

**GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE  
(IA DIVISION-INDUSTRY-3 SECTOR)**

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**Dated: 12.2.2024**

**MINUTES OF THE 74<sup>th</sup> EXPERT APPRAISAL COMMITTEE (INDUSTRY-3 SECTOR) MEETING HELD ON 6<sup>th</sup> FEBRUARY, 2024**

Venue: Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003 through Video Conferencing (VC)

**Time: 10:30 AM onwards**

**(i) Opening Remarks by the Chairman**

Prof. (Dr.) A.B. Pandit, Chairman welcomed the Committee members and opened the EAC meeting for further deliberations.

**(ii) Details of Agenda items by the Member Secretary**

The Member Secretary apprised the Committee that proposal of M/s Transworld Furtichem Pvt. Ltd [proposal no. IA/MH/IND3/437576/2023] was considered in the 69th EAC meeting of Industry-3 Sector held during 16-17 November, 2023 through Video Conferencing (VC) and the Committee noted that Dhatav Village is part of ESAs of Western Ghats as per the Draft Notification published vide S.O. 3072(E) dated 6.7.2022 and also desired to obtain views/comments of ESZ division. Accordingly, ESZ Division has provided the comments regarding the applicability of the Western Ghats ESA regulations for the instant industry. As far the applicability of the Western Ghats ESA regulations for the instant industry is concerned it is mentioned that as of now Dhatav village is part of Western Ghats ESA and is listed in draft notification. Therefore, all the provisions [prohibited/regulated activities; as stated in para '3' (1) & (2)], as contained in draft notification on Western Ghats ESA dated 6.7.2022 are applicable to the projects. It may be mentioned that while the draft Western Ghats ESA notification re-published on 06.07.2022 is under finalization, the directions issued by this Ministry vide its O.M No. 1-4/2012-RE(Pt), dated 13.11.2013 and its amendment issued vide O.M No. 1/9/2018-ESZ, dated 03.12.2018 are in force and valid on date. Therefore, the said case can not be considered by the EAC (Industry -3).

The Member Secretary then apprised the Committee about the details of Agenda items to be discussed during this Expert Appraisal Committee (EAC) meeting.

**(iii) Confirmation of Minutes of the 73<sup>rd</sup> EAC Meeting held on 16<sup>th</sup>-17<sup>th</sup> January, 2024.**

The EAC noted that the final minutes of the above meeting were issued after incorporating the comments offered by the members and approved by the Chairman.

**Agenda Items as per Parivesh 1.0 Portal**

**Agenda No. 74.1**

**Proposed Expansion of Synthetic Organic Chemicals (API and Intermediates) Manufacturing Unit upto the Production Capacity of 34 MT/Month located at Plot No. B-40, MIDC Paithan, Taluka Paithan, District Aurangabad, Maharashtra by M/s Satellite Pharmaceuticals Pvt. Ltd. - Reconsideration of Environmental Clearance**

**[Proposal No. IA/GJ/IND3/457131/2023; File No. IA-J-11011/505/2021-IA-II(I)]**

1. The proposal is for the environmental clearance for Proposed Expansion of Synthetic Organic Chemical (API and Intermediates) Manufacturing Unit upto the Production Capacity of 34 MT/Month located at Plot No.: B-40, MIDC Paithan, Taluka-Paithan, District Aurangabad, Maharashtra by M/s Satellite Pharmaceuticals Pvt. Ltd.
2. The project/activity is covered under Category ‘B’ of item 5(f), Synthetic organic chemicals industry of Schedule of EIA Notification, 2006 (as amended). However, since the proposed project site is at a distance of 2.9. km from ESZ of Jaikwadi Bird Sanctuary, the project attracts the general condition and considered as Category ‘A’ at Centre.
3. The ToR was issued by Ministry vide letter no. No. IA-J-11011/505/2021-IA-II (I) dated 02.02.2021. The PP applied for Environment Clearance in the Common Application Form and submitted EIA/EMP Report and other documents. The PP in the Form reported that it is an **Expansion case. The proposal was placed in 60<sup>th</sup> EAC meeting on 10<sup>th</sup> August, 2023**, in which EAC deferred the proposal, now the proposal is placed in the 74<sup>th</sup> EAC meeting held on 6<sup>th</sup> February, 2024 wherein the PP along with accredited Consultant, Building Environment (India) Pvt. Ltd [Accreditation number NABET/EIA/2225/RA 0267\_Rev 01 Valid till 27.05.2025] made a detailed presentation on the salient features of the project. The information submitted by the PP is as follows:
4. The PP reported that the existing land area is 6,840 m<sup>2</sup> land, no additional land is required for the proposed expansion, no R& R is involved in the Project. The details of products to be manufactured are as follows:

S. NO	Product name	Quantity/Month	Application
<b>Existing</b>			

1	Sodium Chloride	11 MT	Formulation preparation
2	Ammonium Chloride	11 MT	Pharmaceutical preparations
3	Potassium Chloride	11 MT	Medical application, Synthesis of Nucleic acid
<b>Total</b>		<b>33 MT</b>	
<b>The existing products will be discontinued</b>			
<b>Proposed</b>			
1	Benzhydrol	8 MT	Intermediate for Modafinil and Citrazine Hydrochloride.
2	2-Phenyl-1H-Benzimidazole-5-Sulphonic Acid	2 MT	Intermediate for Sunscreen
3	Cinnamyl alcohol	2 MT	Intermediate for Cinnacalsate
4	Diethyl Amine-2-Hydroxy Benzoate	2 MT	API- Analgic Muscular/ joint pain
5	4-Methoxy Phenyl Acetone	10 MT	Food Additive
6	4-Hydroxy Benzyl Alcohol	3 MT;	Precursor for synthesis of copolyoxalate nanaoparticles as potential drug delivery system
7	Chlorsulon Intermediate	3.50 MT	Intermediate for API Chlorsulon [Veterinary API]
8	Nitroxinil Intermediate	3.50 MT	Intermediate for API Nitroxinyl [Verteniary API]
<b>Total</b>		<b>34 MT</b>	

5. The PP reported that there is no violation case as per the Notification No. S.O. 804(E) dated 14.03.2017 and no direction is issued under E (P) Act/Air Act/Water Act.

6. The PP reported that Satellite Pharmaceuticals Pvt. Ltd. (SPPL) started operation in 1993 as an inorganic chemical industry located at Plot No. B-40, MIDC Paithan, District-Aurangabad, Maharashtra. Since production of inorganic compounds are not in purview of EIA Notification 2006, Environment Clearance was not required for production for existing inorganic products.
7. The PP reported that there is Jayakwadi Bird Sanctuary at distance of 2.9 km from project site. Godavari River (Jaikwadi Dam Backwater) – 1.5 km in West direction. There is no forest land involved in the proposed project. Brahminy Kite-Haliastur indus, Western Marsh Harrier-Circus aeruginosus, Steppe Eagle-Aquila nipalensis and Osprey-Pandion haliaetus Schedule-I species are found in the study area for which conservation plan has been prepared and submitted.
8. The PP reported that **Ambient air quality monitoring** was carried out at 8 locations during 01st March to 31st May-2022 to and the baseline data indicate the ranges of concentrations as: PM<sub>10</sub> (56.30 -73.37µg/m<sup>3</sup>), PM<sub>2.5</sub> (27.26- 36.62µg/m<sup>3</sup>), SO<sub>2</sub> (20.96-29.96µg/m<sup>3</sup>) and NO<sub>2</sub> (25.14-39.68 µg/m<sup>3</sup>). AAQ modeling study for point source emissions indicate that the maximum incremental GLCs after the proposed project would be 70.02 µg/m<sup>3</sup>, 20.82 µg/m<sup>3</sup> and 4.2 µg/m<sup>3</sup> with respect to PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>2</sub>. The resultant concentrations are within the National Ambient Air Quality Standards (NAAQS).
9. The PP reported that the total water requirement is 48.453 m<sup>3</sup>/day of which fresh water requirement of 48.453 m<sup>3</sup>/day will be met from MIDC/Recycled Water. Total effluent generated will be 10.30 KLD which will be treated in ETP of capacity 20 CMD. 17 CMD excess treated water will be sent to Waluj CETP for further treatment and disposal
10. The PP reported that the power requirement is as-

Connected Load	187 KVA
Total Demand Load	95 KVA
Solar Panel	50 KW Solar Panels will be installed on site for additional power back up
Source	MSEDCL

#### 11. Details of Process Emissions Generation and its Management:

Sr. No	Name of the Product	Name of the Gas	Emission kg/Day	Emission Rate kg/Hr	Disposal Method
1	Methoxy Phenyl Acetone	CO <sub>2</sub>	8.295	1.036	Scrubbed with chilled water and caustic solution
2	Chlosulon Intermediate	HCl	106.15	8.845	Scrubbed with chilled water and caustic solution

3	Nitrixinil Intermediate	NO	24.15	2.415	Scrubbed with chilled water and caustic solution.
<b>Stack No</b>	<b>Attached to</b>	<b>APCM</b>	<b>Stack Height</b>	<b>Parameters</b>	<b>Permissible Limit</b>
1	Scrubber Process	Catch pot with packed column with water supply	10m	Acid Mist, NH <sub>3</sub> , CO <sub>2</sub>	<35 ppm
2	Laboratory Fume cupboard	Catch pot packed column with water/Alkali supply	10m	SO <sub>2</sub> , HCL,	<35 ppm
3	Reactor Process	Catch pot with packed column	15m	HCl, SO <sub>2</sub> , CO <sub>2</sub>	<35 PPM
4	Process Reactor	Catch pot with packed column	15 m	NH <sub>3</sub> ,CO <sub>2</sub>	< 35PPM.

## 12. Details of Solid Waste/ Hazardous Waste Generation and its Management:

S.No	Description	Schedule No	UOM	Frequency	Quantity	Disposal
1.	Wastes or Residues containing oil	5.2	Kg	Month	50	CHWTSDF
2.	Organic Residues from process	4.4	Kg	Day	38.60	CHWTSDF
3.	Distillation residues	20.3	Kg	Day	94.653	CHWTSDF
4.	Spent Solvent	23.2	Kg	Day	97.6	Sale to authorized Recycler/ CHWTSDF
5.	Off specification products	28.4	Kg	Month	50	CHWTSDF
6.	Spent acids	29.6	Kg	Day	521.53	Sale to authorized Recycler/ CHWTSDF

7.	Empty Barrels / containers/ contaminated hazardous chemicals / wastes	33.1	No	Month	100	Sale to authorized Recycler/ CHWTSDF
8.	Chemical sludge from waste water treatment	35.3	kg	Day	250	CHWTSDF

13. The Budget earmarked towards the Environmental Management Plan (EMP) is ₹ 175 Lakhs (capital) and the Recurring Cost (operation and maintenance) will be about ₹ 30 Lakhs/annum. Industry proposes to allocate Rs. 5.3 Lakhs towards Corporate Social Responsibility.
14. Industry has already developed / will develop greenbelt over an area of 33 % i.e., 2257.21 sq.m. out of total area of the project.
15. The PP reported that the Public Hearing is exempted as per the Para 7.III. Stage (3) (i) (b) of the EIA Notification, 2006 as the project site is located within MIDC Paithan which is declared as notified industrial area in the year 1976.
16. The PP proposed to set up an Environment Management Cell (EMC) by engaging Managing Director- Director operation- Plant manager- EHS Manager- General Manager- Supervisor- Chemist- Worker (safety)- worker (Environment) for the functioning of EMC.
17. The PP submitted the Disaster Management Plan and On-site and Off-site Emergency Plans in the EIA report.
18. The estimated proposed project cost is Rs 5.3 Crores. Total Employment will be 25 persons as after expansion.
19. The Proposal considered in the **60<sup>th</sup> EAC Meeting held on 10<sup>th</sup> August,2023** wherein the EAC deferred the proposal for want of requisite information. Reply to the same was submitted by the PP vide letter 3.11.2023 which is as follows:

S. No.	Queries Raised by EAC	Reply by PP
(i)	Certified Compliance report of the existing CTO from the MPCB	PP has not submitted the Certified Compliance report of the existing CTO. The Committee suggested to submit the same.

