



Punjab Alkalies & Chemicals Limited

Works : Nāngal-Una Road, Naya Nāngal - 140 126, Distt. Ropar, Punjab
Phone : 01887 - 275358, E-mail : stores@punjabalkalies.com
CIN : L24119CH1975PLC003607, Website : www.punjabalkalies.com



PACL:QCD: EC :2021/ II/ 840

Dated: 16.12.2021

Government of India

Ministry of Environment, Forest and Climate Change

(IA-II Section)

Indira Paryavaran Bhawan Jorbagh Road, New Delhi - 3

Ref. No. : F.No. IA-J-11011/332/2018- IA II(I) -dtd. 07.01.2020

SUB: STATUTORY COMPLIANCE BASED ON ENVIRONMENTAL CLEARANCE FOR THE EXPANSION OF OUR CHLOR ALKALI PLANT & ESTABLISHMENT OF OTHER PLANTS BY M/S PUNJAB ALKALIES AND CHEMICALS LTD.

This has reference to the Environmental Clearance given by Govt. of India (MoEF) Vide No. . IA-J-11011/332/2018- IA II(I) -dtd. 07.01.2020

, We are submitting/uploading Compliances of various specific conditions under point No.10 (A) of the EC , as per attached PDF File.

Thanking you,

Yours faithfully,

For PUNJAB ALKALIES & CHEMICALS LTD.,

(M P S WALIA)

GENERAL MANAGER(WORKS)

EC compliance report


For Expansion of:

1. Chlor Alkali Plant from 99000 TPA to 264000 TPA.
2. Establishment of Flaker Plant.
3. Establishment of Stable Bleaching Powder Plant.
4. Establishment of Hydrogen peroxide Plant.
5. Establishment of Captive Power Plant.

Sr. No.	EC Conditions /Recommendation	Compliance Status
A.	Specific Conditions:	
i	Solvent management shall be carried out as follows:	
a)	Reactor shall be connected to chilled brine condenser system.	No solvent will be used for manufacturing of products for which EC has been obtained.
b)	Reactor and solvent handling pump shall have mechanical seals to prevent leakages.	There is no reactor in which reactor is carried out and there is no use of any solvent for manufacturing of products for which EC has been obtained.
c)	The condensers shall be provided with sufficient HTA and residence time so as to achieve more than 95% recovery.	No such condenser for recovery of solvents has been installed in our unit.
d)	Solvents shall be stored in a separate space specified with all safety measures.	There is no use of any kind of solvent.However,only FO is used as fuel in the existing boilers,which is properly stored as per PESO guidelines for direct consumption in our existing Boilers
e)	Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.	Proper earthing is provided as per PESO guidelines for storage of FO.
f)	Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.	Entire plant is flame proof.The storage tank of FO is provided with breather valve
g)	All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.	There is no storage of solvents as there is no use of solvents for the products for which EC has been obtained.
ii	Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP/RO to meet the prescribed standards.	There is generation of only high TDS wastewater,which is treated in an ETP consisting of collection tank, neutralization tank,RO and Evaporators.This ETP is based on ZLD.



