JOINT COMMITTEE REPORT WITH REF TO HON'BLE NGT ORDER IN O.A. 276/2022 IN THE MATTER OF SHRI RAKESH PATEL V/S STATE OF GUJARAT

BACKGROUND:

Hon'ble NGT Principal Bench, Delhi passed an order Dated 28.04.2022 in O.A. No. 276/2022 based on a complaint received from Shri Rakesh Patel, resident of Padra, Dist. Vadodara, State: Gujarat regarding some 4 nos. of industries located in Padra causing water pollution, wherein a Joint Committee was constituted by Hon'ble NGT comprising of CPCB, GPCB, CGWA (Central Ground Water Authority) and District Magistrate, Vadodara to investigate the allegations raised by the complainer and to ascertain factual position in the matter. GPCB was appointed as Nodal Agency for coordination and compliance. The relevant portion of order is reproduced below for ready reference.

"The joint committee may meet within 4 weeks, undertake site visits, look in to the grievance of the applicant & take requisite action by following due process of law. Factual & action taken report may be furnished within two months by e-mail at judicial-ngt@gov.in"

The joint committee comprises of following officers;

1) Shri A.B. Gor (IAS), Collector& District Magistrate, Vadodara
2) Shri R. B. Trivedi, Regional Officer, GPCB, Vadodara
3) Dr.N. Semwal, Scientist C, CPCB, Regional Directorate, Vadodara
4) Shri Saddam Husain, Astt. Hydro Geologist, CGWA, Ahmedabad

APPROACH:

In compliance of the order, a meeting of the Joint Committee under the Chairmanship of District Collector Vadodara was convened on **Dt. 23/05/2022** for detail discussion about the issue raised by the complainer and planning of visit / inspection to be carried out in this regard. Regional Officer, GPCB appraised the Joint Committee about the**Actions Already Taken by GPCB** so far in Padra area in general & specifically against erring industries under complain. After detail discussion about the issue, it was decided that the joint committee will meet again in the morning Dt. 27.05.2022 at District Collector, Vadodara office and will decide about the further course of action. It was also decided to invite representative of Vadodara Enviro Channel Limited (VECL) in the meeting on Dt. 27.05.2022 as they are the service provider/operator of concerned Common Effluent Conveyance System, i.e. VECL channel. Minutes of Meeting, Dt. 23/05/2022 is enclosed as **Annexure-1**.

The joint committee again met at District Collector office on **Dt. 27.05.2022**. VECL representative Shri Sujit Koshi, CEO was also present in the meeting. VECL representative described about the VECL and showed historic as well as live online data of effluent flowing in

the channel captured through Online Continuous Effluent Monitoring System (OCEMS). Minutes of Meeting, Dt. 27/05/2022 is enclosed as **Annexure-2**.

SITE VISIT & SAMPLING BY JOINT TEAMS OF CPCB/GPCB:

Joint committee decided that GPCB and CPCB shall carry out surprise visit / inspection of 04 industries which are specifically mentioned by the complainer and the VECL channel immediately on the same day, i.e. **Dt. 27/05/2022**. Four separate teams of CPCB and GPCB carried out the inspection cum monitoring of following 04 industries and samples were collected from upstream & downstream of their discharge in the VECL channel.

Following are details of team and monitoring:

Team	Name and Designation of official	Name of industry visited	No of sample collected from VECL channel @ 20 m upstream & downstream of industry	Samples collected from industries
A	Dr. N Semwal, Scientist C, RD CPCB Vadodara / D.C Patel, AEE GPCB RO Vadodara.	Loxim Industries Ltd., Padra	2	0
B	M.U Patel, DEE, GPCB, RO Vadodara / S. Pradeep Raj, Sc. D, CPCB, RD Vadodara / K.J Mistry, SSA, GPCB, RO Vadodara.	Mayur Dye Chem Intermediates Pvt. Ltd., Padra	2	0
C	H.C Padaria AEE, GPCB, RO Vadodara / Dharmesh J. Rana, SLA, CPCB RD Vadodara	Kiri Industries Limited (Unit-III), Padra	2	0
D	Kavitha B.V, Scientist D,RD, CPCB Vadodara / J.J. Raiyani AEE, GPCB, RO Vadodara / Mayank Nimbark, JLA RD CPCB Vadodara.	Bodal Chemical Limited (Unit-VII), Padra	2	2

Detail inspection report of above 04 industries are enclosed as **Annexure – 3** separately with this report, however, the abstract of all 04 reports is given in the subsequent para of this report. It is worth to mention that treated effluent from these 4 industries including other industries located in the region is disposed through a dedicated channel namely Vadodara Enviro Channel Ltd. (VECL) for final disposal in to estuarine zone of River Mahi in Gulf of Cambay.

During present investigation on **27/05/2022**, samples were collected from the final discharge point of VECL in estuarine zone i.e. J-Point to assess the cumulative discharge status of effluent being discharged with reference to standards prescribed by GPCB. Analysis result of the sample shows: **COD – 273 mg/L, BOD - 37mg/L, NH_3-N –20.24 mg/L**. Samples collected from VECL channel in the upstream and downstream of individual industry do not show any significant variation due to no discharge from the industries during the visit. Analysis results are enclosed as **Annexure – 4.**

SITE VISIT BY JOINT COMMITTEE:

Additionally, the joint committee again visited the 4 industries along with District Collector Vadodara on **Dt. 23/06/2022** to observe the present status of these industries and VECL channel.

Joint committee met at VECL Karakhadi campus on **Dt. 23/06/2022**. Shri R. B Trivedi (Regional officer, GPCB) briefed regarding status of VECL channel and 4 industries mentioned in complaint. Thereafter, the Joint committee visited M/s Mayur Dye Chem Intermediate LLP, Vill: Karakhadi, Tal: Padra, Vadodara and collected samples from the VECL channel in the upstream and downstream of discharge point of the industry. It is worth to mention that that there was no discharge from the industry during visit.

Subsequently, the Joint committee visited the unit M/s Kiri Industries Limited (Unit-III), Vill: Dudhwada, Tal: Padra, Vadodara and observed their ZLD system. Joint Committee instructed the unit to submit details of ZLD system w.r.t. its technical specification, capacity of the system, installation and operational date etc. Based on the joint committee's instructions, GPCB has issued on site written instructions to in this regards to M/s Kiri Industries Limited (Unit-III) asking to submit above mentioned details. Copy of written instructions is attached as **Annexure – 5.**Joint committee then visited effluent discharge outlet point of unit on VECL channel and which was observed disconnected.

Then after Joint committee visited the unit M/s Bodal Chemicals Ltd (Unit-VII), Vill: Dudhwada, Tal: Padra, Vadodara and observed the ZLD system.

Then after Joint committee visited the VECL channel at which M/s Loxim Industries Ltd, Vill: Ekalbara, Tal: Padra, Vadodara is having their treated effluent discharge outlet in to VECL channel. During visit, no discharge of treated effluent observed.

As decided by joint committee, samples from VECL channel in the upstream and downstream of each industry were also collected and submitted to GPCB laboratory at Vadodara for analysis. Presently, analysis work is under process at GPCB laboratory and the analysis results will be submitted after completion of analysis and generation of analysis reports.

CGWA REPORT:

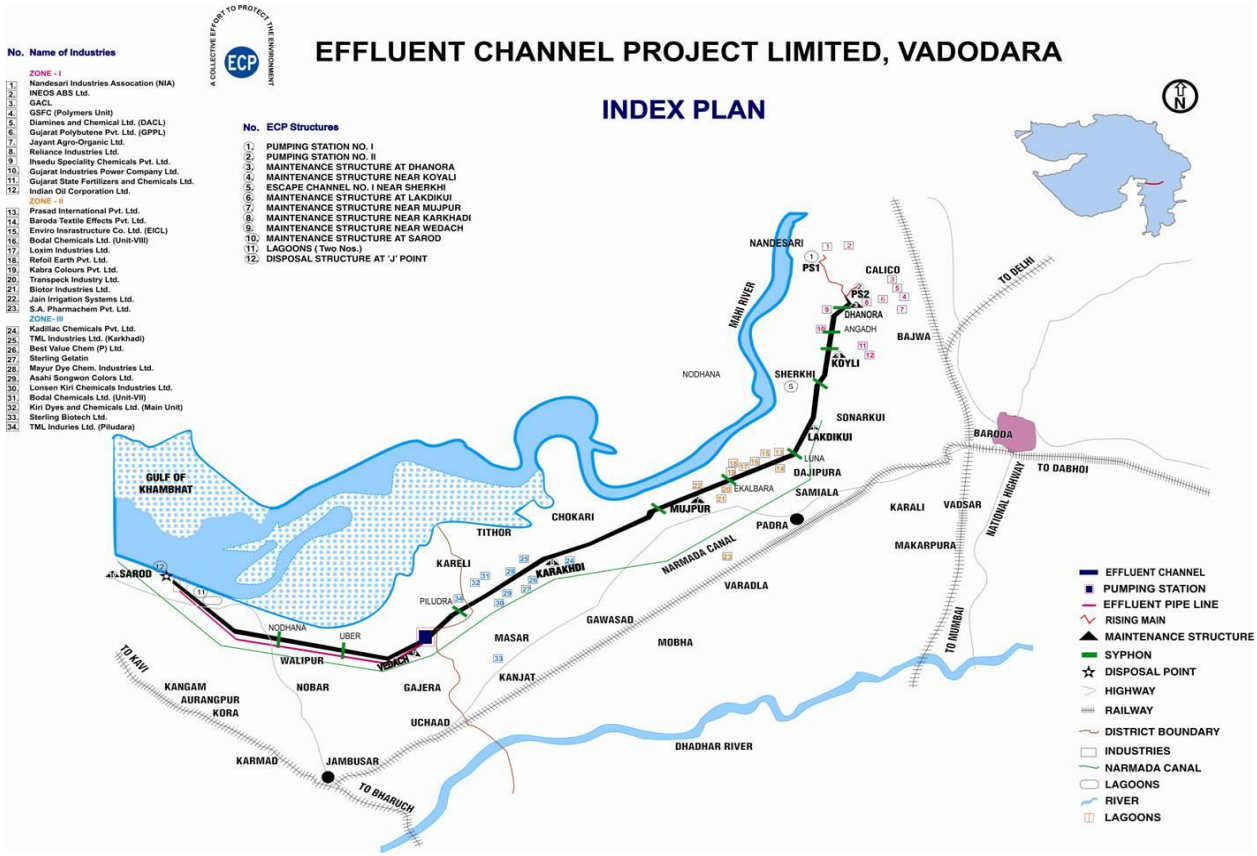
Report on ground water profile of Padra area submitted by CGWA is separately annexed with this report as **Annexure –6.** The report attributed high level of TDS (ranging between 1000 mg/L to >3000 mg/L) due to over exploitation of GW in the region by the industries and consequently intrusion of sea water, Besides, some of the borewells are found with chemical contamination for which GPCB identified industries have implemented GW remediation scheme, progress of which is being reviewed by a State Level Expert Committee.

FINDINGS & CONCLUSIONS OF JOINT COMMITTEE:

As per the Directions of Hon'ble NGT, the Joint Committee carried out the above mentioned investigations, sampling and review of factual details with reference to the complaint under reference. Committee also reviewed the status of industries under complain, VECL channel, Ground Water Scenario and also the actions taken so far by regulatory authorities like CPCB & GPCB. Based on above, the findings & conclusions of the Joint Committee are as below:

1. OVERVIEW OF VECL:

The effluent channel managed by M/s Vadodara Enviro Channel Ltd. (VECL) was originally provided to carry treated effluent from industries located near Vadodara viz. IOCL, GSFC, Reliance etc. and finally discharge in to the Gulf of Cambay (Arabian Sea), and so as to prevent the direct discharge of any industrial effluent in to nearby river Mahi. Subsequently, the industries established along the stretch in the area from Padra Taluka (Vadodara District) and Jambusar Taluka (Bharuch District) also joined the effluent channel for discharge of their effluent into the channel for final disposal in estuarine zone of River Mahi. The 55.30 Km long open channel was commissioned in the year 1983 and was designed for an average flow of 145 MLD. Two holding lagoons (one standby, capacity of each is 18.12 MLD) are provided at the terminal point of the channel (known as J-Point) before final discharge in to estuarine zone of River Mahi in the Gulf of Cambay. The 55.3 km stretch / area of effluent channel is divided into three industrial zones i.e. Zone-1, Zone-2 and Zone-3. The effluent from all 03 zones joins the effluent channel at different locations and flows through gravity up to a location named Vedach and subsequently effluent is pumped through close pipeline from Vedach to J-point (final discharge point).



GPCB has issued latest CCA vide order no. AWH-105482, Dt. 31/03/2020, for the conveyance of treated effluent of member units up to the final disposal point at estuarine zone of river Mahi.

As explained above, VECL effluent conveyance system is catering need of treated effluent conveyance of 37 member industries including 2 CETPs (which further cater the need of effluent treatment & disposal of more than 300 MSME industries). In addition to VECL management, GPCB is continuously monitoring the channel & its member industries & taking suitable legal actions against erring industries as well as VECL for control of pollution thereof.

2. PREVIOUS INVESTIGATION BY CPCB AND GPCB

CPCB Regional Directorate Vadodara and GPCB Regional Office Vadodara jointly carried out random surprise inspection cum monitoring of VECL channel on **17.03.2021, 01.07.2021 & 29.06.2021** and two of the four industries which are mentioned by the complainer in the present case namely M/s Kiri Dyes & Chemicals Pvt. Ltd. And M/s. Mayur Dye Chem Intermediates Ltd. Padra were inspected on 29.06.2021 w.r.t. a public complain received regarding poor operation and maintenance of Effluent Conveying System and progress made for remediation of contaminated sites. Based on the observations and analysis results of samples collected during the visit, a detail report was prepared and submitted to CPCB HO

during September 2021. Subsequently, a letter was issued from CPCB to GPCB for ensuring compliance as per the recommendations of joint report. Analysis results of sample collected by the joint team from the final discharge point of VECL (J-Point) are as below:

Location	Parameter	Sampling on 17.03.2021	Sampling on 29.06.2021	Sampling on 01.07.2021	Prescribed Standard
Final discharge point near estuarine zone of River Mahi (J-point)	COD (mg/L)	1856	1711	2309	250
	BOD (mg/L)	770	390	770	100
	NH_3-N (mg/L)	31	36.3	156.3	50

3. ACTIONS SO FAR BY GPCB:

GPCB has issued time to time Directions for the compliance. Following are the details of action taken by GPCB in last 5 years in Padra area in general & specifically against industries under complain:

Cumulative record of actions by GPCB IN Last 5 Years

Year	Nos. of Industries Visited	Nos. of Samples Collected	Directions Issued	Notice of Directions Issued	Show Cause Notices Issued
2017-18	207	910	4	22	24
2018-19	312	192	7	40	37
2019-20	295	296	6	19	17
2020-21	248	329	20	5	11
2021-22 (Till Dt. 24/06/2022)	390	558	30	19	17
Total	**1452**	**2285**	**67**	**105**	**106**

Actions taken by GPCB against Industries under Complain in Last 5 Years

Name of Industry	Directions Issued	Notice of Directions Issued	Show Cause Notices Issued
Bodal Chemicals Ltd. (Unit-VII)	6	8	9
Kiri Industries Ltd. (Unit-III)	5	8	3
Mayur Dye Chem Intermediates Pvt. Ltd.	7	7	2
Loxim Industries Ltd.	2 + 1 (by CPCB)	0	1
Total	**21**	**23**	**15**

GPCB has recently issued Directions to all 4 industries under reference and VECL also for non-compliances observed, with forfeiture of previously given Bank Guarantees, and asked to submit new Bank Guarantee of Rs. 25 Lakhs each. They have been directed to submit time bound action plans for upgradation /improvement of EMS (Environment Management Systems) for the necessary compliance required for overall improvement & compliance with the final discharge norms given to VECL. Detailed time bound action plans are submitted by all concerns to the Board, upon which regular compliance verification is being carried out by GPCB & extension of time limit for the implementation of Directions is granted.

