documents submitted to SEAC & SEIAA should be forwarded to the Local authority and MPCB.	Complied.
(iii)	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Department.	Noted.
(iv)	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	We are having qualified staff for environment monitoring at site as per MSW rules and as per our concession agreement. Environment cell as per EC has been formed.
(v)	Separate funds shall be allocated for implementation of environmental protection measures/EMP along with item-wise breaks-up. These costs shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should reported to the MPCB & this department.	Cost of environmental monitoring and management is included in tipping fees & which are being paid to the operator of the project.
(vi)	The project management shall advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the Marathi language of the local concerned within seven days of issue of this letter, informing that	Complied.

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	the project has been accorded environmental clearance and copies of clearance letter are available with the Maharashtra Pollution Control Board and may also be seen at Website at http://ec.maharashtra.gov.in .	
(vii)	Project management should submit half yearly compliance reports in respect of the stipulated prior environment clearance terms and conditions in hard & soft copies to the MPCB & this department, on 15 th June & 15 th December of each calendar year.	Complied.
(viii)	A copy of the clearance letter shall be sent by proponent to the concerned Municipal Corporation and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	A copy of Environment Clearance is hosted on the operator's Website as per requirement.
(ix)	In the event of the failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restored until the desired efficiency has been achieved.	Noted.
(x)	Regular monitoring of the air quality including SPM & SO ₂ levels both in work zone and ambient air shall be carried out in and around the power plant and record shall be maintained. The location of monitoring stations and frequency of monitoring shall be decided in consultation with Maharashtra Pollution Control Board (MPCB) & submit report accordingly to MPCB.	Currently air monitoring at locations identified in EIA is being carried out as per the frequency defined in MSW (M&H) Rules, 2000/ SWM Rules, 2016. The reports are submitted to MPCB by the operator.

Sr.No	Conditions Under Environmental Clearance	Status of Compliance.
(xi)	<p>The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely SPM, RSPM, SO₂ and NO_x (ambient levels as well as stack emissions) or critical sector parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.</p>	<p>Air monitoring data is displayed on operator's Website as per requirement of the said clause. Monitoring results are sent to the said Departments as required in the said clause. Latest Monitoring results are displayed at the location within the site at the main entrance of the project site.</p>
(xii)	<p>The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.</p>	<p>Complied.</p>
(xiii)	<p>The environmental statement for each financial year ending 31st March in Form V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by-mail.</p>	<p>Complied. Environment Statement is submitted, and the same report is displayed on operator's website.</p>

The half yearly compliance report on Environmental Clearance issued vide no. SEIAA-EC-000000475, dtd. 29.10.2018 is as below:-

Sr. No.	Specific Conditions	Status of compliance/ action plan for compliance
I	PP to submit their plan for segregation of waste in the city.	In this context, MCGM had already submitted the Compliance of these conditions to SEIAA vide No. Dy.Ch.E./1722/SWM/Project dtd. 25.07.2017 (copy enclosed as Annexure -A).
II	PP to submit copy of compliance of issues raised during the public hearing.	
III	Earlier SEAC-I observation compliance to be submitted: Since the extended cell does compromise the shallow water body on eastern side of premises, proper drainage plan to ensure that storm water will properly led away so as not to stagnate low line areas shall be prepared and included in the EIA report.	
IV	PP to ensure the compliance of points raised by earlier SEAC in their meetings and site visit report dated 17.02.2016.	
V	PP to ensure compliance of the conditions stipulated by MCZMA and CRZ clearance.	
VI	PP to prepare comprehensive drainage plan to ensure proper carrying and disposal of storm water with out contamination.	
VII	PP to take utmost precautions to prevent the nuisance to nearby public from the activities carried out on site.	
VIII	PP to make traffic plan in such a way that no traffic congestion shall happen on the nearby roads which can affect traffic flow.	
IX	No burning is allowed on site; PP to take adequate precautions to prevent the fire incidents by way of administrative and safety controls like prevention of unauthorized entry, smoking	

Sr. No.	Specific Conditions	Status of compliance/ action plan for compliance
	etc.	
X	PP to ensure that it will process waste generated from CRZ area only.	Noted
XI	PP shall ensure compliance of MCZMA conditions.	In this context, MCGM had already submitted the Compliance of MCZMA conditions to SEIAA vide No. Dy.Ch.E./1722/SWM/Project dtd. 25.07.2017 (copy enclosed as Annexure -A).
SR. NO.	General conditions	Status of compliance/ planning for compliance
I	PP to achieve Zero Liquid Discharge ; PP shall ensure that there is no increase in the effluent load to CETP	Arrangement of Leachate collection through HDPE pipeline into HDPE lined ponds is provided by the operator. As per the technology Leachate will be re-circulated into the BLF Cells under controlled conditions by the operator. Leachate Treatment Plant is operational. Leachate treatment comprises of two stage biological treatment anaerobic &, aerobic followed by clarification & filtration. The excess Leachate will be treated in the said Leachate Treatment Plant.
II	No additional land shall be used /acquired for any activity of the Project without obtaining proper permission.	As per the directions of Hon. Supreme Court the land admeasuring 141.77 ha. was handed over to MCGM by GoM. However, the mangroves land admeasuring 23.36 ha. was retained by GoM. vide notification dtd. 02.04.2012. SEIAA issued Environment Clearance for processing of MSW in 65.96 ha. non CRZ area on 05.12.2014. SEIAA issued Environment Clearance for processing of MSW in further 52.45 ha. CRZ -III area (adjacent to 65.96 ha non CRZ area) on 29.10.2018 . In case any additional land apart from above is to be used/ acquired for any activity of the project, the due procedure as per law will be followed.
III	PP to take utmost precaution for the health and safety of the people working in the unit as also for protecting the environment.	The compliance of the said condition is being ensured by the operator while carrying out day to day operation at site.
IV	Proper Housekeeping programmers shall be implemented.	Dedicated team of trained workers is already deployed by the operator to ensure the good housekeeping & cleanliness. The compliance of the said condition is being ensured

Sr. No.	Specific Conditions	Status of compliance/ action plan for compliance
		by the operator while carrying out day to day operation at site.
V	In the event of the failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	The compliance of the said condition will be ensured by the operator while carrying out day to day operation at site.
VI	A stack of adequate height based on DG set capacity shall be provided for control and dispersion of pollutant from DG set. (If applicable).	At present the plant electricity requirement is fulfilled with captive power generation unit with backup power supply from MSEDCL & Standby DG set of 125 KVA with adequate stack height.
VII	A detailed scheme for rainwater harvesting shall be prepared and implemented to recharge ground water.	The compliance of the said condition will be ensured by the operator.
VIII	Arrangement shall be made that effluent and storm water does not get mixed.	Arrangement of separate leachate collection through HDPE pipeline into HDPE lined ponds is provided. It is controlled by re-circulation into the landfill BLF Cells. The excess leachate is treated in the leachate treatment plant and it is not allowed to mix with storm water. Storm water drainage galleries around the BLF Cells have been constructed for the management of rain water.
IX	Periodic monitoring of ground water shall be undertaken and results analyzed to ascertain any change in the quality of water. Results shall be regularly submitted to the Maharashtra Pollution Control Board.	Monthly Ground water quality is being monitored as prescribed in MSW (M&H) Rules, 2000/ SWM Rules, 2016. The results are submitted to MPCB by the operator. The sampling & analysis is being carried out by the operator with the help of laboratory approved by MoEF.
X	Noise level shall be maintained as per standards. For people working in the high noise area, requisite personal protective equipment like earplugs etc. shall be provided.	Noise monitoring as per MSW Rules is being done by operator. The compliance of the said condition will be ensured by the operator while carrying out day to day operation at site.
XI	The overall noise levels in and around the plant are shall be kept well within the standards by providing noise control measures including acoustic	Noise monitoring as per MSW Rules is being done by operator. The compliance of the said condition will be ensured by the operator while carrying out day to day operation at site.