(ii)	Action plan for green belt development of the existing unit (33%), @2500 trees per hectare, in consultation with forest department and accordingly, submit the details of green belt developed, number of trees and aerial photographs and video.	Action plan for greenbelt is submitted Total Plot Area: 6840 sq. m Greenbelt area :2,257.2 Sq. m (33% ) ~ 0.225 ha No. of Existing Trees : 15 no's No. of Trees Proposed : 550 no's Total Nos of Trees : 565 no's Cost / Year: Rs. 17.23 Lacs
(ii)	Revised layout plan with the requisite green belt.	Layout plan with the requisite green belt is submitted.
(i)	Details of carbon foot print and carbon sequestration study w.r.t. proposed project. Proposed mitigation measures also needs to be submitted.	Details of carbon foot print and carbon sequestration study w.r.t. proposed project and proposed mitigation measures is submitted. Total emissions (t CO2 eq. /year) : 3835.35 The total carbon sequestered through trees (565 trees) - 688.309 t CO2 eq. /year
(v)	Revised effluent treatment scheme including the STP.	PP informed that total water requirement will be increased from 10 to 48.458 KLD after expansion. Effluent generation will be increased from 5 to 19.5 KLD after expansion. It was noted that PP has not submitted the treatment mechanism of effluent generated after expansion. The Committee suggested to submit Water balance chart alongwith treatment mechanism of effluent.
(v)	Acknowledgement slip for the submission of the conservation plan for schedule- I species	Acknowledgement slip for the submission of the conservation plan for schedule- I species is submitted. Conservation plan has been submitted to DFO vide letter dated 11.9.2023.

## 20. Deliberations by the EAC

After detailed deliberations, EAC desired the following information:

- **Satellite Pharmaceuticals Pvt. Ltd. (SPPL) started its operation in 1993 as an inorganic chemical industry located at Plot No. B-40, MIDC Paithan, District-Aurangabad, Maharashtra. PP engaged**

in manufacturing of 3 inorganic chemicals - Sodium Chloride, Ammonium Chloride & Potassium Chloride. Since production of inorganic compounds are not in purview of EIA Notification 2006, Environment Clearance was not required for production of existing inorganic products. The Committee noted that PP has not submitted the Certified compliance report issued by MPCB for the existing CTO. Accordingly, the committee suggested that PP shall submit the CCR highlighting compliance of each condition in the letter head of RO, MPCB.

- PP presented that industrial effluent will be segregated into Low TDS/COD and High TDS/COD effluent streams. Low TDS/COD effluent stream will be treated in the ETP comprising primary , secondary and tertiary treatment including RO. High TDS/COD will be treated through solvent stripper followed by Evaporator. Sewage will be treated in the STP. No effluent/treated water will be discharged outside the premises and ZLD will be followed. The Committee suggested to submit the same in writing.

Accordingly, proposal was deferred for want of above additional information. Above all additional information shall be submitted online to the PARIVESH portal for further consideration by EAC.

#### **Agenda No.74. 2**

**Proposed project to produce Light Soda Ash (LSA) of 11,00,000 TPA capacity, 5,00,000 TPA of Dense Soda Ash (DSA) and 2,00,000 TPA Sodium Bicarbonate (SBC) located at near village Bada, Taluka - Mandvi, District - Kutch in the Gujarat state by “Greenfield Chemical Complex” of GHCL Ltd- Reconsideration of Environmental Clearance**

**[Proposal no: IA/GJ/IND3/408164/2022, File No. IA-J-11011/293/2021-IA-II(I)]**

1. The proposal is for Environmental Clearance to the Proposed project to produce Light Soda Ash (LSA) of 11,00,000 TPA capacity, 5,00,000 TPA of Dense Soda Ash (DSA) and 2,00,000 TPA Sodium Bicarbonate (SBC) located at near village Bada, Taluka - Mandvi, District - Kutch in the Gujarat state by “Greenfield Chemical Complex” of GHCL Ltd
2. The project/activity is covered under Category ‘A’ of Item 4 (e) soda ash industry of Schedule of Environment Impact Assessment (EIA) Notification, 2006 (as amended) and requires appraisal at Central Level by the Expert Appraisal Committee (EAC) as the project is located outside the notified industrial area.
3. The ToR was issued by the Ministry, vide letter no. IA-J-11011/293/2021-IA-II(I) dated 10<sup>th</sup> August, 2021. The PP applied for the Environment Clearance in the Common Application Form and submitted the EIA/EMP Report and other documents. The PP in the CAF reported that it is a **Fresh**



**EC case. The proposal was placed in 72<sup>nd</sup> EAC Meeting held on 2<sup>nd</sup> January, 2024** in which EAC deferred the proposal now the proposal is placed in this 74<sup>th</sup> EAC meeting held on 6<sup>th</sup> February, 2024 where project was wherein the PP and an accredited Consultant, M/s. T. R Associates [NABET accreditation till **NABET Accreditation Number: NABET/EIA/2326/RA 0293 valid till 8th April, 2026**], made a detailed presentation on the salient features of the project and informed the following:

4. The PP reported that the Total land area is **5463200 m<sup>2</sup>**; no additional land will be used **for proposed project** and no R& R is involved in the Project. The details of various products are as follows:

Sr. No.	Name of the Product	Production Capacity (MT/Month)	CAS Number	End use
1	Light Soda Ash	11,00,000 TPA	497-19-8	Manufacturing of glass, usage in chemical industry, paper and detergent manufacturing, and food industry
2	Dense Soda Ash	5,00,000 TPA	497-19-8	
3	Sodium bicarbonate	2,00,000 TPA	144-55-8	
Captive Co-generation Power plant Steam (CFBC boilers)			120 MW	
Emergency DG Set			5 MVA	
Note- The production capacities are planned in phased manner and for Phase 1 production capacity for LSA: 5,50,000 TPA, Dense Soda Ash: 2,50,000 TPA, SBC: 1,00,000 TPA and 60 MW for Captive Co-generation Power plant.				

5. The PP reported that there is no violation case as per the Notification No. S.O.804(E) dated 14.03.2017 and no direction is issued under E(P) Act/Air Act/Water Act.
6. The PP reported that there is no National Parks, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. **Marine National Park and Sanctuary, Jamnagar are located at 75 km aerial distance in South direction and Narayan Sarovar Sanctuary is located at more than 100 km aerial distance in North-West directions.** Flap shell turtle, Green Sea turtle, Indian monitor lizard, Olive Ridley Sea turtle, Black shoulder kite, Eurasian Spoonbill, Indian Peafowl, Marsh Harrier, Oriental Honey Buzzard, Gugal Schedule-I species were found in the study area for which conservation plan has been prepared and submitted to PCCF and Chief wildlife warden dated 9.11.2023.

7. The PP reported that the diversion of 0.9689 ha unclass forest for laying part of sea water intake and effluent disposal pipeline and passage for related construction equipment movement in Kachchh has been obtained vide letter dated 18. 7.2023.
8. The PP reported the Unit has received the Final recommendation letter from GZMA vide file no ENV/ 10/ 2021/184/ T- cell dated 26.12.2023. CRZ details are as:

<b>Activities</b>	<b>Zone</b>
Construction of process plant and utilities etc.	Outside CRZ area
Effluent collection	Outside CRZ area
Seawater Intake system i.e. sump and pump house	CRZ III
Intake Pipeline	CRZ IA, CRZ IB and CRZ IV
Outfall Pipeline	CRZ IA, CRZ IB and CRZ IV

Laying of Seawater Intake and effluent disposal underground pipeline through tunnel from unclassified Forest area, Sand dune area, intertidal area outside project boundary.

9. The PP reported that Ambient air quality monitoring was carried out at 10 locations during December 2019 – February 2020. The baseline data indicates the ranges of concentrations as: PM<sub>10</sub> (19 µg/m<sup>3</sup> to 53 µg/m<sup>3</sup>), PM<sub>2.5</sub> (8 µg/ m<sup>3</sup> to 17 µg/ m<sup>3</sup>), SO<sub>2</sub> (1 µg/m<sup>3</sup> to 14 µg/m<sup>3</sup>), NO<sub>x</sub> (5 µg/m<sup>3</sup> to 16 µg/m<sup>3</sup>), Ammonia (6 µg/m<sup>3</sup> to 19 µg/m<sup>3</sup>), Ozone (2 µg/m<sup>3</sup> to 8 µg/m<sup>3</sup>), Carbon Monoxide (0.09 mg/m<sup>3</sup> to 0.21 mg/m<sup>3</sup>), Hydrocarbons [Methane hydrocarbons (0.23 µg/m<sup>3</sup> to 1.27 µg/m<sup>3</sup>) and Non-Methane hydrocarbons (0.11 µg/m<sup>3</sup> to 0.19 µg/m<sup>3</sup>)], Lead (Pb) (0.05 µg/m<sup>3</sup> to 0.27 µg/m<sup>3</sup>), Arsenic (As) (0.02 ng/m<sup>3</sup> to 0.11 ng/m<sup>3</sup>), Nickel (Ni) (0.11 ng/m<sup>3</sup> to 0.18 ng/m<sup>3</sup>), Benzo(α)pyrene(B[a]P) (ND to 0.03 ng/m<sup>3</sup>) and Benzene (ND to 0.16 µg/m<sup>3</sup>). AAQ modeling study for point source emissions indicates that the maximum incremental GLCs after the proposed project would be 3.05 µg/m<sup>3</sup> in case of Lignite, Coal and Petcoke with respect to PM<sub>10</sub>, 10.98 µg/m<sup>3</sup> in case of Lignite, 2.55 µg/m<sup>3</sup> in case of Coal and 13.26 µg/m<sup>3</sup> in case of Petcoke with respect to SO<sub>2</sub> and 11.37 µg/m<sup>3</sup> in case of lignite, 7.3 µg/m<sup>3</sup> in case of coal and 5.62 µg/m<sup>3</sup> in case of Petcoke with respect to NO<sub>x</sub>. The resultant concentrations are within the National Ambient Air Quality Standards (NAAQS).
10. The PP reported that the Total water requirement for project will be 15,20,060 m<sup>3</sup>/day in case of Dry Lime process or 13,63,878 m<sup>3</sup>/day in case of Wet Lime process which will be met from Sea water. Total Effluent of 15,88,570 m<sup>3</sup>/day (Domestic - 160 m<sup>3</sup>/day + Industrial – 15,88,410 m<sup>3</sup>/day) in case of Dry Lime process or 14,48,818 m<sup>3</sup>/day (Domestic - 160 m<sup>3</sup>/day + Industrial – 14,48,658

m<sup>3</sup>/day) in case of Wet Lime process. The Process effluent generated i.e. from distiller waste, brine purification reject, RO/DM rejects will be disposed off along with once through return cooling water/fresh seawater into Arabian Sea as per recommendation of NIO. The characteristics of the discharge water are within the norms prescribed by CPCB.

