COMPLIANCE OF EC CONDITIONS FOR REVAMPING OF AMMONIA-I TO METHANOL PLANT

(EC No. - F No. : J-11011/901/2007-IA (II) dated 31/07/08)

SPECIFIC CONDITIONS:

Sr. No.	Conditions	Compliance Status (Period April '24 to Sept '24)
i)	The Project revamping shall be from existing Ammonia Plant to Methanol plant which is a cost effective. The Urea plant and other infrastructure shall remain same. Present Status of the Project :	Existing Ammonia Plant is revamped to Methanol Plant. Plant commissioning and GTR completed between 11th to 13th April 2013. The Urea Plant and Other infrastructure are remained same. Methanol Plant is under shut down since 17/08/2021 due to economic unviability.
ii)	The company shall implement all the recommendations made in the Charter on Corporate Responsibility for Environmental Protection (CREP) for fertilizer industries.	**Complied** with relevant CREP points pertaining to fertilizer industries.
iii)	The project authorities shall install efficient scrubbing system to control emission and bag filters for dust control in the plant.	One Vent wash Column (K-803) is provided for scrubbing of Vent Gas from Crude Methanol Tank TK-801 and scrubbed methanol is being reused in the same crude methanol tank and the vent gases is being sent to reformer for treatment and finally emitted from flue gas stack. No process stacks. Process Hydrocarbon releases in emergencies are also through Flare System. NG is being used as a fuel in reformer. Bag filters for methanol plant is not applicable as there is no solid/powder handling. Also natural Gas is being used as fuel in reformer. Particulate matter from reformer stack is nil. A request letter for needful amendment in condition is forwarded to MoEF New Delhi, vide letter no. E/11/Methanol Proj.EC dated: 14.07.2018 & 31.01.2020. As a part of certified compliance vide F.No. 5-193/2008(Env)/658 dated 05/10/21, "**BEING COMPLIED**" status is

		received from MoEFCC, Bhopal till amendment received from MoEFCC, New Delhi
iv)	Permission of the competent authority shall be obtained for drawl of water.	**Complied.** GSFC is withdrawing water from its own French wells located in Mahi river for operation of the plants. GSFC got permission for 29.00 MLD drawl of water from Vadodara Irrigation Division (VID) for the year 2024-25 vide letter no. J.N.Versiv/PB-1/GSFC-Vadodara /Annual Qty. Reser./Year 2024-25/433 dated 28/02/2024. As per agreement of GoG, +/- 25% beyond permissible limit is allowed on annual basis without any penalty. Avg. water drawl for the period April '24 to Sept '24 is 25.14 MLD for GSFC Vadodara complex. <u>Permission for 29.00 MLD drawl of water from Vadodara Irrigation Division (VID) for the year 2024-25:</u>

(1)

સુકી ધરા સુકા વન
જળસંચયથી નંદનવન

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Gram : Irrigation

WRD

Superintending Engineer,
અધિક્ષક ઇજનેર,
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ન્યુ કોઠી બીલ્ડીંગ, વડોદરા-૩૯૦ ૦૦૧

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જા.નં.વસિંવ/પીબી-૧/GSFC-Vadodara/વાર્ષિક જથ્થો આરક્ષણ/વર્ષ ૨૦૨૪-૨૫/ 633 સને ૨૦૨૪
તારીખ :: 2૮/૦૨/૨૦૨૪

E.E.V.I. DN. VADODARA
A.S. (D) ...
EE ...
01 MAR 2024
BR ... PB-1
Inward No. ... 1095

પ્રતિ,
કાર્યપાલક ઇજનેરશ્રી,
વડોદરા સિંચાઇ વિભાગ,
વડોદરા.

વિષય :- GSFC-Vadodara દ્વારા મહીસાગર નદીમાંથી બિનખેતી વિષયક હેતુ માટે ઉપાડવામાં આવતા પાણીનો જથ્થો વર્ષ ૨૦૨૪-૨૫ માટે આરક્ષિત કરવા બાબત.

અનુ. :- આપની કચેરીના પત્રાંક : વસિંવિ/પીબી-૧/GSFC/વાર્ષિક જથ્થો આરક્ષણ/ વર્ષ ૨૦૨૪-૨૫/૫૯૧ તા.૨૬/૦૨/૨૦૨૪.

સંદર્ભ :- GSFC-Vadodara ના પત્રાંક તા.૧૪/૦૨/૨૦૨૪.

પ્રસ્તુત વિષય અન્વયે આપની કચેરીના અનુસંધાનીત પત્ર અન્વયે GSFC-Vadodara દ્વારા વર્ષ ૨૦૨૪-૨૫ માટે મહીસાગર નદીમાંથી ૩.૫૭૧૭ એમ.એલ.ડી. પીવાના હેતુસર + ૨૫.૪૨૮૩ એમ.એલ.ડી. ઔદ્યોગીક હેતુસર મળીને કુલ ૨૯.૦૦ એમ.એલ.ડી. પાણીનો જથ્થો મંજુર કરવા માટે સંદર્ભીત પત્રથી માંગણી કરવામાં આવેલ છે.

૧.૦ સરકારશ્રી દ્વારા સદર કંપની માટે ૩.૫૭૧૭ એમ.એલ.ડી. પીવાના હેતુસર + ૨૮.૨૫૦૩ એમ.એલ.ડી. ઔદ્યોગીક હેતુસર મળીને કુલ ૩૧.૮૨૨૦ એમ.એલ.ડી. પાણીનો જથ્થો મંજુર કરવામાં આવેલ છે.

૨.૦ આમ, GSFC-Vadodara દ્વારા વર્ષ ૨૦૨૪-૨૫ માટે મહીસાગર નદીમાંથી ૩.૫૭૧૭ એમ.એલ.ડી. પીવાના હેતુસર + ૨૫.૪૨૮૩ એમ.એલ.ડી. ઔદ્યોગીક હેતુસર મળીને કુલ ૨૯.૦૦ એમ.એલ.ડી. પાણીનો જથ્થો સરકારશ્રી દ્વારા મંજુર કરાયેલ ૩.૫૭૧૭ એમ.એલ.ડી. પીવાના હેતુસર + ૨૮.૨૫૦૩ એમ.એલ.ડી. ઔદ્યોગીક હેતુસર મળીને કુલ ૩૧.૮૨૨૦ એમ.એલ.ડી. કરતાં ઓછો હોઇ, ન.જ.સં.પા.પુ. અને ક.વિભાગના ઠરાવ ક્રમાંક : ડબલ્યુટીઆર/૨૦૦૫/૪૧/પી તા.૦૩/૦૨/૨૦૦૭ ને ધ્યાને લેતાં વર્ષ ૨૦૨૪-૨૫ માટેનો જથ્થો આરક્ષિત કરી મંજુરી આપવાની સત્તા અધિક્ષક ઇજનેરશ્રી હેઠળ આવેલ છે અને સદર પાણીના જથ્થાની મંજુરી અન્વયે, પીબી શાખા દ્વારા અધિક્ષક ઇજનેરશ્રીને રજુ કરેલ કચેરી નોંધને તા.૨૮/૦૨/૨૦૨૪ થી મંજુરી આપવામાં આવેલ છે.

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૩.૦ આમ, ઉપરોક્ત સંજોગોમાં GSFC-Vadodara દ્વારા મહીસાગર નદીમાંથી વર્ષ ૨૦૨૪-૨૫ માટે માંગણી કરાયેલ ૩.૫૭૧૭ એમ.એલ.ડી. પીવાના હેતુસર + ૨૫.૪૨૮૩ એમ.એલ.ડી. ઔદ્યોગીક હેતુસર મળીને કુલ ૨૯.૦૦ એમ.એલ.ડી. પાણીનો જથ્થો નીચેની શરતોને આધીન મંજુર કરવામાં આવે છે.

૪.૦ <u>શરતો :</u>

૪.૧ સરકારશ્રીના તા.૦૩/૦૨/૨૦૦૭ ના ઠરાવમાં દર્શાવેલ શરતો તેમજ જોગવાઇઓનું અચુક અમલ અને પાલન કરવાનું રહેશે.

૪.૨ સદર મંજુરી વિભાગીય કચેરીની સ્પષ્ટ ભલામણ મુજબ તેમજ તેટલા પુરતું જ આપવામાં આવે છે. વધારાના જથ્થા માટે સબંધિત કંપની દ્વારા નિયમોનુસાર પુનઃ માંગણી કરવાની રહેશે.