Sr. No.	Specific Conditions	Status of compliance/ action plan for compliance
	hoods, silencers, enclosures, etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989.	
XII	Green belt shall be developed & maintained around the plant periphery. Green Belt Development shall be carried out considering CPCB guidelines including selection of plant species and in consultation with the local DFO/ Agriculture Dept	Plantation along the periphery of the site is being done on progressive basis by the operator. Dy. Conservator of Forest is requested by MCGM for guidance regarding development & maintenance of Green Belt around the plant periphery and regarding selection of plant species as per guidelines of CPCB in that behalf. After receipt of guidance the operator will be informed to implement the same during development & maintenance of Green belt around the plant periphery.
XIII	Adequate safety measures shall be provided to limit the risk zone within the plant boundary, in case of an accident. Leak detection devices shall also be installed at strategic places for early detection and warning.	The compliance of the said condition is being ensured by the operator while carrying out day to day operation at site.
XIV	Occupational health surveillance of the workers shall be done on a regular basis and record maintained as per Factories Act.	The compliance of the said condition is being ensured by the operator while carrying out day to day operation at site.
XV	The company shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling.	The compliance of the said condition is being ensured by the operator while carrying out day to day operation at site.
XVI	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Waste (Management and Handling) Rules, 2003 (amended). Authorization from the MPCB shall be obtained for collections/treatment/storage/	The said condition is not applicable to this project as the project involves processing of MSW.

Sr. No.	Specific Conditions	Status of compliance/ action plan for compliance
	disposal of hazardous wastes	
XVII	Regular mock drills for the on-site emergency management plan shall be carried out. Implementation of changes / improvements required, if any, in the on-site management plan shall be ensured.	The compliance of the said condition is being ensured by the operator while carrying out day to day operation at site.
XVIII	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Operator already has the Environment Health & Safety Cell and the compliance of the said condition is being ensured by the operator while carrying out day to day operation at site.
XIX	Separate funds shall be allocated for implementation of environmental protection measures /EMP along with item-wise breaks-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should reported to the MPCB & this department	Cost of environmental monitoring and management is included in tipping fees which are being paid to the operator of the project.
XX	The project management shall advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the Marathi language of the local concerned within seven days of issue of this letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the Maharashtra Pollution Control Board and may also be seen at Website at http://ec.maharashtra.gov.in	The said condition is complied.
XXI	Project management should submit half yearly compliance reports in respect of the	The said condition is complied.

Sr. No.	Specific Conditions	Status of compliance/ action plan for compliance
	stipulated prior environment clearance terms and conditions in hard & soft copies to the MPCB & this department, on 1 st June & 1 st December of each calendar year.	
XXII	A copy of the clearance letter shall be sent by proponent to the concerned Municipal Corporation and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	The said condition is complied.
XX III	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM. SO ₂ , NO _x (ambient levels as well as stack emissions) or critical sectorai parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Air monitoring data is being displayed on operator's Website as per requirement of the said condition. Monitoring results are being sent to the said Departments as per requirement of the said condition. Latest Monitoring results are being displayed at the main entrance of the project site.
XXIV	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal	The said condition is complied.

Sr. No.	Specific Conditions	Status of compliance/ action plan for compliance
	Office of CPCB and the SPCB.	
XXV	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.	Noted.

Submitted please.

Yours faithfully,

ds carfomc
20/9/18

Chief Engineer
(Solid Waste Management)

Annexure - 'A'

MUNICIPAL CORPORATION OF GREATER MUMBAI

CHIEF ENGINEER (SOLID WASTE MANAGEMENT)

No. Dy. Ch. E./ 722/SWM/Project, dtd. 25.07.2017

Office of the Chief Engineer
(SWM)
Love Grove Complex,
89, Dr. Annie Besant Road,
Worli,
Mumbai-400018.
Tel. No.: 022-24945186
/24955436

To,
State Level Environment Impact Assessment Authority,
15th Floor, Environment Department,
New Administrative Building,
Mumbai - 400 032.

- Subject : Compliance to the 139th Minutes of Meeting of SEAC- 1 held 24th February 2016 regarding permission for disposal of MSW in 52.45 ha CRZ-III area, at Kanjur Processing site, Mumbai.
- Reference : Minutes of Meeting of SEAC -1 held on 29th, 30th June & 1st July, 2017 (Item No.28).

Sir,

This has reference to the minutes of above referred meeting wherein the committee sought following compliances : -

Sr. No	Conditions	Compliance
1)	PP to submit their plan for segregation of waste in the city.	MCGM is taking serious efforts to encourage the segregation at the source. MCGM has 35 segregation centres and this number will be increased for which Budget provision is made in the year 2017-2018. Also no. Of sites were identified & earmarked for SWM facilities in proposed D.P. 2034. MCGM is taking efforts and the concerns are directed to act on following point :- 1. For all complexes having built up area of 20,000

sq. mtr and above:-

All types of garbage is to be processed on site and is to be disposed in such cases. The garbage of all types shall not be lifted from such premises from 2nd October, 2017 and cases of non compliance shall be taken up with appropriate authority for taking penal action under the provisions of Environment (Protection) Act, 1986.

2. For all complexes having built up area , 5,000 sq.mtr and above:-

The waste generators must segregate waste at source and the dry waste generated by them shall not be lifted. It shall be ensured that the recyclable material is handed over to either the authorized waste pickers or the authorized recycler of dry waste. The wet waste as far as possible shall be processed in phased manner i.e. 99% bio- degradable waste processing like composting, bio- methanation, etc. by the end of three months at the rate of at least 33% waste processing per month for next three months.

3. Although, there is no provision for action to be taken by bulk waste generators/ housing complexes generating waste of average more than 100 kg per day elsewhere in the Rules, but in view of limited capacity of dumping ground, the generators of waste shall be informed to segregate waste at source and the dry waste generated by them shall not be lifted. It shall be ensured that the recyclable material is handed over to either the authorized waste pickers or the authorized recycler of dry waste. The wet waste as far as possible shall be processed in phased manner i.e. 99% bio- degradable waste processing like composing, bio-methanation, etc. to comply with the provisions within three months period.

4. For all complexes having built up area of 2,000 sq.mtr and above for building being constructed after 02.04.2016:- Treat wet garbage in- situ, as per the conditions incorporated in the I.O.D. regarding the treatment of wet garbage generated in the building.

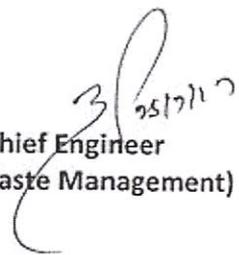
Against defaulting owners and occupiers, their wet waste will not be lifted 2nd October,

		<p>2017 onwards. Further the action should be taken for offences as following:-</p> <p>Section 471 & 472 of the MMC Act provide for penalties punishable with fine for offences committed under various specified sections of MMC Act. Action for offences under section 368 of MMC Act is covered in these sections.</p> <p>The Greater Mumbai Cleanliness & Sanitation Bye- Laws, 2006 prepared as per section 461 of the MMC Act. Specify various penalties under Schedule -I in it.</p>
2)	PP to submit copy of compliance of issues raised during the public hearing.	The compliance to the issues raised during public hearing are enclosed as Annexure 1 .
3)	Earlier SEAC-I observation compliance to be submitted: Since the extended cell does compromise the shallow water body on eastern side of premises, proper drainage plan to ensure that storm water will properly led away so as not to stagnate low line areas shall be prepared and included in the EIA report.	A detailed note regarding adequacy of storm water drainage system to ensure that storm water will properly be led away and shall not remain stagnant in low line areas along with storm water drainage plan is enclosed herewith as Annexure 2 (A&B) .
4)	PP to ensure the compliance of points raised by earlier SEAC in their meetings and site visit report dated 17.02.2016.	The compliance of earlier SEAC i.e. SEAC -I 's 122 nd meeting (in the said meeting the site visit report is also discussed & annexed as Annexure 4 A.1) is uploaded vide letter U/no. Dy.ChE/ 1376/ SWM/Project dtd 03.07.2017 (Copy of the said letter is enclosed as Annexure 3).
5)	PP to ensure compliance of the conditions stipulated by MCZMA and CRZ clearance.	Compliance of the conditions stipulated by MCZMA and CRZ clearance is enclosed as Annexure 4 .
6)	PP to prepare comprehensive drainage plan to ensure proper carrying and disposal of storm water without contamination.	The comprehensive drainage plan to ensure proper carrying and disposal of storm water without contamination is enclosed as Annexure 2 (A&B)
7)	PP to take utmost precautions to prevent the nuisance to nearby public from the activities carried out on site.	<p>The precautions that are being taken to prevent nuisance to the nearby public area due to activities at site and are as under:</p> <ol style="list-style-type: none"> 1) Flaring of landfill gas- Operator has installed flaring system at site which reduces the odour generated from MSW processing facility. 2) Spraying of Enzyme based product - Operator of Kanjur MSW processing facility