11. The PP reported that the Power requirement for proposed project will be 120 MW and will be met from Captive Co-generation Power plant. D. G. Set (5 MVA X 1) [Fuel: HSD (60 KL)] shall be provided and used only in case of power failure. Stack (30 meter) and Retrofit shall provide as per CPCB norms to the DG sets. Industry will provide six Steam Boiler (150 TPH) for captive power plant, six lime kilns and D G sets

**12. Details of process emissions generation and its management:**

SR.NO	Stack attached to	Capacity	Height of the stack (m)	Fuel & its Consumption	Expected Pollutant	APC System	GPCB Limit
1	CPP with flue gas desulphurization CFBC Boiler (6 Nos.)	150 TPH	130 m	Imported Coal/Lignite/ Pet coke (Imported Coal: 13,14,000 TPA, Lignite :19,71,000 TPA, Pet coke: 9,12,500 TPA)	SPM SO <sub>2</sub> NO <sub>2</sub> Hg	Individual ESP with each Boiler	PM ≤ 30 mg/Nm <sup>3</sup> SO <sub>2</sub> ≤ 100 mg/Nm <sup>3</sup> NO <sub>2</sub> ≤ 100 mg/Nm <sup>3</sup> Hg ≤ 0.03 mg/Nm <sup>3</sup>
2	D G Set (2/3 Nos.)	5 MVA	30 m	HSD (60 KL)	HC CO PM NO <sub>x</sub>	Retrofitting	NO <sub>x</sub> 710 ppmv NMHC 100 mg/Nm <sup>3</sup>

							PM 75 mg/Nm <sup>3</sup> CO 150 mg/Nm <sup>3</sup>
3	Lime Kiln 1		68 m	Coke or Briquette or Anthracite (Coke - 1,30,000 TPA, Briquette- 1,55,000 TPA, Anthracite - 1,10,000 TPA)	SPM SO <sub>2</sub> NO <sub>2</sub>	Scrubber and Dust Collector system	SPM ≤ 150 mg/Nm <sup>3</sup> SO <sub>2</sub> ≤ 100 ppm NO <sub>2</sub> ≤ 50 ppm
4	Lime Kiln 2		68 m			Scrubber and Dust Collector system	
5	Lime Kiln 3		68 m			Scrubber and Dust Collector system	
6	Lime Kiln 4		68 m			Scrubber and Dust Collector system	
7	Lime Kiln 5		68 m			Scrubber and Dust Collector system	
8	Lime Kiln 6		68 m			Scrubber and Dust Collector system	

SR.NO.	Stack attached to	Height of the stack (m)	Expected Pollutant	APC System
1	Ammonia Recovery system	42 m	Ammonia	Water scrubber

2	Lime grinding system / Slaker	65 / 20 m	PM / Water vapor	Bag filter / Adequate stack height
3	Calcliner unit	37 m	PM	Scrubber, Bag filter
4	Densification	43 m	PM	Scrubber
5	Sodium Bi-Carbonate Unit	30 m	PM	Bag filter
6	Lime Kiln	Closed system	PM	Scrubber and Wet ESP

### 13. Details of Solid Waste/ Hazardous Waste Generation and Its Management:

Sr. No.	Type of Waste	Mode of Disposal
1	ETP Sludge from treatment of effluent generated from captive power plant & RO/DM Plant	The effluent from power plant, RO/DM plant will require only neutralization & it will have negligible BOD/COD. Sludge will be disposed off in nearby landfill site.
2	Used Oil / Used Cotton	It will be sold to MoEF&CC/CPCB registered recyclers only. Approx. 12 KL
3	Discarded Drums	It will be sold to approve traders. Approx. 5 MT/yr
	Discarded Bags	It will be sent back to supplier for reuse.
4	Spent Ion exchange resin	To be sold to authorized recyclers or will be incinerated at MoEF&CC/CPCB approved TSDF for which plant will obtain membership. Approx. 3000 l/yr
5	Lead acid Batteries	It will be sold to authorized agency through auction.
6	Ash (Fly ash & Bottom Ash) from Boiler	The Boiler ash will be used for cement Manufacturing/ Brick Manufacturing. Approx. 750 TPD
7	Limestone rejects	It can be used in Boiler for desulphurization and as a sweetener in cement industry, road making, pavement etc. 5% of lime stone consumption.

8	Settled sludge	Since settled sludge, non-hazardous in nature, it is proposed to be disposed off in Nearby landfill site.
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14. The Budget earmarked towards the Environmental Management Plan (EMP) is ₹ **205.07 crore** (capital) and the Recurring Cost (operation and maintenance) will be about ₹ **6.98 Crore** per Annum. Industry proposes to allocate ₹ **18.04 Crore** towards CER.
15. The PP reported that Public Hearing for the Proposed project has been conducted by the State Pollution Control Board at the project site on **17.10.2022**. The main issues raised during the public hearing are related to the air pollutants, water pollutants, schedule 1 conservation plan, fishing, traffic etc.
16. The PP proposed to set up an Environment Management Cell (EMC) by engaging Environment officials for the functioning of EMC.
17. The PP submitted the Disaster and Onsite and Offsite Emergency Plans in the EIA report.
18. The estimated total project cost is **Rs 3550 Crores**. Total Employment will be **1200** persons as direct.
19. Intake pipeline and outfall pipeline fall in CRZ 1A, 1B and IV area as per demarcation. It was reported that construction of process plant and utilities fall outside the CRZ area. SCZMA recommendation has been obtained for Laying of Seawater Intake and effluent disposal underground pipeline through tunnel from unclassified Forest area, Sand dune area, intertidal area outside project boundary.
20. The Public Hearing earlier was scheduled to be held on 16-04-2022 at 11:00 Hrs, Venue: Project Site, Survey no. 432, Village: Bada, Taluka: Mandvi, District: Kutch, Public hearing was then time being postponed due to unavoidable circumstances. After that public hearing was completed on **17-10-2022 at 11.00 Hrs**. Venue: Project Site, Survey no. 432, Village: Bada, Taluka: Mandvi, District: Kutch, Gujarat. Which was presided over by Shri Chetan Mishan(GAS), Sub Divisonal Magistrate & Deputy Collector, Mundra- Kutch. Public hearing Details as given below:

S.No.	Issue related to	Nos. Issues	Concern in PH	GHCLID reply	Action Plan	Fund Required	Timeline	Responsibility
1	CSR-Fodder	4	Steps to be taken for cattle Care about Madhan community Security regarding fodder supply for livestock.	Fodder will be provided as well as provision for veterinary doctor will be carried out by GHCL foundation under CSR activity.	<ul style="list-style-type: none"> <li>Activities for fodder supply will be carried out under CSR and CER activities for strengthening the bond between the project authorities and the local population. (refer Ch-8 and Table 10.4 in Ch-10). Fodder field will be developed on the Government/allocate land to nearby villages.</li> <li>Unit will do promotion through providing support for breed improvement, animal health care, fodder improvement and providing veterinary doctor in nearby villages under CER and CSR activities for communities.</li> <li>During year 2020-2021, GHCL foundation has spent INR 9.03 Crores towards CSR projects/activities worth INR 19.09 Cr. were implemented. GHCL wide range of CSR projects have touched and benefitted more than 90,200 lives over the years. Promoting</li> </ul>	<ul style="list-style-type: none"> <li>As per M&amp;EF&amp;CC Office Memorandum FNO. 22-67/2017-IAIII, M&amp;EF&amp;CC, New Delhi, dated on 1st May 2018 GHCL Ltd has earmarked 0.5 % of capital investment (approx. Rs. 18.04 crore), towards the Corporate Environment Responsibility in 5 years</li> <li>GHCL Ltd will spend approx. 4.35 crore* towards Animal husbandry promotion through providing support for breed improvement, animal health care, Veterinary doctor and others as well as provides Fodder for cattle feeding nearby villages as per requirement under CER activities (*value may defer as per actual requirement)</li> </ul>	5 years	GHCL Limited
2	Employment	5	For employment of local villagers Number of employment opportunities to be Priority must be given to nearby 10 villages Regarding priority to nearby villages	Information on employment opportunities has given by Project Proponent that there are different types of employment opportunities in the two phase of the projects i.e. construction	<ul style="list-style-type: none"> <li>The proposed project has a potential for employment of skilled, semiskilled and unskilled employees during construction phase</li> </ul>	<ul style="list-style-type: none"> <li>GHCL Ltd will spend approx. 2.25 crore towards Promoting activities for skill building to improve</li> </ul>	During construction and Operation phase	GHCL Limited

S.No.	Issue related to	Nos Issues	Concern in PH	GHCL/ID reply	Action Plan	Fund Required	Timeline	Responsibility
			for labor work Regarding employment for local communities.	<p>phase and operational phase of the project. GHCL will strive to provide these employment opportunities to the local people, for which work will be done for their skill development and employment opportunities will be provided to the local people.</p> <p>As per requirement, training will be given to local people in coordination with HR department. Priority will be given for employment of local people.</p> <p>In nearby villages a group of women can be formed so that they can work in Grehdyogs (Home-based business). M/s. GHCL shall provide employment to women as per their skills and qualification.</p>	<p>operational phase. The plant will create direct employment in phased manner for about 1200 (operational phase) skilled as well as semi-skilled staff and indirectly large number of unskilled manpower will be engaged for the project. For Employment, local people will get first priority as per suitability and requirement. People will also get employed by the contractors for various project related activities. (Refer Ch-8 of EIA report)</p> <ul style="list-style-type: none"> <li>GHCL foundation will carry out skill development Programme for local youth to improve their employment opportunities, women empowerment under CSR and CER activities.</li> </ul>	employment opportunities and women empowerment in nearby villages under CER activities.		
3	CSR-Health	1	Regarding health facilities under CSR activities	Will provide mobile health van facility and upgradation of existing health care infrastructure	<ul style="list-style-type: none"> <li>Industry will provide Mobile Health Care, Health Camps and Specialized Check Up Camps in nearby villages. Necessary support and help will be extended for advanced diagnosis and treatment wherever identified, Free medical health checkup under CSR and CER activities. (Refer Ch-8 of EIA report). We have already initiated mobile health van facility for nearby affected villages of project site.</li> </ul>	<ul style="list-style-type: none"> <li>GHCL Ltd will spend approx. 1.12 crore towards Infrastructure development Such as primary healthcare units and the fulfilment of the basic amenities in PHCs including mobile medical van and Provide Baka-Rasayana to Malnutrition Children in Aanganwadi and PHC of nearby Villages under CER activities.</li> <li>GHCL Foundation will spend approx.</li> </ul>	5 years	GHCL Limited
4	CSR-Education	3	Regarding scholarship under CSR activity Regarding skill development of youth and improvement of	Will build school in future as per requirement and will also upgrade the existing school infrastructure and will carry out	<ul style="list-style-type: none"> <li>Unit will be directed at two levels viz school and skill building to improve employment opportunities. At</li> </ul>		5 years	GHCL Limited



S.No.	Issue related to	Nos Issues	Concern in PH	GHCLLDreply	Action Plan	Fund Required	Timeline	Responsibility
			Conditions To provide educational facilities	skill development activities	<p>school level we intend to promote quality of education and learnability, develop infrastructure of Government schools, provide vocational training as per the requirement under CSR and CER activities.</p> <ul style="list-style-type: none"> <li>GHCL foundation will support local government and NGO to make that program more effective.</li> <li>GHCL foundation will carry out skill development Programme for local youth to improve their employment opportunities, women empowerment under CSR and CER activities.</li> <li>During year 2020-2021, GHCL Foundation has spent INR 9.03 Crores towards CSR activities. CSR projects/activities worth INR 19.09 Cr. were implemented. GHCL wide range of CSR projects have touched and benefitted more than 90,200 lives over the years. Promoting such activities like water conservation, Animal husbandry, health care, SHG, Infrastructure development etc.</li> </ul>	<p>towards Infrastructure development for quality of education, which will ultimately upgrade schools in nearby villages under CER activities.</p>		
5	Air Pollutants (SOx, NOx, Dust)	6	Height of chimney to be installed Levels of Sox and NOx Regarding acid rain cause by Sox Emission of PM during transportation and Emission of heavy metal such as	For minimizing Air Pollution, requisite height of the stacks will be provided as per the NAAQS norms. Besides this, Modern technology equipment's like Dust collector, Electrostatic Precipitator, Scrubber will	<ul style="list-style-type: none"> <li>The best available technology-based pollution prevention and control shall used to meet the regulatory standards and these pollution control systems will be commissioned before</li> </ul>	<ul style="list-style-type: none"> <li>Air pollution</li> <li>Capital cost would include air pollution control devices like ESPs, Scubbers, Dust extraction</li> </ul>	During operation phase	GHCL Limited