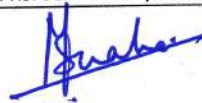
S. No	EC Conditions/Recommendation	Compliance Status
I.	Statutory compliance	
	(i) The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.	Reference to the EC Number: IA-J-11011/332/2018- IA II(I) –dtd. 07.01.2020 and subsequently after obtaining CTE from Punjab Pollution Control Board (CTE Number: CTE/Exp/RPN/2021/16314815) we have started construction work for the following projects: <ol style="list-style-type: none"> 1. Caustic Soda Lye Expansion from 300 TPD to 500 TPD (Total Project Cost: 67.65 Cr.) 2. Stable Bleaching Powder Plant (100 TPD) (Total Project Cost: 20 Cr.) 3. 35 MW CAPTIVE Power Plant (Total Project Cost: 110 Cr.) <p>The work for the said projects is under progress . The total estimated investment for the said projects shall be 197.65 Cr.</p>
	(ii) The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.	<ul style="list-style-type: none"> • To be Complied with for Proposed Expansion after completion of the project. • Complied for Existing Plants
	(iii) The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	The chemicals covered under the ambit of the Manufacture, Storage and Import of Hazardous Chemicals, 1989 are being handled as per the provisions of the said rules.
II.	Air quality monitoring and preservation	
	(i) The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 and connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment(Protection) Act, 1986 or NABL accredited laboratories.	The industry has installed OCEMS on the stack of HCl Plant and Sodium Hypo Plant for monitoring of HCl mist (vapours) and Chlorine gas parameters ,which is connected with the server of PPCB/CPCB.
	(ii) The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognized under Environment (Protection) Act, 1986.	To monitor the leakages of chlorine gas in the plant area 22-no. sensors have been installed,which can detect chlorine to the level of 100.0 ug/Nm ³ . (0.10 mg/Nm ³)
	(iii) The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions.	PPCB has installed one LVS in the premises of the unit to monitor the air quality. Now, it has been proposed to install four continuous ambient air monitoring stations.
	(iv) To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	There are only fugitive emissions of chlorine from different sections, which are collected by providing hoods attached to a common duct which eventually leads to chlorine neutralizer.
	(v) Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions	Common Salt is the raw material which stored in a shed. There is no use of coal as a fuel for the present production. However, coal will be used



		as fuel in the cogeneration power plant, which will be stored in a shed to rule out the possibility of generation of any kind of fugitive emissions.
	(vi) National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21st July, 2010 and amended from time to time shall be followed.	To our unit the standards laid down by the MoEF&CC for chlor alkali plant are applicable, the compliance of which is being ensured.
	(vii) The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.	Compliance of the National Ambient Air Standards are being ensured.
III.	Water quality monitoring and preservation	
	(i) The project proponent shall provide online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises.	The industry has installed OCEMS at the pipeline through which treated wastewater is reused back into the processes.
	(ii) As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.	ETP based on ZLD treatment system installed.
	(iii) Total fresh water requirement shall not exceed 11936 cum/day, proposed to be met from Irrigation Department, Government of Punjab. Prior permission in this regard shall be obtained from the concerned regulatory authority.	Only surface water from river Sutlej is taken to meet the water supply demand and permission in this regard has been obtained from Department of Water Resources.
	(iv) Process effluent/any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.	There is a separate peripheral drain for collection of surface run-off.
	(v) The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.	As the expansion plan is yet to be fully implemented, as such, compliance of this will be ensured before commissioning of the expansion project for EC has been obtained.
	(vi) The DG sets shall be equipped with suitable pollution control devices and the adequate stack height so that the emissions are in conformity with the extant regulations and the guidelines in this regard.	Complied, The DG sets are equipped with proper canopies and stacks of adequate heights.
IV.	Noise monitoring and prevention	
	(i) Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Complied, As Acoustic enclosure provided to all the DG sets.
	(ii) The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.	Complied, as overall noise levels in and around the plant area is well within the standards by providing noise control measures including acoustics.
	(iii) The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Complied, noise levels remain within the prescribed limits.
V.	Energy Conservation measures	
	(i) The energy sources for lighting purposes shall preferably be LED based.	Most of the light sources inside and outside the industrial plant have been replaced with LED based lighting system.
VI.	Waste management	
	(i) Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame Arrester shall be provided on tank farm and the solvent transfer through pumps.	Complied with as Hazardous chemicals are stored in the specified tanks, which are provided with necessary flame arrester system.