Some of the preventive actions taken & directed to be taken by VECL & industries under complain are as below:

Preventive actions taken so far:

- Up gradation of EMS – MEE, MVR, Spray dryer…
- Strengthening / augmenting hazardous waste storage facility
- Providing impervious flooring – wherever required and feasible
- Treated effluent discharge pipeline – above ground
- Online monitoring facility provided on member units of VECL
- Online monitoring facility provided intermittently in VECL channel at strategic points to catch hold of erring industries
- Auto sampler provided on discharge line of industry to VECL
- Three-way valve provided to divert back waste water exceeding discharge norms.
- VECL has provided IOT valves on member unit's discharge line to regulate waste water discharge by industries.
- Augmented discharge point of member industries with clearly visible free flow water.
- Environmental performance assessment of total seven member industries of VECL in zone -III carried out by IIT Mumbai.

Direction issued to industries:

- To provide OCEMS in VECL channel before and after discharge point to VECL.
- To provide tamper proof OCEMs on final discharge line to VECL
- Units shall expedite ground water remediation & use only contaminated ground water for industrial purpose.
- To provide flow meters'/steam meters at strategic points for real time quantification of water used, waste water generation and disposal.

Directions issued to VECL: (Major Directions, including CPCB's)

- To convert whole stretch of VECL by replacing with closed pipeline
- To propose CETP in Zone III – Land acquired and EC under process for 20 MLD CETP
- To improve upon routine and annual maintenance to ensure leak proof conveyance
- To stop simultaneous discharge into open channel after Vedach pumping station
- To follow discharge mechanism as per consent condition at "J" point
- Member industries to have SCADA system
- To provide OCEMS / online surveillance camera at final discharge point

- To decide strategic change of location of RTOMs provided within VECL in Zone –III.

As a result of this, improvement in quality of effluent being discharged at J point (final discharge point of VECL) is observed as mentioned below:

Location	Parameter	Jan'22	Feb'22	Mar'22	April'22	May'22	June'22	Prescribed Standard
Final discharge point near estuarine zone of River Mahi (J-point)	COD (mg/L)	1096	882	1981	1146	309	184	250
	BOD (mg/L)	240	195	420	157	66	33	100
	NH_3-N (mg/L)	26	87	33	12	31	14	50

4. OBSERVATIONS &CONCLUSION ABOUT VECL CHANNEL:

The analysis results compiled in the tables above and also the analysis results of present investigation, shows that at final discharge point i.e. J-Point, concentration of critical parameters namely BOD, COD and NH_3-N were found significantly violating the prescribed discharge standards till April 2022, however the concentration reduced significantly from **May 2022 onwards**. Here it is worth to mention that During monitoring of **May and June 2022** carried out by GPCB as well as sampling carried out during present investigation, there was no regular discahrge from the 04 units mentioned by the complainant. During visit of CPCB / GPCB team on **27.05.2022**, two units namely M/s Loxim Industries and M/s Mayur Dye Chem were not in operation. M/s Loxim Industries was found closed due to Closure Direction from GPCB and M/s Mayur Dye Chem was not in operation due to less / poor market demand and maintanance related works (details in this regard is mentioned in the individual report of these industries which are attached with this report). The other unit M/s Kiri Industries was not operating its H-Acid plants which generates bulk and concentrated stream of the effluent and the unit was operating on partial production capacity for other consented products due to less / poor market demand. M/s Bodal Chemicals was found in operation with partial production capacity due to less / poor market demand. There was intermittent minor discharge outside the premises as there was some breakdown in the effluent discharge pipe line and the unit was

storing the effluent inside the premises during the visit and the minor discharge was coming out from the accumulated effluent in the discharge pipe line.

Further, the joint investigation report of **September 2021** of CPCB and GPCB mentioned about M/s Mayur Dye Chem and M/s Kiri Industries that ground water quality in their presmises is highly contaiminated and the work of ground water remediation undertaken by these units as per the direction of GPCB is not satisfactory.

Moreover, CPCB inspected M/s Loxim in **September 2019** to assess the adequacy of the existing pollution control measures and observed that the treated effluent is not meeting the discharge standards prescribed by GPCB and subsequently Closure Direction was issued to the unit by CPCB on **11.02.2022**.

*It can be inferred from the above observations that the effluent discharged through **VECL channel** in to esturiane zone of River Mahi has been consistently exceeding the prescribed discharge standard with significant margin till April 2022 during the monitored period, however the* concentration *of BOD, COD and NH_3-N reduced significantly from May 2022 onwards.It is worth to mention here that all the four industries mantioned in the present complaint have stopped discharging their effluent in to the VECL channel during the monitoring period of May and June 2022.*

5. OBSERVATIONS &CONCLUSIONS ABOUT INDUSTRIES UNDER COMPLAIN:

(A) M/s. Loxim Industries Ltd

- The unit was not operational during the visit due to Closure Direction from GPCB. Unit is engaged in manufacturing of various dyes and the validity of CCA is up to 30/09/2023.
- The basic treatment scheme of ETP provided is not satisfactory.
- The unit has disposed only 17 MT ETP sludge to CHWTSDF during last more than one year against the consented quantity of 360 MT/Year. It shows that the unit is not operating the ETP properly and regularly.
- The unit has provided electromagnetic flow meters in the ETP which do not have online connectivity. Considering the operational condition of ETP and intention of the unit towards effluent treatment, flow meters without online record would not be useful for verifying the actual operational status of ETP units.
- The above 3 points indicates that the unit is operating the ETP very casually.
- It is gathered from the record of the GPCB that on 07.05.2022 at 12.45 AM (Night time), the unit was found discharging highly concentrated effluent (pH- 10.02 and COD – 1063 mg/l) in to VECL channel. It is worth to mention that the unit is permitted to discharge the treated effluent into VECL during 10.30AM to 3.30PM only by VECL authority. Thus

the unit was not only discharging highly concentrated effluent into VECL but also violating the time slot allotted / permitted for discharge.

Considering all above facts of **M/s. Loxim Industries Ltd***, it can be concluded that the effluent management system is highly unsatisfactory and the unit's intention to operate the ETP efficiently is doubtful. The unit was caught discharging highly concentrated/non-conforming effluent into VECL channel in midnight and thus violating the norms and causing serious damage to the Environment.*

(B) M/s. Mayur Dye Chem Intermediates Private Limited Unit – III

- During inspection, the unit was not in operation due to less / poor market demand and maintenance related works. Unit has valid CCA up to 30/06/2023 for manufacturing of Vinyl Sulphone and H-Acid.
- The unit is having 2 manufacturing plants, namely H-Acid Plant and VS Plant. As per CCA, unit has to dispose 153 KLD effluent (generated from H-acid plant and high concentrated effluent from VS plant) through ZLD system. Whereas, rest trade effluent 27 KLD is allowed to be treated in ETP and treated effluent discharged into VECL channel. It is observed that ensuring ZLD condition in the above mentioned ETP is practically not possible as flow measurement devices are not provided on the strategic locations. Flow meters are not provided at the effluent generation point to measure the quantity of effluent generated in individual manufacturing plant. The same observation was mentioned in GPCB inspection report of **28th March 2022**.
- Earlier, the unit was inspected by GPCB on **28th March 2022** and based on their on-site observation; the report highlights the possibility of unauthorized discharge of untreated / partially treated effluent from this unit.
- GPCB has issued direction to the unit u/s 33 A of Water Act & u/s 31 A of Air Act on **08/04/2022**& subsequently CCA amendment application of the unit was also rejected by GPCB on **12/04/2022** due to gross non-compliances observed during their inspection of the unit on **28th March 2022**. Some of the major non-compliances mentioned in the CCA rejection letter are as follows:
    I. Unit is taking production of H acid (62.5 % Higher) and Vinyl Sulphone (175 % Higher) at the rate much higher than the consented quantity. (H Acid CCA Quantity-200 MT/Month & VS CCA Quantity-150 MT/Month).
    II. Unit is taking production of Acetanilide for selling outside instead of reuse for which unit has not obtained necessary permission of the Board.
    III. Unit is not having flow measurement at source of generation and other strategic stages of EMS and therefore no data at various stages are maintained.
    IV. Unit has not provided STP for treatment of domestic wastewater.

- Earlier, on **1st January, 2020** GPCB had issued Direction under Section 33-A of Water Act to the unit, wherein one of the major noncompliance mentioned is that the unit has provided illegal pipeline from premises to discharge untreated concentrated mother liquor(ML) into conveyance system of VECL.

*Considering all above facts of **M/s. Mayur Dye Chem Intermediates Private Limited**, it can be concluded that the unit is a consistent and intentional violator. The unit is not only violating the discharge norms but also flouting on aspects of excess production and mischievously discharging untreated effluent (mother liquor) directly into VECL channel and thus causing serious damage to the Environment.*

(C) M/s. Kiri Industries Limited -Unit-III

- The unit is engaged in manufacturing of various dyes and dyes intermediates viz. H-Acid, Vinyl sulphone etc.
- As the unit was operational on partial production capacity due to poor market and thus the present pollution load imparted by the unit seems to be less.
- The unit is having 5 manufacturing plants, namely H-Acid Plant, VS Plant- Old, VS Plant-New, Intermediate Plant-1 and Intermediate Plant-2. As per CCA, total effluent generation is 961 KLD, out of which 68 KLD of low concentrated effluent stream is allowed to be treated in ETP and rest 893 KLD is to managed under ZLD system. It is observed that ensuring ZLD condition in the above mentioned ETP is practically not possible as flow measurement devices are not provided on the strategic locations. Flow meters are not provided at the effluent generation point to measure the quantity of effluent generated in individual manufacturing plant. The same observation was mentioned in GPCB inspection report of **22 – 23 March 2022**.
- The unit was inspected by GPCB on **22- 23March 2022** and based on their on-site observation; the report highlights the possibility of unauthorized discharge of untreated / partially treated effluent from this unit.
- Direction u/s 33 A of Water Act & u/s 31 A of Air Act are issued on **08/04/2022**& subsequently CCA Renewal application of the unit was also rejected by GPCB on **12/04/2022** due to gross non-compliances observed during their inspection of the unit on **22-23rd March 2022**. Some of the major non-compliances mentioned in the CCA rejection letter are as follows:
  i. Unit is taking production of H Acid-Average-584.37 MT/Month (CCA Quantity-500 MT/Month) @16.87% higher than the consented quantity.
  ii. Unit is manufacturing KD-040B (Average 10.6 MT/Month) & KD-40 B (JW) (Average: 7.05MT/Month) product without permission of the GPCB.
  iii. Unit has 39% higher generation of spent HCl (Average 1181.62 MT/Month) than consented quantity (CCA Quantity-850 MT/Month).

iv. Unit is having much higher generation of SBS solution (Average-1470 MT/Month) than consented quantity. (CCA Quantity-107.33 MT/Month).
v. Gross discrepancy observed in recorded spent sulphuric acid as compared to consented quantity. (CCA Quantity-13850 MT/Month, Generate @ 4.185 MT/Month).

- Earlier, on **22 June, 2020** GPCB had issued Direction under Section 33-A of Water Act to the unit, wherein one of the major noncompliance mentioned is that the unit has provided illegal pipeline from its compound wall to discharge conveyance system of VECL. Further, VECL has suspended the membership of the unit and the unit can no more discharge in the channel.

*Considering all above facts of **M/s. Kiri Industries Limited -Unit-III**, it can be concluded that the unit is a consistent and intentional violator. The unit is not only violating the discharge norms but also flouting on aspects of excess production. The unit had provided illegal / unauthorized pipeline from its premises to VECL channel which was intended for discharging untreated effluent from its premises directly into VECL channel and thus causing serious damage to the Environment.*

(D) M/s. Bodal Chemicals Ltd (Unit-Vii)

- The unit is having 4 manufacturing plants, namely H-Acid Plant, Vinyl Sulfone Plant, B-Naphthol Plant and Dyes Plant. Out of four, former three plants are ZLD and Dyes plant generates two wastewater streams, one high concentration and other low concentration. High concentration stream is treated under ZLD system and ETP is provided for treatment of low concentration stream. GPCB inspection report of **24-25 March 2022** pointed out that ensuring ZLD condition in the above mentioned ETP is practically not possible as flow measurement devices are not provided on the strategic locations including effluent generation point to measure the quantity of effluent generated in individual manufacturing plant.
- As the unit is observed operated partially and not on full production capacity, the present pollution load imparted by the unit seems to be less. However as observed earlier that unit having inadequate EMS/ Not operating EMS efficiently and thus, violating the norms.
- The unit was inspected by GPCB on **24-25 March 2022** and based on their on-site observation; the report highlights the possibility of unauthorized discharge of untreated / partially treated effluent from the unit.
- GPCB has issued direction to the unit under section 33-A of the Water Act-1974, notice under section 31-A of Air Act 1981 on **08/04/2022**and rejected the CCA amendment application of the unit on **12/04/2022**for the following gross non-compliances observed during inspection on **24-25 March 2022**:

a. Unit is not having flow measurement at source of effluent generation and strategic stages of EMS and therefore no data at various stages are maintained.
b. Gap of 1214.65 KL/month observed in effluent generation recorded. This indicates that about 44% of effluent generation is not recorded.
c. Gap of 72.63 KL/month observed in effluent generation recorded from VS manufacturing. This indicates that about 2.8% of effluent generation is not recorded.
d. Unit has discharged more effluent than the consented quantity in month of OCT-2021-13891 KL, NOV-2021-14487 KL and DEC-2021-15517 KL. (CCA Quantity-452 KL/Day i.e. 13560 KL/Month).
e. Unit has not provided OCMS facility before and after their discharge point into VECL as per Directions of the Board.
f. Unit has not provided proper APCM with Steam Boiler & TFH as per current solid fuel guideline.

*Considering all above facts of **M/s. Bodal Chemicals Ltd (Unit-Vii)**, it can be concluded that the unit is not operating the effluent management system properly and has been a consistent violator of environmental norms.*

Additional Details Noted & Considered by the Joint Committee as Submitted by GPCB

GPCB has submitted the following additional details in the Hon NGT matter OA 276 of 2022, which have been noted & included by the Joint Committee in its report to be submitted to Hon NGT for due consideration in the matter:

1) Analysis Reports of the samples collected from VECL channel in the Upstream & Downstream of final discharge point of all 4 nos. of Industries under complaint during the site visit of Joint Committee on 23.06.2022 shows that the concentration of monitored parameters are within CCA prescribed norms. Concentration of critical parameters i.e. **COD < 250 mg/L, BOD <100 mg/L, NH_3-N < 50 mg/L**. The analysis results are enclosed as **Annexure-7**. Here again it is worth mentioning that all 4 industries were not discharging effluent in to VECL channel during the visit as was observed during previous monitoring of Joint Committee on 27.05.2022.

2) During Joint Committee visit of M/s, Kiri Industries Ltd. (Unit-III) on 23.06.2022, the unit was directed to provide details of Zero Liquid Discharge (ZLD) system installed by them. In response, the unit has submitted the details to GPCB on 30.06.2022 and again submitted additional details on 07.07.2022. Details submitted by M/s Kiri Industries Ltd. (Unit-III) regarding management of their Zero Liquid Discharge (ZLD) system are enclosed as **Annexure-8.** The details submitted by the unit shows that the existing ZLD system is inadequate for treatment of concentrated effluent generated from Vinyl Sulphone plant. Further, the data submitted for Nano Filtration (NF) and Reverse Osmosis (RO) system does not have practical feasibility. It can therefore be concluded that the unit is not having adequate effluent treatment capacity.

3) GPCB has also submitted status of compliance of Action Plans of all 4 nos. of Industries under complaint based on weekly review meetings held by GPCB RO so far with concern industries, details of which are enclosed as **Annexure-9**. Industries under the complaint are required to carry out the progress with respect to each aspects of the action plan in time bound manner so as to comply with the Directions issued by GPCB to comply with the norms.