		<p>is spraying Enzyme based product like Biowish round the clock to reduce odour generated from MSW processing facility.</p> <p>3) Misting arrangement – Operator of Kanjur MSW processing facility has installed misting arrangement on Bio reactor cell to reduce foul smell.</p> <p>4) Soil Cover- Inactive area of Bio reactor Cell is daily covered by the Operator of Kanjur MSW processing facility with the help of soil to reduce foul smell The operator has set up control room having phone No. 8080032282 to attend the complaints regarding foul smell in the area.</p>
8)	<p>PP to make traffic plan in such a way that no traffic congestion shall happen on the nearby roads which can affect traffic flow.</p>	<p>Present entry to the site is provided with the temporary road of 18.3 m width and the same will be maintained in good condition in order to have smooth movement of vehicles.</p> <p>At this juncture around 450 MSW carrying vehicle trips are daily coming to Kanjur site. Further, it is estimated that around 650 to 800 refuse vehicles will come to the Kanjur site per day. If we consider maximum load approximate 50% in the first shift then it will result in 325 to 400 refuse vehicles in 8 hours i.e. maximum of 40 to 50 vehicles per hour approximately.</p> <p>At present these vehicles are going to either Mulund or Deonar dumping grounds, as refuse vehicles instead of travelling up to Deonar or Mulund can directly enter into Kanjur Site which will help in less traffic conjunction & thereby reducing environment pollution.</p> <p>In order to have smooth movements of vehicles inside the plot area, peripheral road is constructed on top of then existing bunds all round Kanjur site area. Sections of the bund near the entry to the site are planned with a top width of 12 m in the form of a two lane carriage way with 2m shoulder on either side.</p> <p>This road will provide the main access to the waste processing area and will surround the land fill area.</p> <p>Separate entry & exit will be provided to each</p>

		unloading points which will be connected to surrounding peripheral roads. Thereby effective conveying system will be developed & maintained so as to reduce the environment pollution by vehicular movement.
9)	No burning is allowed on site; PP to take adequate precautions to prevent the fire incidents by way of administrative and safety controls like prevention of unauthorized entry, smoking etc.	The precautions to prevent the fire incidents is being taken as per the EIA.

In view of above, it is kindly requested to take subject proposal on the agenda of upcoming meeting of SEIAA and grant Environment Clearance for MSW processing facility in 52.45 ha CRZ-III area at Kanjur MSW Processing site expeditiously.


Chief Engineer
(Solid Waste Management)

Annexure 1

Compliance of issues raised during the public hearing dtd. 08.06.2007:-

Sr. No.	Issues raised during public hearing	Answers / clarifications given during public hearing	Compliances
1	<p>Project proponent have claimed all the positive points of the proposed MSW processing and disposal facility at Kanjurmarg site. But, in practice implementation of the project is very difficult and observing the failure of dumping at the other sites like Gorai, Deonar & Mulund success of the proposed MSW processing and disposal facility at Kanjurmarg site is doubtful. Even after the MSW (M &H) Rules 2000 is in force, people residing in the vicinity of the Deonar dumping ground are facing nuisance of smell and various health related problems caused due to unscientific dumping.</p>	<p>Dumping of Municipal solid wastes at Gorai, Deonar & Mulund were started more than 40 years back and at that time scientific way of disposal of Municipal Solid Wastes were not adopted . as a result of this and dumping of Municipal Solid Wastes over this period without applying any treatment have worsened the situation at these sites. Therefore, MCGM have proposed to develop the Municipal Solid Waste processing and disposal facility at S.No. 275 (pt.), village Kanjurmarg.</p>	<p>Kanjur MSW processing facility is processing the MSW in scientific manner and as per the terms & conditions of Authorization granted by MPCB and Environment Clearance granted by SEIAA.</p>
2	<p>As per MSW(M&H) Rules 2000 , MSW processing and disposal site must be located at a distance more than 500 meters away from the residential areas. But, the proposed MSW processing and disposal facility at</p>	<p>Kannamwar Nagar is situated in the South – West direction of the proposed MSW processing and disposal facility at Kanjurmarg and most of the time wind</p>	<p>Hon'ble Supreme Court passed an Order directing the State Government of Maharashtra to identify plots for dumping of MSW. In this context, the joint affidavit dated 26th August 2002 filed by the Secretary, State of</p>

<p>Kanjurmarg site is located at a distance of 150 meters from the residential area like Kannamwar Nagar. This will cause inconvenience to and have adverse effect on the health of the residents of Kannamwar Nagar.</p>	<p>flows from North – West direction towards the Thane Creek which is situated on the Eastern side of the proposed MSW processing and disposal facility. Processing facility of MSW i.e. composting section will be located away from the Kannamwar Nagar and landfill will receive only the inert process rejects hence it will not have any of the negative environmental impacts such as odour, flying waste and vermin as associated with unscientific dumping of MSW. Arrangement for trapping gases generated beneath dumping site will be made. Hence, the residents of the Kannamwar Nagar will not be affected due to the above project.</p>	<p>Maharashtra and the Municipal Commissioner, MCGM in the Hon'ble Supreme Court in Special Leave Petition (Civil) No.18717 of 2001, stated that the land admeasuring about 283 hectares at Village Kanjur was vacant and free from encumbrances and therefore, the said land could be used for land fill purpose. It was mentioned in the said affidavit that out of 283 hectares, 141.77 hectares of land was free from CRZ I and the said land of 141.77 hectares was required to be shared by the Government of Maharashtra and the Government of India. It was therefore, decided that 50% of the land admeasuring 141.77 hectares shall be handed over to the Municipal Corporation for using the same as land fill site and the remaining 50% of the land admeasuring 141.77 hectares bearing Survey No.275(Part) will not be used by the Government of India for development purpose as the same would be in the vicinity of the proposed land fill site. The Kanjur project is being carried out on the said allotted land. The precautions that are being taken to prevent any inconvenience or adverse effect on the health of residents of Kannamwar Nagar due to activities at site are as under:</p> <ol style="list-style-type: none"> 1) Flaring of landfill gas- Operator has installed flaring system at site which reduces the odour generated from MSW processing facility.
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			<p>2) Spraying of Enzyme based product - Operator of Kanjur MSW processing facility is spraying Enzyme based product like Biowish round the clock to reduce odour generated from MSW processing facility.</p> <p>3) Misting arrangement - Operator of Kanjur MSW processing facility has installed misting arrangement on Bio reactor cell to reduce foul smell.</p> <p>4) Soil Cover- Inactive area of Bio reactor Cell is daily covered by the Operator of Kanjur MSW processing facility with the help of soil to reduce foul smell The operator has set up control room having phone No. 8080032282 to attend the complaints regarding foul smell in the area.</p>
3	Proposed MSW processing and disposal site at Kanjurmarg is situated in CRZ area. Large quantities of various species of mangroves exist on the above site. Whether project proponent have obtained necessary permissions from the CRZ Authority to set up proposed MSW processing and disposal facility at Kanjurmarg site.	MCGM has obtained permissions from the CRZ Authority for all the necessary works related to the development of proposed MSW processing and disposal facility at Kanjurmarg.	MCGM during the execution of the project had obtained all the necessary permissions from the concerned authorities.
4	Project proponent have claimed that mangroves existing on 10 Hectare land	Due to non availability of the alternative site for	State of Maharashtra has retained the 23.36 ha mangroves land through forest