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	(ii) Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.	The process waste is the brine sludge, which is stored in the earmarked area and is used for landfilling being non-hazardous in nature. The ETP sludge is given to the operator of the common TSDF. Used oil is given to the registered recycler.
	(iii) The company shall undertake waste minimization measures as below:- (a) Metering and control of quantities of active ingredients to minimize waste. (b) Reuse of by-products from the process as raw materials or as raw material Substitutes in other processes. (c) Use of automated filling to minimize spillage. (d) Use of Close Feed system into batch reactors. (e) Venting equipment through vapour recovery system. (f) Use of high pressure hoses for equipment clearing to reduce waste water generation.	Efforts are being made on regular basis to minimise the waste generation by recycling and reuse etc.
VII.	Green Belt	
	(i). The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.	At present green belt is provided in more than 33 % (29 acres) of the total plant/project Area.
VIII	Safety, Public hearing and Human health issues	
	(i) Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Hazard Identification and Risk Assessment (HIRA) and Disaster Management Plan already in place.
	(ii) The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.	Necessary arrangement for fire fighting has been made to cope with any exigency.
	(iii) The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act.	All the workers are allowed in the working area with Personal Protection Equipment (PPE) as per the norms of Factory Act.
	(iv) Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Time to time training is being imparted to the workers regarding safety and health aspects. Their pre-employment medical check up and routine medical check up is mandatory.
	(v) 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, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied for Proposed Expansion.
	(vi) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Occupational health surveillance of the workers is being done on a regular basis and records in this regard is being maintained as per the Factories Act.
	(vii) There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.	There is provision of adequate parking of vehicles inside the industrial premises.
IX.	Corporate Environment Responsibility	
	(i) As proposed, Rs.8 Crore shall be allocated for Corporate Environment	Rs.8 Crore has been allocated for CER activities for total expansion project cost of Rs.1240 crore . Therefore for project implementation worth Rs. 197.65 Cr , the company has already spent Rs.1.08 Cr on CER



	Responsibility (CER). The CER plan shall be implemented during the plant construction stage and before commissioning of the project.	against committed Rs.1.275 Cr. (On pro Rata basis for expenditure of Rs.197.65 Cr Projects covered under said CTE- Ref Sr.No. 1 (i)) .
	(ii) The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation Norms/conditions and/or shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MOEF & CC as a part of six-monthly report.	The company has prepared environmental policy, which has been duly approved by the Board of Directors. In this policy SOPs for proper checks and balances and to bring into focus the environmental concerns.
	(iii) A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	Environmental Cell duly approved by the Board of Directors is in place.
	(iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.	Action Plan for implementing EMP and environmental conditions along with responsibility matrix of the company has been prepared.
	(v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Self environmental audit and third party environmental audit is regularly got carried out.
X.	Miscellaneous	
	(i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	An advertisement was published in two news papers on 12.01.2020 regarding the EC granted by the MoEF&CC.
	(ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayat and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt	Compliance in this regard made.
	(iii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	Half yearly compliance report of EC conditions is being prepared and submitted to the MoEF&CC/PPCB.
	(iv) The project proponent shall monitor the criteria pollutants level namely; PM-10, SO ₂ , NO _x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	Compliance of this is being ensured.
	(v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	Half yearly compliance report of EC conditions is being prepared and submitted to the MoEF&CC/PPCB.
	(vi) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the	Environmental statement in Form-V is being prepared every year and submitted to the PPCB.



	Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	
	(vii) The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	Compliance of this will be ensured.
	(viii) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	Noted
	(ix) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Noted
	(x) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.	Noted
	(xi) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.	Noted

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PUNJAB ALKALIES & CHEMICALS LIMITED

NANGAL UNA ROAD, NAYA NANGAL

LIQUID EFFLUENT RECORD FOR THE MONTH OF DEC., 2021

Date	Caustic Soda Production(MT)	Effluent discharged	pH	TSS (mgpl)	Total residual in chlorine (mgpl)
01.12.2021	340.346	124	7.7	26	Nil
2	339.665	61	7.8	20	Nil
3	340.500	37	7.6	22	Nil
4	340.419	124	7.5	26	Nil
5	340.484	110	7.5	24	Nil
6	339.708	22	7.6	28	Nil
7	340.642	79	7.7	24	Nil
8	314.997	46	7.7	26	Nil
9	295.524	76	7.4	24	Nil
10	295.877	62	7.5	24	Nil
11	282.515	0	7.6	26	Nil
12	296.142	46	7.6	22	Nil
13	208.546	47	7.5	28	Nil
14	0	42	7.5	22	Nil
15	184.373	48	7.5	26	Nil
16	274.304	90	7.5	25	Nil
17	297.507	78	7.5	26	Nil
18	300.025	89	7.6	24	Nil
19	298.979	84	7.4	28	Nil
20	300.855	118	7.4	24	Nil
21	338.420	77	7.7	24	Nil
22	350.187	83	7.5	25	Nil
23	348.449	62	7.5	26	Nil
24	349.968	40	7.6	22	Nil
25	152.590	33	7.7	28	Nil
26	0	0	7.5	28	Nil
27	97.432	0	7.5	24	Nil
28	233.506	72	7.4	24	Nil
29	377.343	78	7.8	24	Nil
30.12.2021	391.516	88	7.3	26	Nil
31.12.2021	402.471	114	7.5	22	Nil