Considering the observations of dated 27.05.2022, 23.06.2022 and the details provided to the Joint Committee, it can be concluded that the 04 industries under the complainant reference namely, **M/s. Loxim Industries Ltd, M/s. Mayur Dye Chem Intermediates Private Limited Unit – III**, M/s. **Kiri Industries Limited -Unit-III and M/s. Bodal Chemicals Ltd (Unit-Vii)** in Padra area are not operating the effluent management system satisfactorily and violating the environmental norms despite directions of GPCB. It shows that the industries are not only violating the environmental norms but also not holistically complying with GPCB directions.

Saddam Husain	**Dr. N. Semwal**	**R. B. Trivedi**	**A.B. Gor (IAS)**
Asst. Hydro Geologist, CGWA, Ahmedabad	Scientist C, CPCB, RD Vadodara	Regional Officer, GPCB, Vadodara	Collector & District Magistrate, Vadodara

Annexure - 1

Minutes of Meeting of Joint committee held at Collector office Vadodara on 23/05/2022 at 5.30 PM

A meeting is held with reference to NGT order dtd 28/04/2022 OA 276/2022

Following members where remain present in the meeting

1) Shri A.B Gor, IAS , Collector and District Magistrate, Vadodara.
2) Shri R.B Trivedi, Regional officer, GPCB Vadodara.
3) Dr. N. Semwal Scientist C CPCB, RD Vadodara.

Presence sheet is attached herewith as Annexure- A. Member from CGWA was not remained present for the meeting due to some field work.

Shri R. B. Trivedi (Regional officer, GPCB) briefed on complaint made and order passed by NGT on dtd 28/04/2022. He further gave details about VECL Canal and industries against whom action taken recently by the Gujarat pollution Control Board.

Dr. Semwal , Scientist C from CPCB RD Vadodara shown a detailed joint visit report of CPCB & GPCB comprising of inspection and sampling of VECL, industries, ground water sampling of Padra and suggestions made thereof.

Shri A.B Gor, IAS Collector and DM Vadodara has illustrate his concern about the environment and informed to take this issue very seriously.

Committee has decided following points after discussions:

- VECL, MD shall be invited as a member for the next meeting of committee looking to the gravity of issue
- Next meeting will be scheduled on 27/05/2022 at 10:00AM at collector office Vadodara.
- Keeping in view of busy schedule of Collector Vadodara a site visit will be planned by end of this week or next week later on.
- Joint teams comprising GPCB /CPCB officials will carry out sampling.

The meeting concluded with thanks.

List of members present during the meeting scheduled on 23/05/2022 at 5:30 P.M at Collector office Vadodara with reference to NGT order dtd 28/04/2022 Original Application No. 276/2022

Sr. No.	Name and Designation	Department	Signature
01.	Shri A.B Gor, IAS Collector and District Magistrate, Vadodara	Collector office Vadodara	
02.	R.B Trivedi , Regional officer	GPCB, RO Vadodara	
03.	N. Semwal, Sc. 'C'	CPCB, Regional Directorate Office Vadodara	
04.		Central Ground Water Authority Office	
05.			

Annexure - 2

Minutes of Meeting of Joint committee held at Collector office Vadodara on 27/05/2022 at 10.00 AM

A meeting is held with reference to NGT order dtd 28/04/2022 OA 276/2022

Following members/officers were remained present in the meeting

1) Shri A.B Gor, IAS , Collector and District Magistrate, Vadodara.
2) Shri R.B Trivedi, Regional officer, GPCB Vadodara.
3) Dr. N. Semwal Scientist C CPCB, RD Vadodara.
4) Sri Saddam Husain, AGH, CGWA, Ahmedabad.
5) Smt M.U Patel, DEE, RO Vadodara.
6) Shri Sujit Koshy, CEO –VECL.
7) Shri Keyur Parikh, GM Finance.

Presence sheet is attached herewith as Annexure- A.

Officers present in the meeting gave their introduction.

VECL officers shown online monitoring facility provided on VECL channel as well as on treated waste water discharge line of individual member industry and parameters analyzed.

Shri A.B Gor, IAS Collector and DM Vadodara informed that before joint committee visits the site, joint teams of GPCB and CPCB officers will carry out sampling of VECL and industries against which complaint made.

Committee has decided following points after discussions:

- Today a joint team of GPCB and CPCB will carry out sampling of VECL at different four locations at a same time.
- Accordingly teams have been formed and simultaneously they will coordinate timing and take sample of VECL channel before and after @ 20 meter from industry premises.
- Team will collect sample of industry if discharge is going on and industry inspection will be carried out.
- CGWA will provide information on groundwater usage permissions & monitoring data of Padra Taluka.

The meeting concluded with thanks.

List of members present during the meeting scheduled on 27/05/2022 at 10:00 A.M at Collector office Vadodara with reference to NGT order dtd 28/04/2022 Original Application No. 276/2022

Sr. No.	Name and Designation	Department	Signature
01.	Shri A.B Gor, IAS Collector and District Magistrate, Vadodara	Collector office Vadodara	
02.	R.B Trivedi , Regional officer	GPCB, RO Vadodara	
03.	N.N. Semwal Sc. 'C'	CPCB, Regional Directorate Office Vadodara	
04.	Saddam Husain (AHg)	Central Ground Water Authority Office	
05.	Smt Koshy CEO- VEC	VECL	
06	M.U. Patel AEE.	GPCB. Regional office Vadodara	
07	Keyur Parikh CFM- Finance	VECL	

Annexure - 3

Joint Site Inspection Report (CPCB & GPCB)

(W.r.t. Hon'ble NGT O.A. No. 276/2022)

Name of Unit: M/s Loxim Industries Ltd
Date: 27/05/2022.

The unit was visited by joint team of CPCB and GPCB on 27.05.2022 w.r.t. Hon'ble NGT Matter O.A. No. 276/2022.Unit has obtained CCA (AWH:98695) from GPCB for manufacturing of various dyes and the validity of CCA is up to 30/09/2023. During visit, the unit was not in operation as GPCB had issued Closure Direction to the unit under section 33 (A) of the water (Prevention and control of pollution) act-1974 vide no: GPCB/CCA-VRD-1043(7)/id-22199/672598 dated 17/05/2022 for gross non-compliance observed in the operation of ETP and discharge of effluent into VECL with high pH (10.02) and COD concentration (1063 mg/l).Three phase power of the unit was disconnected on 19/05/2022 and unit has submitted power disconnection from MGVCL vide no: P-2/Loxim/GPCB/DC dated 19/05/2022.

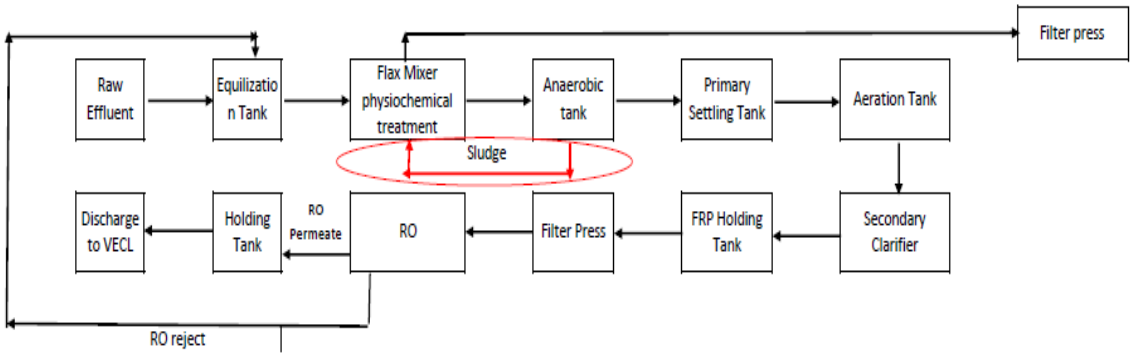
Shri Bhusan Borse, DGM Operation of the unit was present during the visit and provided information related to the unit.

Effluent Management

As per CCA, effluent generation from the unit is permitted to discharge treated waste water into VECL. The unit has provided ETP for treatment of generated effluent. Treated effluent from ETP is discharged into Vadodara Enviro Channel Limited (VECL) as prescribed in the CCA. VECL is a 55 km long channel which ultimately discharge the treated effluent into estuarine zone of River Mahi. The ETP comprises of following treatment units:

1. Oil & Grease Trap – 3Nos
2. Equalization tank -1 Nos
3. Flash Mixer -4 Tanks
4. Anaerobic Tank
5. Primary settling tank -1 Nos
6. Aeration tank -1 Nos
7. Secondary Clarifier -1 Nos
8. Holding Tank
9. Sand & Carbon Filter
10. RO Feed Tank
11. RO (Reverse Osmosis) – 6 Cartridge
12. Filter press -3 Nos
13. Sludge Drying beds– 2Nos

Treatment scheme of waste water is shown as below:



The unit has provided flow meters at 4 locations in ETP just one week back. The location of flow meters is as given below.

(1) Transfer line between Equalization Tank and Flash Mixer (2) RO feed line (3) RO permeate line i.e. outlet of ETP (4) RO reject line

The ETP was not operational during visit as the unit was under closure direction from GPCB and consequently there was no effluent discharge from the final discharge point of industry into the VECL channel.

The treatment scheme of the ETP as explained during the visit appeared unsatisfactory for sludge management. There are 4 tanks in the Flash Mixer. The effluent from the Flash Mixer is fed into the Anaerobic Tank and the sludge from the Anaerobic Tank is taken back into The Flash Mixer tanks again. As informed, there is no gas generation from the Anaerobic Tanks and hence functioning of Anaerobic Tanks itself is questionable. There is no fix provision for removal of sludge from the Flash Mixer tanks and it is gathered from the ETP operators that the sludge from the Flash Mixer tanks is taken to Sludge Settling Tanks (SST) with temporary provision of flexible pipes. Sludge from the SST is taken into a Filter Press for dewatering. It appears from the condition of Filter Press that it is not operated since long. Further, the treated effluent from Secondary Clarifier is taken in to another Filter Press which is again not in accordance of basic waste water treatment scheme.

Te unit has provided OCEMS for the finally treated effluent. Photographs of the same is attached.

During visit it was observed that work for installation of some plant machinery was under progress in the premises of the unit. It was informed by the unit representatives that the said construction work is related to providing Mechanical Vapour Recompression(MVR) for strengthening of wastewater treatment scheme. The unit has obtained CTE for same from GPCB. One effluent storage tank has been constructed near upcoming MVR. The tank was observed about 1/3rd filled with raw effluent. The intention of storing the effluent in the said tank which is situated away from the existing ETP was not explained. Photographs of the same is attached herewith.

Hazardous waste management

As per CCA, quantity of hazardous waste generation is as follows:

i. ETP Sludge - 324 MT/Year.
ii. Process Sludge – 36 MT/Year

During visit, solid hazardous waste was found stored at following 3 places in the ETP area:

a) In a closed shed near Equalization Tank without leachate collection facility.
b) Open area near Primary Settling Tank.
c) Sludge Drying Beds

The approximate quantity of stored sludge would be 70 to 80 MT. (Photograph is attached herewith).

As per XGN record, the unit has disposed only 17 MT of ETP Sludge & process sludge during 01.04.2021 to 27.05.2022.

Electricity consumption

During visit last 5 months' electricity bill data was collected and the unit consumption pattern is as follows:

Month	Dec - Jan-22	Jan - Feb-22	Feb -Mar-22	March - Apr-22	April -May-22	May – June-22
Electricity consumption (KWH)	234332	201756	154664	129200	203392	25740

The electricity consumption data shows that unit consumption dropped significantly during May - June 2022 compared to previous 5 months due to closure of unit during this period.

Conclusion:

1. The unit was not operational during the visit due to Closure Direction from GPCB. Unit is engaged in manufacturing of various dyes and the validity of CCA is up to 30/09/2023.
2. The basic treatment scheme of ETP provided is not satisfactory.
3. The unit has disposed only 17 MT ETP sludge to CHWTSDF during last more than one year against the consented quantity of 360 MT/Year. It shows that the unit is not operating the ETP properly and regularly.
4. The unit has provided electromagnetic flow meters in the ETP which do not have online connectivity. Considering the operational condition of ETP and intention of the unit towards effluent treatment, flow meters without online record would not be useful for verifying the actual operational status of ETP units.
5. The above 3 points indicates that the unit is operating the ETP very casually.
6. It is gathered from the record of the GPCB that on 07.05.2022 at 12.45 AM (Night time), the unit was found discharging highly concentrated effluent (pH- 10.02 and COD – 1063 mg/l) in to VECL channel. It is worth to mention that the unit is permitted to

discharge the treated effluent into VECL during 10.30AM to 3.30PM only by VECL authority. Thus the unit was not only discharging highly concentrated effluent into VECL but also violating the time slot allotted / permitted for discharge.

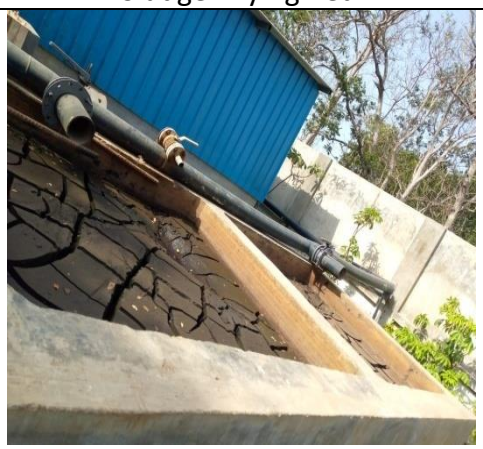
Considering all above facts, it can be concluded that the effluent management system is highly unsatisfactory and the unit's intention to operate the ETP efficiently is doubtful. The unit was caught discharging highly concentrated/non-confirming effluent into VECL channel in midnight and thus violating the norms and causing serious damage to the Environment.

Visited on : 27/05/2022

Visited by :
1. **Dr. Nirpendra Semwal,** Scientist 'C', CPCB , RD Vadodara.
2. **D.C. Patel,** AEE, GPCB, RO Vadodara.

<u>Photographs taken during visit</u>

<table>
<tr><td>Fix pipeline for abstraction of waste water sample from discharge pipeline</td><td>Sensor box is not completely temper proof</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td colspan="2">Provided OCEMS</td></tr>
<tr><td>  </td><td> 
</td></tr>
<tr><td>Provided Auto Sampler</td><td>Provided IOT valve</td></tr>
</table>

	
Sludge Drying Bed	
	
Seepage and leakages was observed from wall of the said tank	Provided MVR
	
Construction of civil structure is under process	Hazardous waste storage area
	

Joint Site Inspection Report (CPCB & GPCB)
(W.r.t. Hon'ble NGT O.A. No. 276/2022)

Name of Unit: M/s. Mayur Dye Chem Intermediates Private Limited Unit – III
Date of Inspection: 27.05.2022

The unit was visited by joint team of CPCB and GPCB on 27.05.2022 w.r.t. Hon'ble NGT Matter O.A. No. 276/2022.

The unit is a dye intermediate manufacturing unit establish in 1998, located at survey no 327-334/A Village Karakhadi, ECP Road, Ta: Padra, Dist: Vadodara. The unit is having consent to operate vide order no: AWH-97406 valid till 30/06/2023.

GPCB has issued direction u/s 33 A of Water Act 1974 & u/s 31 A of Air Act 1981 are issued on 08/04/2022 with 15 days' effects, which was further extended for 15 days and again extended for 3 Months.

Shri Shirish Shah, GM Works of the unit was present during the visit and provided information related to the unit.

During inspection unit was not in operation. Plant and machinery was found idle. Housekeeping and revamping of acid storage area was going on during the visit. Photograph of the revamping work inside the premises observed during the visit is given below. Industry was not in operation since 21/04/2022.

