

GACL/S&E/D-16/20

Dtd. 22.05.2020

Member Secretary,
State Level Environment Impact Assessment Authority
Gujarat Pollution Control Board
Paryavaran Bhavan,
Sector -10 A,
Gandhinagar - 382 010.

Sub: Half yearly Compliance Report under specific condition of Environment Clearance

Ref: SEIAA/GUJ/EC/4(d) & 5 (f)/4037/2015 dated 30.11.2015 granted by SEIAA

With the above reference on the subject cited, we are submitting half yearly compliance report with respect to stipulated prior EC terms and conditions.

Thanking you,

For Gujarat Alkalies and Chemicals Ltd.,

Sd-

(NR Bhargava)
DGM (TS & Mech.) / I/c (S, E, Fire, Sec & Civil)

Compliance of Specific and General Conditions of Environment Clearance no. SEIAA/GUJ/EC/4(d) & 5 (f)/4037/2015 dated 30.11.2015 granted by SEIAA

A - Specific Conditions

A.-1 WATER

Sr. No.	Specific Conditions	Compliance by
1.	No ground water shall be used for the project. Entire Water requirement of 6245 KLD after the proposed expansion shall be met through the own joint water supply scheme with GIPCL. No new borewell shall be dug within the premises as per the undertaking submitted in EIA report.	Complied. Ground water is not used. Entire water requirement is met from surface water sources.
2.	The industrial effluent generation from salt washery unit shall not exceed from existing 30 KLD due to proposed expansion and it shall be disposed into estuary of river mahi as per consent given by GPCB	Complied. The effluent discharge from salt washery plant is zero.
3.	The other industrial effluent generation (except from salt washery unit) shall reduce from existing 2470 KLD to 2461 KLD after the proposed expansion due to recycle / reuse of effluent	Complied. The industrial effluent is less than 2461 KL/Day.
4.	Various measures shall be implemented as proposed for reducing the industrial effluent generation viz existing practices as well as reuse of condensate generated from the caustic evaporation unit into chemical preparation in the brine system.	Complied.
5.	The industrial effluent shall be treated in existing ETP. ETP shall be operated regularly and efficiently so as to achieve the GPCB norms at the ETP outlet.	Complied. The industrial effluent complies with GPCB effluent norms.
6.	The treated wastewater conforming to GPCB norms shall be discharged into ECP channel for its final disposal into estuary of river mahi	Complied. The effluent is discharged into ECP channel only.
7.	The unit shall provide online system for monitoring of treated effluent quantity and quality, with an arrangement for reflecting the same on company's server, which can be assessed by GPCB on real time basis.	Complied. We have provided online system for monitoring effluent quality and quantity and assess given to GPCB and CPCB
8.	The domestic wastewater generation shall not exceed from existing 280 KLD due to proposed expansion. Domestic ww shall be sent to STP for its further treatment and finally disposed at VECL along with industrial effluent	Complied.
9.	Proper logbooks of ETP operation and also showing the quantity of effluent generated, discharged into ECP channel, utilized for plantation/gardening, reused/recycled etc. shall be maintained and furnished to GPCB from time to time.	Complied. The data of effluent quantity discharged to VECL is maintained and submitted to GPCB on monthly basis.

		Record of wastewater recycled is also maintained.
10.	Regular performance evaluation of ETP shall be undertaken every year to check its adequacy through credible institutes like LD college of Engg, NPC or such other institute of similar repute and its records shall be maintained.	Complied. Regular performance evaluation of ETP is carried out once every year through GPCB approved Schedule I Env. Auditor.
11	Rain water harvesting of surface as well as of rooftop runoff shall be undertaken and the same water shall be used for various activities of the project to conserve fresh water as well as to recharge ground water. Before recharging the surface runoff, pretreatment must be done to remove suspended matters.	Complied. We have developed recharge bore well at own solid waste landfill site for rain water harvesting. The recharged water is used for watering the plants.
12	The unit shall join and participate financially and technically for any common environmental facility / infrastructure as and when the same is taken up either by the GIDC or GPCB or any such authority created for this purpose by Govt./GIDC	Noted. We are one of the promoters of Effluent channel of VECL, initiated by GIDC for safe disposal of effluent into the sea. At present we are one of the core members in the VMC project of sewage water recycling and reuse by big industries. We also carried out joint awareness programmes along with GPCB in village school.