	<p>of the proposed site will be cut down for the development of the proposed MSW processing and disposal facility at Kanjurmarg. This will violate the order of Hon. High Court, Mumbai.</p>	<p>development of municipal Solid Waste processing and disposal facility, Hon. Supreme Court has passed an order in Nov.2003 to handover 141.77 hectare of land at Kanjurmarg Salt pan. Mangroves existing on 10 hectares of the will be cut down for the development of proposed MSW processing and disposal facility. If possible these mangroves will be transplanted and compensatory plantation of mangroves will be done on 80 hectares of land situated in South direction of proposed facility.</p>	<p>department and MCGM is not carrying out any project activities on the said mangroves land. MCGM had constructed the underground channels/ culverts for free tidal movement of sea water in mangroves land.</p>
5	<p>What method will be adopted for the treatment on the municipal Solid Wastes? Whether the area available at the proposed site will be sufficient for the effective composting of the Solid Wastes?</p>	<p>After segregating organic (Bio-degradable) component from the MSW, it will be subjected to open windrow aerobic composting. 8 Nos. of composting units having capacity to compost 500 MT/day of MSW will be constructed over 50 hectares area. After composting, it will be sold as a manure. Proper shed will be provided at the composting section so that composting</p>	<p>MCGM proposed the project on the 141.77 ha area, however after deduction of 23.36 ha mangroves land & 52.45 ha CRZ-III area the area available for the project activities was 65.96 ha. Due to curtailment in the land available for the project MCGM has adopted Bioreactor technology and Composting technology for which Environmental Clearance was obtained. In view of the provisions of CRZ notification, 2011 MCGM applied for the permission for disposal of MSW in 52.45 ha CRZ-III area. The said proposal is under consideration.</p>

		process remains uninterrupted during monsoon.	
6	Development of MSW processing and disposal facility at Kanjurmarg is proposed on land which falls under CRZ area. Dense mangroves exists at the above site. Proposed development of MSW processing and disposal facility will require construction of bunds which will adversely affect the free tidal movement of sea water and growth of the mangroves.	Proposed MSW processing and disposal facility at Kanjurmarg is planned to be developed on land which is enmarked as CRZ-III area. MCGM has obtained permissions from the CRZ authority for the necessary works during construction of bunds underground channels will be constructed for free tidal movement of sea water. Hence, the growth of the mangroves will not be affected.	State of Maharashtra has retained the 23.36 ha mangroves land through forest department and MCGM is not carrying out any project activities on the said mangroves land. MCGM had constructed the underground channels/ culverts for free tidal movement of sea water in mangroves land.
7	Proposed development of MSW processing and disposal facility at Kanjurmarg site will have adverse effect on the lives of the existing birds and creatures.	Sea birds exists on the mud flat of the Thane Creek and creatures exists in dense mangroves. Hence, sea birds and creatures will not be affected due to the proposed project.	Sea birds and creatures are not being affected due to the existing project.
8	It is claimed by the project proponent that the life of the proposed MSW processing and disposal facility at Kanjurmarg site is 25 years. How & where the Municipal Solid Wastes will be disposed off after that when no site will be available ? why it is not emphasized on reduction of Solid Wastes at source and its recycling?	MCGM is always encouraging public to reduce generation of Solid Wastes at source and adopt composting method to treat organic waste at society level. This will reduce the generation quantity of MSW.	The GoM has in principle allotted the land admeasuring about 52.10 ha at Mauje Karvale (near Taloja). Out of which advance possession of 38 ha of Govt. land has been given to MCGM. The process of handing over of remaining 14 ha of private land is in process. The process of handing over of land at Mulund East near Airoli bridge to MCGM by GoM is in process.

			<p>MCGM is taking serious efforts to encourage the segregation at the source.</p> <p>MCGM has 35 segregation centres and this number will be increased for which Budget provision is made in the year 2017-2018.</p> <p>Also no. of sites were identified & earmarked for SWM facilities in proposed D.P. 2034.</p> <p>MCGM is taking efforts and the concerns are directed to act on following point :-</p> <ol style="list-style-type: none">1. For all complexes having built up area of 20,000 sq. mtr and above:- All types of garbage is to be processed on site and is to be disposed in such cases. The garbage of all types shall not be lifted from such premises from 2nd October,2017 and cases of non compliance shall be taken up with appropriate authority for taking penal action under the provisions of Environment (Protection) Act, 1986.2. For all complexes having built up area , 5,000 sq.mtr and above:- the waste generators must segregate waste at source and the dry waste generated by them shall not be lifted. It shall be ensured that the recyclable material is handed over to either the authorized waste pickers or the authorized recycler of dry waste. The wet waste as far as possible shall be processed in phased manner i.e. 99% bio-degradable waste processing like composting, bio - methanation, etc. by the end
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			<p>of three months at the rate of at least 33% waste processing per month for next three months.</p> <p>3. Although, there is no provision for action to be taken by bulk waste generators/ housing complexes generating waste of average more than 100 kg per day elsewhere in the Rules, but in view of limited capacity of dumping ground, the generators of waste shall be informed to segregate waste at source and the dry waste generated by them shall not be lifted. It shall be ensured that the recyclable material is handed over to either the authorized waste pickers or the authorized recycler of dry waste. The wet waste as far as possible shall be processed in phased manner i.e. 99% bio-degradable waste processing like composing, bio-methanation, etc. to comply with the provisions within three months period.</p> <p>4. For all complexes having built up area of 2,000 sq.mtr and above for building being constructed after 02.04.2016:- Treat wet garbage in- situ, as per the conditions incorporated in the I.O.D. regarding the treatment of wet garbage generated in the building.</p> <p>Against defaulting owners and occupiers, their wet waste will not be lifted 2nd October, 2017 onwards. Further the action should be taken for offences as following.,</p>
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			<p>A) Section 471 & 472 of the MMC Act provide for penalties punishable with fine for offences committed under various specified sections of MMC Act. Action for offences under section 368 of MMC Act is covered in these sections.</p> <p>B) The Greater Mumbai Cleanliness & Sanitation Bye-Laws, 2006 prepared as per section 461 of the MMC Act. Specify various penalties under Schedule -I in it.</p>
9	Who will be responsible for the monitoring of water & air quality at the proposed MSW processing and disposal facility at Kanjurmarg site?	MCGM will make arrangement for the monitoring of water & air quality at the proposed MSW processing and disposal facility at Kanjurmarg site.	<p>The operator has monitoring various Environmental aspects through MoEF approved laboratory. MCGM is also monitoring the Air quality through its own laboratory. In order to cross check the monitoring being done by the operator, MCGM has appointed National Environmental Engineering Research Institute (NEERI) to monitor environment related aspects for Kanjur Landfill Project and to suggest the remedies for the same if any.</p> <p>The MPCB is regularly visiting the Kanjur site to monitor the site conditions and their suggestions if any are being incorporated during day to day operations.</p> <p>Also authorities like CPCB, MCZMA and MoEF visit the Kanjur Site.</p>
10	Which agency will be responsible for attending polluting related complaints at the proposed MSW processing and disposal facility at Kanjurmarg site?	Both MCGM and MPC board will be responsible for attending pollution related complaints at the proposed MSW processing and	<p>The operator has set up control room having phone No. 8080032282 to attend the complaints regarding foul smell in the area.</p> <p>Both MCGM and MPC board are also attending the complaints</p>

		disposal facility at Kanjurmarg site.	from the residents if any.
11	How the problems of encroachment near the proposed dumping site will be tackled?	Boundary wall and adequate security arrangement will be provided to tackle the problems of encroachment near the proposed dumping site.	MCGM had constructed the boundary wall along the periphery of the site which is at present taking care of problems related with encroachment. The same will also be utilized in future to deal with the problems related with encroachment. The operator has made the security arrangement to tackle the problems of encroachment on the area of existing project.
12	MCGM has disposed off toxic silt removed from the Mithi River at the above site which has destroyed various species of mangroves present at the above site and also it is adversely affecting the growth of the mangroves existing in the surrounding area. What measures will be taken to keep alive the affected mangroves?	Silt removed from the Mithi River was treated by spraying lime spray as per MPCB guidelines and disposed off at the Kanjur Salt Pan land. No mangroves were affected by the above act. It is planned to do compensatory plantation of mangroves on 80 hectares of land and to develop green belt in consultation with the experts.	State of Maharashtra has retained the 23.36 ha mangroves land through forest department and MCGM is not carrying out any project activities on the said mangroves land. MCGM had constructed the underground channels/ culverts for free tidal movement of sea water in mangroves land.