૪.૩ સદર મંજુરીને લગત સરકારશ્રીના વખતોવખતના નિયમોને આધીન તમામ કાર્યવાહી કરવાની રહેશે અને સદર બહાલી માટે પણ સરકારશ્રીના સ્તરેથી સમીક્ષા સહ જે સુચના મળે તે કંપનીને બંધનકર્તા રહેશે.

૪.૪ ઉપરોક્ત જથ્થા માટે સરકારશ્રીના તા.૦૩/૦૨/૨૦૦૭ ના ઠરાવ મુજબ પાણી ઉપાડની મંજુરી અન્વયે લગત તેમજ વપરાશના દરોના નાણાંની સમય મર્યાદામાં ભરપાઇ કરવાની સંપૂર્ણ જવાબદારી GSFC-Vadodara ની રહેશે.

૪.૫ ઉપરોક્ત મંજુરી કરારનામાના એક ભાગરૂપે ગણવાની રહેશે અને બાકીની અન્ય શરતો સરકારશ્રીના વખતોવખતના નિયમોને આધીન રહેશે જે GSFC-Vadodara ને સંપૂર્ણપણે બંધનકર્તા રહેશે.

(એસ.ટી.ગામીત)
અધિક્ષક ઇજનેર
વડોદરા સિંચાઇ વર્તુળ
વડોદરા

નકલ સાદર રવાના પ્રતિ, ઉપસચિવશ્રી (જળસંપત્તિ), ન.જ.સં.પા.પુ. અને ક.વિભાગ, સચિવાલય, ગાંધીનગર તરફ જાણ સારૂ.

જા.નં./વ.સિં.વિ./પીબી-૧/વાર્ષિક જથ્થો આરક્ષણ/GSFC-વડોદરા/1671 / તા: 2/3/24
નકલ રવાના પ્રતિ ; શ્રી કે. એસ. બદલાની, વાઇસ પ્રેસિડેન્ટ, જી. એસ. એફ. સી. લિ., ફર્ટિલાઇઝરનગર, વડોદરા - ૩૯૧૭૫૦. તરફ જાણ તેમજ ઉપરોક્ત તમામ શરતોનું પાલન કરવા સારૂ.

(for) કાર્યપાલક ઇજનેર
વડોદરા સિંચાઇ વિભાગ
વડોદરા.

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v) The gaseous emission (SO2, SO3, NOx, NH3, F, fertilizer dust) and particulate matter from various process units shall conform to the standards prescribed by the concerned authorities from time to time.

Complied.

Monitoring of gaseous emission (SO2, NOx, NH3, F, fertilizer dust) and particulate matter from various process units of entire Vadodara complex is carried out through NABL approved lab, Results for the period **April '24 to Sept '24** are confirmed to standard prescribed by statutory authority.

<u>Details (Parameter wise Avg, Min, Max and GPCB norms.) for **April '24 to Sept '24** period are given below</u>:

A. <u>Ammonia-III and Ammonia-IV:</u>

Compliance		AMMONIA-III	AMMONIA-IV

period		SO2	NOX	PM	SO2	NOX	PM
April '24 to Sept '24	Avg.	Nil	46.0	10.0	Nil	87.1	9.6
	Min	Nil	41.3	8.7	Nil	77.5	9.3
	Max	Nil	50.8	11.3	Nil	96.7	9.9
GPCB Norms (mg/Nm3)		**262**	**400**	**150**	**262**	**400**	**150**

B. Urea-I, II & ECS:

		UREA - I		UREA - II		UREA ECS
Compliance period		PM kg/ton	NH3(mg/Nm3)	PM kg/ton	NH3(mg/Nm3)	NH3(mg/Nm3)
April '24 to Sept '24	Avg.	0.71	36.4	1.17	50.4	25.5
	Min	0.70	35.9	1.15	49.9	22.7
	Max	0.71	36.8	1.18	51.0	28.3
GPCB Norms		**2**	**175**	**2**	**175**	**175**

C. Sulfuric Acid-III and Sulfuric Acid-IV:

		SA-III		SA-IV	
Comp. period		SO2 kg/ton	ACID MIST mg/Nm3	SO2 kg/ton	ACID MIST mg/Nm3
April '24 to Sept '24	Avg.	1.38	12.6	1.63	16.4
	Min	1.36	11.7	1.52	15.1
	Max	1.39	13.6	1.74	17.7
GPCB Norms		**2**	**50**	**2**	**50**

D. Caprolactam-II:

Compliance period		CAPRO.-I WASTE LIQUOR			CAPRO.-II WASTE LIQUOR		
		SO2	NOX	PM	SO2	NOX	PM
April '24 to Sept '24	Avg.	34.2	64.1	85.9	38.6	82.5	19.8
	Min	32.0	57.8	81.3	32.5	34.3	19.4
	Max	36.3	70.5	90.5	44.6	130.8	20.2
GPCB Norms (mg/Nm3)		**262**	**400**	**150**	**262**	**400**	**150**

E. Caprolactam-I:

		CAPRO.-I SO2	CAPRO.-I DE-NOX	CAPRO.-II AS VENT

Compliance period		SCR.		UNIT		SCR.	
		SO2	NH3	NOX	NH3	SO2	NH3
April '24 to Sept '24	Avg.	Nil	29.8	94.8	19.8	Nil	19.8
	Min	Nil	25.5	90.7	17.0	Nil	19.8
	Max	Nil	34.0	98.9	22.7	Nil	19.8
GPCB Norms (mg/Nm3)		**40**	**175**	**300**	**175**	**40**	**175**

F. Caprolactam-II, DAP, PA:

		CAPRO.II DRYER	DAP DUST SCR.		DAP DUST SCR.		PA ROCK
Compliance period		O/L	A		B		G. MILL
		PM	NH3	PM	NH3	PM	PM
April '24 to Sept '24	Avg.	24.4	Nil	51.1	Nil	50.7	74.7
	Min	23.8	Nil	50.4	Nil	46.9	74.4
	Max	25.1	Nil	51.8	Nil	54.5	75.1
GPCB Norms (mg/Nm3)		**150**	**175**	**150**	**175**	**150**	**150**

G. DAP, PA plant:

		DAP FUMES SCR.		DAP FUMES SCR.		PA PLANT
Compliance period		A		B		FUMES SCR.
		NH3	F	NH3	F	F
April '24 to Sept '24	Avg.	14.2	8.7	19.8	8.0	10.4
	Min	11.3	7.9	17.0	7.7	9.3
	Max	17.0	9.6	22.7	8.3	11.6
GPCB Norms (mg/Nm3)		**175**	**25**	**175**	**25**	**25**

H. Utility Boiler and CVL boiler:

Compliance period		UTILITY BOILER -4,5			UTILITY CVL BOILER		
		SO2	NOX	PM	SO2	NOX	PM
April '24 to Sept '24	Avg.	Nil	39.7	23.7	Nil	30.4	33.0
	Min	Nil	39.7	23.7	Nil	25.4	30.3
	Max	Nil	39.7	23.7	Nil	35.5	35.7
GPCB Norms (mg/Nm3)		**600**	**300**	**150**	**600**	**300**	**150**

The total fluoride emission shall not increase 25 mg/Nm3.

I. Co-Generation-III, AS-I & II & N-6 II:

Compliance period		CO-GEN PHASE-III			AS-I	AS-II	Nylon-6 II
		SO2	NOX	PM	PM	PM	PM
April '24 to Sept '24	Avg.	NIl	70.7	16.7	24.6	34.4	13.6
	Min	NIl	63.9	14.5	24.6	30.2	12.7
	Max	NIl	77.5	18.9	24.6	38.6	14.5
GPCB Norms (mg/Nm3)		**600**	**600**	**100**	**150**	**150**	**150**

J. Melamine-III:

		MELAMINE-III			MELA-III, DRYER OUTLET				M-III MPTS	M-III vent scrubber
Compliance period		SALT FURNACE								
		SO2	NOX	PM	PM	NH3	SO2	NOx	PM	NH3
April '24 to Sept '24	Avg.	Nil	13.8	11.7	18.5	Nil	Nil	10.1	10.2	15.9
	Min	Nil	11.8	10.7	17.2	Nil	Nil	9.3	8.4	14.7
	Max	Nil	15.8	12.7	19.7	Nil	Nil	10.9	12.0	17
GPCB Norms		**100 ppm**	**250 mg/Nm3**	**150 mg/Nm3**	**150 mg/Nm3**	**175 mg/Nm3**	**100 ppm**	**350 mg/Nm3**	**150 mg/Nm3**	**175 mg/Nm3**

Note: Stack of Melamine-I & II, WSF, SAG, S90WDmG & Methanol is under s/d during April '24 to Sept '24.