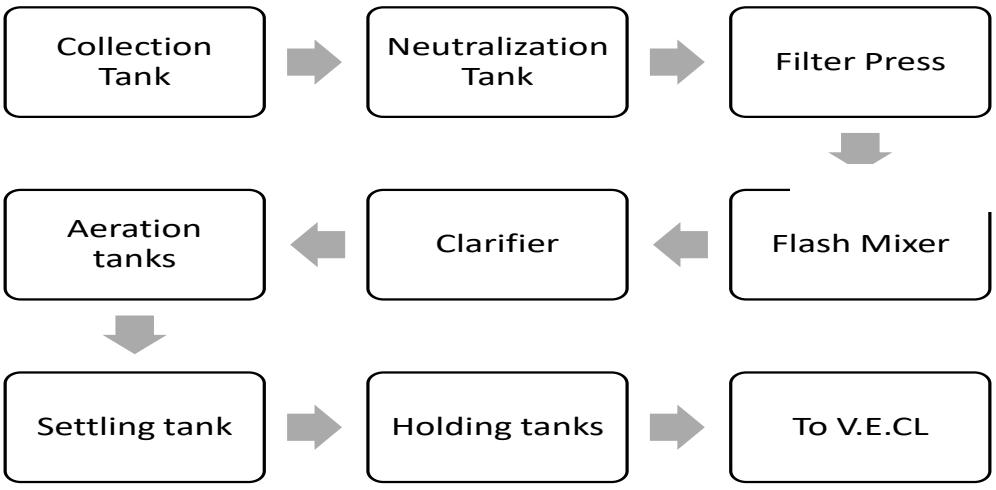
Photograph showing the revamping work inside the premises during the visit

❖ **Effluent Management**

Dilute stream

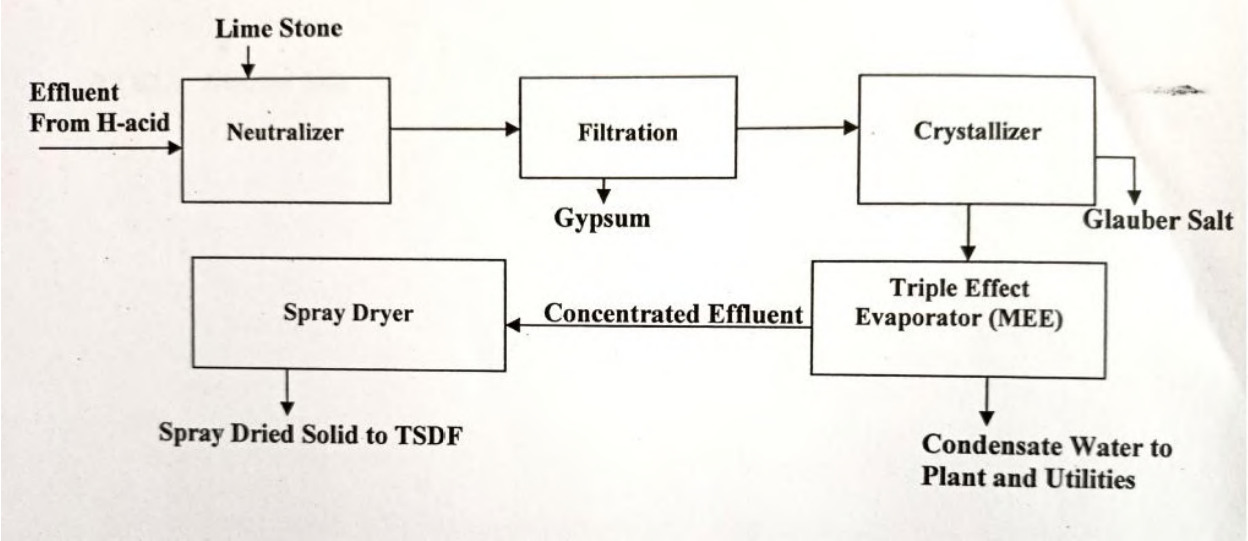
➢ Industry is having permission to discharge treated waste water (dilute stream) to Vadodara Enviro Channel Limited (VECL) for which unit has provided (Primary + secondary + Tertiary) ETP units as below. During visit all ETP units were found not in operation except aeration tanks.

- Dilute Spent Acid Storage Tank
- Neutralization Tank
- Filter press
- Equalization Tank
- Flash Mixer
- Clariflocculator
- Main Aeration Tank
- First Clarifier
- Second Aeration Tank
- Second Clarifier
- Holding Tank
- Holding Tank
- Pressure Sand Filter
- Pressure Carbon Filter
- Sludge Drying Bed



Concentrated stream

- For concentrated stream (ML generates from production of H-Acid and VS) separately stored and after neutralization and glauber salt recovery it is sent to captive MEE and spray dryer to maintain Zero Liquid Discharge. During visit MEE and spray dryer was not observed in operation.



- During inspection there was no waste water discharge observed in to VECL since unit was not in operation and final discharge line was found disconnected. As per VECL direction for tamper proof monitoring facility, the unit has to provide online monitoring facility, auto sampler and three-way valve outside the unit premises for which discharge line was disconnected and shifting of existing facility is going on. Photographs of the disconnected discharge line and construction of cabin for online monitoring facility outside the premises is given below.

Photograph showing the disconnected discharge line

Photograph showing the discharge pipeline removed at sump outside the premises

Photograph showing the construction of cabin outside the premises for online monitoring system

During the visit, the material storage sheds and the Hazardous waste storage facility found almost empty with less quantity of hazardous waste. About 2.5 MT of spray dyer salt and about 20 MT of gypsum were found stored in the storage shed during the visit. Photographs taken during the visit showing the empty condition of storage sheds are given below.

Photograph showing the empty storage shed during the visit

Photograph showing empty leachate collection tank in hazardous waste storage yard

Photograph showing the gypsum storage yard almost empty during the visit

Electricity consumption

The visiting team collected the monthly electricity bills of the unit for last six months' period. The details of the monthly electricity consumption for the period Nov-Dec 2021 to April-May 2022 are given in the table below:

Month	Nov –Dec-2021	Dec - Jan-22	Jan - Feb-22	Feb -Mar-22	March - Apr-22	April - May-22
Electricity consumption (KWH)	139590	120885	80535	44205	73560	29280

Conclusion:

1. During inspection, the unit was not in operation due to less / poor market demand and maintenance related works. Unit has valid CCA up to 30/06/2023 for manufacturing of Vinyl Sulphone and H-Acid.
2. As the unit is operated partially and not on full production capacity, the present pollution load imparted by the unit seems to be less. However as observed earlier that unit found having inadequate EMS/ Not operating EMS efficiently and thus violating the norms.
3. The unit is having 2 manufacturing plants, namely H-Acid Plant and VS Plant. As per CCA, unit has to dispose 153 KLD effluent (generated from H-acid plant and high concentrated effluent from VS plant) through ZLD system. Whereas, rest trade effluent 27 KLD is allowed to be treated in ETP and treated effluent discharged into VECL channel. It is observed that ensuring ZLD condition in the above mentioned ETP is practically not possible as flow measurement devices are not provided on the strategic locations. Flow meters are not provided at the effluent generation point to measure the quantity of effluent generated in individual manufacturing plant. The same observation was mentioned in GPCB inspection report of 28th March 2022.
4. Earlier, the unit was inspected by GPCB on 28th March 2022 and based on their on-site observation; the report highlights the possibility of unauthorized discharge of untreated / partially treated effluent from this unit.
5. GPCB has issued direction to the unit u/s 33 A of Water Act & u/s 31 A of Air Act on 08/04/2022 & subsequently CCA amendment application of the unit was also rejected by GPCB on 12/04/2022 due to gross non-compliances observed during their inspection of the unit on 28th March 2022. Some of the major non-compliances mentioned in the CCA rejection letter are as follows:
    I. Unit is taking production of H acid (62.5 % Higher) and Vinyl Sulphone (175 % Higher) at the rate much higher than the consented quantity. (H Acid CCA Quantity-200 MT/Month & VS CCA Quantity-150 MT/Month).
    II. Unit is taking production of Acetanilide for selling outside instead of reuse for which unit has not obtained necessary permission of the Board.
    III. Unit is not having flow measurement at source of generation and other strategic stages of EMS and therefore no data at various stages are maintained.
    IV. Unit has not provided STP for treatment of domestic wastewater.

6. Earlier, on 1st January, 2020 GPCB had issued Direction under Section 33-A of Water Act to the unit, wherein one of the major noncompliance mentioned is that the unit has provided illegal pipeline from premises to discharge untreated concentrated mother liquor(ML) into conveyance system of VECL.

Considering all above facts and observations, it can be concluded that the unit is a consistent and intentional violator. The unit is not only violating the discharge norms but also flouting on aspects of excess production and mischievously discharging untreated mother liquor directly into VECL channel and thus causing serious damage to the Environment.

Visited on : 27/05/2022

Visited by :
1. **K. J. Misty,** SSA, GPCB RO Vadodara**.**
2. **M. U. Patel,** DEE, GPCB, RO Vadodara.
3. **S. Pradeep Raj,** Scientist 'D', CPCB , RD Vadodara.

Joint Site Inspection Report (CPCB & GPCB)

(W.r.t. Hon'ble NGT O.A. No. 276/2022)

M/s. Kiri Industries Limited -Unit-III

Date of Inspection: 27/05/2022.

The unit was visited by joint team of CPCB and GPCB on 27.05.2022 w.r.t. Hon'ble NGT Matter O.A. No. 276/2022.

Unit is dye and dyes intermediate manufacturing unit. Earlier CCA renewal application of the unit was rejected on 12/04/2022, hence unit has reapply for CCA-Renewal for manufacturing of Vinyl Sulphone Ester: 1500 MT/M, Ortho Anisidine base veny sulphaone (OAVS) Ester -100 MT/M, Para Cresidine base (PCVS) Ester -100 MT/M, Di Methoxy Aniline base vinyl Sulphne (DMAVS) Ester: 350 MT/Month, Sulpho VS Ester:150 MT/Month,Meta VS Ester: 75 MT/Month, Sulpho 2 Amino (Amino Sulphone-E): 75 MT/Month, DASA: 500 MT/Month, NEPA Ester: 50 MT/Month, MAE Ester: 25 MT, Royal Blue Ester: 75 MT/Month.

GPCB has issued direction u/s 33 A of Water Act 1974 & u/s 31 A of Air Act 1981 are issued on 08/04/2022 with 15 days' effects, which was further extended for 15 days and again extended for 3 Months.

Shri Nevil Patel- Sr. Executive EHS of the unit was present during the visit and provided information related to the unit.

Unit has H-Acid Plant, VS-Plant (old), VS-Plant (New), Intermediate plant-1 and Intermediate plant-2. During inspection, VS-Plant (old), VS-Plant (New) and Intermediate plant-1 are observed in operation. As informed, unit was operating on partial production load due to poor marked demands.

- **Effluent Management:**

  Fresh water source is Borewells. Unit has total three nos of Borewells for fresh water consumption.

(a). Treatment Methodology of acidic effluent from H-Acid plant:

- Treatment of acidic effluent (from H acid) mainly consisting of Neutralization, Crystallization, 4 stage MEE (Cap: 15 KL/hr) & Spray Dryer.

- Neutral effluent is taken into crystallizer (chilling type) for glauber salt recovery. Then after ML from crystallizer is taken into MEE (cap: 15 KL/hr). Concentrate ML from MEE is taken into spray dryer for final disposal.
- During inspection, H-Acid treatment effluent scheme plant is not observed in operation due to H-Acid plant not in operation.
- During inspection, @ 180 KL trade effluent of H-Acid is storage is observed at site.
- Unit has not provided water flow meter at strategic location for H-Acid effluent management.

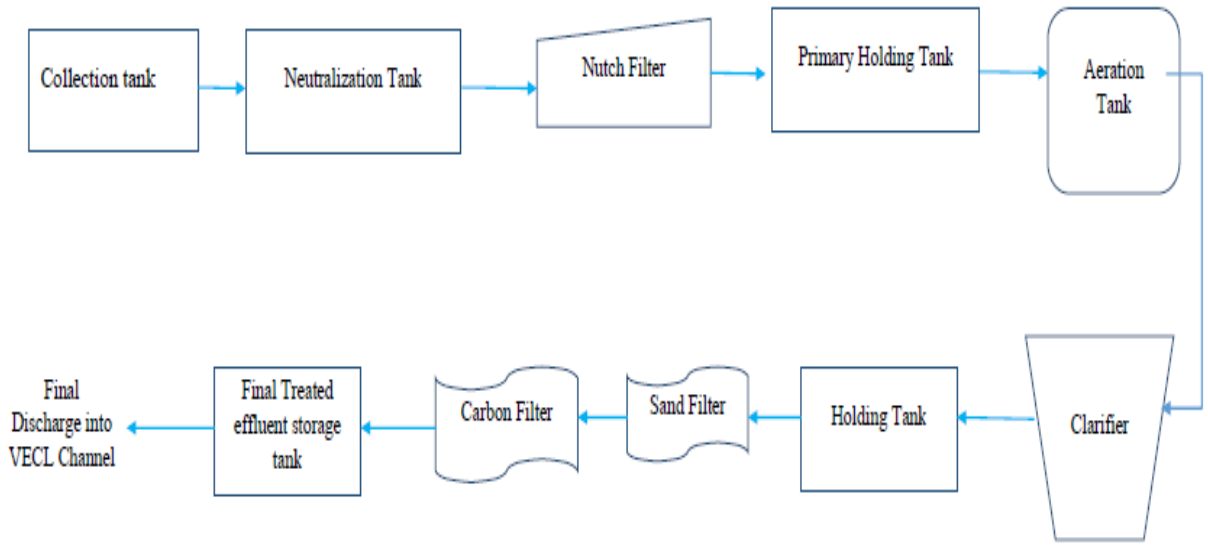
(b). For VS Plant (Old & New) effluent Management:

- Effluent generation from both VS plant (Old & New) is taken in MVR. Unit is recovering solid NA_2S (Reuse/selling to outside) from MVR and concentrated ML (from MVR) is transferred to spray drying system for further treatment. During inspection, VS treatment effluent scheme is observed in operation.
- During inspection, @ 360 KL trade effluent storage is observed at site.
- Unit has not provided water flow meter at strategic location for VS-effluent management.

(c). ETP for low COD stream:

- Unit has surrender VECL membership for Low COD treated effluent discharge into VECL channel accordingly VECL has dismantled effluent discharge pipeline and related photographs is attached herewith.

- During inspection, ETP provided for the treatment of dilute streams observed completely not in operation. ETP units consist of Collection tank, Neutralization tank, Nutch Filter, Aeration Tank, Clarifier, Holding tank, Sand filter, Carbon Filter, Final treated effluent storage tank.



ETP Block Diagram for Low Concentrated Effluent Treatment

- As informed, the low COD effluent that is being generated from other products, on the basis of the compatibility of the effluent stream(s), it is either being taken with H Acid ML or with VS ML for further treatment.

(d) For Intermediate-1 and Intermediate-2 effluent Management:

- Effluent generates from Intermediate-1 and Intermediate-2 is treated with effluent scheme of H-Acid plant.
- Unit has not provided water flow meter at strategic location atIntermediate-1 and Intermediate-2 effluent Management.

Hazardous waste disposal details (as per verification of records):

Hazardous waste Details	Iron Sludge (MT)	Gypsum Sludge (MT)	Glauber salt (MT)	Spray dryer ash (MT)
NOV-2021	1808.42	--	367.47	367.47
DEC-2021	3775.45	--	607.79	607.79
JAN-2022	2054.58	--	755.77	755.77
FEB-2022	3187.3	--	1209.97	1209.97
MAR-2022	2086.39	318.5	1312.86	1312.86
APR-2022	288	591.25	1198.66	1198.66

- During inspection, @1000 MT gypsum salt, 4500 MT spray dryer ash and @ 300 MT Glauber salt storage is observed at site.