 Chief Engineer
 (Solid Waste Management)

Annexure 2A

Storm Water Drainage System Design

Due to heavy intensity of rainfall in Mumbai, several times there have been incidences of major flooding mainly because of inadequate storm water drainage system. Considering these experiences & in order to avoid flooding situation at Kanjur Integrated Solid Waste Management (ISWM) Project site, proper Storm Water System has been designed. MCGM has awarded the work to construct compound wall, MCGM's site office, Canteen, Toilet block & a peripheral storm water gutter. This peripheral gutter will run parallel to site boundary. M/s Antony-Lara Enviro Solutions Pvt. Ltd. being a Project Proponent of this project, has to make arrangement to divert all storm water in plot area towards peripheral gutter. It is observed from the existing drawings that all this storm water will be taken out of the plot area through the peripheral gutter. In fact, the water coming into the drainage system is purely storm water. Leachate collection & removal is a separate system and will never be taken out through the storm water drainage system. Kanjur site is located adjacent to creek area & all the three sides of plot are surrounded by creek water. Considering the site situation it is convenient & safe to drain all the storm water into the creek through the nearest boundary.

The Storm water system is designed for the heaviest intensity of rainfall. After considering the flooding incidence of 26th July 2005 & also referring to the news of rainfall intensity; 50mm/hr rainfall intensity has been taken for designing storm water drainage system at Kanjur.

Quantum of the storm water in the drain depends on which type of the ground-surface it falls. Several kind of losses can occur before storm water finally comes into the drain. These losses decreases the amount of flow passing through the drain. There are losses like infiltration loss, evaporation loss, evapotranspiration loss etc. Infiltration loss depends on nature of the catchment area. If the catchment area will be of soil, there can be considerable reduction in the surface runoff. If the area is impervious there will be much less loss due to infiltration. This loss has to be considered while calculating flow in the drain. Other losses are minor losses & hence can be neglected. Catchment areas are of several types. If we consider the development & utilization of the plot, rainwater can fall on closure area i.e. impervious in nature or on the open

plot area which is partially pervious in nature. Depending on the type of catchment area, Runoff Coefficients are taken to calculate the total flow.

There are three types of gutters provided on the site. 1) Gutter at top of bund of BLF 2) Gutter at Bottom of bund of BLF 3) Gutter towards boundary of the plot.

- 1) Gutter at top of bund of BLF: The gutter is provided at the top of the bund & runs parallel to the boundary of the Processing cell. Storm water from closure of that cell will be collected in this gutter. Closure area is considered impervious in nature due to HDPE liner. Runoff coefficient for the impervious ground is 0.74 (Ref: Manual on Sewerage & Sewage Treatment by CPHEEO, Page No. 45, Table No. 3.3). This gutter has been connected to gutter at bottom through hume pipes. These pipes are provided at every 100 m interval. Bed Slope of 1 (V) : 500 (H) is kept for the gutter.
- 2) Gutter at bottom of bund of BLF: This gutter is provided at the toe of the bund & run parallel to boundary of the Processing cell. Storm water from closure & bund will be collected in this gutter. As the bund area is very small as compared to closure area & to be on safer side, same Runoff coefficient is used to calculate the flow. This gutter has been connected to gutter towards boundary through hume pipes. These pipes are provided at every 100m interval. Bed Slope of 1 (V) : 500 (H) is kept for the gutter.
- 3) Gutter towards boundary: This gutter is provided at the access road level. This gutter is connecting gutter between gutter at bottom & peripheral gutter. This gutter will carry flow from gutter at bottom & additional flow from the area between storm water gutter at bottom & peripheral gutter which is 150m wide. Area between storm water gutter at bottom & peripheral is open ground. This area is partially pervious in nature. Runoff Coefficient for the partially pervious ground is 0.569 (Ref: Manual on Sewerage & Sewage Treatment by CPPHEEO, Page No. 45, Table No. 3.3). For the flow from the gutter at bottom Runoff coefficient is kept 0.74. This gutter is provided at every 200m interval.

Ground level is raised by filling C&D waste. Plot area is at elevated at level (29.50) & highest flood level is at (27.50). Hence storm water is finally released into the sea. The outlet of storm water gutter is at 27.60. All the structures are raised to either 30.00 or 31.00 so that there is enough level difference for the storm water to flow off to the nearest plot boundary.

Therefore, Main outlets are provided at every 200m. For critical conditions provision of extra outlets has been made at every 100m. These outlets will take storm water out of the plot boundary within a short time span. There are four main culvert outlets at the mangroves areas which will help to sea water to come in & go out. This is necessary for mangroves to survive.

Following formulae are used to design the storm water drainage system.

For calculating total flow in the gutter:

$$Q = A \times V$$

Where,

Q = Total flow in the gutter in m³/s

A = Catchment area in m²

V = Velocity of flow in m/s

Manning's formula:

$$V = 1/n * R^{(2/3)} * S^{(1/2)}$$

Where,

V = Velocity of the storm water in m/s

n = Manning's Coefficient of roughness

= 0.017 (for unfinished concrete)