S.No.	Issue related to	Nos. Issues	Concern in PH	GHCLLDreply	Action Plan	Fund Required	Timeline	Responsibility
			mercury. Regarding once through cooling for 120MW. Regarding linkage of fuel and how they are going to use it	installed. As a result, the pollution level will be within standard limits. GHCL will continue to support development of green belt in the surrounding villages through various agencies including GHCL Foundation (AF). GHCL shall endorse AF tree plantation movement of planting trees in entire Mandvi Taluka and 50,000 trees that mentioned, GHCL shall surely nurture those plants for five years.	commencement of operation of the project. Wherever possible, the control systems shall be interlinked with the operational units, so that failure of the control system shall shut down the respective operational unit. <ul style="list-style-type: none"> <li>High efficiency ESPs shall be provided in the flue gas path of the CFBC boilers for control of particulate matter.</li> <li>Finely ground limestone will be added to the boiler combustion zone</li> <li>together with coal/lignite to arrest the SO<sub>2</sub> formed during combustion.</li> <li>Lime stone dozing system to the furnace to be designed to achieve higher than 90% capture of SO<sub>2</sub>. Monitoring system (CEMS) of air pollutants SO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> will be implemented.</li> <li>So, the expected pollutants will be well within standard norms.</li> <li>The air quality monitoring will be carried out on regular basis by approved agencies by CPCB/SPCB, (refer Ch-6 and Ch-10 of EIA report)</li> <li>GHCL will implement green belt /plantation program to ameliorate the pollutants and improve the aesthetics and ambient air quality. (refer Ch-10 of EIA report)</li> <li>There is negligible cooling water requirement for power generation. There is no any alternative effective system is available for soda ash plant.</li> </ul>	Stacks, Dry Fog system Wind screen etc- 89.28 crore <ul style="list-style-type: none"> <li>recuring cost would include operation and maintenance of pollution control devices- 150 crore</li> <li><b>Environmental monitoring Programme</b> capital cost include CEMS, online weather station etc- 3.4 crore</li> <li>Recuring cost – 0.95 crore</li> <li>Greenbelt</li> <li>Capital Cost- 20 Crore</li> <li>Recuring Cost- 0.5 crore</li> </ul>		

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
					<ul style="list-style-type: none"> <li>There is no readily available infrastructure for transportation of fuel i.e. rail or water way. So, we have to transport through road. Traffic study are shown in section 3.2.3 of chapter-3 and impact due to transportation is show in 4.1.4.3 and 4.2.3 of Chapter-4 in EIA report. In future, any alternative option available will explore.</li> <li>GHCL Foundation will also promoting plantation activities in nearby villages under CSR and CER activities</li> </ul>			
6	Water pollutants (BOD,COD,Ammonia, Mercury, Sea Weed, Mangroves)	7	<p>Regarding water related question by Koli society</p> <p>Regarding decrease in number of phytoplanktons and disruption of food chain</p> <p>Regarding temperature and presence of ammonia in waste water</p> <p>Regarding presence of mangroves</p> <p>Regarding setup of tunnel for intake of sea water, seismic zone in which company falls, liquification of land due to heat</p> <p>Regarding discharge of effluents into sea containing ammonia and high temperature and death of fishes at Sutrapada plant</p> <p>Regarding quality of effluent in terms of BOD and COD</p>	<p>Effluent will be highly alkaline so it will be mixed with HCL and then it will be disposed off in sea.</p> <p>Design of structure will have done according to seismic zone V.</p> <p>In soda ash industry impact of ammonia is very low.</p>	<ul style="list-style-type: none"> <li>Industry will provide adequate effluent management and monitoring system for disposal of treated water</li> <li>Proper seawater intake and treated effluent disposal (ensure maximum dilution) shall be done as per recommendation Marine EIA report.</li> <li>The water monitoring results of (surface and groundwater and marine) should be carefully evaluated to identify significant changes, if any, adverse change from the baseline accordingly, corrective measures will be taken to ensure the sustenance of water quality. However, there is no ground water pollution is envisage in such soda ash plant,</li> <li>The ammonia concentration in treated waste water well</li> </ul>	<ul style="list-style-type: none"> <li>Capital cost would include cost of ETP, STP etc- 14 crore</li> <li>recurring cost would include operation and maintenance of pollution control</li> </ul>	During operation phase	GHCL Limited

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
					<p>within the limit specified by CPCB for soda ash industry.</p> <ul style="list-style-type: none"> <li>There is no such fish kill cases due to treated effluent in existing plant. There are independent studies available which indicates there is no significant adverse impact on marine environment but there will be positive impact on environment.</li> <li>During studies, there is no such mangroves identified in sea water intake and outfall line area.</li> <li>Design of pipeline/tunnel will be done according to seismic zone V. In case of catastrophic failure/ liquification on land, there are no chances of flooding as water transport through gravity.</li> </ul>			
7	Marine Life	1	Effect on marine life due to proposed project	No adverse impact on fish or marine animals and sea weed observed.	<ul style="list-style-type: none"> <li>Industry should be ensured that the effluent released to the sea meets the prescribed GPCB/ CPCB norms at all times. This should be verified through tracer studies after the outfall becomes operational. The effluent release scheme can then be adequately modified to ascertain necessary dilution, if required. The efficiency of the diffuser must be checked periodically and if necessary, it should be cleaned to revert back to the dilution ascertained through initial tracer studies.</li> <li>There are independent studies available which indicates there is no significant adverse</li> </ul>	<ul style="list-style-type: none"> <li>A provision of Rs. 1 crore to be earmarked for the biodiversity management plan to be implemented in the project area during construction phase and operation phase.</li> <li>For periodic monitoring of the marine area environment during project construction phase, a provision of Rs. 0.5 crore to earmarked.</li> <li>For operation phase, Rs. 0.3 crore per year to be kept provision</li> </ul>	During construction and Operation phase	GHCL Limited

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
					<p>impact on environment but there will be positive impact on environment.</p> <ul style="list-style-type: none"> <li>Design of pipeline/tunnel will be done according to seismic zone V. In case of catastrophic failure/ liquification on land, there are no chances of flooding as water transport through gravity.</li> </ul>			
8	Health & Hygiene(Ammonia Leakage)	2	<p>Skin diseases due to Soda Ash</p> <p>Regarding the leakage of ammonia.</p>	<p>GHCL will take care of any such issues related to Health of local peoples and workers.</p> <p>All the necessary measures for handling of chemicals will be implemented to reduce its impact on health of peoples. This information is also provided in the EIA report. All the pockets will have leak detection and repair system technology. Moreover, periodical maintenance will also be carried out. GHCL will ensure that there will be no leakage and therefore, there will not be occupational health issues for workers or villagers working in the plant. Moreover, GHCL will also provide PPE like</p>	<ul style="list-style-type: none"> <li>Ammonia tanks should have latest instrumentation for pressure indication, temperature indication and level indication. The provision of instrumentation should be within 100 percent redundancy. Continues recording of major parameters pertaining to the storages shall be maintained in the control room.</li> <li>Unit will provide all the safety measure for ammonia storage</li> </ul>	<ul style="list-style-type: none"> <li>Capital cost would include cost of OHS center, PPEs, fire &amp; safety instruments, automation system for ammonia storage – 3.4 crore</li> <li>Recurring cost would include maintenance charges and training, audit &amp; health check-up etc.- 0.35</li> </ul>	During operation phase	GHCL Limited

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
					<p>commissioned before commencement of operation of the project. Wherever possible, the control systems shall be interlinked with the operational units, so that failure of the control system shall shut down the respective operational unit. There is no significant impact observed in the existing soda ash plants in Gujarat.</p> <ul style="list-style-type: none"> <li>There are rare possibilities of ammonia leakage</li> </ul>			
9	CSR - Farmers	3	<p>Facilities to be provided</p> <p>How hygenic the plant will</p> <p>How hygenic will be bada plant and what facility will be provided to the farmer.</p>	<p>GHCL Foundation is already providing subsidy for drip irrigation and GHCL will also consider to support this scheme further out of the CSR funds proposed for this project.</p> <p>To help agriculture, GHCL will help farmers as part of our CSR activity in consultation with villagers. The details and type of developmental work will be decided in consultation with villagers. GHCL foundation has been working for farmers through its different schemes like ground water recharge water harvesting</p>	<ul style="list-style-type: none"> <li>Industry will Promote environment friendly and nature-based solutions to enhance productivity of farming (Organic Farming) activities. It covers capacity building on farming techniques, provision of high-quality seeds/manure, efficient irrigation solutions, etc. under CSR and CER activities</li> </ul>	<ul style="list-style-type: none"> <li>GHCL Ltd will spend approx.. 3.00 crore towards Promoting environment friendly and nature-based solutions to enhance productivity of farming (Organic Farming) activities. It covers capacity</li> </ul>	5 years	GHCL Limited
10	EIA Report & PH	14	EIA report is not correct	The terrestrial EIA report	<ul style="list-style-type: none"> <li>It is requested to note that as</li> </ul>			GHCL Limited

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
	advertisement		Regarding the alternative of site modhwa village. Regarding the NIO accreditation to prepare marine EIA report Regarding ToR granted and Study carried out prior of ToR granted. Regarding the advertisement of the PH Regarding NABET accreditation of consultant organization Regarding Marine EIA Regarding NEERI who has prepared EIA report Regarding the correction in EIA report Regarding the monitoring data collection Regarding accreditation certificate of additional studies for ecology.	prepared by CSIR NEERI and Marine EIA report is prepared by NIO, Mumbai	per OM number J-17011/8/92-IA-III dated 8 <sup>th</sup> August, 2019, there are 7 institutes/agencies authorized for preparation of CZMPS in consonance with the provision of CRZ notification, 2019 vide GSR 37(e) dated 18/01/2019. IRS anna university Chennai has prepared the CRZ map for GHCL LTD. CSIR - NIO is Expert hired to carryout the Marine EIA study. • EIA report has been prepared by CSIR-NEERI, which is reputed governmental body and QCI NABET accredited consultant.			
11	Vipassana	3	Project site is near Vipassana meditation center The meditation center will be disturbed due to industry. Ammonia used in the industry. Related to presence of Vipassana center and other religious places in 15km radius of project site	--	<ul style="list-style-type: none"> <li>Environmental Management Plan envisages the plans for the proper implementation of mitigation measures to reduce the adverse impacts.</li> <li>The EMP implementation will minimize the impact of atmospheric emissions, liquid effluents, solid wastes and noise generation on the surrounding environment.</li> </ul>	<ul style="list-style-type: none"> <li>Cost of Environment management plant including various installations for Air</li> </ul>	--	GHCL Limited

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
					<p>ash manufacturing industry.</p> <ul style="list-style-type: none"> <li>It is reported in CSIR NEERI report that there are no significant impact expected on man-made sensitive installations and habitations. On basis of study of present environment condition near project area and impact prediction and control measures proposed by GHCL Ltd. The proposed project will not have any significant negative impact on environment. Company operations are limited to the plant boundary and no negative impacts on Vipassana Centre are anticipated. The company will have robust peripheral Green Belt in</li> </ul>	<ul style="list-style-type: none"> <li>Recurring Cost- 0.5 crore</li> </ul>		
12	CSR - Animal Husbandry	3	Regarding arrangements for Animal Husbandry Regarding number of cattle present in the area	GHCL Foundation will support nearby community by providing education and livelihood support to make them self – reliant.	<ul style="list-style-type: none"> <li>Unit will do promotion through providing support for breed improvement, animal health care, fodder improvement and providing veterinary doctor in nearby villages under CER and CSR activities.</li> <li>Unit will also promote development Initiatives for Fishing Communities such as Creation of infrastructure like ice plants, cold storages as well as provide operational inputs such as fishing boats, nets and engines</li> <li>We have already provided veterinary doctor for</li> </ul>	<ul style="list-style-type: none"> <li>GHCL Ltd will spend approx.. 4.35 crore towards Animal husbandry promotion through providing support for breed improvement, animal health care, Veterinary doctor and others as well</li> </ul>	5 years	GHCL Limited