The gaseous pollutants emitted from the existing facilities are regularly monitored through NABL approved lab & in- house laboratory. The report is submitted to GPCB &MoEF regional office on half yearly basis. Moreover, GSFC has implemented OMS in 30 nos. of stacks and connected to CPCB & GPCB server. Stack emission data is also uploaded on monthly basis to GPCB website. Stack parameters details as per OMS:

Stack parameters details as per OMS for Compliance period **April '24 to Sept '24:**

Emission data shall be periodically monitored and reports submitted to Ministry's Regional Office, CPCB and SPCB.

Stack Id and Norms	AS_II_DRYER-PM - (Limit: 150 mg/Nm3)	CAPRO_II_AS_VENT-Ammonia - (Limit: 175 mg/Nm3)	CAPRO_II_AS_VENT-SO2 - (Limit: 40 mg/Nm3)
Avg	62.08	0.23	12.22
Min	0	0.03	0.83
Max	126.37	19.83	36.48
Stack Id and Norms	CAPRO_II_DRYER-PM - (Limit: 150 mg/Nm3)	CAPRO_I_DENOX-Ammonia - (Limit: 175 mg/Nm3)	CAPRO_I_DENOX-NOx - (Limit: 300 mg/Nm3)
Avg	18.12	30.11	101.57
Min	11.81	3.4	34.13
Max	37.45	83.44	194.1
Stack Id and Norms	CAPRO_I_SCRUBBER-Ammonia - (Limit: 175 mg/Nm3)	CAPRO_I_SCRUBBER-SO2 - (Limit: 40 mg/Nm3)	CVL_BOILER_STK-NOx - (Limit: 300 mg/Nm3)
Avg	48.10	0.00	45.32
Min	0.37	0	19.38
Max	161.63	0.04	112.37
Stack Id and Norms	DAP_FUMES_SCR_A-Ammonia - (Limit: 175 mg/Nm3)	DAP_FUMES_SCR_A-HF - (Limit: 25 mg/Nm3)	DAP_FUMES_SCR_B-Ammonia - (Limit: 175 mg/Nm3)
Avg	23.71	0.05	5.78
Min	22.58	0.02	3.1
Max	25.25	0.43	6.5
Stack Id and Norms	DAP_FUMES_SCR_B-HF - (Limit: 25 mg/Nm3)	PA_FUMES_SCRUBBER-HF - (Limit: 25 mg/Nm3)	PA_ROCK_GRINDING-PM - (Limit: 150 mg/Nm3)
Avg	0.06	1.00	31.69
Min	0.03	0	14.21
Max	0.45	1.57	62.14

Stack Id and Norms	Stack_Flue_Gas_2_AMMONIA_III_REFORMER-NOx - (Limit: 400 mg/Nm3)	Stack_Flue_Gas_3_AMMONIA_IV_REFORMER-NOx - (Limit: 400 mg/Nm3)	Stack_Flue_Gas_7_COGENERATION_III-NOx - (Limit: 600 mg/Nm3)
Avg	287.09	264.74	57.04
Min	123.67	2.32	95.1
Max	341.63	324.62	209.02
Stack Id and Norms	Stack_Flue_Gas_8_CAPRO_1_WASTE_LIQ-NOx - (Limit: 400 mg/Nm3)	Stack_Flue_Gas_8_CAPRO_1_WASTE_LIQ-SO2 - (Limit: 262 mg/Nm3)	Stack_Flue_Gas_9_CAPRO_II_IWI-NOx - (Limit: 400 mg/Nm3)
Avg	23.31	66.25	155.17
Min	0.05	0	0
Max	88.92	194.73	316.58
Stack Id and Norms	Stack_Flue_Gas_9_CAPRO_II_IWI-PM - (Limit: 150 mg/Nm3)	Stack_Flue_Gas_9_CAPRO_II_IWI-SO2 - (Limit: 262 mg/Nm3	Stack_P_13_SulphuricAcid_III_FAT-SO2 - (Limit: 1250 mg/Nm3)
Avg	41.76	16.40	800.82
Min	0.16	12.1	507.44
Max	96.75	32.69	1066.48
Stack Id and Norms	Stack_P_14_Sulphuric Acid_IV_FAT-SO2 - (Limit: 1250 mg/Nm3)	Stack_P_1_UREA_I_Prilling_tower-Ammonia - (Limit:175 mg/Nm3)	Stack_P_1_UREA_I_Prilling_tower-PM - (Limit: 150 mg/Nm3)
Avg	785.29	45.77	47.38
Min	149.78	44.84	13.97
Max	1120.52	49.15	70.12
Stack Id and Norms	Stack_P_2_UREA_II_Prilling_tower-Ammonia - (Limit: 150 mg/Nm3)	Stack_P_2_UREA_II_Prilling_tower-PM - (Limit: 150 mg/Nm3)	Stack_P_8_Dryer_Outlet-Ammonia - (Limit: 175 mg/Nm3)
Avg	18.70	82.36	0.49

Min	17.94	43.38	0.41
Max	20.09	131.75	0.82
Stack Id and Norms	Stack_P_9_Dryer_Outlet-Ammonia - (Limit: 175 mg/Nm3)	UREA_MELA_ECS-Ammonia - (Limit:175 mg/Nm3)	UTILITY_BOILER-NOx - (Limit: 300mg/Nm3)
Avg	0.97	21.17	35.50
Min	0.1	13.91	0
Max	22.73	22.15	114.62
Stack Id and Norms	Stack_P_25_AS_I_Dryer-PM - (150 mg/Nm3)	Stack_P_22_Mel_III_Vent_Scrubber-NH3 - (175 mg/Nm3)	Stack_P_23_Mel_III_MPTS-PM - (150 mg/Nm3)
Avg	9.89	1.92	14.82
Min	5.46	0.2	0.73
Max	30.19	19.89	41.64
Stack Id and Norms	Stack_P_24_Mel_III_Dryer-NH3 - (175 mg/Nm3)	Stack_P_24_Mel_III_Dryer-NOx - (350 mg/Nm3)	Stack_P_24_Mel_III_Dryer-PM - (150 mg/Nm3)
Avg	2.11	6.98	20.35
Min	0.96	0.25	1.65
Max	3.53	21.73	27.87
Stack Id and Norms	Stack_Flue_Gas_11_Mela_IIII_Salt_Furnace-NOx - 250 mg/Nm3)	Stack_P_26_S90WDmG_Spray Drying System-PM – 150 (mg/Nm3)	Stack_P_27_AS_IV_Dryer-PM - (mg/Nm3)
Avg	33.07	S/D	S/D
Min	1.4	S/D	S/D
Max	45.85	S/D	S/D

Reason for occasional sms alert has been submitted to CPCB that is mainly due to choking / deposition on lens of OMS& Malfunction. Rarely sms alert due to operation disturbance/startup/shutdown.

vi) All the waste waters generated from the various processes shall be treated as per the GPCB norms and

Complied.

Effluent generated from methanol plant is in the form of cooling tower and boiler blow down which is collected in final effluent disposal pond. Condensate is recycled/ reused.

Contaminated effluent streams of existing plants are treated as per GPCB norms. Analysis of final discharged effluent is carried out daily in in-house laboratory and through NABL approved lab, Avg. results for the period April '24 to Sept '24 are within the permissible limit given by GPCB. Details (Parameter wise max. Min. & Avg.) are given below in tabular format.