A-2 AIR

Sr. No.	Specific Conditions	Compliance
13	Out of total 5 boilers , three boilers shall be kept as standby and two boilers shall be running. Existing 3 DG sets shall be kept as standby.	Complied.
14	Natural gas to the tune of 2483 SCM/hr shall be used as a fuel for boilers.	Complied. Only Natural gas is used in all the boilers.
15	No additional process vent shall be provided for the proposed expansion	Complied. No additional process vent is provided.
16	At present, Alkali scrubber is provided with process stack attached to CS hypo plant to scrub the HCl and Cl ₂ gases. Water scrubbers are provided with process stack attached to HCl plant, CLM 1 & 2 plant to scrub the HCl gas. A stack for H ₂ O ₂ is also provided at the solvent recovery unit where the charcoal bed is provided.	Complied.
17	Existing APCM shall be used for the proposed process emission from Hypo tower, HCl section of CS plant, HCl	Complied.

	section of old and new CLM plant and solvent recovery plant.	
18	The existing air pollution control equipments shall be operated efficiently and effectively to achieve the norms prescribed by the GPCB at stack outlets.	Complied. The stack emission norms are within the GPCB norms.
19	Online monitoring system shall be installed at the process vents of Hypo tower – Caustic Soda plant and Chloromethanes plant for monitoring of HCl and Cl ₂ parameters. Arrangement shall be made for reflecting the monitored values on the company's server, which can be assessed by GPCB on real time basis.	Complied. We have provided online system for monitoring process gas emission and assess given to GPCB and CPCB
20	The company shall prepare schedule, carry regular preventive maintenance of air pollution control equipments and assign responsibility of preventive maintenance to the senior officer of the company.	Complied. Regular preventive maintenance of air pollution control equipments is carried out.
21	The fugitive emission in work zone environment shall be monitored. The emission shall conform to the standards prescribed by concerned authority from time to time (e.g Directors of industrial safety and health)	Complied.
22	Regular performance evaluation of air pollution control systems shall be undertaken every year to check its adequacy through credible institutes like LD college of Engg, NPC or such other institute of similar repute and its records shall be maintained	Complied. Regular performance evaluation of ETP is carried out once every year through GPCB approved Schedule I Env. Auditor.
23	Airborne dust at all transfers operations/points shall be controlled either by spraying water or providing enclosures.	Complied. We have provided enclosure in KCl unloading facility to prevent airborne dust.
24	Solvent management shall be carried out as follows	
24 (1)	Reactor shall be connected to chilled brine condenser system to condensate solvent vapors and reduce solvent losses.	Complied. Condenser for solvent (methanol) recovery provided.
24 (2)	Reactor and solvent handling pump shall have mechanical seals to prevent leakages	Complied.
24(3)	The condensers shall be provided with sufficient HTA and residence time so as to achieve more than 95 % solvent recovery.	Complied.
24 (4)	Solvents shall be stored in a separate space specified with all safety measures	Complied. Methanol is stored in approved storage tank.
24(5)	Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.	Complied.
24(6)	Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.	Complied.
25	Regular monitoring of VOCs shall be carried out in the work zone area and ambient air.	Complied.

26	For control of fugitive emission, VOCs following steps shall be followed: a. Closed handling and charging system shall be provided for chemicals. b. Reflux condenser shall be provided over reactors/vessels. c. Pumps shall be provided with mechanical seals to prevent leakages. d. System of leak detection and repair of pump/pipeline based on preventive maintenance.	Complied. All control measures for fugitive emission provided in methanol storage area.
27	Regular monitoring of ground level concentrations of SO ₂ , NO _x , Cl ₂ , HCl, PM 10 & PM 2.5 shall be carried out in impact zone and its record shall be maintained. Ambient air quality shall not exceed the standards stipulated by GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be undertaken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.	Complied. Regular monitoring of ambient air parameters like NO _x , SO ₂ , HCl, Cl ₂ , PM 10 & PM 2.5 is carried out.