R = Hydraulic Mean depth Wetted Perimeter in m

= Cross-section Area / wetted perimeter

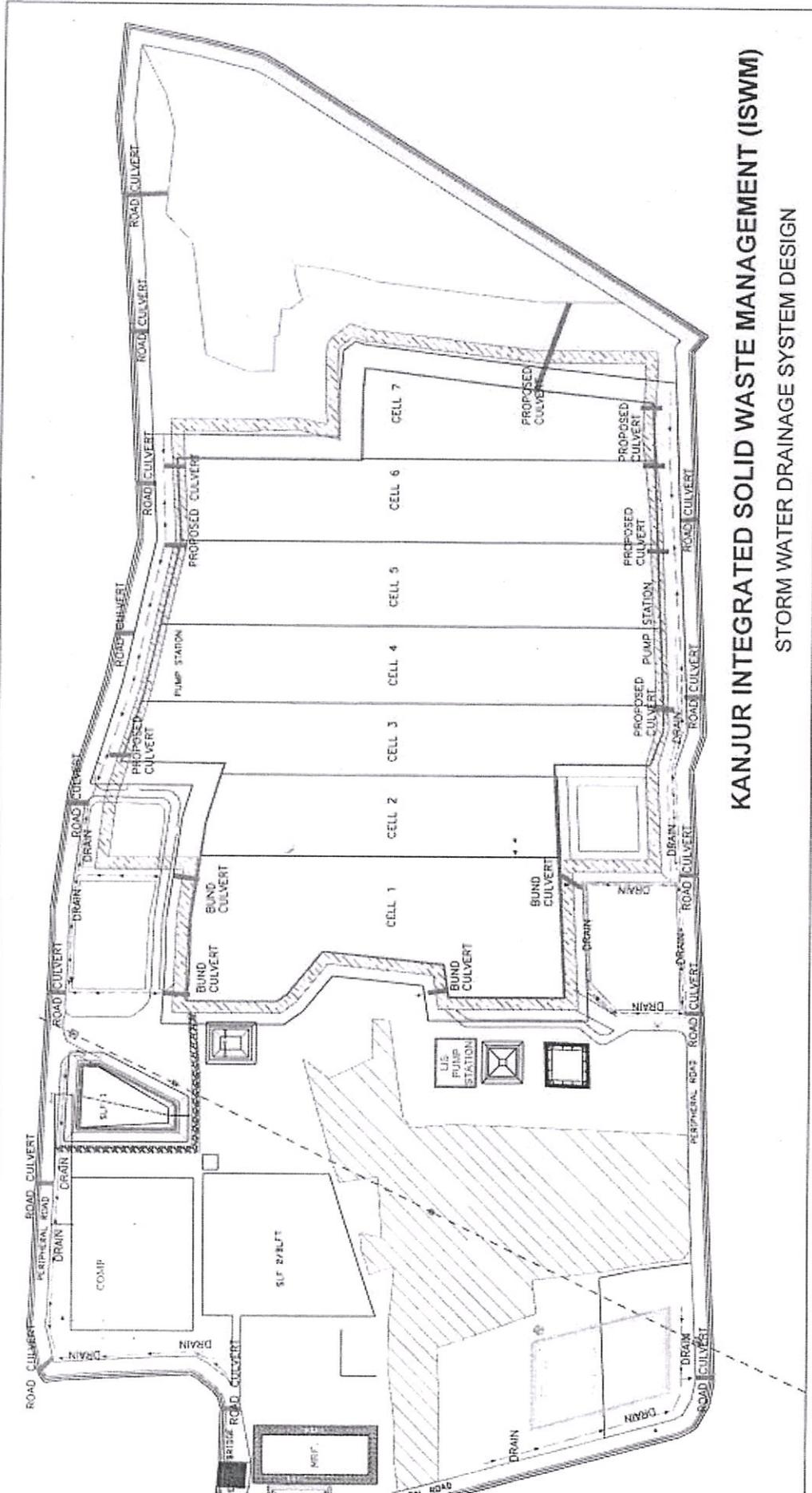
S = Bed slope

Table shown below summarizes the cases considered for finalizing gutter size. Provided gutter sizes have also been tested for runoff coefficient equal to 1. Considering 100% water from catchment area will come in the gutter. Gutter sizes have been also tested for increasing rainfall intensity.

Case No.	Rainfall intensity mm/hr	Area taken for calculation (SqM)	Runoff Coefficient	Actual required Size of the gutter (sqM)	Provided Size of the gutter (Incl. Clear head) (sqM)
SWG AT TOP- SLOPE OF GUTTER 1:500 (Outlet at every 100m)					
1	50	30000	0.74	0.35	1.0
2	75	30000	0.74	0.50	1.0
3	100	30000	0.74	0.60	1.0
4	50	30000	1	0.50	1.0
5	75	30000	1	0.60	1.0
SWG AT BOTTOM-SLOPE OF GUTTER 1:500 (Outlet at every 100m)					
1	50	30000	0.74	0.35	1.0
2	75	30000	0.74	0.50	1.0
3	100	30000	0.74	0.60	1.0
4	125	30000	0.74	0.70	1.0
5	50	30000	1	0.50	1.0
6	75	30000	1	0.60	1.0
SWG TOWARDS BOUNDARY 1:500 (Outlet at every 200m)					
1	50	60000	1 & 0.569	0.625	1.0
2	75	60000	1 & 0.569	0.875	1.0

- Note:
- 1) Runoff coefficient is taken from Manual on Sewerage & sewage Treatment, Table No. 3.3, Page No. 45
 - 2) Area is considered impervious in nature for the flow from closure area & Area is considered 40% pervious in nature for the flow from open ground, Duration = 60 min
 - 3) Eastern side of the plot has existing GL lower than HFL. This low lying area is under backfilling for raising it to above HFL. Adequate dewatering pumps have been provided in this region to avoid water accumulation.

Annexure 2B



KANJUR INTEGRATED SOLID WASTE MANAGEMENT (ISWM)
STORM WATER DRAINAGE SYSTEM DESIGN

Annexure 3

MUNICIPAL CORPORATION OF GREATER MUMBAI

Dy.Chief Engineer (Solid Waste Management) Project

No. DyChE/1376 /SWM/Project, dated.03.07.2017

Office of the
Dy. Chief Engineer (SWM) Project
2nd, 3rd & 4th floor,
Bai Padmabai Thakkar Marg,
Kotwadi, Mahim (Shivaji Park),
Mumbai-400016.

To,
State Expert Appraisal Committee 1,
Room No.217, Mantralaya,
Madam Cama Road,
Mumbai - 400 020.

Sub: Compliance to the 122nd Minutes of Meeting of SEAC- 1 held 24th February 2016 regarding permission for disposal of MSW in 52.45 ha area, at Kanjur Processing site, Mumbai.

Ref: Meeting of SEAC -1held on 29th, 30th June & 1st July,2017 (item No.28).

Sir,

Reference is requested to above subject matter please.

In this context, it is submitted that as directed by the committee members during above referred meeting MCGM is submitting details regarding following points:-

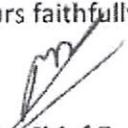
1. Since the extended cells have their toes within 15 m of perimeter wall, the stability of slope of cells shall be analyzed by competent specialist by using Slip Circle Analysis which shall be included in EIA.
 - Stability of slope of cells was analyzed and Slip Circle Analysis report is enclosed in EIA report as Annexure XII.As per the said report global stability is analyzed using software GEOSLOPE using above parameters. The factor of safety in static and seismic conditions are observed as 1.7 and 1.02 which are higher than the acceptable factor of safety of 1.3 and 1 in static and seismic conditions. Therefore, it is concluded that the wall is safe in global stability. The report on slope stability is enclosed herewith as Annexure 1.

2. Since the extended cells does compromise the shallow water body on eastern side of premises, a proper drainage plan to ensure that storm water will properly led away so as not to stagnant low line areas shall be prepared and included in the EIA report.
 - A detailed note regarding adequacy of storm water drainage system to ensure that storm water will properly be led away and shall not remain stagnant in low line areas along with storm water drainage plan is enclosed herewith as Annexure 2 (A&B).
3. The Committee is very keen that the PP should address the long term plan of keeping Mumbai city totally free of dumping grounds. For this purpose a comprehensive study shall be carried out, envisaging transporting of garbage by rail/water transport to suitable locations on land or offshore islands outside the city limits ensuring economical transportation of garbage and its treatment in a technically and economically feasible manner.
 - MCGM has prepared long term Plan for effective management of Municipal Solid Waste generated in the city of Mumbai Accordingly MCGM has filed detailed affidavit in the Hon'ble High Court of Mumbai the same is enclosed herewith as Annexure 3. Further, MCGM will ensure economical transportation of garbage and its treatment in a technically and economically feasible manner.
4. Minutes of Environmental Public Hearing conducted on 8th June 2007 at Municipal Marathi School, Tagore Nagar (Hariyali Village), Vikhroli (E), Mumbai -400 083 for proposed Municipal Solid Waste processing and disposal facility at S. No. 275 (pt.), Village Kanjurmarg, Mumbai on the land adm. 141.77ha. allotted as per the directions of Hon. Supreme Court is enclosed herewith as Annexure 4.

In view of above, SEAC -1 is kindly requested to recommend the proposal to SEIAA to grant Environment Clearance.