Analysis results of final discharged effluent done by external NABL approved lab (min, max, avg and comparison with GPCB norms):

For Compliance Period April '24 to Sept '24:

Parameters	UNIT	Permissible Limit	Avg	Min	Max
pH value	-	6.5 to 8.5	7.6	7.3	8
Colour	Pt.Co.	100	86	70	98
S.S	mg/l	100	29	12	46
COD	mg/l	250	81	65	95
BOD	mg/l	100	20	15	26
Oil & Grease	mg/l	10	<1	<1	<1
Ammonical Nitrogen	mg/l	50	40	32	49
Ph.compounds	mg/l	1	<0.2	<0.2	<0.2
Fluorides	mg/l	1.5	0.7	0.4	1.0
Cyanides	mg/l	0.2	<0.01	<0.01	<0.01
Sulphides	mg/l	2	<0.1	<0.1	<0.1
Copper	mg/l	3	<0.1	<0.1	<0.1
Arsenic	mg/l	0.2	<0.01	<0.01	<0.01
Total Chromium	mg/l	2	<0.1	<0.1	<0.1
Hexavalent Chromium	mg/l	0.1	<0.05	<0.05	<0.05
Zinc	mg/l	5	<0.1	<0.1	<0.1
Nickel	mg/l	3	<0.1	<0.1	<0.1
Lead	mg/l	0.1	<0.05	<0.05	<0.05
Mercury	mg/l	0.01	<0.005	<0.005	<0.005

Chlorides	mg/l	600	425	320	512
TDS	mg/l	5000	2592	1080	3210
Sulphates	mg/l	1000	416	380	482
Bio assay test	%survival of fish after 96 hrs.in 100% effluent	90% survival of fish after 96 hrs. in 100% effluent	Pass	Pass	Pass

Analysis of final discharged effluent is also carried out on daily basis at in-house lab. Avg. in-house results of final discharged effluent for the period April '24 to Sept '24 are well within the GPCB norms. Analysis results of final discharged effluent done in-house (min, max, avg and comparison with GPCB norms):

For compliance period April '24 to Sept '24**:**

Parameters	**pH**	**SS**	**AN**	**TN**	**COD**	**BOD**
Avg	7.9	33	13	43	105	30
Min	7.8	27	10	37	96	18
Max	8.0	39	16	48	112	40
Norms	**6.5-8.5**	**100**	**50**	**100**	**250**	**100**

*All parameters are in mg/l except pH.

Moreover, Real time-Online Monitoring System is in operation from July 2014 for the effluent parameters i.e. pH, COD, BOD, TSS, NH4-N and it is connected to GPCB as well as CPCB server.

OMS data for compliance period April '24 to Sept '24**:**

	ETP Ammonical Nitrogen (Norms: 50mg/l)	ETP BOD (Norms: 100mg/l)	ETP COD (Norms: 250mg/l)	ETP TSS (Norms: 100mg/l)	ETP pH (Norms: 6.5-8.5 mg/l)
Avg	12	38	128	22	7.5
Min	1	36	109	10	7.4
Max	20	41	181	27	7.7

efforts shall be made to recycled/reuse the treated waste water.

Existing Phosphoric Acid plant and DAP/APS plant has zero effluent discharge system. Moreover, effluent of Urea, Melamine & Ammonium sulphate plant effluent is reused in phosphoric acid plant. As an ISO 9001, 14001, ISO 45001, ISO 50001& RC company, GSFC is continuously making efforts for recycling and reuse of waste.

The domestic waste water shall be treated in septic tanks and treated waste shall be used for

The domestic effluent from the plants is being treated in existing Septic tank & Soak Pit

<table>
<tr><td></td><td>irrigation in the green belt.

Effluent from the process plant and associated facilities shall not be discharged to the storm water drain. The quality of the storm water shall be monitored regularly for pH, NH3 and fluoride.</td><td>system. Domestic effluent from colony is treated in STP (plant capacity: 3175 m^3/day) and used for irrigation in green belt.
Lean streams like cooling tower & boiler blow down are collected to pond through open channel and then discharged along with treated effluent streams to common effluent channel of M/s. VECL for ultimate discharge to estuary of Mahi.
The quality of total effluents discharged from GSFC which includes lean streams through open channel is monitored on daily basis.</td></tr>
<tr><td>vii)</td><td>The company shall develop the green belt in at least 33 % land area to mitigate the effect of fugitive emissions and noise as per the guidelines of CPCB.</td><td>Complied. The total area of premises was 328 ha. Out of which 0.65 Ha. was diverted for Bullet Train Project and hence total area is 327.35 ha. The green belt area is 133.35 Ha which is 40.73 % of total plot area in which 7.46 Ha. has been developed in GSFC owned land in Ranoli, Vadodara.
Total 187133 number of trees/plantation available in existing Green Belt (GB) in GSFC complex and 15500 numbers of trees/plantation available in existing GB in Ranoli Kotar land.
<table>
<tr><th>Sr. No.</th><th>Particulate</th><th>Total Area (Ha)</th></tr>
<tr><td>1</td><td>Green Belt (In Plant)</td><td>39.84</td></tr>
<tr><td>2</td><td>Green Belt (Township)</td><td>86.05</td></tr>
<tr><td>3</td><td>Green Belt in Ranoli (Kotar land), Nandesari</td><td>7.46</td></tr>
<tr><td></td><td>Total GB area (40.73%)</td><td>133.35</td></tr>
<tr><td></td><td>Total area</td><td>327.35</td></tr>
</table></td></tr>
<tr><td>viii)</td><td>Occupational health surveillance of the workers shall be carried out on a regular basis and

records shall be maintained as per the Factories Act.</td><td>Complied, Medical examination (six monthly) of employees is carried out on regular basis by Occupational Health Centre located within premises.

Records are maintained at OHC. Month wise summery of employees who underwent periodical and pre medical examination are given below:

<u>Periodical Medical Examination details from April ‘24 to Sept ‘24:</u>
<table>
<tr><td>Month</td><td colspan="3">Periodical Medical Examination numbers</td></tr>
<tr><td></td><td>Employees</td><td>Contract worker</td><td>Total</td></tr>
<tr><td>April-24</td><td>180</td><td>14</td><td>194</td></tr>
<tr><td>May-24</td><td>229</td><td>22</td><td>251</td></tr>
<tr><td>June-24</td><td>222</td><td>121</td><td>343</td></tr>
<tr><td>July-24</td><td>203</td><td>43</td><td>246</td></tr>
</table></td></tr>
</table>

Aug-24	254	70	324
Sept.-24	236	201	437
Total	**1324**	**471**	**1795**

Pre-Medical Examination details for period April '24 to Sept '24:

Month	Pre-medical Examination numbers
April-24	0
May-24	0
June-24	5
July-24	0
Aug-24	4
Sept.-24	13
Total	**22**

Examination done for Periodical medical examination:

S. No	Examinations	
1	Physical examination	
2	History of past and present illnesses of personal and family	
3	History of any medication and drug and allergic reaction.	
4	ECG (if needed)	
5	PFT	
6	Counseling for habits(tobacco, alcohol, smoking)	
7	Counseling (Nutrition , stress, ergonomics, hazard specification)	
8	Health screening of life style diseases	
9	Screening of HYPERSENSITIVITY of any chemical or any drug	
10	X-ray/USG (if needed)	
11	Blood investigation	1. CBC 2. LFT 3. RFT 4 Lipid profile(prone to cases) 5. RBS/FBS (PP2BS for prone to cases).
12	Urine examination	1. Glucose 2. Protein

- There is no occupational health disease during above period.

GENERAL CONDITIONS:

Sr.No.	Conditions	Compliance Status (Period April '24 to September '24)
(i)	The project authorities shall strictly adhere to the stipulations of the SPCB / State Government or any statutory body.	**Complied**, we are ensuring compliance of all the applicable statutory requirements. Management of hazardous wastes (Mentioned in general condition no.ix) is carried out as per Rules. The return in Form-4 is also submitted regularly to GPCB. Avg. results of gaseous emission and final effluent discharge are given in point vi of specific condition. Moreover, Real-time-Online Monitoring System is in operation from July 2014 for the effluent parameters i.e. pH, COD, BOD, TSS, NH4-N and it is connected to GPCB as well as CPCB server. Data of real-time-Online Monitoring System for compliance period is also mentioned in point (v) of specific condition.
(ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	**Agreed to comply**. GSFC will carry any further expansion or modification in the plants after taking necessary permission and approval from concerned authority i.e. GPCB/SEIAA/MOEF. There are no deviations and alterations in the project proposal.
(iii)	At no time, the emissions shall exceed the prescribed limits. In the event of 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.	**Complied.** Emissions from the all other plants in Vadodara complex are within the prescribed norms. Details (Parameter wise Min, Max, Avg & Comparison with standard) are given in specific condition v. In the event of failure of any pollution control system adopted by the unit, the unit is safely closed down and is not be restarted until the desired efficiency of the control equipment has been achieved.
(iv)	The locations of ambient air quality monitoring stations shall be reviewed in consultation with the	**Complied,** 4 nos. of online ambient air quality monitoring station (AAQMS) are installed in Nov.