A-3 SOLID/HAZARDOUS WASTE

Sr. No.	Specific Conditions	Compliance
28	The company must strictly comply with the rules and regulations with regards to handling and disposal of hazardous waste in accordance with the Hazardous waste (M,H&TM) Rules 2008 as may be amended from time to time. Authorization from GPCB must be obtained for collection/storage/treatment/disposal of hazardous waste.	Complied. We have obtained authorization for our Caustic Soda Unit no. AWH 101053 valid upto 31.12.2023 for collection, storage, treatment and disposal of hazardous waste.
29	The hazardous waste shall be dried, packed and stored in separate designated hazardous waste storage facility with pucca bottom and leachate collection facility before its disposal.	Complied. Designated storage facilities are provided for each waste having impervious bottom.
30	Used heating salt shall be sold to authorized recyclers or disposed at own landfill site. Salt washery and brine purification sludge, ETP sludge, incineration ash and used heating salt shall be disposed in company's own TSDF.	Complied. The inorganic wastes are disposed in our own landfill site.
31	Organic waste from H ₂ O ₂ plant, activated charcoal and waste mixed chloromethane (Hi boilers) shall be sent to the common hazardous waste incineration facility (CHWIF)	Complied. Organic wastes are sent to approved CHWIF.
32	Spent catalyst and molecular sieves shall be sent to authorized regeneration units or shall be disposed off at TSDF or CHWIF depending on its characteristics.	Complied. Molecular sieves are disposed to our own landfill site.

33	Discarded containers / barrels/ bags/liner shall be either reused or sold only to authorized recyclers after decontamination.	Complied. Discarded containers are sold to authorized recyclers.
34	Used oil, discarded lead acid batteries, lead acid battery plates and other lead scrap and insulated copper wire scrap/copper with PVC sheathing shall be sold only to registered reprocessors.	Complied. These wastes are sold to only approved recyclers.
35	The unit shall obtain membership of the common TSD/CHWIF (whichever is applicable)	Complied. We have obtained membership of CHWIF.
36	Vehicles used for transportation of hazardous waste shall be in accordance with the provisions under the motor vehicle act 1988 and rules made there under.	Complied.
37	All possible efforts shall be made for co-processing of the hazardous waste prior to disposal into TSD/CHWIF.	Noted.
38	The company shall provide additional ground water monitoring wells (three well clusters) around the captive TSD as per the "Criteria of Hazardous Waste landfills" published by CPCB. Quality of ground water in saturated zone beneath and around the landfills as well as other parameters like leachate quality, air quality etc. shall be monitored regularly as per the "Criteria of Hazardous Waste landfills" published by CPCB	Complied. We have provided ground water monitoring wells. Quality of water in borewells and leachate well and ambient air quality is monitored/checked on regular basis.

A-4 SAFETY

Sr. No.	Specific Conditions	Compliance
39	Provision of Manufacture, Storage and Import of hazardous chemicals rules 1986 and The Factories Act 1948 shall be strictly complied with.	Complied.
40	The project authorities shall strictly comply with the provisions made in manufacture, storage and import of hazardous chemicals rules 1989, as amended in 2000 and the public liability insurance act for handling of hazardous chemicals etc. Necessary approvals from the CCE and concerned govt. authorities shall be obtained before commissioning of the project. Requisite onsite and offsite disaster management plans have to be prepared and implemented.	Complied. Necessary approval for methanol storage taken from CCE. We have prepared onsite ERP and implemented.
41	The unit shall obtain requisite permission from PESO, nagpur for storage of chlorine, hydrogen etc. before commissioning of expansion project.	Complied. Necessary permission obtained from PESO.
42	All the necessary precautions measures shall be taken to avoid any kind of accident during storage and handling of toxic / hazardous chemicals, especially Cl ₂ & H ₂	Complied. All safety measures taken to avoid any kind of accidents.
43	Storage of hazardous chemicals shall be sufficiently away from the production area.	Complied.