Thanking you,

Yours faithfully,


Deputy Chief Engineer
(Solid Waste Management) Project

Annexure 4

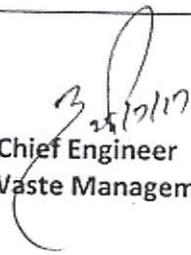
Compliance of the conditions stipulated by MCZMA and CRZ clearance:-

Sr.No.	Conditions stipulated	Compliance
1	MCGM to submit the rapid EIA, EMP and Monitoring Plan for the project to SEAC and SEIAA.	MCGM submitted the rapid EIA, EMP and Monitoring Plan for the project to SEAC-I.
2	MCGM to implement Sensor based air quality monitoring in and around the site instead of conventional monitoring methodology. Location of the air monitoring shall be decided in consultation with MPCB and NEERI.	NEERI is appointed for the said monitoring work. At this juncture, NEERI is monitoring at the strategic locations finalized by them.
3	Monitoring should incorporate protocol for monitoring air pollution in the morning and evening periods specifically and develop online display system for information of public. Periodic reports on the same shall be submitted to Environment Department.	Operator of the project is carrying out and displaying the results of periodic Air monitoring on the display board kept at the entrance gate of the site. Periodic reports on the same are being submitted to Environment Department from time to time.
4	MCGM to ensure that no garbage is burned on the dumping ground. Further, incidents have been reported that garbage is burned at the various collection points. MCGM to instruct concerned responsible ward officer/ authority to stop the same.	MCGM has ensured that there will be no burning of waste at Kanjur site. Further, MCGM has the penal provision in the Greater Mumbai Cleanliness and Sanitation By-laws, 2006 for disposal by burning of any type of solid waste at road sides, or any private or public property.
5	MCGM to ensure that 50m mangroves buffer zone should be maintained around of mangroves patches at southwest & Eastern side of the project. No activity is permitted within 50m mangroves buffer zone. MCGM to improve the saline water circulation in the mangroves area by providing adequate number culverts at appropriate locations.	MCGM ensures that there will not be any construction activity in the buffer zone for the mangroves. MCGM had already provided culverts for saline water circulation in the mangroves area and also requested the Forest department &

		Mangrove Cell to suggest improvements, if any. MCGM will make the improvements as per the said suggestions, if any.
6	MCGM to ensure the measures for preventing leachate into coastal water or ecosystem surrounding the area. Leachate from the facility shall be collected and treated in leachate treatment plant to meet the prescribed standards.	<p>The operator of the facility has provided the lining system as per the MSW rules, 2000 to prevent leachate into coastal water or ecosystem surrounding the area.</p> <p>Operator has also provided the leachate collection, recirculation and treatment facility to manage the leachate on site.</p>
7	MCGM to ensure all the measures/ efforts are taken to control odour nuisance and especially implementation of measures to control the odour. The odour level should be measured at strategic location considering the wind directions and location of habitats. This aspect should be part of the Environment Management and monitoring plan for the project.	<p>The measurement of odour level at strategic location considering the wind directions and location of habitats is considered in the Environment Management and monitoring plan submitted for the project.</p> <p>The precautions that are being undertaken to control odour nuisance due to activities at site and are as under:</p> <ol style="list-style-type: none"> 1) Flaring of landfill gas- Operator has installed flaring system at site which reduces the odour generated from MSW processing facility 2) Spraying of Enzyme based product - Operator of Kanjur MSW processing facility is spraying Enzyme based product like Biowish

		<p>round the clock to reduce odour generated from MSW processing facility.</p> <p>3) Misting arrangement –</p> <p>Operator of Kanjur MSW processing facility has installed misting arrangement on Bio reactor cell to reduce foul smell.</p> <p>4) Soil Cover- Inactive area of Bio reactor Cell is daily covered by the Operator of Kanjur MSW processing facility with the help of soil to reduce foul smell</p> <p>The operator has set up control room having phone No. 8080032282 to attend the complaints regarding foul smell in the area.</p>
8	MCGM may also explore the system of biological control of odour nuisance.	Operator of the facility is using Enzyme based product like Biowish to control odour nuisance.
9	Odour control program and its implementation schedule should be displayed for public information on strategic location.	Odour control program is being implemented round the clock.
10	MCGM to ensure that methane gas generated from the facility is not be emitted in the atmosphere . MCGM to maintain the emission inventory.	<p>The operator of the facility has provided land fill gas collection and flaring system. At this juncture, electricity is also being generated which is being utilized for reducing the captive consumption of the plant.</p> <p>The operator is also maintaining the emission inventory for the gas generated from the facility.</p>

11	MCGM to ensure there shall be no drawl of ground water in the project.	The operator of the facility is not drawing the ground water except for monitoring purpose.
12	MCGM to ensure zero spillage of the garbage during transportation and compliance of MSW (M & H) Rules,2000.	MCGM is using closed body vehicles for transportation of MSW as per MSW (M & H) Rules,2000.
13	MCGM to ensure the regular sprinkling of water for control of fugitive dust.	The operator of the facility is sprinkling the water for control of fugitive dust.
14	All the other statutory clearances/ approvals shall be obtained from competent Authority before commencement of project activities.	The project will be commissioned only after receipt of E.C. from SEIAA.
15	MCGM to also submit comprehensive report on air quality of Deonar and other dumping sites and compare the results with MPCB. Report on the same shall be submitted of Environment Department within a month.	Noted.
16	MCGM to have an Environment Monitoring Cell, including an independent member to monitor the compliance of conditions of EC.	The operator of the facility has established the Environment Health & Safety Cell.


 Chief Engineer
 (Solid Waste Management)

As per the general conditions number (XXIII) stipulated in SEIAA-EC-000000475 dated 3rd October 2018 and general conditions number (xi) stipulated in EC dated 5th December 2014 for post construction/operation phase, the details of Air pollution levels monitored at ISWM Project site, Kanjur, are as follows.

Sr. No.	Parameters *	Permissible levels as per SWM Rules, 2016	Values Recorded during December 2018	Remarks for the values recorded during December 2018
1	Sulphur Dioxide	80 µg/m ³ (24 hrs)	23.37 µg/m ³ (24 hrs)	Within limit
2	Nitrogen Dioxide	80 µg/m ³ (24 hrs)	23.65 µg/m ³ (24 hrs)	Within limit
3	Particulate matter, PM ₁₀	100 µg/m ³ (24 hrs)	68.22 µg/m ³ (24 hrs)	Within limit
4	Particulate matter, PM _{2.5}	60 µg/m ³ (24 hrs)	37.50 µg/m ³ (24 hrs)	Within limit
5	Ozone	8 hours average : 100 µg/m ³	8 hours average : 22.22 µg/m ³	Within limit
6	Lead	1.0 µg/m ³ (24 hrs)	<0.01 µg/m ³ (24 hrs)	Within limit
7	Carbon Monoxide	1 hour average : 4 mg/m ³	1 hour average : <0.4 mg/m ³	Within limit
8	Ammonia	400 µg/m ³ (24 hrs)	4.75 µg/m ³ (24 hrs)	Within limit
9	Benzene	5 µg/m ³ (annual)	<2.1 µg/m ³	Within limit
10	Benzo(α)Pyrene	1 ng/m ³ (annual)	<0.1 ng/m ³	Within limit
11	Arsenic	6 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
12	Nickel	20 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
13	Methane	Not to exceed 25% of the Lower Explosive Limit (equivalent to 650 mg/m ³)	<0.5 µg/m ³	Within limit

* As per Authorization Dated 19.08.2017

As per the general conditions number (xi) stipulated in EC dated 5th December 2014 for post construction/operation phase, the details of

Air pollution levels monitored at ISWM Project site, Kanjur, are as follows.

Sr. No.	Parameters *	Permissible levels as per SWM Rules, 2016	Values Recorded during November 2018	Remarks for the values recorded during November 2018
1	Sulphur Dioxide	80 µg/m ³ (24 hrs)	20.11 µg/m ³ (24 hrs)	Within limit
2	Nitrogen Dioxide	80 µg/m ³ (24 hrs)	21.59 µg/m ³ (24 hrs)	Within limit
3	Particulate matter, PM ₁₀	100 µg/m ³ (24 hrs)	75.76 µg/m ³ (24 hrs)	Within limit
4	Particulate matter, PM _{2.5}	60 µg/m ³ (24 hrs)	41.46 µg/m ³ (24 hrs)	Within limit
5	Ozone	8 hours average : 100 µg/m ³	8 hours average : 21.91 µg/m ³	Within limit
6	Lead	1.0 µg/m ³ (24 hrs)	<0.01 µg/m ³ (24 hrs)	Within limit
7	Carbon Monoxide	1 hour average : 4 mg/m ³	1 hour average : <0.4 mg/m ³	Within limit
8	Ammonia	400 µg/m ³ (24 hrs)	4.58 µg/m ³ (24 hrs)	Within limit
9	Benzene	5 µg/m ³ (annual)	<2.1 µg/m ³	Within limit
10	Benzo(α)Pyrene	1 ng/m ³ (annual)	<0.1 ng/m ³	Within limit
11	Arsenic	6 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
12	Nickel	20 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
13	Methane	Not to exceed 25% of the Lower Explosive Limit (equivalent to 650 mg/m ³)	<0.5 µg/m ³	Within limit
* As per Authorization Dated 19.08.2017				

As per the general conditions number (xi) stipulated in EC dated 5th December 2014 for post construction/operation phase, the details of

Air pollution levels monitored at ISWM Project site, Kanjur, are as follows.