State Pollution Control Board (SPCB) and additional stations shall be installed, if required, in the downwind direction as well as where maximum ground level concentrations are anticipated.

13 at the periphery of entire factory premises after intimation to GPCB having PM10, PM2.5, NO_x, SO2 & NH3 monitoring facility

Moreover, Ambient air monitoring is carried out at 4 Nos. locations through NABL approved lab.

Ambient air analysis reports for compliance period April '24 to Sept. '24:

	SO2, Limit – 80 micro gm/m3			NOX, Limit – 80 micro gm/m3			NH3, Limit – 400 micro gm/m3		
LOCATION	**AVG**	**MIN**	**MAX**	**AVG**	**MIN**	**MAX**	**AVG**	**MIN**	**MAX**
Vadnagar Tank Farm	8.2	6.3	10.2	11.4	8.9	14.8	4.5	3.2	6.0
Dashrath Village	18.7	15.6	23.3	23.6	18.2	28.2	6.0	4.5	8.5
Nr. Godama Pump,Channi	23.2	20.3	26.4	28.0	23.8	32.9	8.4	6.2	10.2
Near main gate	16.8	12.1	21.0	20.5	16.6	24.1	5.9	4.5	7.6

	RSPM10, Limit – 100 micro gm/m3			RSPM2.5, Limit – 60 micro gm/m3		
LOCATION	**AVG**	**MIN**	**MAX**	**AVG**	**MIN**	**MAX**
Vadnagar Tank Farm	59.2	48.8	72.5	35.3	27.2	42.5
Dashrath Village	81.9	66.9	93.5	46.2	39.8	54.5
Nr.Godama Pump,Channi	93.7	87.9	99.3	54.8	48.0	58.7
Near main gate	74.8	60.4	87.8	43.4	34.5	50.4

Details of PM parameters of process stacks are given in specific condition no. 5.

AAQM annual avg. results are also submitted to SPCB as a part of form -4.

All the online ambient air quality monitoring stations are connected to GPCB & CPCB server.

(v) Dedicated scrubbers and stacks of appropriate height as per the Central Pollution Control Board guidelines shall be provided to control the emissions from various vents.

The scrubbed water shall be sent to ETP for further treatment.

Complied,

One flue gas stack (AS-101) in Reformer section is provided for venting of flue gas generated in Reformer. The flue gas stack height is 33 Mts as per CPCB guideline.

One Vent wash Column (K-803) is provided for scrubbing of Vent Gas from Crude Methanol Tank TK-801 and scrubbed methanol is being reused in the same crude methanol tank and the vent gases is treated in reformer and finally vent through flue gas stack.

There is no process stacks in methanol plant.

Details of APC, diameter and height of all the existing process& flue stacks are given below.

Details of Flue Gas stacks:

Sr. No	Plant	Stack attached to	Air Pollution Control Device	Height of stack (M)	Dia. (m)
1	Methanol	Reformer (Furnace)	-	33	2.5
		NG Pre heater		18	0.9
2.	Ammonia – III	Reformer (Furnace)	-	30	0.85
		NG Pre heater	-	30	0.85
3	Ammonia – IV	Reforming Section-100	-	52	3.0
		Syn. Unit-500	-	30	
		CRG Unit-900	-	30	
		CRG Unit-900	-	30	
		Pre-desulphurization	-	-	
4	Mela – I	Salt furnace	-	30	1.19
5	Mela – II	Salt furnace	-	35	1.5
6	Utility Boiler 4 & 5	Boiler 4 & 5	-	30	2.4
7	Cogen – I	Boiler	-	70	3.08
8	Cogen – II	Boiler	-	70	3.08

9	Cogen– III	Boiler	-	35	3.4
10	Capro – I	Waste liquor unit	Water scrubber	22	0.96
11	Capro – II	IWI Unit	ESP (Eff. 99.26%)	40	1.0
12	New CVL Boiler	New Boiler	-	70	3.5
13	Melamine – III	Salt furnace	-	30	1.2

Details of Process stacks:

Sl. No	Plant	Stack attached to	APC Device	Dia (m)	Stack height (m)
1	Urea – I	Prilling Tower	Water Scrubber	4 x 1	38
2	Urea – II	Prilling Tower	Water Scrubber	1.45 x 4.36	70
3	Urea –Mel (Urea ECS)	Condenser oxidation column	H2SO4 Scrubber (Eff. 99.5%)	1.25	38
4	Melamine – I	Dryer Outlet	Filter	0.15	15
5	Melamine – II	Dryer Outlet	Filter	0.15	17
6	Phos. Acid	Rock Grinding Mill	Ventury Scrubber	0.8	30
7	Phos. Acid	Digester	Fume scrubber	2.49	20
8	DAP/APS/MAP /NPK	Dryer&Dust Scrubber A Train & B Train	Cyclone separator &Ventury scrubber	1.43	30

		9	DAP/APS/MAP /NPK	Granulator & Neutralization A Train & B Train	Fume Scrubber	0.74 1.02	25
		10	AS-II	Dryer	Cyclone Separator	0.9	19.2
		11	SA-III	Final Absorption Tower	Final Absorption Tower	1.22	52
		12	SA-IV	Final Absorption Tower	Final Absorption tower	2.86	100
		13	Capro-I	D-415-3 Tower O/L	Scrubber	0.43	25
		14	Capro-I	D-414-3 Tower O/L	De Nox unit	1.0	25
		15	Capro-II	AS Dryer	Cyclone Separator & Scrubber	1.016	30
		16	Capro-II	AS Vent Scrubber	Scrubber	0.2	30
		17	New Nylon 6 Plant	Process Vessels	Scrubber	0.25	30
		18	WSF & MM Plant	Crusher, Hopper, Mixers	Bag Filter	0.25	40
		19	SAG	Vibro feeder packing & handling unit	Bag Filter	0.152	12.2
		20	Melamine – III	Dryer Outlet	Wet Scrubber	0.8	20
		21		Vent Scrubber	Ammonia Scrubber	1.3	23
		22		MPTS	Filter	0.3	15
		23	AS-I	Dryer	Dust cyclone	0.54	21

		24	S90WDmG	Spray Drying System	Cyclone followed by venture scrubber	0.9	18
		25	Gypsum Granulation(GG)	Dryer & Hot air gas generator (HAGG)	Cyclone separator	0.4	30
		26	AS-IV	Dryer	Dust cyclone	0.9	30
(vi)	All the storage tanks will be under negative pressure to avoid any leakages. Breather valves, N2 blanketing And secondary condensers with brine chilling system shall be provided for all the storage tanks to minimize vapor losses. All liquid raw materials shall be stored in storage tanks and drums.	Complied, All the storage tanks are designed with Nitrogen blanketing. Breather Valves are also provided. All liquid material is being stored at atmosphere condition. Secondary condenser is not provided as there is no vapor loss from the tanks. The same is as per the design provided by technology supplier M/s Haldor Topsoe A/S, Denmark A request letter for needful amendment in condition is being forwarded to MoEF New Delhi, vide letter no. E/11/Methanol Proj.EC dated: 14.07.18 & 31.01.2020. Secondary condenser is not applicable as there are no vapor losses from the tanks. All storage tanks are designed with Nitrogen blanketing with slight positive pressure to avoid ingress of air/oxygen into tank. As a part of certified compliance vide F.No. 5-193/2008(Env)/658 dated 05/10/21, "**BEING COMPLIED**" status is received from MoEFCC, Bhopal till amendment received from MoEFCC, New Delhi All liquid raw materials are stored in the storage tanks.				
(vii)	The company shall undertake following waste minimization measures: ➢ Metering and control of quantities of active ingredients to minimize waste. ➢ Reuse of by-products from the process as raw materials or as raw material substitutes inother processes.	**Complied.** Active ingredients such as BFW (boiler feed water) chemicals are used through metering pumps. Condensate from the process & scrubbing liquor of wash column is recycled in to system.					

<table>
<tr><td></td><td>➢ Use of automated filling to minimize spillage.</td><td>Filling is done through control valve based on batch counter setting.</td></tr>
<tr><td></td><td>➢ Use of “Close Feed” system into batch reactors.</td><td>Process is having “Close Feed” system and continuous in nature.</td></tr>
<tr><td></td><td>➢ Venting equipment through vapor recovery system.</td><td>Vapor is scrubbed & recovered in Wash Column and finally mixed with CA to avoid venting.</td></tr>
<tr><td></td><td>➢ Use of high pressure hoses for equipment cleaning to reduce waste water generation.</td><td>This will be considered as and when required.</td></tr>
<tr><td>(viii)</td><td>Fugitive emissions in the work zone environment, product, and raw materials storage area shall be regularly monitored.