Electricity consumption details (as per verification of Electricity bill):

Electricity consumption details	KWH
NOV-DEC-2021	4632930.00
DEC-JAN-2022	4406930.55
JAN-FEB-2022	4923729.90
FEB-MAR-2022	4338117.45
MAR-APR-2022	4931612.10
APR-MAY-2022	2183016.15
MAY-JUNE-2022	3601878.30

Conclusion:

1. The unit is engaged in manufacturing of various dyes and dyes intermediates viz. H-Acid, Vinyl sulphone etc.
2. As the unit was operational on partial production capacity and thus, the present pollution load imparted by the unit seems to be less.
3. The unit is having 5 manufacturing plants, namely H-Acid Plant, VS Plant- Old, VS Plant-New, Intermediate Plant-1 and Intermediate Plant-2. As per CCA, total effluent generation is 961 KLD, out of which 68 KLD of low concentrated effluent stream is allowed to be treated in ETP and rest 893 KLD is to managed under ZLD system. It is observed that ensuring ZLD condition in the above mentioned ETP is practically not possible as flow measurement devices are not provided on the strategic locations. Flow meters are not provided at the effluent generation point to measure the quantity of effluent generated in individual manufacturing plant. The same observation was mentioned in GPCB inspection report of 24-25 March 2022.
4. The unit was inspected by GPCB on 22-23 March 2022 and based on their on-site observation; the report highlights the possibility of unauthorized discharge of untreated / partially treated effluent from this unit.
5. Direction u/s 33 A of Water Act & u/s 31 A of Air Act are issued on 08/04/2022 & subsequently CCA Renewal application of the unit was also rejected by GPCB on 12/04/2022 due to gross non-compliances observed during their inspection of the unit on 22-23rd March 2022. Some of the major non-compliances mentioned in the CCA rejection letter are as follows:
    i. Unit is taking production of H Acid-Average-584.37 MT/Month (CCA Quantity-500 MT/Month) @16.87% higher than the consented quantity.
    ii. Unit is manufacturing KD-040B (Average 10.6 MT/Month) & KD-40 B (JW) (Average: 7.05MT/Month) product without permission of the GPCB.

iii. Unit has 39% higher generation of spent HCl (Average 1181.62 MT/Month) than consented quantity (CCA Quantity-850 MT/Month).

iv. Unit is having much higher generation of SBS solution (Average-1470 MT/Month) than consented quantity. (CCA Quantity-107.33 MT/Month).

v. Gross discrepancy observed in recorded spent sulphuric acid as compared to consented quantity. (CCA Quantity-13850 MT/Month, Generate @ 4.185 MT/Month).

6. Earlier, on 22 June, 2020 GPCB had issued Direction under Section 33-A of Water Act to the unit, wherein one of the major noncompliance mentioned is that the unit has provided illegal pipeline from its compound wall to discharge conveyance system of VECL. Further, VECL has suspended the membership of the unit and the unit can no more discharge in the channel.

Considering all above facts and observations, it can be concluded that the unit is operating without valid CCA. Further it can be inferred that the unis is a consistent and intentional violator. The unit is not only violating the discharge norms but also flouting on aspects of excess production and providing illegal pipeline from its premises to VECL channel which intended for discharging untreated effluent from its premises directly into VECL channel and thus causing serious damage to the Environment.

Visited on : 27/05/2022

Visited by :
1. **H. C. Padaria,** AEE, GPCB, RO Vadodara.
2. **Dharmesh J. Rana** SLA, CPCB, RD Vadodara.

Joint Site Inspection Report (CPCB & GPCB)

(W.r.t. Hon'ble NGT O.A. No. 276/2022)

Name of Unit: M/s.Bodal Chemicals Ltd (Unit-Vii)
Date: 27/05/2022.

The unit was visited by joint team of CPCB and GPCB on 27.05.2022 w.r.t. Hon'ble NGT Matter O.A. No. 276/2022.

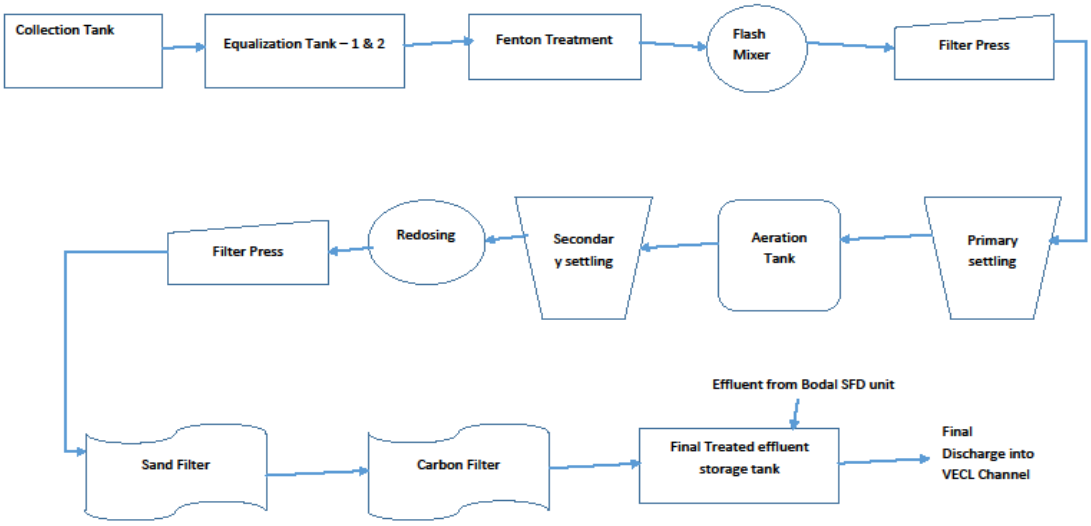
Unit is dye and dyes intermediate manufacturing unit having CCA vide order no. AWH-88988 dated 26/07/2017 which is further amended vide AWH-97704 dated 21/01/2019 for the manufacturing of dye and dyes intermediate. Unit has obtained CTE amendment vide order no. CTE-111595 dated 26/03/2021 for merger of M/s. Apollo Dye Chem Pvt. Ltd. into this unit.

GPCB has issued direction to the unit under section 33-A of the Water Act-1974 on 08/04/2022 with 15-day effect and notice under section 31-A of Air Act-1981 on 08/04/2022. GPCB has extended their direction under section 33-A of the Water Act-1974 for 15 days which was further again extended for 3 months.

Shri Shailesh Meghani, DGM Operation of the unit was present during the visit and provided information related to the unit.

Unit has H-acid plant, VS Plant, Dyes Plant 1, 2 & 3 and B-naphthol plant for manufacturing. During inspection, all the plants except B-naphthol plant observed in operation. As informed, unit was operating on partial production capacity due to poor market demand.

- **Effluent Management:**
  - During inspection, there is very minute flow of effluent discharge into VECL channel observed from outside of unit. One sample of the same collected for analysis purpose.
  - Effluent from the H-acid plant is neutralized and evaporated into dedicated MEE followed by common spray dryer to achieve ZLD.
  - Effluent from the B-naphthol plant is evaporated into dedicated MEE of H-acid plant by common spray dryer to achieve ZLD.
  - Effluent from the VS plant is evaporated into dedicated MEE followed by common spray dryer to achieve ZLD.
  - Effluent from Dyes plant-1, 2 & 3 is segregated into concentrated and dilute stream. Concentrated effluent is treated in advent membrane plant having UF + NF. Reject of membrane plant evaporated into dedicated MEE plant. Permeate of membrane plant and condensate of MEE plant is utilized for ice making within premises. Dilute stream of effluent is treated in ETP having treatment scheme Collection tank→Equalization tank 1 followed by Equalization tank 2 →Fenton Treatment→ Cationic-Anionic Dosing in Flash Mixer → Filter press→Primary Settling→Aeration tank→Secondary settling→ Redosing → Filter press →Sand Filtration → Carbon Filtration→Final storage.



ETP Block Diagram for Low Concentrated Effluent Treatment

- During inspection, person contacted informed that there was leakage in effluent discharge line in ETP area due to which they have stop the discharge and attend the leakage. Photograph of the pipeline leakage:

- During inspection, ETP observed in operation and one treated wastewater sample has been collected from the final holding cum disposal tank of ETP.
- Here, in final effluent holding cum disposal tank, effluent from the other unit, M/s. Bodal Chemicals Ltd. Unit-Vii-Sulfur Division (PCB ID: 33329) is mixed with treated

effluent of the M/s. Bodal Chemicals Ltd (Unit-Vii) (PCB ID: 21752) before final discharge into VECL channel.

- This effluent received from the other unit M/s. Bodal Chemicals Ltd. Unit-Vii-Sulfur Division (PCB ID: 33329) is not mentioned in the CCA of this unit.
- Unit has provided OCEMS for measuring quality of effluent being discharged into VECL, however, flexible pipeline & open tray type arrangement connected to sensor box is provided, which is not temper proof & false/misleading results may be shown by diluting effluent manually in open tray.
- Auto sampler is provided with OCEMS; however, it is found idle during inspection.
- 3-way valve system provided at OCEMS to return back non-conforming effluent is having pipe connected to collection tank before primary treatment of ETP.

❖ **Electricity Consumption:**

- Electricity consumption details collected are as follows:

Month	From CPP (kWH)	From GEB (kWH)
March-April'22	2573390	1680820
April-May'22	275040	2160375
May-June'22	0	2254380

❖ **Analysis Results:**

Sr. No.	Parameter	Location			
		Discharge point of M/s. Bodal Chemical Ltd (Unit – VII) into VECL	Final treated effluent collection tank of M/s. Bodal Chemical Ltd (Unit – VII)	VECL Channel upstream of M/s. Bodal Chemical Ltd (Unit – VII)	VECL Channel Downstream of M/s. Bodal Chemical Ltd (Unit –VII)
1	pH	7.86	7.98	7.61	7.63
2	Colour (Hazen)	-	255	-	-
3	Suspended Solids(mg/L)	52	109	108	112
4	Oil and Grease(mg/L)	BDL	0.27	BDL	BDL
5	Phenolic Compounds(mg/L)	0.08	0.14	0.16	0.16
6	Cyanides(mg/L)	0.164	0.185	0.2	0.221
7	Fluorides(mg/L)	-	1.17	-	-
8	Sulphides(mg/L)	0.170	0.174	BDL	BDL
9	Ammonical Nitrogen(mg/L)	4.57	31.46	7.90	8.32
10	Hexavelant Chromium	BDL	15.83	20.83	20.65
11	BOD (5 days at 200C)	11	61	48	43

	(mg/L)				
12	COD(mg/L)	67	225	213	240
13	Chlorides(mg/L)	-	4990	-	-
14	Sulphates(mg/L)	-	4025	-	-
15	Total dissolved solids (mg/L)	7762	14004	12985	12896
16	Fixed Dissolved Solid(mg/L)	5572	13379	10387	10526
17	Chromium	BDL	0.09	0.14	0.16
18	Lead	BDL	BDL	BDL	BDL
19	Nickel	BDL	0.10	0.29	0.34
20	Zinc	0.02	0.05	0.81	0.18
21	Manganese	0.32	1.20	0.27	0.31

❖ **Conclusion:**

1. The unit is having 4 manufacturing plants, namely H-Acid Plant, VinylSulfone Plant, B-Naphthol Plant and Dyes Plant. Out of four, former three plants are ZLD and Dyes plant generates two wastewater streams, one high concentration and other low concentration. High concentration stream is treated under ZLD system and ETP is provided for treatment of low concentration stream. GPCB inspection report of 24-25 March 2022 pointed out that ensuring ZLD condition in the above mentioned ETP is practically not possible as flow measurement devices are not provided on the strategic locations including effluent generation point to measure the quantity of effluent generated in individual manufacturing plant.
2. As the unit is observed operated partially and not on full production capacity due to poor marked, the present pollution load imparted by the unit seems to be less. However as observed earlier that unit having inadequate EMS/ Not operating EMS efficiently and thus, violating the norms.
3. The unit was inspected by GPCB on 24-25 March 2022 and based on their on-site observation; the report highlights the possibility of unauthorized discharge of untreated / partially treated effluent from the unit.
4. GPCB has issued direction to the unit under section 33-A of the Water Act-1974, notice under section 31-A of Air Act 1981 and rejected the CCA amendment application of the unit for the following gross non-compliances observed during inspection on 24-25 March 2022:
    I. Unit is not having flow measurement at source of effluent generation and strategic stages of EMS and therefore no data at various stages are maintained.
    II. Gap of 1214.65 KL/month observed in effluent generation recorded. This indicates that about 44% of effluent generation is not recorded.
    III. Gap of 72.63 KL/month observed in effluent generation recorded from VS manufacturing. This indicates that about 2.8% of effluent generation is not recorded.

IV. Unit has discharged more effluent than the consented quantity in month of OCT-2021-13891 KL, NOV-2021-14487 KL and DEC-2021-15517 KL. (CCA Quantity-452 KL/Day i.e. 13560 KL/Month).

V. Unit has not provided OCMS facility before and after their discharge point into VECL as per Directions of the Board.

VI. Unit has not provided proper APCM with Steam Boiler & TFH as per current solid fuel guideline.

Considering all above facts and observations, it can be concluded that the unit is not operating the effluent management system properly and has been a consistent and intentional violator of environmental norms.

Visited on : 27/05/2022

Visited by :
1. **Kavitha BV,** Scientist 'D', CPCB , RD Vadodara.
2. **J. J. Raiyani,** AEE, GPCB, RO Vadodara.
3. **Mayank Nimbark,** JLA, CPCB, RD Vadodara.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Annexure - 4

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

TC-5287

Sample ID:351374 - Analysis Completion:02/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 43857

Accreditation Standards & NABL Certificate Details : TC-5287 / -- / Issue: 09/05/2019 / Validity: 08/05/2022

TEST REPORT

Test Report No. : 43857 **Date: 02/06/2022**

1. Name of the Customer : Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875
2. Address : ,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In
3. Nature of Sample : REP-Representative/Grab, (Insp Type : ROU-Routine Visit)
4. Sample Collected By : Dhruvinkumar C Patel
5. Quantity of Sample Received : 05 Litter.
6. Code No. of the Sample : 351374
7. Date & Time of Collection & Inwarding : 27/05/2022 , (1405 to 1405) & 30/05/2022
8. Date of Start & Completion of Analysis : 30/05/2022 & 02/06/2022
9. Sampling Point : w/w sample collected from chamber of VECL (Upstream of M/s Loxim ind) ~
10. Flow Details (Remarks) : Flow is going on
11. Mode of Disposal : Estuary of River Mahi
12. Ultimate Receiving Body : No generation of industrial wastewater
13. Temperature on Collection : 32 & pH Range on pH Strip :Around 7-8 on pH strip
14. Carboys Nos for : Barcode & Color & Appearance :Light Yellowish
15. Water Consumption & W.W.G (KLPD) : Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000
16. Parameter : 17 ,Cap No & Weight : W-1

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	32
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.60
3	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	13928
4	Fixed Dissolved Solids	mg/l	Gravimetric method. (2540 E APHA Standard Method	2 – 200000 mg/L	2350
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	50
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	5.26
7	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	163
8	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	0.29
9	Cyanide	mg/l	Titrimetric method. (4500 - CN? D APHA Standard Me	1-10 mg/l	BDL
10	Sulphide	mg/l	APHA (23rd Edi.)4500-s2-F –iodometric Method	1-500.0 mg/l	BDL
11	Hexavalent Chromium	mg/l	APHA (22nd Edition) –3500 – Cr B : -2012 Colorimet	0.1 – 100 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	21

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/06/2022

B.M.PARMAR,SO

Note :

1. The results refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied.
2. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
3. This report is not to be reproduced wholly or in part or used in any advertising media without the permission of the Board in writing.
4. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:351374 - Analysis Completion:02/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 43857

TEST REPORT

Test Report No. : 43857 **Date: 02/06/2022**

1. Name of the Customer : **Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address : **,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample : **REP-Representative/Grab, (Insp Type : ROU-Routine Visit)**
4. Sample Collected By : **Dhruvinkumar C Patel**
5. Quantity of Sample Received : **05 Litter.**
6. Code No. of the Sample : **351374**
7. Date & Time of Collection & Inwarding : **27/05/2022 , (1405 to 1405) & 30/05/2022**
8. Date of Start & Completion of Analysis : **30/05/2022 & 02/06/2022**
9. Sampling Point : **w/w sample collected from chamber of VECL (Upstream of M/s Loxim ind) ~**
10. Flow Details (Remarks) : **Flow is going on**
11. Mode of Disposal : **Estuary of River Mahi**
12. Ultimate Receiving Body : **No generation of industrial wastewater**
13. Temperature on Collection : **32 & pH Range on pH Strip :Around 7-8 on pH strip**
14. Carboys Nos for : **Barcode & Color & Appearance :Light Yellowish**
15. Water Consumption & W.W.G (KLPD) : **Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
2	Zinc	mg/l	(3111 B APHA Standard methods 21st edi)	0.005-100mg/l	0.069
3	Total Chromium	mg/l	3111 B APHA Standard methods 21st edi)	0.02-150mg/l	0.212
4	Nickel	mg/l	(3111 B APHA Standard methods 21st edi)	0.02-150 mg/l	0.097
5	Lead	mg/l	(3111 B APHA Standard methods 21st edi)	0.05-150 mg/l	0.282