44	Sufficient no. of fire extinguishers shall be provided near the plant and storage area.	Complied. Sufficient fire protection system provided.
45	All the necessary precautions measures shall be taken to avoid any kind of accident during storage and handling of toxic / hazardous chemicals	Complied.
46	All the toxic/hazardous chemicals shall be stored in optimum quantity and all necessary permissions in this regard shall be obtained before commencing the expansion activities.	Complied. All necessary permission taken for storage of chemicals.
47	The project management shall ensure to comply with all the environment protection measures, risk mitigation measures and safeguards mentioned in the risk assessment report.	Complied.
48	Only flame proof electrical fittings shall be provided in the plant premises.	Complied.
49	Storage and use of hazardous chemicals shall be minimized to the extend possible and all necessary precautions shall be taken to mitigate the risk generated out of it. Storage of hazardous chemicals shall be in multiple small capacity tanks/containers instead of one single large capacity tank for safety purpose.	Complied.
50	All the storage tanks shall be fitted with appropriate controls to avoid any leakages. Bund/Dyke walls shall be provided for storage tanks for hazardous chemicals. Close handling system for chemicals shall be provided.	Complied. Dyke facility provided in methanol storage tank.
51	Handling and charging of chemicals shall be done in closed manner by pumping or by vacuum transfer so that minimal human exposure occurs.	Complied. Handling and charging of hazardous chemicals is done by pumping.
52	Tie up shall be done with nearby health care unit/doctor for seeking immediate medical attention in case of emergency.	Complied. We have our own OHC and also have tie up with competent health care units.
53	Personal Protective Equipment shall be provided to workers and its usage shall be ensured and supervised.	Complied. Required PPEs provided.
54	First aid box and required antidotes for the chemicals used in the unit shall be made readily available in adequate quantity.	Complied. Required first aid boxes and antidotes provided.
55	Training shall be given to all workers on safety and health aspects of handling chemicals.	Complied. Regular training given by safety officers.
56	Occupational health surveillance of the workers shall be done and records shall be maintained. Pre-employment and periodical medical examination for all workers shall be undertaken as per Factories Act & Rules	Complied. Occupational health surveillance of the workers is conducted once in every year. Pre-employment and periodical medical examination are also conducted.
57	Transportation of hazardous chemicals shall be done as per the provisions of Motor Vehicle Act and Rules	Complied.
58	The company shall implement all preventive and mitigation measures suggested in the risk assessment report	Complied.

A-5 NOISE

Sr. No.	Specific Conditions	Compliance
59	<p>To minimize the noise pollution the following noise control measures shall be implemented :</p> <ul style="list-style-type: none"> ● Selection of any new plant equipment shall be made with specifications of low noise levels ● Manufacturers/suppliers of major noise generating machines / equipments like air compressors, feeder pumps, turbine generators etc. shall be instructed to make required design modifications wherever possible before supply and installation to mitigate the noise generation and to comply with national/international regulatory norms with respect to noise generation for individual units ● Regular maintenance of machinery and vehicles shall be undertaken to reduce noise impact ● Noise suppression measures such as enclosures, buffers and /or protective measures shall be provided ● Employees shall be provided with ear protection measures like ear muff or ear plug. ● Proper oiling, lubrications and preventive maintenance shall be carried out of the machineries and equipments to reduce noise generation ● Construction equipments generating minimum noise and vibration shall be chosen. ● Ear plugs and muffs shall be made compulsory for the construction workers working near the noise generating activities/machines /equipments ● Vehicles and construction equipment with internal combustion engines without proper silencer shall not be allowed to operate ● Construction equipment meeting the norms specified by EP act 1986 shall be used ● Noise control equipment and baffling shall be employed on generators especially when they are operated near the residential and sensitive areas. ● Noise levels shall be reduced by the use of adequate mufflers on all motorized equipment. 	<p>Complied. We have taken preventive measures to reduce noise generation wherever possible. Regular preventive maintenance of all the equipments/machineries is carried out. We have provided ear plugs and ear muffs wherever required. Regular noise monitoring is carried out.</p>
60	<p>The overall noise level in and around the plant area shall be well within the prescribed standards by providing noise control measures including acoustic insulation, hoods, silencers, enclosures vibration dampers etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act and Rules. Workplace noise levels for workers shall be as per the Factories Act and Rules.</p>	<p>Complied. The ambient noise levels and work place noise conform to the standards prescribed.</p>