The emissions shall conform to the limits imposed by the State Pollution Control Boards/Central Pollution Control Board.</td><td>Complied,
Work place monitoring is carried out at regular intervals at 5 locations within Methanol plant during the operation of plant. Moreover, work place monitoring is carried out at 52 different locations in different existing plants through third party.

<u>For Compliance period April ‘24 - Sept ’24</u> :
<table><tr><th>Parameters</th><th>NH3 (ppm)</th><th>SO2 (ppm)</th><th>HF (ppm)</th><th>NOX (ppm)</th><th>BENZENE (ppm)</th></tr><tr><td>Avg</td><td>8.8</td><td>0.3</td><td>0.4</td><td>3.4</td><td>0.1</td></tr><tr><td>Min.</td><td>2.4</td><td>0.05</td><td>0.22</td><td>2.5</td><td>0.03</td></tr><tr><td>Max.</td><td>18</td><td>1</td><td>1</td><td>5</td><td>0.2</td></tr><tr><td>Limit</td><td>25.00</td><td>2.00</td><td>3.00</td><td>25.00</td><td>0.50</td></tr></table>
The emissions conform to the limits imposed by the State Pollution Control Boards/Central Pollution Control Board.</td></tr>
<tr><td>(ix)</td><td>The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000and

Hazardous Waste (Management and Handling)</td><td>Complied. GSFC is adhered to all applicable legal requirements comply with the rules and guidelines of Manufacture, Storage and Import of Hazardous Chemicals Rules. Onsite emergency plant has been prepared and updated in 18/06/2020.
Also strictly complied with the rules & guidelines of Hazardous Waste Rules.

<u>Details of Hazardous Waste generated during April ’24 – Sept ’24 are given below:</u></td></tr>
</table>

Rules, 1989, as amended from time to time. Authorization from the SPCB shall be obtained for collection, treatment, storage and disposal of hazardous wastes.

S.no	Name of waste	Authorization from GPCB	Generation (MT)
1	ETP Sludge	40 MT/Year	Nil
2	Used Oil	250 MT/Year	43.52
3	Discarded Containers	10000 nos./Year	4994 Nos.
4	Spent Catalyst (Acidic)	35 MT/Year	30
5	Spent Catalyst (Alkaline)	275 MT/Year	30.51
6	Organic Waste	20 MT/Year	0.7
7	Sulphur Muck	350 MT/Year	247.5
8	Carbon residue	7.7 MT/Year	Nil
9	Molten Salt	66 MT (in span of 07 years)	Nil
10	High Boiling Hydro Carbon	8.25 MT (in span of 07 years)	Nil
11	Spent Resin	80 MT/Year	0.04
12	Insulation waste	75 MT/year	30
13	Contaminated Cotton rags & other cleaning material	5 MT/Year	0.3

- ETP Biological sludge of 20.0 MT was given to vendor for further utilization by organic manure manufacturer / farmers.

Details of Hazardous waste management:

Sr. No	Name of Waste	Method of Collection/ Storage	Method of Disposal
1	ETP Sludge	Generated during cleaning of tank/pond, packed	Dispose at NECL

				in HDPE bags	
		2	Used Oil	Drums/Tanks in Room	Sell to registered refiner
		3	Discarded Containers	Storage Yard	Sell to registered recycler
		4	Spent Catalyst (Acidic)	Drums in Room	Dispose at TSDF/ Sell to register recycler
		5	Spent Catalyst (Alkaline)	Drums in Room	Sell to register recycler
		6	Organic Waste	Drums/Bags stored in Room	Dispose at NECL's /SEPPL's incineration facility
		7	Sulphur Muck	Stored in the yards	Reuse/ authorized Secured Disposal facility.
		8	Carbon residue	Store in bags & keep on pallets at specified waste storage area	Dispose at common hazardous waste incineration facility
		9	Molten Salt		Reuse/ or disposal at authorized TSDF site.
		10	High Boiling Hydro Carbon		Dispose at common hazardous waste incineration facility
		11	Spent Resin	In Bags / Drums at Utility Plant	Dispose at common hazardous waste incineration facility / co-processing sites.
		12	Insulation waste	Stored in bags at specified storage area.	Disposal at M/s. NECL – TSDF.
		13	Contaminated Cotton rags & other cleaning material		Disposal at M/s. NECL//SEPPL/DIPL/BEIL/co-processing sites.

<table>
<tr><td></td><td></td><td>Authorization under HWMH Rules has been obtained from GPCB vide CCA order No. AWH-117101, valid up to 30/09/2028.</td></tr>
<tr><td>(x)</td><td>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.

The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dB(A) (day time) and 70 dB(A)(nighttime).</td><td>Complied,
At Methanol Plant, necessary Engineering controls like silencers are provided to retard noise emission. Noise level at the periphery of premise are monitored through NABL approved lab,are being monitored on regular interval by summarized below.
Noise Level for compliance period April‘24 – Sept ’24:
<table>
<tr><th rowspan="2">Location</th><th colspan="3">Noise Level, Limit-75 dB(A) Daytime</th><th colspan="3">Noise Level, Limit-70 dB(A) Night time</th></tr>
<tr><th>Avg</th><th>Min</th><th>Max</th><th>Avg</th><th>Min</th><th>Max</th></tr>
<tr><td>Nr Marketing Yard</td><td>61</td><td>48</td><td>74</td><td>56</td><td>42</td><td>70</td></tr>
<tr><td>Nr Adm. Bldg</td><td>58</td><td>46</td><td>70</td><td>53</td><td>40</td><td>66</td></tr>
<tr><td>B/H SA-IV</td><td>58</td><td>44</td><td>70</td><td>54</td><td>42</td><td>66</td></tr>
<tr><td>Vadnagar Tank Farm</td><td>51</td><td>40</td><td>62</td><td>48</td><td>39</td><td>58</td></tr>
</table>
Noise monitoring is also carried out at different locations within plant/premises.

The ambient noise levels conform to the standard prescribed under environment (protection) act, 1986 rules, 1989 viz. 75dB(A) (day time) and 70 dB (A) (nighttime).</td></tr>
<tr><td>(xi)</td><td>The company shall develop rain water harvesting structures to harvest the runoff water for recharge of ground water.</td><td>Complied. GSFC has installed Roof top rainwater harvesting in GSFC’s Corporate building, A block, ADC, R&D, Central Lab, SDO, Officer Punching & Mechanical Store building. @ 12743 m3 of rainwater is collected during April ’24 to Sept. ‘24 and re used for fire water make up.

Rain Water Harvesting System exists at the Guest House, Science Foundation Building and Township’s residential areas with well water recharging, Roof Top Rain Water Harvesting and Rain water harvesting ponds. Further to this, GSFC has constructed 15 water harvesting structure (Recharge well & Furrat system) in phase manner in 2009 & 2012. The filtrations rate is in the in the range of 65-70 M3/ Hr. of each wells. Ponds have also been dug out to store the rain water runoff and percolate the same.</td></tr>
</table>

<table>
<tr>
<td>(xii)</td>
<td>The company shall undertake eco- developmental measures including community welfare measures in the project area for the overall improvement of the environment.

The eco-development plan should be submitted to the SPCB within three months of receipt of this letter for approval.</td>
<td>
Complied. Individual eco-development plans are not prepared but all sectors for community welfare and environment improvements are considered in company's regular CSR activities. Various other green initiatives are Bio Fertilizers; Tissue culture etc. has been undertaken.

CSR activities with respect to Education, drinking water, health, Garden rejuvenation etc are done regularly.

Details of CSR activities are submitted to GPCB as a part of half yearly compliance report.
CSR Expenditure incurred from April '24 – Sept '24:
<table>
<tr><th>Sr.</th><th>Details</th><th>Amount Rs.</th></tr>
<tr><td>1</td><td>Education</td><td>27,87,800</td></tr>
<tr><td>2</td><td>Drinking Water Facility</td><td>12,62,086</td></tr>
<tr><td>3</td><td>Other Local activities</td><td>82,26,205</td></tr>
<tr><td colspan="2">Total</td><td>1,22,76,091</td></tr>
</table>
In 2008, after receipt of EC, CSR activities (eco-development plan) was submitted.