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/06/2022

B.M.PARMAR,SO

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6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:351372 - Analysis Completion:02/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 43856

TEST REPORT

Test Report No. : 43856 **Date: 02/06/2022**

1. Name of the Customer : **Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address : **,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample : **REP-Representative/Grab, (Insp Type : ROU-Routine Visit)**
4. Sample Collected By : **Dhruvinkumar C Patel**
5. Quantity of Sample Received : **05 Litter.**
6. Code No. of the Sample : **351372**
7. Date & Time of Collection & Inwarding : **27/05/2022 , (1435 to 1435) & 30/05/2022**
8. Date of Start & Completion of Analysis : **30/05/2022 & 02/06/2022**
9. Sampling Point : **w/w sample collected from rectangular chamber of VECL (Downstream of M/s Loxim Ind) ~**
10. Flow Details (Remarks) : **Flow is going on**
11. Mode of Disposal : **Estuary of River Mahi**
12. Ultimate Receiving Body : **No generation of industrial wastewater**
13. Temperature on Collection : **31 & pH Range on pH Strip :Around 7-8 on pH strip**
14. Carboys Nos for : **Barcode & Color & Appearance :Light Yellowish**
15. Water Consumption & W.W.G (KLPD) : **Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	31
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.55
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	13516
5	Fixed Dissolved Solids	mg/l	Gravimetric method. (2540 E APHA Standard Method	2 – 200000 mg/L	2616
6	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	42
7	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	5.88
8	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	203
9	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	0.36
10	Cyanide	mg/l	Titrimetric method. (4500 - CN? D APHA Standard Me	1-10 mg/l	BDL
11	Sulphide	mg/l	APHA (23rd Edi.)4500-s2-F –iodometric Method	1-500.0 mg/l	BDL
12	Zinc	mg/l	(3111 B APHA Standard methods 21st edi)	0.005-100mg/l	0.093
13	Total Chromium	mg/l	3111 B APHA Standard methods 21st edi)	0.02-150mg/l	0.296
14	Hexavalent Chromium	mg/l	APHA (22nd Edition) –3500 – Cr B : -2012 Colorimet	0.1 – 100 mg/l	BDL
15	Nickel	mg/l	(3111 B APHA Standard methods 21st edi)	0.02-150 mg/l	0.126
16	Lead	mg/l	(3111 B APHA Standard methods 21st edi)	0.05-150 mg/l	0.345
17	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	21

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/06/2022

B.M.PARMAR,SO

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5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Sample ID:351373 - Analysis Completion:02/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 43851

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

TC-5287

Accreditation Standards & NABL Certificate Details : TC-5287 / -- / Issue: 09/05/2019 / Validity: 08/05/2022

TEST REPORT

Test Report No. : 43851 **Date: 02/06/2022**

1. Name of the Customer : Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875
2. Address : ,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In
3. Nature of Sample : REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)
4. Sample Collected By : M.U.PATEL,DEE
5. Quantity of Sample Received : 0
6. Code No. of the Sample : 351373
7. Date & Time of Collection & Inwarding : 27/05/2022 , (1405 to 1405) & 30/05/2022
8. Date of Start & Completion of Analysis : 30/05/2022 & 02/06/2022
9. Sampling Point : W/W sample from Chamber No-16 of VECL (Upstream of Mayur dye chem intermediates private limited)
10. Flow Details (Remarks) : --
11. Mode of Disposal : Estury of river mahi
12. Ultimate Receiving Body : No generation of industrial wastewater
13. Temperature on Collection : 34 & pH Range on pH Strip :7-8 on pH stripe
14. Carboys Nos for : barcode & Color & Appearance :brownish
15. Water Consumption & W.W.G (KLPD) : Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000
16. Parameter :

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	34
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.34
3	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	12572
4	Fixed Dissolved Solids	mg/l	Gravimetric method. (2540 E APHA Standard Method	2 – 200000 mg/L	2825
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	158
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	11.03
7	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	181
8	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	0.29
9	Cyanide	mg/l	Titrimetric method. (4500 - CN? D APHA Standard Me	1-10 mg/l	BDL
10	Sulphide	mg/l	APHA (23rd Edi.)4500-s2-F –iodometric Method	1-500.0 mg/l	BDL
11	Hexavalent Chromium	mg/l	APHA (22nd Edition) –3500 – Cr B : -2012 Colorimet	0.1 – 100 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	37

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/06/2022

B.M.PARMAR,SO

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7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:351373 - Analysis Completion:02/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 43851

TEST REPORT

Test Report No. : 43851 **Date: 02/06/2022**

1. Name of the Customer : **Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address : **,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample : **REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)**
4. Sample Collected By : **M.U.PATEL,DEE**
5. Quantity of Sample Received : **0**
6. Code No. of the Sample : **351373**
7. Date & Time of Collection & Inwarding : **27/05/2022 , (1405 to 1405) & 30/05/2022**
8. Date of Start & Completion of Analysis : **30/05/2022 & 02/06/2022**
9. Sampling Point : **W/W sample from Chamber No-16 of VECL (Upstream of Mayur dye chem intermediates private limited)**
10. Flow Details (Remarks) : **--**
11. Mode of Disposal : **Estury of river mahi**
12. Ultimate Receiving Body : **No generation of industrial wastewater**
13. Temperature on Collection : **34 & pH Range on pH Strip :7-8 on pH stripe**
14. Carboys Nos for : **barcode & Color & Appearance :brownish**
15. Water Consumption & W.W.G (KLPD) : **Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	120
2	Zinc	mg/l	(3111 B APHA Standard methods 21st edi)	0.005-100mg/l	2.237
3	Total Chromium	mg/l	3111 B APHA Standard methods 21st edi)	0.02-150mg/l	0.255
4	Nickel	mg/l	(3111 B APHA Standard methods 21st edi)	0.02-150 mg/l	0.205
5	Lead	mg/l	(3111 B APHA Standard methods 21st edi)	0.05-150 mg/l	0.253

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/06/2022

B.M.PARMAR,SO

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5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:351375 - Analysis Completion:02/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 43852

TEST REPORT

Test Report No. : 43852 **Date: 02/06/2022**

1. Name of the Customer : **Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address : **,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample : **REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)**
4. Sample Collected By : **M.U.PATEL,DEE**
5. Quantity of Sample Received : **0**
6. Code No. of the Sample : **351375**
7. Date & Time of Collection & Inwarding : **27/05/2022 , (1435 to 1435) & 30/05/2022**
8. Date of Start & Completion of Analysis : **30/05/2022 & 02/06/2022**
9. Sampling Point : **W/W sample from Chamber No-14 of VECL (Down stream of Mayur**
10. Flow Details (Remarks) **dye chem intermediates private limited**
11. Mode of Disposal : **--**
12. Ultimate Receiving Body : **Estury of river mahi**
13. Temperature on Collection : **No generation of industrial wastewater**
14. Carboys Nos for : **34 & pH Range on pH Strip :7-8 on pH stripe**
: **barcode & Color & Appearance :brownish**
15. Water Consumption & W.W.G (KLPD) : **Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	34
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.40
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	120
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	13082
5	Fixed Dissolved Solids	mg/l	Gravimetric method. (2540 E APHA Standard Method	2 – 200000 mg/L	2832
6	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	92
7	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	10.58
8	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	172
9	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	2.45
10	Cyanide	mg/l	Titrimetric method. (4500 - CN? D APHA Standard Me	1-10 mg/l	BDL
11	Sulphide	mg/l	APHA (23rd Edi.)4500-s2-F –iodometric Method	1-500.0 mg/l	BDL
12	Zinc	mg/l	(3111 B APHA Standard methods 21st edi)	0.005-100mg/l	0.189
13	Total Chromium	mg/l	3111 B APHA Standard methods 21st edi)	0.02-150mg/l	0.263
14	Hexavalent Chromium	mg/l	APHA (22nd Edition) –3500 – Cr B : -2012 Colorimet	0.1 – 100 mg/l	BDL
15	Nickel	mg/l	(3111 B APHA Standard methods 21st edi)	0.02-150 mg/l	0.211
16	Lead	mg/l	(3111 B APHA Standard methods 21st edi)	0.05-150 mg/l	0.279
17	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	26

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/06/2022

B.M.PARMAR,SO

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6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Sample ID:351368 - Analysis Completion:02/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 43853

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

TC-5287

Accreditation Standards & NABL Certificate Details : TC-5287 / -- / Issue: 09/05/2019 / Validity: 08/05/2022

TEST REPORT

Test Report No. : 43853 **Date: 02/06/2022**

1. Name of the Customer : Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875
2. Address : ,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In
3. Nature of Sample : REP-Representative/Grab, (Insp Type : ROU-Routine Visit)
4. Sample Collected By : Mr. Padaria henil c
5. Quantity of Sample Received : 0
6. Code No. of the Sample : 351368
7. Date & Time of Collection & Inwarding : 27/05/2022 , (1405 to 1405) & 30/05/2022
8. Date of Start & Completion of Analysis : 30/05/2022 & 02/06/2022
9. Sampling Point : W/w sample from chamber no 13 of VECL (upstream of Kiri Ind) ~
10. Flow Details (Remarks) : Yes
11. Mode of Disposal : Estuary of river mahi
12. Ultimate Receiving Body : No generation of industrial wastewater
13. Temperature on Collection : 31 & pH Range on pH Strip :@7-8 on pH strip
14. Carboys Nos for : Barcode & Color & Appearance :brownish
15. Water Consumption & W.W.G (KLPD) : Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000
16. Parameter : 17 ,Cap No & Weight : W-1

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	31
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.44
3	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	12916
4	Fixed Dissolved Solids	mg/l	Gravimetric method. (2540 E APHA Standard Method	2 – 200000 mg/L	2708
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	84
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	10.30
7	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	185
8	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	0.22
9	Cyanide	mg/l	Titrimetric method. (4500 - CN? D APHA Standard Me	1-10 mg/l	BDL
10	Sulphide	mg/l	APHA (23rd Edi.)4500-s2-F –iodometric Method	1-500.0 mg/l	BDL
11	Hexavalent Chromium	mg/l	APHA (22nd Edition) –3500 – Cr B : -2012 Colorimet	0.1 – 100 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	23

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/06/2022

B.M.PARMAR,SO

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6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:351368 - Analysis Completion:02/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 43853

TEST REPORT

Test Report No. : 43853 **Date: 02/06/2022**

1. **Name of the Customer** : Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875
2. **Address** : ,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In
3. **Nature of Sample** : REP-Representative/Grab, (Insp Type : ROU-Routine Visit)
4. **Sample Collected By** : Mr. Padaria henil c
5. **Quantity of Sample Received** : 0
6. **Code No. of the Sample** : 351368
7. **Date & Time of Collection & Inwarding** : 27/05/2022 , (1405 to 1405) & 30/05/2022
8. **Date of Start & Completion of Analysis** : 30/05/2022 & 02/06/2022
9. **Sampling Point** : W/w sample from chamber no 13 of VECL (upstream of Kiri Ind) ~
10. **Flow Details (Remarks)** : Yes
11. **Mode of Disposal** : Estuary of river mahi
12. **Ultimate Receiving Body** : No generation of industrial wastewater
13. **Temperature on Collection** : 31 & pH Range on pH Strip :@7-8 on pH strip
14. **Carboys Nos for** : Barcode & Color & Appearance :brownish
    : Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000
15. **Water Consumption & W.W.G (KLPD)** : 17 ,Cap No & Weight : W-1

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	120
2	Zinc	mg/l	(3111 B APHA Standard methods 21st edi)	0.005-100mg/l	0.141
3	Total Chromium	mg/l	3111 B APHA Standard methods 21st edi)	0.02-150mg/l	0.239
4	Nickel	mg/l	(3111 B APHA Standard methods 21st edi)	0.02-150 mg/l	0.245
5	Lead	mg/l	(3111 B APHA Standard methods 21st edi)	0.05-150 mg/l	0.279

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/06/2022

B.M.PARMAR,SO

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7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:351369 - Analysis Completion:02/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 43855

TEST REPORT

Test Report No. : 43855 **Date: 02/06/2022**

1. Name of the Customer : **Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address : **,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample : **REP-Representative/Grab, (Insp Type : ROU-Routine Visit)**
4. Sample Collected By : **Mr. Padaria henil c**
5. Quantity of Sample Received : **05 Litter.**
6. Code No. of the Sample : **351369**
7. Date & Time of Collection & Inwarding : **27/05/2022 , (1435 to 1435) & 30/05/2022**
8. Date of Start & Completion of Analysis : **30/05/2022 & 02/06/2022**
9. Sampling Point : **W/w sample collected from chamber no 10 of VECL (Downstream of Kiri Ind) ~**
10. Flow Details (Remarks)
11. Mode of Disposal : **Yes**
12. Ultimate Receiving Body : **Estuary of river mahi**
13. Temperature on Collection : **No generation of industrial wastewater**
14. Carboys Nos for : **32 & pH Range on pH Strip :@7-8 on pH strip**
: **Barcode & Color & Appearance :brownish**
15. Water Consumption & W.W.G (KLPD) : **Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	32
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.47
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	80
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	13132
5	Fixed Dissolved Solids	mg/l	Gravimetric method. (2540 E APHA Standard Method	2 – 200000 mg/L	3168
6	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	96
7	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	18.54
8	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	205
9	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	0.37
10	Cyanide	mg/l	Titrimetric method. (4500 - CN? D APHA Standard Me	1-10 mg/l	BDL
11	Sulphide	mg/l	APHA (23rd Edi.)4500-s2-F –iodometric Method	1-500.0 mg/l	BDL
12	Zinc	mg/l	(3111 B APHA Standard methods 21st edi)	0.005-100mg/l	0.126
13	Total Chromium	mg/l	3111 B APHA Standard methods 21st edi)	0.02-150mg/l	0.264
14	Hexavalent Chromium	mg/l	APHA (22nd Edition) –3500 – Cr B : -2012 Colorimet	0.1 – 100 mg/l	BDL
15	Nickel	mg/l	(3111 B APHA Standard methods 21st edi)	0.02-150 mg/l	0.216
16	Lead	mg/l	(3111 B APHA Standard methods 21st edi)	0.05-150 mg/l	0.333
17	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	21

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/06/2022

B.M.PARMAR,SO

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8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

Central Pollution Control Board
Regional Directorate, Vadodara

''Parivesh Bhawan,,
opp. VMC Ward Office No. 10,
Subhanpura, Vadodara, Gujarat
Ph.0265-2392831-33

ANALYSIS REPORT OF PHYSICO-CHEMICAL PARAMETERS

Reg. No.: W-08/22(25/22 to 33/22)
Date and type of sample collection: 27.05.2022, Grab.
Name of the location: ECP channel from Vadodara to 'J, Point, Jambusar, Bharuch & effluent samples from industries.
Sample collected by: Regional Directorate, CPCB, Vadodara

Location	Parameters							
	pH	Colour	TSS	TDS	FDS	COD	BOD	NH_3-N
Discharge point of M/s Bodal Chemicals Ltd.(unit-VII) in to VECL	7.86	--	52	7762	5572	67	11	4.57
VECL channel upstream of M/s Bodal Chemicals Ltd.(unit-VII)	7.61	--	108	12985	10387	213	48	7.90
VECL channel downstream of M/s Bodal Chemicals Ltd.(unit-VII)	7.63	---	112	12896	10526	240	43	8.32
Final treated effluent collection tank of M/s Bodal Chemicals Ltd.(unit-VII)	7.98	255	109	14004	13379	225	61	31.46
VECL pumping station at Vedach	7.52	--	104	13003	10805	230	42	7.90
VECL open channel after Vedach pumping station	7.67	--	61	13237	10763	218	38	11.78
Final discharge point near estuarine zone of River Mahi	7.66	--	159	15039	11739	273	37	20.24
Upstream of M/s Kiri Industry Ltd. Unit-III ECPL Chamber No.13,Karkhadi,Padra	7.60	--	100	12376	10180	215	42	8.87
Downstream of M/s Kiri Industry Ltd. Unit-III ECPL Chamber No.13,Karkhadi,Padra	7.75	--	101	12532	10152	211	36	9.98

Location	Parameters							
	Phenols	F^-	Cl^-	SO_4^{-2}	S^{-2}	Cr^{+6}	CN^-	O&G
Discharge point of M/s Bodal Chemicals Ltd.(unit-VII) in to VECL	0.08	--	--	--	0.170	BDL	0.164	BDL
VECL channel upstream of M/s Bodal Chemicals Ltd.(unit-VII)	0.16	--	--	--	BDL	20.83	0.200	BDL
VECL channel downstream of M/s Bodal Chemicals Ltd.(unit-VII)	0.16	---	---	---	BDL	20.65	0.221	BDL
Final treated effluent collection tank of M/s Bodal Chemicals Ltd.(unit-VII)	0.14	1.17	4990	4025	0.174	15.83	0.185	0.27
VECL pumping station at Vedach	0.05	--	--	--	0.813	20.65	0.164	BDL
VECL open channel after Vedach pumping station	0.11	--	--	--	BDL	22.10	0.171	BDL
Final discharge point near estuarine zone of River Mahi	0.15	--	--	--	BDL	22.50	0.207	BDL
Upstream of M/s Kiri Industry Ltd. Unit-III ECPL Chamber No.13,Karkhadi,Padra	0.15	--	--	--	BDL	29.16	0.171	BDL
Downstream of M/s Kiri Industry Ltd. Unit-III ECPL Chamber No.13,Karkhadi,Padra	0.12	--	--	--	BDL	20.83	0.164	BDL

Note: Except pH, Colour & Cr^{+6}, all other results expressed in mg/L. Colour expressed in Hazen unit and **Cr^{+6} values in µg/L**. ***BDL**-Below Detectable Limit.