A-6 ENERGY CONSERVATION

Sr. No.	Specific Conditions	Compliance
61	The project proponent shall install energy efficient devices and appliances conforming to the Bureau of Energy Efficiency norms	Complied.
62	The energy audit shall be conducted at regular intervals and recommendations of the audit report shall be implemented	Complied.
63	The project proponent shall implement the application of solar energy which shall be utilized as solar lighting for illumination of common areas, lighting of internal roads and passages in addition to utilisation of solar water heating systems	Noted.
64	The transformers and motors shall have minimum efficiency of 85 %.	Complied.
65	Variable frequency drives shall be installed	Complied. We have installed VFD in many equipments to conserve power.
66	Energy conservation measures shall include use of electronic lighting system, use of CFL tubes to minimize energy use, use of programmable times for pumping system and lighting, water level controllers for water pumps, centralized cooling etc.	Complied. We have installed CFL tubes, centralized cooling, electronic ballast, installed VFDs etc to save energy.
67	<p>Energy saving practices as follows shall be practiced :</p> <ul style="list-style-type: none"> ● Constant monitoring of energy consumption and defining targets for energy conservation ● Adjusting the settings and illumination levels to ensure minimum energy used for desired comfort level ● Use of solar cells for lighting ● Use of solar water heater for canteen and washing area ● Proper load factor shall be maintained ● Provision of day light roof to maximize natural light in the production plant instead of electrical lighting ● Use of electronic ballast to save energy ● Automatic switching system for lighting and water tank pumping shall be used. ● To the maximum extent possible and technically feasible, energy efficient motors, pumps, air conditioning systems shall be selected. ● Gravity flow shall be preferred wherever possible to save pumping energy. <p>Promoting awareness on energy conservation</p> <ul style="list-style-type: none"> ● Training to the staff on methods of energy conservation and to be vigilant for this 	<p>Complied.</p> <p>We have 35 MW solar plant and 171 MW wind farm.</p> <p>Apart from above, following are our energy saving practices:</p> <ul style="list-style-type: none"> ● Constant monitoring of energy consumption. ● Adjusting the settings of illumination ● Proper load factor is maintained ● Use of electronic ballast ● Energy efficient equipment like motors ● Training to employees etc.

A-6 CLEANER PRODUCTION AND WASTE MINIMISATION

Sr. No.	Specific Conditions	Compliance
68	The unit shall undertake the Cleaner Production Assessment study through a reputed institute / organization and shall form a CP team in the company. The recommendations thereof along with the compliance shall be furnished to GPCB	Complied. In past we have already conducted CP study. Then we have also taken CP initiatives like changing raw material to reduce solid and liquid waste, replacement of energy efficient membrane cells, solvent recovery system, etc.
69	The company shall undertake following waste minimization measures : <ul style="list-style-type: none"> ● Metering and control of quantities of active ingredients to minimize waste ● Reuse of byproducts from the process as raw materials or raw materials substitutes in other process ● Use of automated and enclosed filling to minimize spillages ● Use of close feed system into batch reactors ● dry cleaning /mopping of floor instead of floor washing ● Use of high pressure hoses for cleaning to reduce wastewater generation ● Regular preventive maintenance for avoiding leakage, spillage etc. 	Complied. We have implemented, metering facility, reuse of byproducts to convert into product, closed reaction system, etc.

A-7 GREEN BELT AND OTHER PLANTATION

Sr. No.	Specific Conditions	Compliance
70	The unit shall develop green belt within premises as per the CPCB guidelines. However if the adequate land is not available within the premises, the unit shall take up adequate plantation on road sides and suitable open areas in GIDC estate or any other open areas in consultation with the GIDC/GPCB and submit an action plan of plantation for next three years to the GPCB.	Complied. We have more than 33 % green belt area.
71	Drip irrigation /low volume, low angle sprinkler system shall be used for green belt development within premises.	Complied. Drip and sprinkler system implemented.