S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD	Action Plan	Fund Required	Timeline	Responsibility
13	Site Selection	2	Regarding the alternative of site modhwa village. Regarding showing presence of marshy land near coastline	--	During the site selection, the alternative sites considered for setting-up of the proposed chemical complex project are given below: : Site 1 - Village Pingleswar, Taluka - Abdasa, Dist. Kutch Site 2 - Village Suthri, Taluka - Abdasa, Dist. Kutch Site 3 - Village Bambhdai, Taluka - Mandvi, Dist. Kutch Site 4 - Village Bada, Taluka - Mandvi, Dist. Kutch Site 5 - Village Modhva, Taluka Mandvi, Dist. Kutch  The site at village bada is considered favorable based on the environmental and logistic advantages over other four sites. Justification	--	--	GHCL Limited
14	Sand Dunes	2	Concern of presence of sand dunes at bada coast  Regarding digging of sand dunes for preparation of tunnels for water intake	--	<ul style="list-style-type: none"> <li>• There is no disturbance to existing sand dunes.</li> <li>• Tunnelling work (much below ground level) for laying pipeline through sand dunes will be done by adopting proven construction methodology like micro tunnelling. The detailed Studies on sand dune mapping and morphological changes near the project site was carried by National Institute of</li> </ul>	--	--	GHCL Limited

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
15	Turtle	3	Regarding presence of turtles on the coastline of bada Regarding information on endangered species not mentioned in EIA report Regarding hatching and presence of sea turtles	--	<ul style="list-style-type: none"> <li>Study on Status Survey and Conservation Plan for Sea Turtles along Mandvi Taluka, Bhuj, Gujarat by <b>Zoological Survey of India, Kolkata (April,2019)</b> is attached with EIA report.</li> <li>ZSI study report mention that they did not any encounter any sea turtle and fresh/old nests or crawl marks of turtles on the beach. Since many of the factor for selection of a suitable nesting site are not conducive.</li> <li>As per additional Ecological and Biodiversity study, suggests that the coast near the proposed project site may not be</li> </ul>	<ul style="list-style-type: none"> <li>Contribution to Forest department for Sea Turtle Conservation Activities- 0.20 crore</li> </ul>	10 years	GHCL Ltd
16	Schedule 1 species	4	Regarding presence of greater numbers of	--	<ul style="list-style-type: none"> <li>Details of schedule -1</li> </ul>	<ul style="list-style-type: none"> <li>the proposed</li> </ul>	10 years	GHCL Ltd

S. No.	Issue related to	Nos. Issues	Concern in PH	G HCL LTD reply	Action Plan	Fund Required	Timelin e	Responsi bility
	Sandha and indian Monitor Lizard)		stated in report Presence of reptiles and amphibians not reported Related to study of presence of Indian Monitor Lizard in study area Regarding presence of gugal trees,		already incorporated in EIA report.  <ul style="list-style-type: none"> <li>GHCL shall make financial allocations for taking up wildlife mitigation measures and for contribution to forest department for carrying out activities towards propagation, protection and conservation of wildlife.</li> <li>GHCL Ltd have submitted Conservation Plan (Flap shell turtle, Green Sea turtle, Indian monitor lizard, Olive Ridley Sea turtle, Black shoulder kite, Eurasian Spoonbill, Indian Peafowl, Marsh Harrier, Oriental Honey Buzzard, Shikra, Short-toed Snake</li> </ul>	Allocation for conservation of Schedule 1 species for 10 years is 1.25 crore		
17	Conservation Plan	2	Regarding conservation plan for Schedule 1 species Concern regarding green sea turtles and conservation plan for them	--	<ul style="list-style-type: none"> <li>GHCL shall make financial allocations for taking up wildlife mitigation measures and for contribution to forest department for carrying out activities towards propagation, protection and conservation of wildlife.</li> <li>The unit have submitted Conservation Plan (Flap shell turtle, Green Sea turtle, Indian monitor lizard, Olive Ridley Sea turtle, Black shoulder kite, Eurasian Spoonbill, Indian Peafowl, Marsh Harrier, Oriental Honey Buzzard, Shikra, Short-toed Snake Eagle,</li> </ul>	<ul style="list-style-type: none"> <li>the proposed budget allocation for conservation of Schedule 1 species for 10 years is 1.25 crore</li> </ul>	10 Years	GHCL Limited

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeli ne	Responsibili ty
					department of			
18	Form 1(Water Bodies, Temples, Schedule 1 Species)	5	Regarding presence of waterbody not shown in form-1 Regarding religious places and lakes not mentioned in PFR Waterbody not mentioned in form-1 Data given in form-1 and EIA are different Waterbody not mentioned in form-1	--	<ul style="list-style-type: none"> <li>Environmental settings are given in Chapter-1 and Chapter-5 of EIA report. Approximate distance of water bodies, temples etc are given in EIA report.</li> <li>Through drainage studies of the area, it was observed that there is one stream of 1st order entering the plant area from north. Although, it has small catchment area, it is proposed that this stream, will be diverted to nearby passing Vengadi River in the west.</li> <li>There are also pond inside the premises. It is</li> </ul>	<ul style="list-style-type: none"> <li>-Cost of drainage network of surface runoff, rainwater collection pond and rain water harvesting system - 53 crores (included in EMP)</li> </ul>	--	GHCL LTD
19	Govt. Land	3	Regarding type of land to be procured by the industry Regarding status of government land to be procured Providing data for proving gauchar land	--	<ul style="list-style-type: none"> <li>There is no gauchar land within proposed project site. M/s GHCL has applied to Industries Commissioner and District Collector for allotment of aforesaid land. Industries Commissioner has granted In Principle approval for Bonafied Industrial Purpose. District Collector has initiated actions for</li> </ul>		--	GHCL LTD
20	Fishing	8	Regarding details of Pagadia fisherman not mentioned and Marine EIA is misinterpreted	--	<ul style="list-style-type: none"> <li>Proper seawater intake and treated effluent disposal (ensure maximum</li> </ul>	<ul style="list-style-type: none"> <li>A provision of Rs. 1 crore to be earmarked for the</li> </ul>	During construction and	GHCL LTD

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
			<p>Regarding disturbance to fishes due to presence of pipeline</p> <p>Regarding status of fishing near bada and Mandvi</p> <p>Related to number of fisherman not incorporated in study</p> <p>--</p> <p>Related to presence of dead fishes not reported in study, fishing carried out for commercial purpose</p> <p>Regarding presence of fisherman in study area</p>		<p>Marine EIA report prepared by NIO</p> <p>Industry should be ensured that the effluent released to the sea meets the prescribed GPCB/ CPCB norms at all times. This should be verified through tracer studies after the outfall becomes operational.</p> <p>Details of Fishery and fishermen including their family and population are given in Chapter-3 of marine EIA report.</p> <p>Other than construction phase, there will be no any impact on pagadiya fisher men. As shore line will remain undisturbed.</p> <p>It is mentioned in marine EIA report that no large-scale commercial fishing operation prevail in the study area except for minor shore based and Gill net operations.</p> <p>There are independent studies available which indicates there is no significant adverse impact on environment but there will be positive impact on environment.</p> <p>Unit will also promote development Initiatives for Fishing Communities including pagadiya under CER and CSR activities</p>	<p>implemented in the project area during construction phase and operation phase.</p> <ul style="list-style-type: none"> <li>For periodic monitoring of the marine area environment during project construction phase, a provision of Rs. 0.5 crore to earmarked.</li> <li>For operation phase, Rs. 0.3 crore per year to be kept provision for the monitoring.</li> <li>GHCL Ltd will spend approx.. 0.75 crore towards Development Initiatives for Fishing Communities</li> </ul>	Operation phase	
21	Water Body (check dams)	2	Related to presence of seasonal river which passes near bada village and presence of dam over it	--	Through drainage studies of the area, it was observed that there is one stream of 1 <sup>st</sup> order	<ul style="list-style-type: none"> <li>Cost of drainage network of surface</li> </ul>	During construction of and	GHCL LTD

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
			Related to distance of river from project site		entering the plant area from north. Although, it has small catchment area, it is proposed that this stream, may be diverted to nearby passing Vengadi River in the west, which has two check dams, one for salinity ingress check and on upstream side for storing fresh water. This will not cause any adverse impact on the downstream. For channelizing the monsoon run off from the area adjacent to plant it is required to construct peripheral drain along plant boundary so that flooding is avoided and run off find its way to the natural slope towards Arabian Sea. So, the present hydrological setting of the area will remain unaffected. So, the present hydrological setting of the area will remain unaffected. The additional water enter into the vengadi river through drainage will not impact on check dam. As any additional water above the river and check dam shall overflow to the Arabian sea.	pond and rain water harvesting system - 53 crores (included in EMP)	Operation phase	
22	Traffic (R MH, Heavy Trucks, Road Usage)	4	Regarding number of trucks passing due to project for raw Related to traffic study not mentioned in ToR, impact not carried out Concern regarding public roads Regarding number of trucks passing	--	Traffic study are shown in section 3.2.3 of chapter-3 and impact due to transportation is show in 4.1.4.3 and 4.2.3 of Chapter-4 in EIA report. We will use existing road network as no other transportation i.e. rail/water ways are available. We have carried out calculation on	--		GHCL Limited

S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
					Traffic study (Level of Service) and added on Form Part-C.			
23	CSR General	1	Regarding past data of CSR	<p>GHCL has proposed CSR budget in the EIA report which will be utilized based on need identification and village development meetings. CSR will be implemented with CSR implementing agencies including GHCL Foundation is working in following area.</p> <ol style="list-style-type: none"> <li>1. Agro-livelihood and animal husbandry,</li> <li>2. Education and skill development,</li> <li>3. Health, water, and sanitation.</li> </ol>	<ul style="list-style-type: none"> <li>• GHCL's commitment towards the development of weaker sections of society has been a continuous initiative for more than two decades. Through its "GHCL Foundation Trust", GHCL has upgraded its CSR activities to cover a larger section of the society to provide support to the downtrodden, needy and marginalized citizens and also to create a social infrastructure for their sustenance. GHCL Foundation serves as the Corporate Social Responsibility arm of GHCL Limited and represents our commitment to the holistic development of our surrounding community. During year 2020-2021</li> </ul>			GHCL LTD
S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
					Infrastructure development etc.			
			Regarding pollution to be caused by industry		<ul style="list-style-type: none"> <li>• Environmental Management Plan envisages the plans for the proper implementation of mitigation measures to reduce the adverse</li> </ul>	<ul style="list-style-type: none"> <li>• Cost of Environment management plant including various installations for</li> </ul>		GHCL Limited
			Regarding to dusting due to kiln and power plant,					

24	Pollution and Environment General	4	Related to disposal of effluent water	Unit will follow all the rules and regulation with their subsequent amendments as directed by concerned authorities	impacts. <ul style="list-style-type: none"> <li>The EMP implementation will minimize the impact of atmospheric emissions, liquid effluents, solid wastes and noise generation on the surrounding environment</li> </ul>	Air Pollution, Water Pollution, Noise Control, Greenbelt Development, Occupational Health and Safety and other related activities.- 205.07 crore	--	
25	Forest area	2	Related to distance of project site from forest area Details regarding families dependent on forest	There is no classified forest area.	<ul style="list-style-type: none"> <li>There is no forest land within the boundary of proposed project site. However, some part of the unclassified forest area located south of the project site outside boundary. Sea water intake and outfall pipeline will pass through underground micro tunnel in specific corridor to cross forest area. The permission from the Forest Department is</li> </ul>	--	--	GHCL LTD



S. No.	Issue related to	Nos. Issues	Concern in PH	GHCL LTD reply	Action Plan	Fund Required	Timeline	Responsibility
					of 0.9689 Ha. of un-class forest			
26	Supporting for Industrial Development to GHCL LTD	--	For Employment For Infrastructure development in nearby village Social upliftment towards nearby villages Health facilities Women empowerment ment Skill	GHCL LTD team thanked or welcoming the industries		--	--	--
	Total	94						

21. The Proposal was considered in the 72<sup>nd</sup> **EAC Meeting held on 2.1.2024** wherein the EAC deferred the proposal for want of requisite information. Reply to the same was submitted by the PP vide letter dated 30.1.2024, which is as follows:

S. No.	Queries Raised by EAC	Reply by PP																												
	Action plan for disposal of gypsum and fly ash generated from desulphurization plant	<p>The Fly Ash and Gypsum generated from the Desulphurization plant is provided in the below table followed by the Action Plan for the Disposal of Fly Ash and Gypsum.</p> <table border="1" data-bbox="342 558 1594 945"> <thead> <tr> <th data-bbox="342 558 440 751">SR. NO.</th> <th data-bbox="440 558 597 751">FUEL</th> <th data-bbox="597 558 891 751">FUEL CONSUMPTION TPH</th> <th data-bbox="891 558 1159 751">FLY ASH GENERATION, TPD</th> <th data-bbox="1159 558 1425 751">GYPSUM GENERATION, TPD</th> <th data-bbox="1425 558 1594 751">TOTAL GENERATION, TPD</th> </tr> </thead> <tbody> <tr> <td data-bbox="342 751 440 804">1</td> <td data-bbox="440 751 597 804">Coal</td> <td data-bbox="597 751 891 804">150</td> <td data-bbox="891 751 1159 804">405.216</td> <td data-bbox="1159 751 1425 804">117.457</td> <td data-bbox="1425 751 1594 804">796.588</td> </tr> <tr> <td data-bbox="342 804 440 856">2</td> <td data-bbox="440 804 597 856">Lignite</td> <td data-bbox="597 804 891 856">225</td> <td data-bbox="891 804 1159 856">765.828</td> <td data-bbox="1159 804 1425 856">880.924</td> <td data-bbox="1425 804 1594 856">2726.847</td> </tr> <tr> <td data-bbox="342 856 440 945">3</td> <td data-bbox="440 856 597 945">Pet Coke</td> <td data-bbox="597 856 891 945">104.17</td> <td data-bbox="891 856 1159 945">10.675</td> <td data-bbox="1159 856 1425 945">741.519</td> <td data-bbox="1425 856 1594 945">1389.667</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>• While utilization of Coal as fuel the percentage of Fly ash and Gypsum in the total Ash generated will be 50.87% and 14.74% respectively.</li> <li>• While utilization of Lignite as fuel the percentage of Fly ash and Gypsum in the total Ash generated will be 28.08% and 32.31 % respectively.</li> <li>• While utilization of Pet coke as fuel the percentage of Fly ash and Gypsum in the total Ash generated will be 0.77% and 53.36 % respectively.</li> </ul> <p>➤ It is noted that gypsum and fly ash separation is not possible in the dry desulfurization system. However we assure that the unit will primarily use Coal and Lignite as fuel. Pet coke will only be utilized as a fuel alternative in the circumstances when Coal and Lignite are unavailable. Action Plan For The Disposal Of Fly Ash And Gypsum Letter From Cement Industry is submitted.</p>					SR. NO.	FUEL	FUEL CONSUMPTION TPH	FLY ASH GENERATION, TPD	GYPSUM GENERATION, TPD	TOTAL GENERATION, TPD	1	Coal	150	405.216	117.457	796.588	2	Lignite	225	765.828	880.924	2726.847	3	Pet Coke	104.17	10.675	741.519	1389.667
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	Action plan for management and disposal	<p>PP reported that :</p> <ul style="list-style-type: none"> <li>➤ Main source of CaCl<sub>2</sub> and CaSO<sub>4</sub> Contain wastewater will be from distillation process wastewater.</li> </ul>																												

of CaCl<sub>2</sub> and CaSO<sub>4</sub>.

- The **concentration of CaSO<sub>4</sub> and CaCl<sub>2</sub>** in the wastewater from Distillation unit will be **0.13 % and 11.35 %** respectively.
- The discharge of final effluent into the deep sea with an average **dilution of 30 to 40 times** will further **dilute the concentration of CaSO<sub>4</sub> and CaCl<sub>2</sub>**.
- The concentration of **CaSO<sub>4</sub>** in the final effluent will be reduced from **0.13 % to less than 0.07%** while the concentration of **CaCl<sub>2</sub>** will be reduced from **11.35 % to less than 6.09%**.
- Other impurities in the final effluent will contain CaO, MgO, NaCl, MgCl<sub>2</sub>, CaCO<sub>3</sub> and Silica etc.
- The characterization of the wastewater stream, suggests that the composite effluent discharged into the Arabian Sea will maintain the concentrations well within the CPCB norms.
- **As a result, it is anticipated that the effluent will have no adverse impact on the marine environment and the nearby terrestrial habitat.**

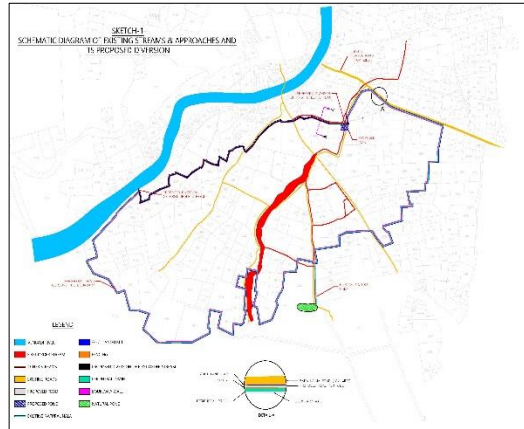
**CHARACTERIZATION OF WASTEWATER STREAM**

S R. N O.	PARAMETERS	WASTEWATER STREAMS						
		RO/D M PLA NT REJ ECT	BRINE PURIFIC ATION REJECT	DISTIL LER WAST E	BOILER BLOWD OWN	ONCE THRO UGH COOL ING	FRES H SEA WATE R FOR DILUT ION	COMPO SITE EFFLU ENT AT DISCH ARGE POINT*
		<b>EFFLUENT QUANTITY, m<sup>3</sup>/day</b>						
		97,16 0	2,550	27,000	120	8,07,00 0	5,14,67 8	14,48,50 8
1	pH	7.2	12	9.8	10.0	8.0	7.5	6.5- 9.0

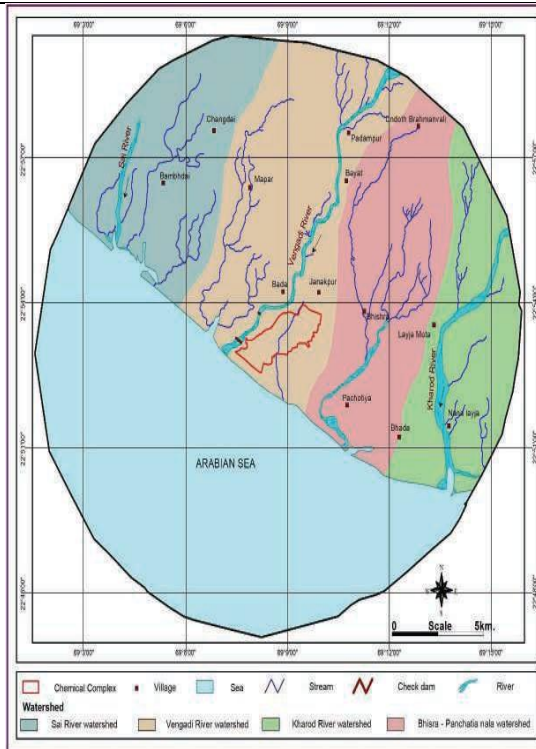
		2	Temperature	30-35°C	30-35°C	95°C	90°C	30-35°C	30-35°C	Will not exceed 5°C above the ambient temperature of the receiving water body
		3	Suspended Solids	Nil	54,000 mg/l	45,430 mg/l	100 mg/l	Nil	Nil	<1000 mg/l
		4	Ammonical Nitrogen	Nil	Nil	40-45 mg/l	Nil	Nil	Nil	< 50 mg/l
		5	Oil & Grease	Nil	Nil	Nil	Nil	Nil	Nil	< 5.0 mg/l (Occasionally)

Details of existing natural drains within the proposed project site as well as proposal for diversion if any. Details of measures to be taken to maintain the flow

- By conducting the drainage studies of the area, it is observed that there is a one stream of 1st order entering the plant area from north.
- Although, it has small catchment area, it is proposed that this stream, may be diverted to nearby passing Vengadi river in the west has two check dams, one for salinity ingress check and on upstream side for storing fresh water.
- It is proposed that this pond may be deepened by 2 metres so as to store entire annual surface runoff for ground water recharge and for plant use.
- With the proposed deepening, there will not be any possibility of any overflow in the plant.
- While the other two rivers will continue to flow as these are not being affected by the setting up of the plant.
- So, the present hydrological setting of the area will remain unaffected.
- Detailed Hydrogeology Assessment study report prepared by Hydro-Geosurvey Consultants Pvt. Ltd. , Jodhpur. Report is verified by **CSIR NEERI and T R Associates.**
- **Hydrogeological assessment Study is submitted which comprises of :**  
**Schematic arrangement for stream diversion and approach roads**



### DRAINAGE AND WATERSHED MAP OF BUFFER ZONE



- Project Site is superimposed on the drainage and watershed map with red color boundary.
- Proposed project is fall under the Vengadi river Water shed.
- 1<sup>st</sup> order stream passing through the project site is demarcated in blue color.
- 1<sup>st</sup> order stream will be diverted into the Vengadi river followed by Arabian sea.

### VENGADI WATERSHED

- Vengadi watershed within buffer zone covers area of **84.43 km<sup>2</sup>** with gradient of about **2.20 m/km** towards Arabian sea.
- The catchment yield of Vengadi watershed is estimated as **4.40 mcm** taking average annual rain, which amounts to **434 mm**.
- Average value of Strange's run off percentage of the buffer area is calculated from Strange's monsoon rainfall-runoff curves considering the catchment area as good and the run off % for **catchments is found as 12%**.

**CONSTRUCTION OF FLOOD DISCHARGE OF FOUR STREAMS IN BUFFER ZONE**

The peak flood discharges of the stream have been calculated by Dicken's formula method:

**Dicken's formula**

Dicken's formula states that:

$$Q_P = CA^{3/4}$$

Where,

$Q_P$  = High flood or peak discharge in cumec

A = Catchment area

C = A constant, taken  $c = 6$  for the study area.

**PEAK FLOOD DISCHARGE ( $Q_P$ ) IN CUMECS**

S. NO.	STREAM	TOTAL CATCHMENT AREA (KM <sup>2</sup> )	DICKEN'S	LEAN PERIOD DISCHARGE (CUMEC)
1.	Sai river	194.89	312.96 cumecs	0cumec
2.	Vengadi river	160.80	270.93 cumecs	0cumec
3.	Bhisra-Panchatia nala	63.92	135.63 cumecs	0cumec
4.	Kharod river	329.52	464.04 cumecs	0cumec

The peak flood discharges of the stream have been calculated by Dicken's formula method:

**Dicken's formula**

Dicken's formula states that:  $Q_P = CA^{3/4}$

Where,

$Q_P$  = High flood or peak discharge in cumec

A = Catchment area = 0.12 km<sup>2</sup>

C = A constant, taken  $c = 6$  for the study area.