Compiled by

(B.D.Pandey) 06/06/2022
S.S.A

Checked & verified by

(A.K.Jha)
LAB.I/C

(Prasoon Gargava)
REGIONAL DIRECTOR

cpcb

Ph.0265-2392831-33

ANALYSIS REPORT OF HEAVY METALS

Reg. No.: W-08/22(25/22 to 33/22)

Date and type of sample collection: 27.05.2022, Grab.

Name of the location: ECP channel from Vadodara to 'J, Point, Jambusar, Bharuch & effluent samples from industries.

Sample collected by: Regional Directorate, CPCB, Vadodara

Location	Parameters				
	Cr	Pb	Ni	Zn	Mn
Discharge point of M/s Bodal Chemicals Ltd.(unit-VII) in to VECL	BDL	BDL	BDL	0.02	0.32
VECL channel upstream of M/s Bodal Chemicals Ltd.(unit-VII)	0.14	BDL	0.29	0.81	0.27
VECL channel downstream of M/s Bodal Chemicals Ltd.(unit-VII)	0.16	BDL	0.34	0.18	0.31
Final treated effluent collection tank of M/s Bodal Chemicals Ltd.(unit-VII)	0.09	BDL	0.10	0.05	1.20
VECL pumping station at Vedach	0.15	BDL	0.36	0.17	0.32
VECL open channel after Vedach pumping station	0.12	BDL	0.39	0.63	0.30
Final discharge point near estuarine zone of River Mahi	0.13	BDL	0.61	0.15	0.71
Upstream of M/s Kiri Industry Ltd. Unit-III ECPL Chamber No.13,Karkhadi,Padra	0.16	BDL	0.34	0.17	0.25
Downstream of M/s Kiri Industry Ltd. Unit-III ECPL Chamber No.13,Karkhadi,Padra	0.14	BDL	0.30	0.16	0.23

Note: All results are expressed in mg/L.

***BDL**-Below Detectable Limit

Compiled by

16/08/2022

(B.D.Pandey)
S.S.A

Checked & verified by

(A.K.Jha)
LAB.I/C

(Prasoon Gargava)
REGIONAL DIRECTOR

Annexure - 5 : Written Instruction given to M/s. Kiri Industries Limited (Unit - III)

REGIONAL OFFICE

GUJARAT POLLUTION CONTROL BOARD

IS/ISO 9001 : 2008 AND IS/ISO 14001 : 2004 CERTIFIED ORGANIZATION

GERI COMPOUND, RACECOURSE ROAD, VADODARA – 390 007 ☐ Phone : 2354850 ☐Fax : 2339205

WEB SITE: www.gpcb.gov.inONLINE APPLICATION SITE :http://gpcbxgn.gujarat.gov.in

Email Id (RO): ro-gpcb-vado@gujarat.gov.in Email Id (UH): uh-gpcb-vado@gujarat.gov.in

સ્થળ તપાસની નિરિક્ષણ નોંધ

આઈ.ડી.નં. 32148, કેટેગરી/સ્કેલ: Red / Large, Latitude/ longitude 22.1847297 / 72.8917929

શ્રીમાન,

આપશ્રીને જણાવવાનું કે, આજ તા. 23/06/22 16:15 hrs. ના રોજ આપશ્રીના એકમની મુલાકાત લઈ સ્થળ તપાસ કરી ઈન્સ્પેક્શન કરેલ છે જે દરમ્યાન હવા/પાણી/જોખમી કચરા/........ના ...../....../..... /.........નમૂના પૃથ્થકરણ અર્થે એકત્રીત કરેલ છે.

આપશ્રીના એકમની મુલાકાત દરમ્યાન પર્યાવરણીય કાયદાઓના સંદર્ભે ત્રુટીઓ/ક્ષતિઓ જોવા/જાણવા મળેલ છે, જે આધારે પડતર અરજી સંદર્ભે નિર્ણય લેતા પહેલા અને/અથવા કાયદાકીય પગલાં લેતા અને/ અથવા પર્યાવરણ નુકશાન વળતર લેતા પહેલા કુદરતી ન્યાયના સિદ્ધાંત મુજબ આપશ્રીને સાંભળવાની તક પુરી પાડવાના હેતુથી અત્રે લેખિતમાં સ્થળસ્થિતિ/ મુદ્દાઓ/સૂચનાઓ આપવામાં આવે છે.

આ પરત્વે આપશ્રી નીચે લેખિતમાં રજૂઆત કરી શકો છો અથવા લેખિત ખુલાસો/સ્પષ્ટતા/પુર્તતા અહેવાલ કામકાજના દિન-૦૩ માં બોર્ડની વડી કચેરી, ગાંધીનગર તેમજ અત્રેની ક્ચેરીને લેખિતમાં અથવા XGN પર અથવા Emailથી રજૂ કરવા નોટીસ આપવામાં આવે છે.

સ્થળ તપાસ દરમ્યાન જોવા મળેલ સ્થળસ્થિતિ/ ત્રુટીઓ/ક્ષતિઓ/ ખામીઓ:

૧.) સ્થાપના કિરી ZLD system ક્યારથી બેસાડેલ છે. અને ક્યારથી કાર્યરત છે. તે જણાવવું. તેમજ ZLD system નો certified technical specifications રજૂ કરવા. વધુમાં હયાત ZLD system, effluent generation/ Production માટે સુસંગત છે કે કેમ તેના certified પુરાવા રજૂ કરવા.

ગુ.પ્ર.નિ.બોર્ડના નામે અને વતી,

P. S. Chaudhary (AEE)	J. J. Rayani (AEE)	R. B. Trivedi (RO)

મુલાકાત લેવામાં આવેલ હોય તે એકમના પ્રતિનિધીની રજૂઆત: (જે લાગુ પડે તેની સામે જ સહી કરવી)

મુલાકાત દરમ્યાન અધિકારીશ્રીઓએ ......1........મુદ્દાઓ માટે સ્થળસ્થિતિ/ સૂચનાઓ/સુધારાત્મક પગલાં ભરવા જણાવેલ છે., જેમાં,

(૧) આ સ્થળસ્થિતિ/ સૂચનાઓ સાથે હું, નીચે સહી કરનાર સંપૂર્ણ સહમત છું .	
(૨) જેમા દર્શાવેલ સ્થળસ્થિતિ/ સૂચનાઓમાંથી મુદ્દા નં .... સાથે હું, નીચે સહી કરનાર અસહમત છું. જેના માટે મારી નીચે પ્રમાણેની રજૂઆત છે.:	N.A. Patel

એકમના પ્રતિનિધી/ આ નોંધ મેળવનાર નું નામ, હોદ્દો અને સહી: Mr. Nehul Patel (Sr. Exe - Environment)

તા.: 23/06/22

Re: Details of ground water _Hon NGT matter OA 276 of 2022 regarding

G KRISHNAMURTHY <rdwcr-cgwb@nic.in>

Thu 23-06-2022 13:01

To:R. B. Trivedi(GoG-GPCB Dept.) <ro-gpcb-vado@gujarat.gov.in>;

1 attachments (840 KB)

Hydrogeological_Note_Padra.docx;

Sir,

With reference to trailing mail, kindly find attached note on overall status of ground water (qualitative & quantitative) in Padra Taluka for your kind perusal.

Regards,
TS
For Regional Director(I/C)

From: ro-gpcb-vado@gujarat.gov.in
To: "G KRISHNAMURTHY" <rdwcr-cgwb@nic.in>
Sent: Thursday, June 16, 2022 3:05:31 PM
Subject: Re: Details of ground water _Hon NGT matter OA 276 of 2022 regarding

Respected Sir,

We are in receipt of the details you have sent & took a note of that. You are also a member of joint committee formed vide NGT order dtd 28/04/2022 Original Application No. 276/2022 and a report has to be submitted to NGT on subject matter before 28th June, 2022. You are therefore further requested to send your opinion/remark /note on overall status of ground water (qualitative & quantitative) in Padra Taluka, especially with ref to industrial cluster. This is for your information and necessary submission please.

Regards,

R. B. Trivedi
Regional Officer
Gujarat Pollution Control Board
GERI Compound, Race Course Road,
Vadodara - 390 007.
Ph. No. (0265) 2354850

Hydrogeological condition in the Padra Taluka, District Vadodara, Gujarat

Introduction:

With reference to the mail dated 16th June2022 from Gujarat Pollution Control Board , GERI compound, Race Course Road, Vadodara, requested hydrogeological condition in the industrial cluster in Padara Taluka, Vadodara.

Padra taluka with 508 Sq km area, is located in the south western part of the Vadodara district of Gujarat, lies between 22°02'26.07" and 22°19'45.15" north latitude and 72°51'46.71"and 73°37'37.87" east longitude (Fig. 1).

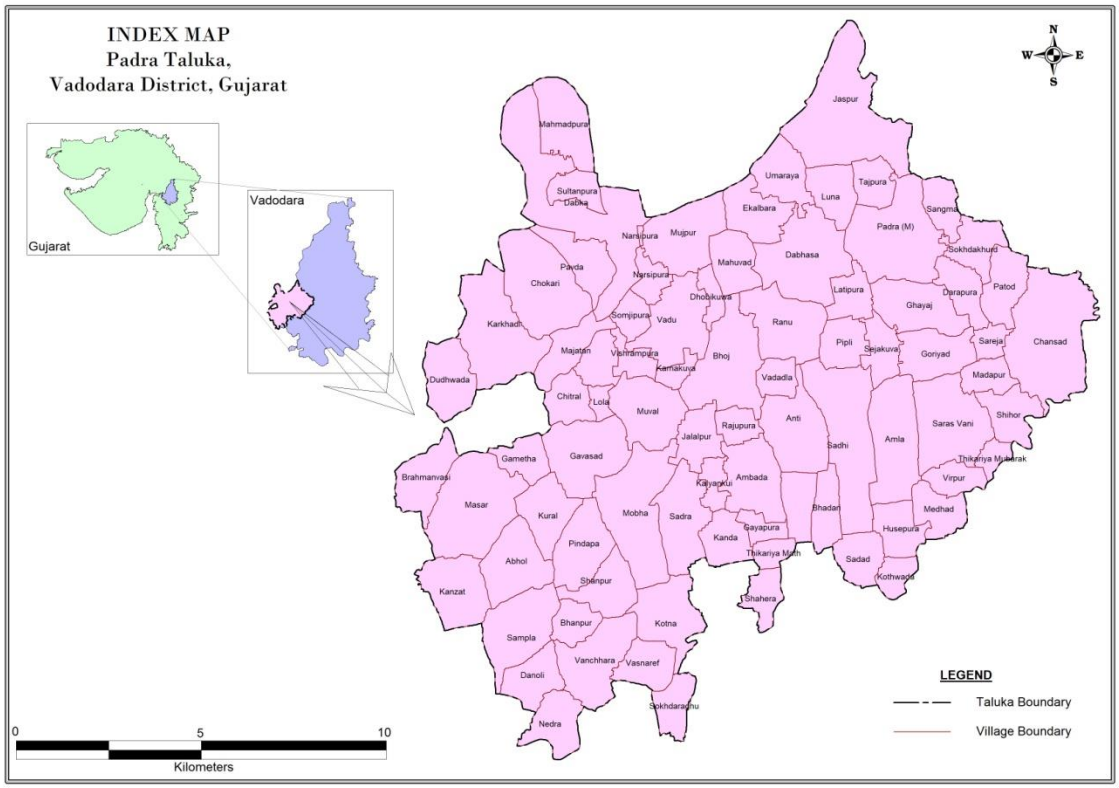

Fig. 1 Administrative map of Padra taluka, district Vadodara.