However, CSR Activities are undertaken by GSFC since its inception in some or the other form. Today, company has developed CSR as a very special concept to promote the overall development, progress and betterment of the people belonging to weaker sections of society with a view to improving 'Human Development Index' (HDI) in core areas like education, health, safe drinking water, vocational training, livelihood, special children, support during natural calamities and various in-house projects.
<table>
<tr><th>Area</th><th>Project</th></tr>
<tr><td>Education</td><td>• Empowering youth for better prospect - GSFC University
• Shaping future of the nation - School at BU, SU, FU
• A healthy body leads to healthy mind - Sports Coaching in schools - Looking at the present competitive world to develop multifaceted personalities the sports culture is given very high importance worldwide.</td></tr>
</table>
</td>
</tr>
</table>

		Special Children	• Why fit in when you were born to stand out - **Osmosis Centre** - GSFC in association with GCSRA has established 'Osmosis Centre' at Urban PHC, Chhani, Vadodara. The main goal of Centre is to help children with learning difficulties by adopting inclusive education with developmental therapy and enhance the growth curve of children. Osmosis runs therapy center for children who learn differently.
		Developing CSR Culture	• We rise by lifting others - Employee Engagement Activities • Not just human, Humane too - Wall of Humanity • Making world a better place - Support Beyond Boundaries
		Rural Development	• Jal he Jivanhai - Drinking water Supply to Nearby villages • Creating inclusive structures - Infrastructure Development • I have a dream - Skill Development
		Major Past Initiatives	• Fighting Hunger - Support to The Akshaya Patra Foundation • Swachtatyanprabhuta - Construction of HSLs – Household Sanitary Latrines
		Contribution and Donations	• Together we can - Regular Support to Various NGOs and other institutions for upliftment of the society
(xiii)	The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA/EMP report.	**Complied** with all the conditions mentioned in EC. Existing Ammonia 1 Plant has been revamped to Methanol Project. Hence EIA report is not required as per condition no.7 (ii) of EIA notification. During granting of EC, only detailed note on various sources of pollution asked by MoEF, New Delhi. Details of the same has been submitted to your office vide our letter no. E/10/Methanol Proj. EC dated 18/01/13. EMP as per the details submitted by GSFC :	

S. No	EMP	Measures
1	Scrubbing of emission from venting equipment with wash column.	Wash column installed
2	During the emergency, gaseous emission is being released in to Flare system.	System installed.
3	Recycle of condensate from the process & scrubbing liquor of wash column.	System installed

(xiv) A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.

Complied. GSFC has separate environment cell and fully fledged laboratory facilities for environment management and monitoring.

EMC details like name of persons, designation, technical qualification along with parameter wise equipment available for in-house monitoring is given below.

EC Dept. Staff list:

Sr. No.	Name of employees	Designation	Tech. Qualification
1	K S Badlani	Sr. VP (I&MB, U&EC, PLM & FU) & MR	B.E (Chemical)
2	P D Kachchhi	Chief (U&EC &, TTWWP)& Dy.MR	B.E. (Env.), PDIS
3	Mrs.S Y Singh	Chief (EC & IMS)	B.E. (Civil)
4	Prashant U Kadu	Sr. Mgr (EC)	B.E. (TEXTILE)
5	Jaxesh P Trivedi	Mgr (EC)	B.E (Chemical), M.Tech (EPD), PDIS
6	Ashok H Shah	Mgr(EC)	B. Sc (Chemistry)
7	Jayesh M Dave	Mgr(EC)	B. Sc (Chemistry)
8	Prateek Jain	Dy.Mgr (EC).	B. Tech. (Chem.)
9	Pankaj K Sharma	Dy.Mgr (EC)..	B.Tech. (Chem.)
10	Mosmi M Patel	Asst.Mgr (EC)...	B.Tech. (RE & EE)
11	H V Shah	Plant Engr.	B. Sc (Chemistry)
12	Ambalal K Rana	Sr.Operator	B. Sc (Chemistry)
13	Anil L Arora	Sr.Operator	B. Sc (Chemistry)
14	Vipul R Upadhyay	Sr.Operator	B. Sc (Chemistry)
15	Rajesh H Patel	Sr. Operator	B. Sc (Chemistry)

16	Kanubhai B Padhiyar	Sr. Operator	B. Sc (Chemistry)
17	Hitesh D Patel	Sr. Operator	M.Sc (Env. Sci.)
18	K S Dave	Sr. Operator	B. Sc (Chemistry)
19	MB Kharachia	Sr. Operator	SSC
20	K C Dave	Sr. Operator	B. Sc (Chemistry)
21	A B Shukla	Foreman	ITI
22	M R Chandlekar	Foreman	ITI
23	S A Christian	Foreman	HSC
24	H G Pandey	Foreman	12th
25	MM Parmar	Foreman	SSC
26	Jayesh Solanki	Foreman	Old SSC
27	Bhavesh C Patel	Operator	M.Sc (Indus. Chem)
28	Biren R Patel	Jr. Operator	M.Sc. (Env), PDIS, Cert. (Dis.Mgmt)
29	Purvish S Shah	Jr. Operator	M.Sc. (Env), Cert. (Dis. Mgmt)
30	Jayesh S Patel	Attendant	Bsc. (Chem.)
31	Bhavdip S Vamja	Assistant Operator	B.Sc Chemistry
32	Gami Ravi kumar	Assistant Operator	B.Sc Chemistry
33	K K Mahida	Asst.Operator (OC)	Dip. (Chemical)

* Total 12 nos. of contract workmen available.

Equipments are available for in-house effluent monitoring for parameters like PH, Total Dissolved Solids, Suspended solids, Ammonical Nitrogen, Total Nitrogen, Chemical Oxygen Demand, Fluoride, Oil and Grease. Equipments are available for in-house gaseous monitoring for parameters like SO2, NH3, F & NOX.

For spot analysis of gaseous pollutant (Equipment: Dragger tube (available) and pump)

(xv) The project authorities shall earmark adequate funds to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein.

The funds so provided shall not be diverted for any other purpose.

Complied. GSFC has provided adequate funds to implement the conditions stipulated by the MoEF. Expenditure incurred on EMP: Rs. 4.38 crore.
Details pertaining to Env

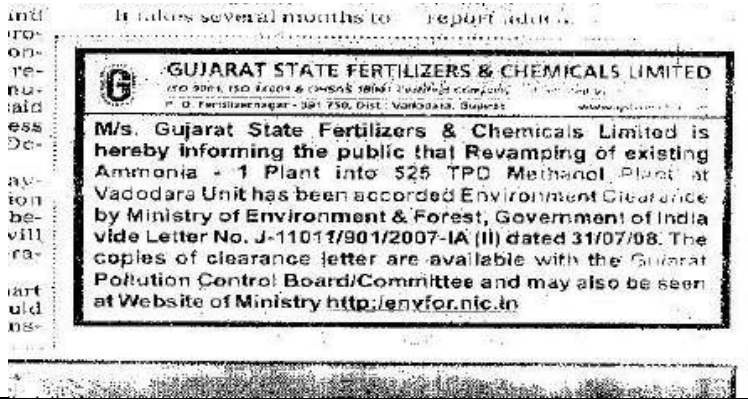
Expenditure incurred on EMP (Environment Management Plan) of Methanol Plant:

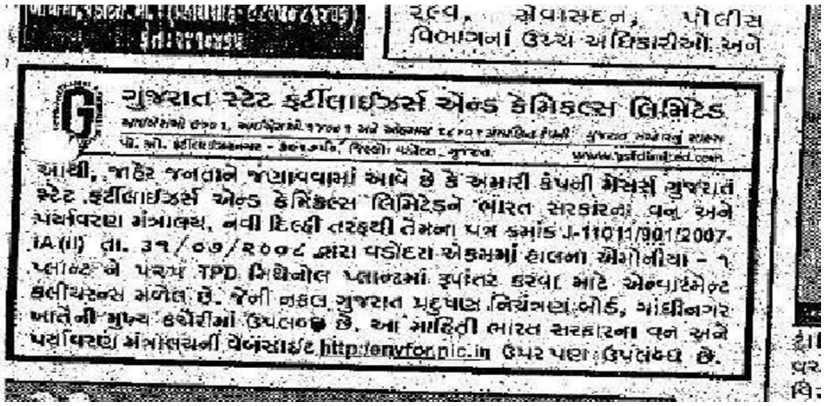
Equipment	Equipment Value	Operating Cost
Hot Flare stack	Rs. 3.0729 Cr. (Considering Supply, Erection, Commissioning etc.)	9500Rs./Day Basis : NG price 15 Rs/sm3, IG price: 15 Rs/Nm3
Vent Wash Column (K-803)	Rs. 0.0746 Cr.	No extra cost , as DMW is being recycled in process.
De-aerator (D-101) (Condensate recycling)	Rs. 0.4248 Cr	1000 Rs/day chemical cost. Basis : 231Rs/kg for Hydrazine & 223 Rs/Kg for morpholine.
Flue Gas Stack	Existing	-
Closed Darin Vessel (V-108)	Rs. 0.810 Cr.	-

Past three year investment in pollution control in overall GSFC premise:

Description	Expenses in lakhs		
	Till 2021-22	Till 2022-23	Till 2023-24
Investment in Pollution control	4198.58	4198.58	4198.58
Total Investment	521036.12	528422.48	539630.49

Separate budget is also allocated for environmental dept. activities every year.
The fund earmarked to implement the conditions of MOEF has been utilized for intended purpose only.