Sr. No.	Parameters *	Permissible levels as per SWM Rules, 2016	Values Recorded October 2018	Remarks for the values recorded October 2018
1	Sulphur Dioxide	80 µg/m ³ (24 hrs)	19.72 µg/m ³ (24 hrs)	Within limit
2	Nitrogen Dioxide	80 µg/m ³ (24 hrs)	21.99 µg/m ³ (24 hrs)	Within limit
3	Particulate matter, PM ₁₀	100 µg/m ³ (24 hrs)	71.85 µg/m ³ (24 hrs)	Within limit
4	Particulate matter, PM _{2.5}	60 µg/m ³ (24 hrs)	36.46 µg/m ³ (24 hrs)	Within limit
5	Ozone	8 hours average : 100 µg/m ³	8 hours average : 22.02 µg/m ³	Within limit
6	Lead	1.0 µg/m ³ (24 hrs)	<0.01 µg/m ³ (24 hrs)	Within limit
7	Carbon Monoxide	1 hour average : 4 mg/m ³	1 hour average : <0.4 mg/m ³	Within limit
8	Ammonia	400 µg/m ³ (24 hrs)	4.91 µg/m ³ (24 hrs)	Within limit
9	Benzene	5 µg/m ³ (annual)	<2.1 µg/m ³	Within limit
10	Benzo(α)Pyrene	1 ng/m ³ (annual)	<0.1 ng/m ³	Within limit
11	Arsenic	6 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
12	Nickel	20 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
13	Methane	Not to exceed 25% of the Lower Explosive Limit (equivalent to 650 mg/m ³)	<0.5 µg/m ³	Within limit

* As per Authorization Dated 19.08.2017

As per the general conditions number (xi) stipulated in EC dated 5th December 2014 for post construction/operation phase, the details of Air pollution levels monitored at ISWM Project site, Kanjur, are as follows.

Sr. No.	Parameters *	Permissible levels as per SWM Rules, 2016	Values Recorded September 2018	Remarks for the values recorded September 2018
1	Sulphur Dioxide	80 µg/m ³ (24 hrs)	23.58 µg/m ³ (24 hrs)	Within limit
2	Nitrogen Dioxide	80 µg/m ³ (24 hrs)	24.89 µg/m ³ (24 hrs)	Within limit
3	Particulate matter, PM ₁₀	100 µg/m ³ (24 hrs)	70.55 µg/m ³ (24 hrs)	Within limit
4	Particulate matter, PM _{2.5}	60 µg/m ³ (24 hrs)	32.29 µg/m ³ (24 hrs)	Within limit
5	Ozone	8 hours average : 100 µg/m ³	8 hours average : 23.52 µg/m ³	Within limit
6	Lead	1.0 µg/m ³ (24 hrs)	<0.01 µg/m ³ (24 hrs)	Within limit
7	Carbon Monoxide	1 hour average : 4 mg/m ³	1 hour average : <0.4 mg/m ³	Within limit
8	Ammonia	400 µg/m ³ (24 hrs)	4.10 µg/m ³ (24 hrs)	Within limit
9	Benzene	5 µg/m ³ (annual)	<2.1 µg/m ³	Within limit
10	Benzo(α)Pyrene	1 ng/m ³ (annual)	<0.1 ng/m ³	Within limit
11	Arsenic	6 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
12	Nickel	20 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
13	Methane	Not to exceed 25% of the Lower Explosive Limit (equivalent to 650 mg/m ³)	<0.5 µg/m ³	Within limit

* As per Authorization Dated 19.08.2017

As per the general conditions number (xi) stipulated in EC dated 5th December 2014 for post construction/operation phase, the details of Air pollution levels monitored at ISWM Project site, Kanjur, are as follows.

Sr. No.	Parameters *	Permissible levels as per SWM Rules, 2016	Values Recorded August 2018	Remarks for the values recorded August 2018
1	Sulphur Dioxide	80 µg/m ³ (24 hrs)	20.89 µg/m ³ (24 hrs)	Within limit
2	Nitrogen Dioxide	80 µg/m ³ (24 hrs)	22.56 µg/m ³ (24 hrs)	Within limit
3	Particulate matter, PM ₁₀	100 µg/m ³ (24 hrs)	64.68 µg/m ³ (24 hrs)	Within limit
4	Particulate matter, PM _{2.5}	60 µg/m ³ (24 hrs)	41.67 µg/m ³ (24 hrs)	Within limit
5	Ozone	8 hours average : 100 µg/m ³	8 hours average : 24.53 µg/m ³	Within limit
6	Lead	1.0 µg/m ³ (24 hrs)	<0.01 µg/m ³ (24 hrs)	Within limit
7	Carbon Monoxide	1 hour average : 4 mg/m ³	1 hour average : <0.4 mg/m ³	Within limit
8	Ammonia	400 µg/m ³ (24 hrs)	4.19 µg/m ³ (24 hrs)	Within limit
9	Benzene	5 µg/m ³ (annual)	<2.1 µg/m ³	Within limit
10	Benzo(α)Pyrene	1 ng/m ³ (annual)	<0.1 ng/m ³	Within limit
11	Arsenic	6 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
12	Nickel	20 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
13	Methane	Not to exceed 25% of the Lower Explosive Limit (equivalent to 650 mg/m ³)	<0.5 µg/m ³	Within limit

* As per Authorization Dated 19.08.2017

As per the general conditions number (xi) stipulated in EC dated 5th December 2014 for post construction/operation phase, the details of Air pollution levels monitored at ISWM Project site, Kanjur, are as follows.

Sr. No.	Parameters *	Permissible levels as per SWM Rules, 2016	Values Recorded July 2018	Remarks for the values recorded July 2018
1	Sulphur Dioxide	80 µg/m ³ (24 hrs)	24.62 µg/m ³ (24 hrs)	Within limit
2	Nitrogen Dioxide	80 µg/m ³ (24 hrs)	25.25 µg/m ³ (24 hrs)	Within limit
3	Particulate matter, PM ₁₀	100 µg/m ³ (24 hrs)	67.90 µg/m ³ (24 hrs)	Within limit
4	Particulate matter, PM _{2.5}	60 µg/m ³ (24 hrs)	38.96 µg/m ³ (24 hrs)	Within limit
5	Ozone	8 hours average : 100 µg/m ³	8 hours average : 25.04 µg/m ³	Within limit
6	Lead	1.0 µg/m ³ (24 hrs)	<0.01 µg/m ³ (24 hrs)	Within limit
7	Carbon Monoxide	1 hour average : 4 mg/m ³	1 hour average : <0.4 mg/m ³	Within limit
8	Ammonia	400 µg/m ³ (24 hrs)	4.13 µg/m ³ (24 hrs)	Within limit
9	Benzene	5 µg/m ³ (annual)	<2.1 µg/m ³	Within limit
10	Benzo(α)Pyrene	1 ng/m ³ (annual)	<0.1 ng/m ³	Within limit
11	Arsenic	6 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
12	Nickel	20 ng/m ³ (annual)	<0.5 ng/m ³	Within limit
13	Methane	Not to exceed 25% of the Lower Explosive Limit (equivalent to 650 mg/m ³)	<0.5 µg/m ³	Within limit
* As per Authorization Dated 19.08.2017				