**PEAK FLOOD DISCHARGE ( $Q_P$ ) IN CUMEC**

S. NO.	CATCHMENT	DICKEN'S	LEAN PERIOD DISCHARGE (M <sup>3</sup> /S)
1.	Plant stream	1.22 m <sup>3</sup> /s	0 m <sup>3</sup> /s
<p>❖ <b>COST FOR NATURAL DRAIN DIVERSION</b></p> <ul style="list-style-type: none"> <li>• The cost incurred for the Drainage network and Nala diversion will be <b>44.60 Crores.</b></li> <li>• Cost is consider into the Environmental Management Plan cost.</li> </ul>			



<p>Status of land acquisition including government and pvt. land as well as permission for land use change for industrial purpose.</p>	<ul style="list-style-type: none"> <li>➤ The Status of land acquisition including Government as well as Private land along with permission for <b>land use change for industrial purpose has been received from Industry Centre.</b></li> <li>➤ The type of land involved along with the area bifurcation into Government and private land.</li> </ul> <table border="1" data-bbox="342 411 1576 972"> <thead> <tr> <th data-bbox="342 411 500 520">SR. NO.</th> <th data-bbox="500 411 1159 520">TYPE OF LAND</th> <th data-bbox="1159 411 1576 520">AREA (SQ. M.)</th> </tr> </thead> <tbody> <tr> <td data-bbox="342 520 500 632">1</td> <td data-bbox="500 520 1159 632">Government Land</td> <td data-bbox="1159 520 1576 632">10,16,351</td> </tr> <tr> <td data-bbox="342 632 500 743">2</td> <td data-bbox="500 632 1159 743">Private Land</td> <td data-bbox="1159 632 1576 743">48,06,632</td> </tr> <tr> <td data-bbox="342 743 500 854">3</td> <td data-bbox="500 743 1159 854">Private Land with NA permission</td> <td data-bbox="1159 743 1576 854">1,72,473</td> </tr> <tr> <td colspan="2" data-bbox="342 854 1159 972"><b>Total</b></td> <td data-bbox="1159 854 1576 972"><b>59,95,456</b></td> </tr> </tbody> </table> <p><b>M/s. GHCL Limited has applied for Environmental Clearance (EC) for plot area admeasuring <u>54,63,200 sq. mt.</u> <u>Land acquisition letter is submitted.</u></b></p>	SR. NO.	TYPE OF LAND	AREA (SQ. M.)	1	Government Land	10,16,351	2	Private Land	48,06,632	3	Private Land with NA permission	1,72,473	<b>Total</b>		<b>59,95,456</b>
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<b>Total</b>		<b>59,95,456</b>														
<p>It was observed that baseline study was conducted during December 2019 – February 2020, which is more than 3 years old.</p>	<ul style="list-style-type: none"> <li>➤ It is requested to note that as per OM F.No. IA3-22/10/2022-IA.III [E 177258] dated 08-06-2022 baseline data should not be older than three years at the time of submission of the proposal for the grant of Environmental Clearance (EC).</li> <li>➤ Project proponent have submitted EC proposal on Parivesh portal dated <b>30-11-2022.</b></li> <li>➤ The baseline period was December 2019 to February 2020 and the baseline data validity was up to <b>December 2022.</b> M/s GHCL informed that baseline data is line with OM dated 8.6.2022 for validity of baseline data, wherein it is mentioned that baseline data used for preparation of EIA/EMP report may be collected at any stage of the EC process or even before the grant of TOR. In this case, they have reconducted <b>3-month</b> Baseline data from <b>December, 2022 to February, 2023, which is less than 3 years old.</b></li> </ul>															

As per OM, PP shall conduct fresh 3 months study		<ul style="list-style-type: none"> <li>➤ However, M/s GHCL had already appointed <b>T. R. Associates</b> for conducting the <b>3-month Baseline Monitoring</b> in November 2022.</li> <li>➤ The Baseline study was conducted during the period <b>December, 2022 to February, 2023 and it is incorporated in Addendum of EIA Report submitted on 1.02.2024.</b></li> <li>➤ <b>Baseline details is submitted.</b></li> </ul>
It was noted that EIA - EMP report is prepared by NEERI, which is not QCI /NABET accredited consultant for soda ash. PP informed that now T R Associate has been hired for the proposed project who is a QCI /NABET accredited consultant for soda ash. The Committee suggested that new consultant shall undertake site visit and verify/check the entire		<ul style="list-style-type: none"> <li>➤ The authorization letter dated 10.01.2024 for engaging T.R. Associates, a QCI/NABET accredited consultant for the Soda Ash Industry, to verify and check the entire data and the EIA-EMP report prepared by NEERI. Further, M/s T.R. Associates has undertaken site visit and examine the existing EIA-EMP report.</li> <li>➤ T. R. Associates vide letter dated 30.01.2024 have undertaken the task of visiting and thoroughly checking the entire data of the EIA-EMP report provided by NEERI.</li> <li>➤ Additionally, it is important to note that T.R. Associates has subsequently prepared an Addendum to the EIA report.</li> </ul>

	<p>data as well as EIA - EMP report. They should give undertaking that they are satisfied with data and own the data provided in the EIA-EMP report. PP shall also submit authorization letter for new Consultant</p>									
	<p>Revised water balance to be submitted. STP's treatment process shall include secondary treatment</p>	<p>Revised water balance is submitted.</p> <ul style="list-style-type: none"> <li>➤ Initial processing of domestic wastewater occurs in a Sewage Treatment Plant (STP) with a focus on utilizing treated water for plantation and Greenbelt development in the vicinity.</li> <li>➤ The wastewater undergoes preliminary treatment involving a Bar Screen Chamber and an Oil &amp; Grease Trap tank to capture extraneous and floating matter effectively.</li> <li>➤ Subsequently, the sewage is directed to a Collection Tank cum Equalization tank, where it undergoes equalization processes.</li> <li>➤ The equalized sewage is then pumped for secondary treatment in an Aeration tank and Secondary Clarifier, with the clear supernatant being collected in a holding tank.</li> <li>➤ Further as polishing treatment the effluent is passed through a two-stage process, involving a Pressure Sand Filter (PSF) and an Activated Carbon Filter (ACF).</li> <li>➤ Upon completion of the polishing treatment, the treated wastewater undergoes disinfection before being employed for landscaping and gardening purposes.</li> <li>➤ The biological sludge generated during the treatment process is directed to a sludge drying bed, with the resulting treated sludge utilized as manure in gardening activities</li> </ul> <table border="1" data-bbox="342 1360 1576 1495"> <thead> <tr> <th data-bbox="342 1360 509 1430">SR. NO.</th> <th data-bbox="509 1360 1102 1430">NAME OF THE UNITS</th> <th data-bbox="1102 1360 1284 1430">NO. OF UNIT</th> <th data-bbox="1284 1360 1576 1430">CAPACITY OF UNIT</th> </tr> </thead> <tbody> <tr> <td data-bbox="342 1430 509 1495">1</td> <td data-bbox="509 1430 1102 1495">Bar Screen</td> <td data-bbox="1102 1430 1284 1495">1</td> <td data-bbox="1284 1430 1576 1495">10.5 m<sup>3</sup>/hr</td> </tr> </tbody> </table>	SR. NO.	NAME OF THE UNITS	NO. OF UNIT	CAPACITY OF UNIT	1	Bar Screen	1	10.5 m <sup>3</sup> /hr
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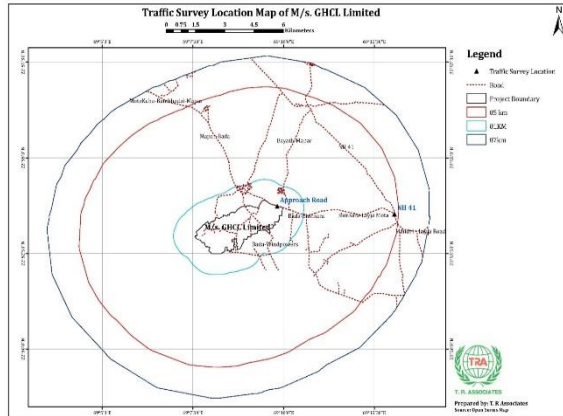
2	Oil and Grease trap Tank	1	60 KL
3	Collection Tank cum Equalization tank	1	80 KL
4	Aeration tank	1	80 KL
5	Secondary Clarifier	1	40 KL
6	Holding tank	1	80 KL
7	Activated Carbon Filter	1	10.5 m <sup>3</sup> /hr
8	Pressure Sand Filter	1	10.5 m <sup>3</sup> /hr
9	Disinfection (Chlorine contact tank)	1	80 KL

PP informed that widening of approach road to project site is being carried out. PP shall submit road widening action plan. Traffic study to be conducted

**TRAFFIC FLOW ANALYSIS**

Traffic study was carried out on following roads:

1. **NH41 (old NH-8A)** i.e. Mandvi - Narayan Sarovar, which is 5.5 km (by road) away from project site in East direction (via Bhinsara - Mota Layja road) and
2. The **approach road** (Bada- Bhinsara- Mota Layaja road) to GHCL proposed site. (**Note: Government considered as Coastal Highway.**)



The traffic survey study was conducted for traffic flow on both sides. Studied route is shown in above figure.

	<p><b>Traffic Count Data existing - NH-41 [Narayan Sarovar to Mandvi is submitted</b>  <b>Traffic Count Data existing - NH-41 [Narayan Sarovar to Mandvi is submitted</b>  <b>Traffic Count Data Existing-Approach Road (Bada- Bhinsara- Mota Layja Road) to M/s. GHCL Ltd is submitted.</b>  <b>Traffic Count Data after proposed project - Approach Road (Bada- Bhinsara- Mota Layja Road) to M/s. GHCL Ltd is is submitted.</b>  PP reported that it can be concluded that even for considering the worst case; there will be <b>minor increase in vehicular load</b> due to the Proposed project.</p>																																
<p>Air quality modeling for line source shall also be incorporate and cumulative impact of line and point source shall provided</p>	<ul style="list-style-type: none"> <li>➤ They have used AERMOD 12.0.0 latest version to perform Air Quality Modeling for Point Source .</li> <li>➤ The Emission rate of (PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>) by utilization of different fuels is given in below table</li> </ul> <table border="1" data-bbox="341 751 1578 1379"> <thead> <tr> <th>Sr. No</th> <th>Fuel</th> <th>% Ash</th> <th>% Sulphur</th> <th>% Nitrogen</th> <th>SO<sub>2</sub> Emission rate, g/s</th> <th>NO<sub>x</sub> Emission rate, g/s</th> <th>PM<sub>10</sub> Emission rate, g/s</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Coal</td> <td>16.08</td> <td>0.77</td> <td>1.13</td> <td>1.94</td> <td>69.9</td> <td>4.75</td> </tr> <tr> <td>2</td> <td>Lignite</td> <td>20.26</td> <td>3.85</td> <td>0.39</td> <td>14.45</td> <td>38.17</td> <td>4.92</td> </tr> <tr> <td>3</td> <td>Pet coke</td> <td>0.61</td> <td>7</td> <td>1.77</td> <td>12.16</td> <td>74.91</td> <td>4.57</td> </tr> </tbody> </table>	Sr. No	Fuel	% Ash	% Sulphur	% Nitrogen	SO <sub>2</sub> Emission rate, g/s	NO <sub>x</sub> Emission rate, g/s	PM <sub>10</sub> Emission rate, g/s	1	Coal	16.08	0.77	1.13	1.94	69.9	4.75	2	Lignite	20.26	3.85	0.39	14.45	38.17	4.92	3	Pet coke	0.61	7	1.77	12.16	74.91	4.57
Sr. No	Fuel	% Ash	% Sulphur	% Nitrogen	SO <sub>2</sub> Emission rate, g/s	NO <sub>x</sub> Emission rate, g/s	PM <sub>10</sub> Emission rate, g/s																										
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3	Pet coke	0.61	7	1.77	12.16	74.91	4.57																										

Sr. No.	Process	NH <sub>3</sub> Emission rate, g/s
1	Ammonia Recovery system	1.04
2	Filtration/Calcination Vent	0.52

➤ The emission rates were calculated considering following efficiencies of Air Pollution Control Measures:

SR. NO.	APCM	Efficiency of APCM (%)
1	Dust Collector	60 %
2	Bag filter	92%
3	Scrubber	95%
4	Desulfurization system and injection of Sodium Bicarbonate	99.7%
5	Electrostatic Precipitator (ESP)	99.99%

The incremental concentration of (PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>,) by utilization of different fuels are given in below Table:

Sr. no.	Fuel	Incremental Concentration of PM <sub>10</sub> (µg/m <sup>3</sup> )	Incremental Concentration of SO <sub>2</sub> (µg/m <sup>3</sup> )
1	Coal	1.21	0.229
2	Lignite	<b>1.23</b>	<b>1.71</b>
3	Pet coke	1.19	1.44

➤ The incremental concentration in case of NH<sub>3</sub> will be 2.39 µg/m<sup>3</sup>.