(xvi)	The implementation of the project vis-à-vis environmental action plans shall be monitored by the concerned Regional Office of the Ministry / SPCB / CPCB. A six monthly compliance status report shall be submitted to monitoring agencies and shall be posted on the website of the Company.	Director of MoEF, Bhopal visited on 09/09/2013, and Scientist (D) of MoEF visited on 08/07/17, 17/07/18 & 26.07.19 and GPCB last visited on 06/04/2023. Dy. Director-MoEF visited on 23.06.2021. Dy. Director- MoEF from IRO-Gandhinagar visited on 12.05.2023 **Complied,** Submitted report in Nov. 2008, Mar. 2010, July 2011 and regularly from Dec 2012. Last compliance status report submitted to MoEF, Integrated Regional office (Gandhinagar) in June..2024 and also uploaded in GSFC's website www.gsfclimited.com(gsfc@glance-RC- IMS-Baroda unit).
(xvii)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.	**Complied,** EC Advertise has been published in local news papers i.e. Vadodara Samachar & Business Standard newspaper on 03/09/2008. We did not get the copy of environmental clearance due in time, hence we had to go to MoEF to collect copy of environmental clearance personally and after getting the copy, and we have published within 7 days. Copy of the advertisement was forwarded to MoEF Bhopal vide letter ref no. EC/1 dated 12.11.2008. **Advertisement published in Vadodara Samachar& Business Standard newspaper on 03/09/2008:**  It takes several months to report [illegible] GUJARAT STATE FERTILIZERS & CHEMICALS LIMITED M/s. Gujarat State Fertilizers & Chemicals Limited is hereby informing the public that Revamping of existing Ammonia - 1 Plant into 525 TPD Methanol Plant at Vadodara Unit has been accorded Environment Clearance by Ministry of Environment & Forest, Government of India vide Letter No. J-11011/901/2007-IA (II) dated 31/07/08. The copies of clearance letter are available with the Gujarat Pollution Control Board/Committee and may also be seen at Website of Ministry http:/envfor.nic.in

		
(xviii)	The project authorities 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 and the date of start of the project.	**Complied.** Project approved on 15/07/2006 by Board of Directors. Financial Closure - Part B of Industrial Entrepreneur's Memorandum filed for Methanol Project submitted to the Secretariat for Industrial Assistance (SIA), Department of Industrial Policy and Promotion, Ministry of Industry, Udyog Bhawan, New Delhi – 110011. . Final Approval - CTO obtained from GPCB on 28.08.2012.. 10th March 2013 (First Production)

Monitoring the Implementation of Environmental Safeguards Ministry of Environment & Forests
Western Region, Regional Office, Gandhinagar
MONITORING REPORT

PART – 1 DATASHEET

No.	Conditions	Compliance Status (Period April '24 to Sept. '24)
1.	**Project type**: River-valley / Mining/ Industry/Thermal/Nuclear/Others(specify)	Revamping of existing Ammonia -1 plant into Methanol Plant.
2.	**Name of the Project**	525 TPD Methanol Plant
3.	**Clearance letter(s) OM No. and date**	F.No.J-11011/901/2007-IA(II)dated 31/07/08
4.	**Location** a) District(s) b) State(s) c) Location Latitude /Longitude	 Vadodara Gujarat $20^0$22'27" latitude and $73^0$09'11" longitude
5.	**Address for Correspondence** Address of the Concerned Project Chief Engineer (with Pin Code & Telephone/ Telex/ Fax Numbers)	Mr. K S Badlani, Sr. Vice President (I&MB, U&EC, PLM & FU) & MR P.O.: Fertilizernagar - 391750, Tal. & District : Vadodara, State : Gujarat Mo. no. :9909965842; email: ksbadlani@gsfcltd.com

6.	**Salient Features** a) of the Project b) of the Environmental Management Plans	Project: Brown field project utilizing idle asset of existing Ammonia – 1 Plant and prevent venting Gas i.e. O_2 & CO_2 from Ammonia – IV Plant. EMP: Wash column has been provided for scrubbing of emission from venting equipment. During the emergency, gaseous emission is being released in to Flare system. Condensate from the process & scrubbing liquor of wash column are recycled.
7.	**Breakup of the Project Area** a) Submergence area : Forest &Non-Forest b) Others	 Not Applicable Revamping of existing Ammonia – 1 Plant.
8.	**Breakup of the project affected population** with enumeration of those Losing Houses / Dwelling Units only, Agricultural Land only, Both Dwelling Units & Agricultural Land &I Landless Laborers/ Artisans : a) SC, ST /Adivasi b) Others (Please indicate whether these figures are based on any scientific and systematic survey carried out or only provisional figures, if a survey is carried out and give details & year of survey)	Not Applicable

<table>
<tr><td>9.</td><td>Financial Details :

a) Project Cost as originally planned and subsequent revised estimates and the year of price Reference.

b) Allocation made for environmental management plans with item wise and year wise break-up.

c) Benefit cost ratio/Internal rate of Return and the year of assessment

d) Whether (c) includes the cost of environmental management as shown in the above

d) Actual expenditure incurred on the Project so far.

e) Actual expenditure incurred on the environmental management plans so far.</td><td>Original Cost Rs. 259 Crore (Year 2005). Revised estimated cost Rs 301 Cr. (Oct'2010).

Following expenses made towards EMP:
<table><tr><th>Equipment</th><th>Equipment Value</th></tr><tr><td>Hot Flare stack</td><td>Rs. 3.0729 Cr. (Considering Supply, Erection, Commissioning etc.)</td></tr><tr><td>Vent Wash Column (K-803)</td><td>Rs. 0.0746 Cr.</td></tr><tr><td>De-aerator (D-101)
(Condensate recycling)</td><td>Rs. 0.4248 Cr</td></tr><tr><td>Flue Gas Stack</td><td>Existing</td></tr><tr><td>Closed Darin Vessel (V-108)</td><td>Rs. 0.810 Cr.</td></tr></table>
Internal Rate of Return – 15.93 %

Yes

Approx. Rs. 290 Crore expenditure booked.

Integral part of Project</td></tr>
</table>

10	**Forestland Requirement** a) The status of approval for diversion of forest land for non-forestry use b) The status of clearing felling. c) The status of compensatory a forestation,	Not Applicable
	If any. Comments on the viability & sustainability Of compensatory a forestation program In the light of actual field experience so far	
11	**The Status of Clear Felling** in non-forest Areas (such as submergence area or Reservoir, approach roads), if any with Quantitative information required.	Not Applicable
12	**Status of Construction** (actual and/ or planned) a) Date of commencement (Actual and/or planned) b) Date of completion (Actual and/or planned)	 12th April 2009 24th February 2013
13	**Reason for the delay** if the project is yet to start	-
14	**Dates of Site Visits** a) The dates on which the project was monitored by the Regional Office on previous occasions, if any b) Date of site visits for this monitoring report.	Director of MoEF, Bhopal visited on 09/09/2013. Scientist (D) of MoEF visited on 08/07/17, 17/07/18 & 26/07/19. Dy. Director-MoEF visited on 23.06.2021. Dy. Director- MoEF from IRO-Gandhinagar visited on 12.05.23.

Status of project: Methanol Plant is under shut down since 17/08/2021 due to economic unviability.