01. Total energy consumed : 6458 KWH

02. NaOH consumed : Nil

03. HCl consumed : Nil



PUNJAB ALKALIES AND CHEMICALS LIMITED.

DEC., 2021

Ground water quality monitoring (Hand pumps inside the plant)

PARAMETERS	NEAR GATE NO.1			OPPOSITE STORES		
	Date	07.12.21	20.12.21	07.12.21	20.12.21	
pH --	7.6	7.5		7.6	7.5	
T.D.S ppm	280	285		285	290	
Total Hardness ppm	252	250		250	254	
Chlorides ppm	16	18		18	16	
Sulphates ppm	12	14		14	15	
Mercury ppm	Nil	Nil		Nil	Nil	

PARAMETERS	NFL BOUNDARY			HORTICULTURE NURSERY		
	Date	07.12.21	20.12.21	07.12.21	20.12.21	
pH --	7.6	7.6		7.6	7.5	
T.D.S ppm	286	290		280	278	
Total Hardness ppm	260	254		250	254	
Chlorides ppm	16	16		16	15	
Sulphates ppm	14	16		14	12	
Mercury ppm	Nil	Nil		Nil	Nil	

PARAMETERS	HAND PUMP NEAR PROCESS WATER TANK			
	Date	07.12.21	20.12.21	
pH --	7.5	7.6		
T.D.S ppm	280	278		
Total Hardness ppm	254	250		
Chlorides ppm	16	14		
Sulphates ppm	14	16		
Mercury ppm	Nil	Nil		

PUNJAB ALKALIES & CHEMICALS LIMITED
NANGAL UNA ROAD, NAYA NANGAL

STACK MONITORING FOR DEC., 2021
UNIT-1

DATE	HYPO VENT CHLORINE MILLIGRAMS/M3	HCL VENT HCL MIST MILLIGRAMS/M3
02.12.21	5.10	PLANT REMAINED UNDER SHUTDOWN
07.12.21	4.73	
11.12.21	2.37	
16.12.21	5.92	
19.12.21	4.73	
23.12.21	3.55	
29.12.21	2.37	

UNIT-2

DATE	HYPO VENT CHLORINE MILLIGRAMS / M3	HCL VENT HCL MIST MILLIGRAMS / M3
02.12.21	5.28	4.74
07.12.21	5.28	2.95
11.12.21	4.69	3.52
16.12.21	5.65	4.13
19.12.21	4.28	4.56
23.12.21	4.87	5.74
29.12.21	3.47	4.34



PUNJAB ALKALIES & CHEMICALS LIMITED

NANGAL UNA ROAD, NAYA NANGAL

STACK MONITORING REPORT OF OIL/HYDROGEN FIRED BOILER FOR THE MONTH OF DEC., 2021

UNIT-1 THERMAX BOILER 5 MT/HR

DATE	TEMP. DEG. C	FLOW RATE M3/HR	SO2 MILLIGRAMS/M3	SPM MILLIGRAMS/M3
REMAINED	STOPPED			

UNIT-2 STERLING BOILER 10 MT/HR

DATE	TEMPERATURE DEG. C	FLOW RATE M3/HR	SO2 MILLIGRAMS/M3	SPM MILLIGRAMS/M3
03.12.21	182	8240	28	22
08.12.21	190	7618	24	25
12.12.21	188	8614	22	26
18.12.21	186	8634	28	22
21.12.21	194	9028	22	25
24.12.21	188	8816	26	24
30.12.21	182	7840	24	30