**Considering Worst Case Scenario the cumulative Concentrations of the PM<sub>10</sub> (µg/m<sup>3</sup>) will be**

Sr. No.	Monitoring Location	Distance (km)	Direction	Existing monitored maximum PM <sub>10</sub> Concentration (µg/m <sup>3</sup> )	Maximum GLC from Point Source (µg/m <sup>3</sup> )	Maximum GLC from Line Source (µg/m <sup>3</sup> )	Total PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> )
1	Panchotiya*	3.00	SE	81.53	1.23	1.3	84.06
2	Bada	0.34	NW	76.56			79.09
3	Bhinsara	2.28	E	68.99			71.52
4	Bhada*	5.68	SE	83.48			86.01
5	Mota Layja	7.00	NNE	59.73			62.26
6	Padampur	5.25	NNW	68.74			71.27
7	Mapar	5.09	NNW	65.94			68.47
8	Bambhadi	7.11	NW	72.99			75.52
9	Dedhiya	9.97	NNW	58.68			61.21
10	Nana Layja	7.25	ESE	81.98			84.51

- After considering the worst case scenario the cumulative concentration of PM<sub>10</sub> remains well within the NAAQS.
- After considering the worst case scenario the cumulative concentration of PM<sub>10</sub> remains well within the NAAQS.

Sr. No.	Monitoring Location	Distance (km)	Direction	Existing monitored maximum SO <sub>2</sub> Concentration (µg/m <sup>3</sup> )	Predicted SO <sub>2</sub> Concentration (µg/m <sup>3</sup> )	Total SO <sub>2</sub> Concentrations (µg/m <sup>3</sup> )
1	Panchotiya*	3.00	SE	15.6	1.71	17.31
2	Bada	0.34	NW	14.82		16.53
3	Bhinsara	2.28	E	13.68		15.39
4	Bhada*	5.68	SE	16.92		18.63
5	Mota Layja	7.00	NNE	8.25		9.96
6	Padampur	5.25	NNW	12.92		14.63
7	Mapar	5.09	NNW	11.78		13.49
8	Bambhadai	7.11	NW	10.94		12.65
9	Dedhiya	9.97	NNW	9.85		11.56
10	Nana Layja	7.25	ESE	17.38		19.09
<p>➤ After considering the worst case scenario the cumulative concentration of SO<sub>2</sub> remains well within the NAAQS.</p> <p>➤ Considering Worst Case Scenario the cumulative Concentrations of the NO<sub>2</sub> (µg/m<sup>3</sup>) will be:</p>						



Sr. No.	Monitoring Location	Distance (km)	Direction	Existing monitored maximum NO <sub>2</sub> Concentration (µg/m <sup>3</sup> )	Maximum GLC from Point Source (µg/m <sup>3</sup> )	Maximum GLC from Line Source (µg/m <sup>3</sup> )	Total NO <sub>2</sub> Concentrations (µg/m <sup>3</sup> )
1	Panchotiya*	3.00	SE	38.88	9.50	7.59	55.97
2	Bada	0.34	NW	33.67			50.76
3	Bhinsara	2.28	E	31.81			48.9
4	Bhada*	5.68	SE	41.49			58.58
5	Mota Layja	7.00	NNE	22.71			39.8
6	Padampur	5.25	NNW	30.38			47.47
7	Mapar	5.09	NNW	33.62			50.71
8	Bambhadi	7.11	NW	28.45			45.54
9	Dedhiya	9.97	NNW	25.65			42.74
10	Nana Layja	7.25	ESE	36.43			53.52

**After considering the worst case scenario the cumulative concentration of NO<sub>2</sub> remains well within the NAAQS**

- In addition, Baseline concentration of NH<sub>3</sub> found at all the locations are **B.D.L(D. L - 21)**, however **incremental concentration is found 2.39 µg/m<sup>3</sup>** by using AERMOD software, considering worst case scenario cumulative ammonia concentration is **well within the stipulated norms of NAAQS, 2009.**

		<ul style="list-style-type: none"> <li>➤ Baseline concentration of <b>CO</b> found at all the locations are <b>B.D.L(D. L - 0.5 mg/m<sup>3</sup>)</b>, however Maximum GLC from Line Source is found <b>4.81 µg/m<sup>3</sup></b> by using AERMOD software, considering worst case scenario cumulative CO concentration is <b>well within the stipulated norms of NAAQS, 2009.</b></li> <li>➤ Baseline concentration of <b>HC</b> (Benzene and Benzo alpha Pyrene) found at all the locations are <b>B.D.L(D. L - 1 mg/m<sup>3</sup> of Benzene and D. L - 1 ng/m<sup>3</sup> of Benzo alpha Pyrene)</b>, however Maximum GLC from Line Source is found <b>0.31 µg/m<sup>3</sup></b> by using AERMOD software, considering worst case scenario cumulative HC concentration is <b>well within the stipulated norms of NAAQS, 2009.</b></li> </ul>
	<p>As per point source air quality modeling, incremental levels of SO<sub>2</sub> and NO<sub>x</sub> have been estimated to be 10.98 µg/m<sup>3</sup> and 11.37 µg/m<sup>3</sup>, which are in higher side. PP shall reduce the incremental values after taking suitable pollution control measures</p>	<p>PP reported the same reply as mentioned in the above row.</p>
	<p>Villages are located 500-600 m away</p>	<ul style="list-style-type: none"> <li>➤ The <b>nearest village Janakpur is located at 0.55 km</b> and <b>project site village Bada is at 0.58 km</b> from the proposed project site boundary.</li> </ul>

<p>from the project site. PP shall elaborate various measures to be taken for the surrounding villages</p>	<ul style="list-style-type: none"> <li>➤ Moreover, the unit will install <b>adequate Air pollution control equipment</b> to abate the air pollution arising from the manufacturing unit.</li> <li>➤ Also, the effluent generating from the unit will be properly disposed into deep sea which will not impose any risk to soil/land/ground water pollution.</li> <li>➤ The Solid/Hazardous waste will be efficiently collected, stored and disposed to TSDF/CHWIF site or sold to registered recyclers or reused within premises.</li> <li>➤ Additionally, the <b>unit will develop dense greenbelt all around the periphery of the project site.</b></li> <li>➤ The unit will provide <b>acoustic hood</b> at highly noise generated equipment's as well as <b>acoustic building</b> to abate the noise pollution generating from the process and machineries.</li> <li>➤ The unit will also carry out various CSR activities for the upliftment of the surrounding villagers</li> </ul>								
<p>Details representations received by SPCB/MoE F&amp;CC against the project, if any. Action plan to address the issues raised in writted/representations received by SPCB /MoEF&amp;CC</p>	<ul style="list-style-type: none"> <li>➤ The Public Hearing was scheduled to be held on 16-04-2022 at 11:00 Hrs, Venue: Project Site, Survey no. 432, Village: Bada, Taluka: Mandvi, District: Kutch, Public hearing was then time being postponed due to unavoidable circumstances. After that public hearing was completed on <b>17-10-2022 at 11.00 Hrs.</b> Venue: Project Site, Survey no. 432, Village: Bada, Taluka: Mandvi, District: Kutch, Gujarat. Which was presided over by Shri Chetan Mishan (GAS), Sub Divisional Magistrate &amp; Deputy Collector, Mundra- Kutch.</li> <li>➤ The public hearing was attended by <b>106 people.</b></li> <li>➤ Total 1154 written questions (representation received by GPCB) and 1066 verbal questions were asked by people in public hearing that we have summarized in 94 Concerns and it will further identified in 26 different head to address Public Hearing Action Plan.</li> <li>➤ <b>The Action Plan Addressing the Written &amp; Verbal Questions Received During Public Hearing is Submitted</b></li> </ul>								
<p>Details of issues raised by local fishermen if any. Action plan to address the said issues.</p>	<p>The issues raised by local fishermen have been addressed in the Public Hearing Action Plan</p> <table border="1" data-bbox="342 1346 1576 1465"> <thead> <tr> <th data-bbox="342 1346 672 1465">CONCERN IN PH</th> <th data-bbox="672 1346 997 1465">ACTION PLAN</th> <th data-bbox="997 1346 1300 1465">FUND REQUIRED</th> <th data-bbox="1300 1346 1576 1465">RESPONSIBILITY</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	CONCERN IN PH	ACTION PLAN	FUND REQUIRED	RESPONSIBILITY				
CONCERN IN PH	ACTION PLAN	FUND REQUIRED	RESPONSIBILITY						

		<p>Regarding details of Pagadia fisherman not mentioned and Marine EIA is misinterpreted</p> <p>Regarding disturbance to fishes due to presence of pipeline</p> <p>Regarding status of fishing near Bada and Mandvi</p> <p>Related to number of fishermen not incorporated in study</p> <p>Related to presence of dead fishes not reported in study, fishing carried out for commercial purpose</p> <p>Regarding presence of fisherman in study area</p> <p>Regarding the impact due to project activities on fishes</p> <p>Regarding chances of reduction in number of fishes</p>	<ul style="list-style-type: none"> <li>• Other than construction phase, there will be no any impact on Pagadiya fisher men. As shore line will remain undisturbed.</li> <li>• Details of Fishery and fishermen including their family and population are given in <b>Chapter-3 of Marine EIA report</b> is prepared by CSIR - NIO.</li> <li>• It is mentioned in marine EIA report that no large-scale commercial fishing operation prevail in the study area except for minor shore based and Gill net operations.</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity management plan to be implemented in the project area during construction phase and operation phase which is included in <b>EMP cost.</b></li> <li>• For periodic monitoring of the marine area environment during project Construction phase, a provision of <b>Rs. 0.5 crore</b> to earmarked.</li> <li>• For operation phase, <b>Rs. 0.5 crore</b> per year to be kept provision for the monitoring.</li> <li>• GHCL Ltd will spend approx. <b>Rs.</b></li> </ul>	<p style="text-align: center;"><b>GHCL Limited</b></p>
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			<ul style="list-style-type: none"> <li>Unit will also promote development Initiatives for Fishing Communities including Pagadiya under CER activities. For the Development Initiatives for Fishing Communities Unit will provide <b>1 Crore Rupees.</b></li> </ul>	<b>1.0 crore</b> towards Development Initiatives for Fishing Communities including Pagadiya under CER activities.	
	Copy of stage I forest Clearance and SCZMA recommendations	Copy of stage I forest Clearance and stage II and SCZMA recommendations has been obtained vide letter ENV/10/2021/184/T-cell dated 26.12.2023.			
	Commitment for Disaster Management Plan in case of Tsunami, earthquake and cyclone to be prepared and submitted to the respective authority.	<ul style="list-style-type: none"> <li>Detailed Disaster Management Plan has been submitted. Additional Studies of the Environment Impact Assessment Report prepared by CSIR-NEERI.</li> <li>Disaster Management Plan of Tsunami, Earthquake and Cyclone has been prepared and will be submitted to Director Industrial Safety and Health (DISH) after getting EC from the Concerned authority. Report is also submitted to MOEF&amp;CC.</li> <li>Disaster management plan is submitted.</li> </ul>			

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22. **Deliberations by the EAC:**

After detailed deliberations, EAC desired the following additional information:

- (i) The Committee was of the view that PP shall compare the baseline data collected during December -February 2020 and data collected during December 2022 -February 2023. Accordingly, PP shall also carry out trend analysis of previous baseline data by conducting latest additional one-month baseline data.
- (ii) The Committee noted that several representations have been received from various level of public raising several issues. The Committee was of the view that representations shall be forwarded to the PP for their response. The Committee also recommended that in the next meeting they will go through the video of proceedings of public hearing. The Committee will go through the response of PP then decide further course of action accordingly.**


Accordingly, proposal was deferred for want of above additional information. Above all additional information shall be submitted online to the PARIVESH portal for further consideration by EAC.

**List of the Expert Appraisal Committee (Industry-3) members participated during Video Conferencing (VC) meeting held on 06.02.2024**

S. No	Name of Member	Designation
1.	Prof. (Dr.) A.B. Pandit	Chairman
2.	Dr. Suresh Panwar	Member
3.	Dr. (ER.) Dibakar Swain	Member
4.	Shri Dinabandhu Gouda	Member
5.	Dr. Kishore Malviya	Member
6.	Dr. P. Jagannadha Rao	Member
7.	Shri Dinesh Runiwal,	Member
8.	Prof. (Dr.) Suneet Dwivedi	Member
9.	A N Singh	Member Secretary
<b>MOEFCC</b>		
1.	Dr. Kanchan Puri	Scientist-B
2.	Dr. S. Pradeep kumar	Scientist-B

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**MOM approved by**



**(Prof. Aniruddha B. Pandit)**

**Chairman**

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