B. GENERAL CONDITIONS

72	In the event of failure of any pollution control system adopted by the unit, the unit shall be safely closed down and shall not be restarted until the desired efficiency of the control equipment has been achieved.	Noted.
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73	All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s San Envirotech Pvt. Ltd. And submitted vide letter no. Nil dtd. 07.07.2015 and commitments made during presentation before SEAC, proposed in the EIA report shall be strictly adhered to in letter and spirit.	Complied.
74	A separate Environment management cell equipped with full fledged laboratory facilities and qualified personnel shall be set up to carry out Environment management and monitoring functions and a separate budget shall be allocated for this purpose	Complied. We have qualified environment engineers and dedicated staff and equipment for quality monitoring.
75	The company shall strictly follow all the recommendations mentioned the charter on corporate responsibility for Environment Protection (CREP) published by CPCB as may be applicable	Complied.
76	The funds earmarked for environmental protection measures shall be maintained in a separate account and there shall not be any diversion of these funds for any other purpose. A year wise expenditure on environmental safeguards shall be reported	Complied. The funds provided for environmental protection/monitoring and expenditure is reported to GPCB.
77	The project authorities shall also adhere to the stipulations made by the Gujarat Pollution Control Board, state government and any statutory authority.	Noted
78	During material transfer, spillage shall be avoided and garland drain shall be constructed to avoid mixing of accidental spillages with domestic wastewater or storm water	Complied. The spillage of material is does not mix with domestic or storm water but is directed to ETP for treatment.
79	Pucca flooring/impervious layer shall be provided in the work areas, chemicals storage areas and chemical handling areas to minimize soil contamination.	Complied. Impervious layer provided at chemical warehouses and handling area.
80	Leakages from pumps, pipes shall be minimal and if occurs shall be arrested promptly.	Complied.
81	No further expansions or modifications in the plant likely to cause environmental impacts shall be carried out without obtaining prior environment clearance from the concerned authority.	Noted
82	The above conditions shall be enforced inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, The Environment (Protection) Act 1986, Hazardous Wastes (Management Handling and Transbouandary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 alongwith their amendments and rules.	Complied
83	The project proponent shall comply all the conditions mentioned in "The companies (CSR policy) rules 2014 and its amendments from time to time in a letter and spirit	Complied. We are into CSR activity.

84	The project authorities shall earmark adequate funds to implement the conditions stipulated by SEIAA or GPCB along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Complied.
85	The applicant shall inform the public that the project has been accorded environmental clearance by the SEIAA and the copies of the clearance letter are available with GPCB and may also be send at website of SEIAA/SEAC/GPCB. This shall be advertised within seven days from the date of clearance letter, in at least two local news paper that are widely circulated in the region one of which shall be in Gujarati language and other in English. A copy each of the same shall be forwarded to the concerned regional office of the ministry.	Complied
86	The applicant shall also comply with any additional condition that may be imposed by SEAC or SEIAA or any other competent authority for the purpose of environmental protection and management	Noted
87	It shall be mandatory for the project management to submit half-yearly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1 st June and 1 st December of each calendar year.	Complied
88	Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment Act 1986.	Noted
89	The project authorities shall also adhere to the stipulations made by the Gujarat Pollution Control Board.	Noted
90	The SEIAA may revoke or suspend the clearance, if implementation of any of the above conditions is not found satisfactory.	Noted
91	The company in a time bound manner shall implement these conditions. The SEIAA reserves the right to stipulate additional conditions, if the same is found necessary.	Noted
92	The project authorities shall inform the GPCB, Regional Office of MoEF and SEIAA about the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Complied
93	This environmental clearance is valid for seven years from the date of issue	Noted
94	Any appeal against this environmental clearance shall lie with the national green tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the national green tribunal act 2010.	Noted