Hydrogeology:

Area is underlain by alluvium formation of quaternary age. In taluka area, groundwater occurs both as unconfined and confined conditions. Saturated zones of unconsolidated shallow alluvium forms unconfined aquifers, whereas multilayered aquifer below impervious clay horizons in alluvium formation give rise to semi confined to confined conditions (Fig.2). Details of aquifer characteristics is shown in table 1

Table: 1 Aquifer disposition in Padara taluka

Stratigraphy	Formation	Aquifer Nomenclature	Depth of occurrence	Thickness	Water Level (mbgl)	Quality (TDS)
			Aquifer	Range	Range	Range
			(mbgl)	(m)	(mbgl)	Mg/l
Quaternary	Alluvium	Unconfined Aquifer	0 to 60	35 to 60	3 to 38	1240 to 1950
		Semi confined to Confined Aquifer I	74 to 165	10 to 30	5 to 50	550 to 1220

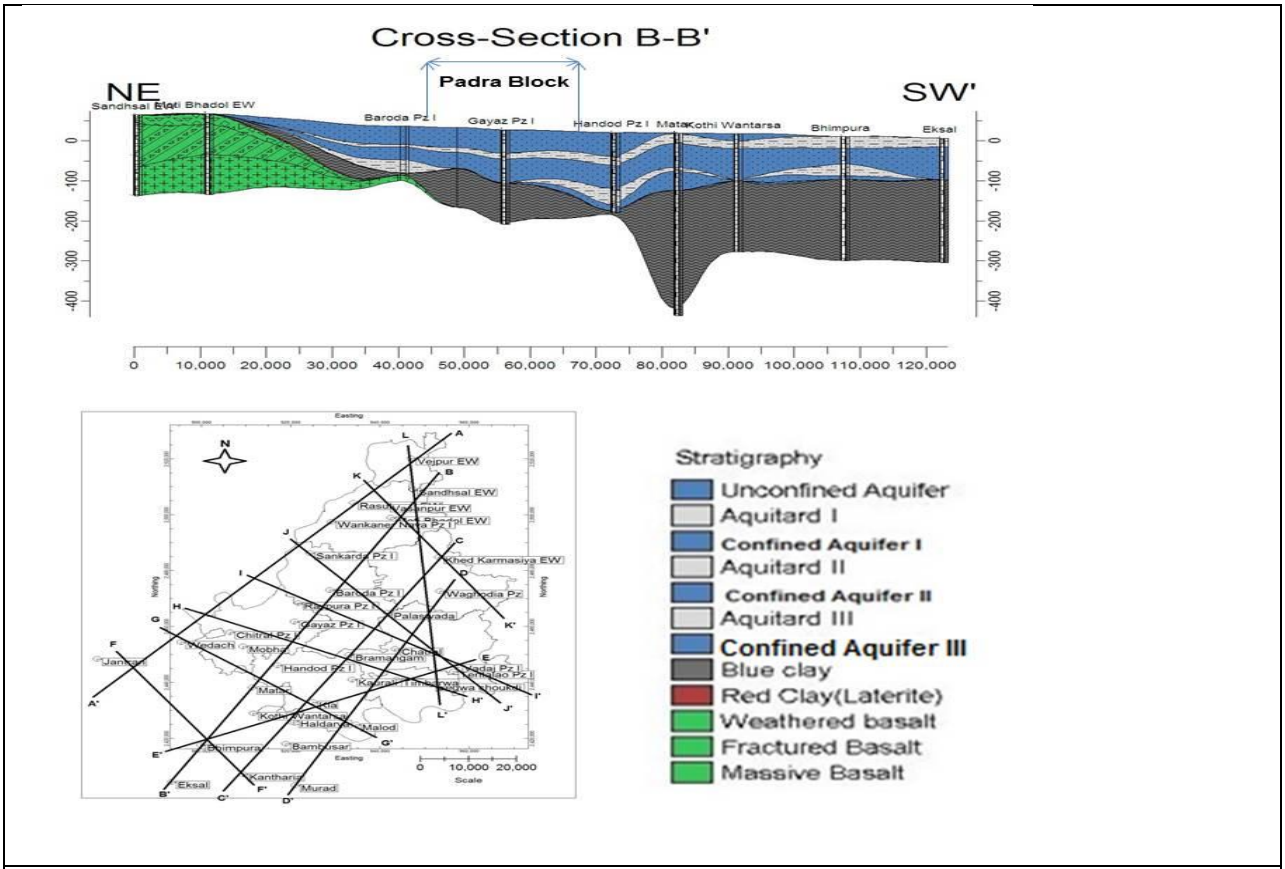

Fig.2 Hydrogeological cross section near Gayaj .

Depth to Water Level:

Depth to water level in the area is ranges between 5 to 40 m bgl. In the central part of the taluka the depth to water level ranges etween 20 to 40 m below ground level (bgl).

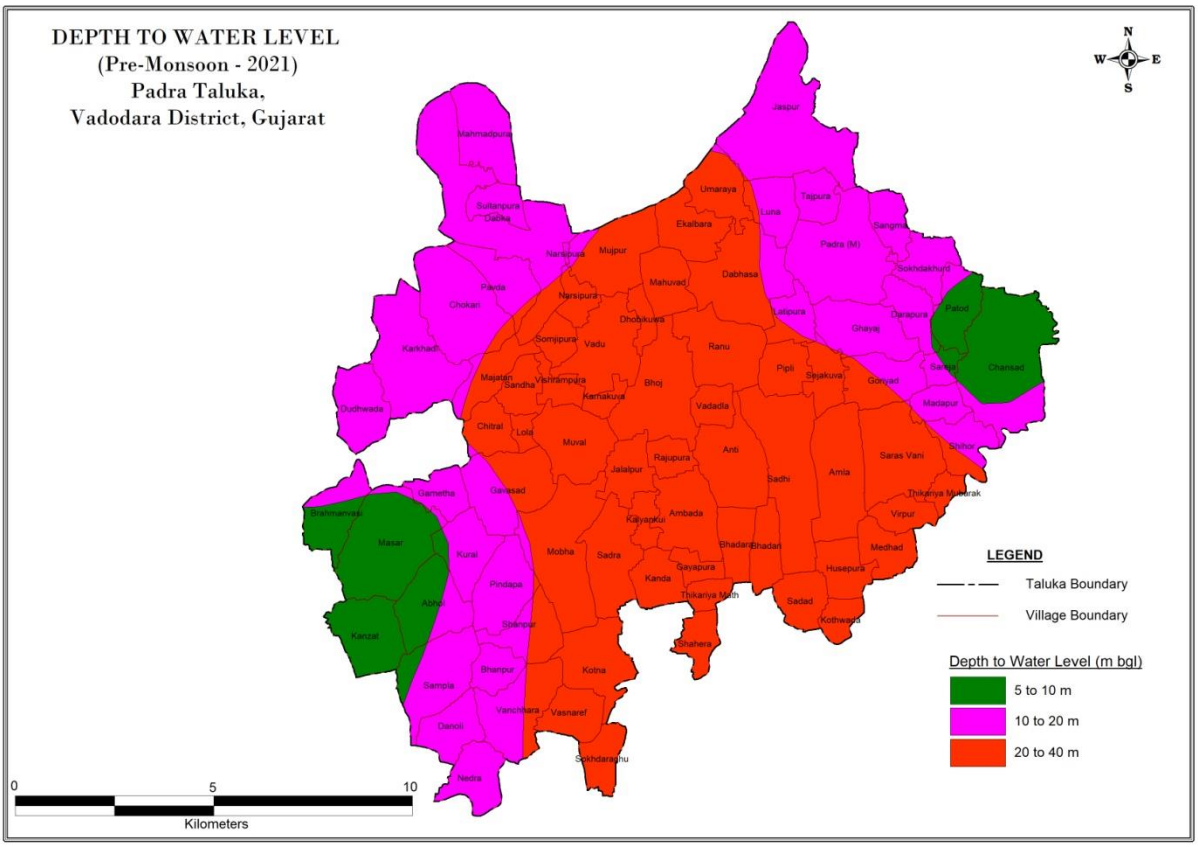

Fig. 3 Depth to water level for the period of May 2021

Groundwater quality:

Groundwater quality in term of total dissolved solids (TDS) is ranges from 1000 mg/l to more than 3000 mg/l. Central part of the taluka the TDS ranges between 1000 to 2000 mg/l Fig. 4).

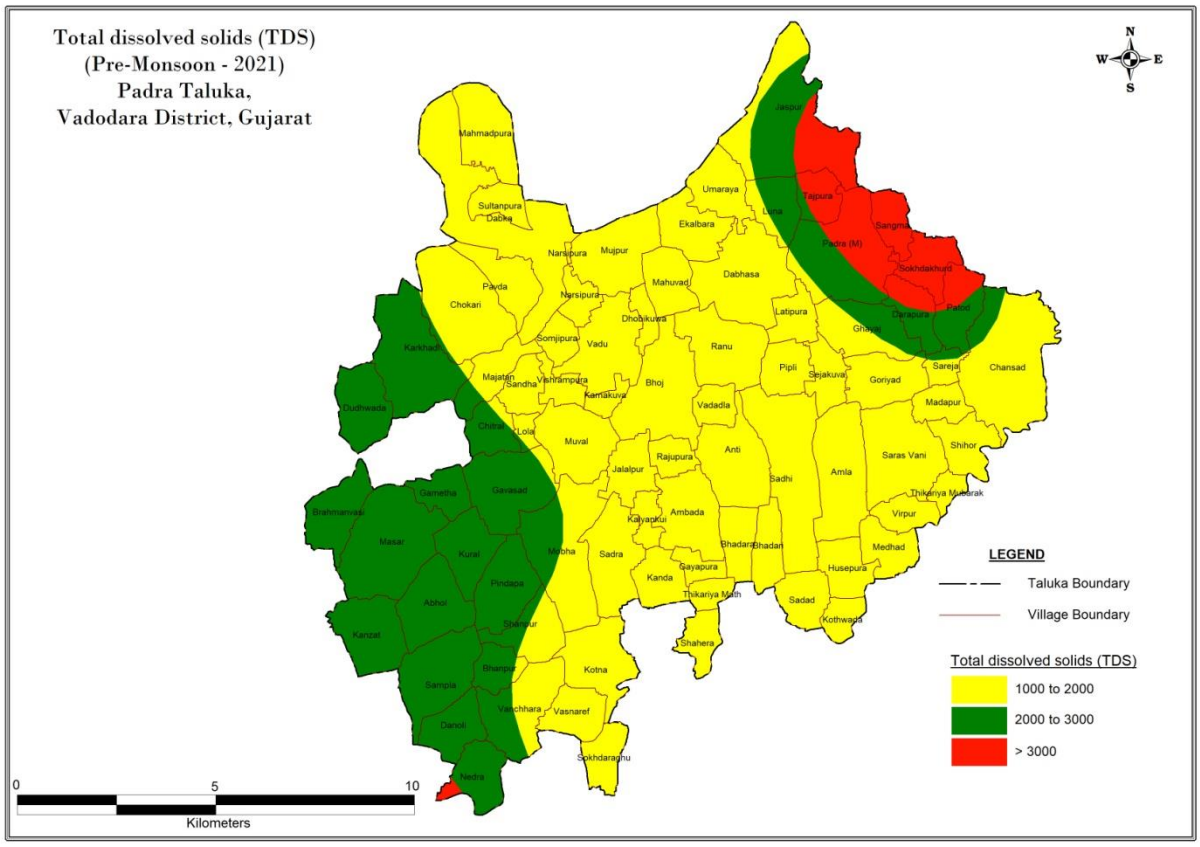

Fig. 4 Total dissolved solids in groundwater in the Padara Taluka, District Vadodara.

Groundwater Resources:

In the assessment year 2020 the groundwater resources has been done and shown in the table 2 for the Padaa taluka. Total extractable groundwater resources computed to 11615.24 Ham and total groundwater extraction is 11719.21, as a resulted the taluka falls in the Over Exploited Category.

Table :2 Details of the groundwater resources for the Padra taluka for the assessment year 2020.

GROUNDWATER RESOURCES OF PADRA TALUKA, DISTRICT VADODARA IN ASSESSMENT YEAR 2020	
State	GUJARAT
District	VADODARA
Assessment Unit Name	PADRA
Total Area of Assessment Unit (Ha)	53460
Recharge Worthy Area(Ha) Fresh	53460
Recharge from Rainfall-Monsoon Season (Ham)	9247.13
Recharge from Other Sources- Monsoon Season	792.92
Recharge from Rainfall-Non Monsoon Season(Ham)	Nil
Recharge from Other Sources- Non Monsoon Season(Ham)	2865.77
Total Annual Ground Water (Ham) Recharge- Fresh	12905.82
Total Natural Discharges (Ham)-Fresh	1290.58
Annual Extractable Ground Water Resource (Ham)-Fresh	11615.24
Ground Water Extraction for Irrigation Use (Ham)	11236.50
Ground Water Extraction for Industrial Use (Ham)	0.00
Ground Water Extraction for Domestic Use (Ham)	482.71
Total Extraction (Ham)-Fresh	11719.21
Annual GW Allocation for for Domestic Use as on 2025 (Ham)	523.79
Net Ground Water Availability for future use (Ham)	0.00
Stage of Ground Water Extraction (%) Fresh	100.90
Categorization Fresh (Over-ExploitedE/Critical/Semicritical/Safe/Saline)	over_exploited
Ha	Hacrare
Ham	Hacrtare meter

Conclusions:

The following conclusions are drawn in the hydrogeological studies of Padara taluka.

1. Area is underlain by Quaternary Alluvium forming multilayered aquifer .
2. Aquifer are Unconfined and semi-confined to confined conditions.
3. Depth to water level ranges between 5 to 40 m bgl.
4. Total dissolved solids ranges from 1000 mg/l to more than 3000 mg/l.
5. Groundwater resource category of taluka is Over Exploited in the assessment year 2020.

Note. Present Report is compiled based upon the available data of CGWB and State Government (GWRDC) at and around Padara taluka. Refinement in the hydrogeological condition in the area is possible on further detail hydrogeological survey in the area.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE **Annexure - 7**

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:353146 - Analysis Completion:02/07/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 44026

TEST REPORT

Test Report No. : 44026 **Date: 02/07/2022**

1. Name of the Customer : **Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address : **,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample : **REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)**
4. Sample Collected By : **MR. JIGNESH JAYSUKHBHAI RAIYAN**
5. Quantity of Sample Received : **5 lit**
6. Code No. of the Sample : **353146**
7. Date & Time of Collection & Inwarding : **23/06/2022 , (1750 to 1750) & 24/06/2022**
8. Date of Start & Completion of Analysis : **24/06/2022 & 02/07/2022**
9. Sampling Point : **From the VECL channel Upstream of M/s Loxim industry ~**
10. Flow Details (Remarks) : **yes**
11. Mode of Disposal : **estuary of river mahi**
12. Ultimate Receiving Body : **No generation of industrial wastewater**
13. Temperature on Collection : **30 & pH Range on pH Strip :@7-8 on pH strip**
14. Carboys Nos for : **barcode & Color & Appearance :light yellowish**
: **Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000**
15. Water Consumption & W.W.G (KLPD) : **12 ,Cap No & Weight :**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	30
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.73
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	12448
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	58
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	6.27
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	5051
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	1270
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	152
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	31

Laboratory Remarks : Approved By:327-r.o_327 Dt.: 02/07/2022

B.M.PARMAR,SO

Note :
1. The results refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied.
2. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
3. This report is not to be reproduced wholly or in part or used in any advertising media without the permission of the Board in writing.
4. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:353147 - Analysis Completion:29/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 44027

TEST REPORT

Test Report No. : 44027 **Date: 30/06/2022**

1. Name of the Customer : Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875
2. Address : ,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In
3. Nature of Sample : REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)
4. Sample Collected By : MR. JIGNESH JAYSUKHBHAI RAIYAN
5. Quantity of Sample Received : 5 lit
6. Code No. of the Sample : 353147
7. Date & Time of Collection & Inwarding : 23/06/2022 , (1800 to 1800) & 24/06/2022
8. Date of Start & Completion of Analysis : 24/06/2022 & 29/06/2022
9. Sampling Point : From the VECL channel Downstream of M/s Loxim industry ~
10. Flow Details (Remarks) : yes
11. Mode of Disposal : estuary of river mahi
12. Ultimate Receiving Body : No generation of industrial wastewater
13. Temperature on Collection : 30 & pH Range on pH Strip :@7-8 on pH strip
14. Carboys Nos for : barcode & Color & Appearance :light yellowish
    : Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000
15. Water Consumption & W.W.G (KLPD) : 12 ,Cap No & Weight :

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	30
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.83
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	13028
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	84
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	7.17
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	5543
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	1230
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	137
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	26

Laboratory Remarks : APPROVED. By:327-r.o_327 Dt.: 30/06/2022

B.M.PARMAR,SO

Note :

1. The results refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied.
2. Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
3. This report is not to be reproduced wholly or in part or used in any advertising media without the permission of the Board in writing.
4. The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
5. Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Gujarat Jurisdiction only.
6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:353153 - Analysis Completion:29/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 44033

TEST REPORT

Test Report No. : 44033 **Date: 30/06/2022**

1. Name of the Customer : **Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address : **,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample : **REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)**
4. Sample Collected By : **MR. JIGNESH JAYSUKHBHAI RAIYAN**
5. Quantity of Sample Received : **5 lit**
6. Code No. of the Sample : **353153**
7. Date & Time of Collection & Inwarding : **23/06/2022 , (1925 to 1925) & 24/06/2022**
8. Date of Start & Completion of Analysis : **24/06/2022 & 29/06/2022**
9. Sampling Point : **From the VECL Channel Upstream of M/s. Mayur dye chem intermediates private limited ~**
10. Flow Details (Remarks) : **Yes**
11. Mode of Disposal : **estuary of river mahi**
12. Ultimate Receiving Body : **No generation of industrial wastewater**
13. Temperature on Collection : **30 & pH Range on pH Strip :@7-8 on pH strip**
14. Carboys Nos for : **barcode & Color & Appearance :light yellowish**
15. Water Consumption & W.W.G (KLPD) : **Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	30
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	8.00
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	10968
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	106
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	13.38
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	5185
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	1410
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	163
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	27

Laboratory Remarks : APPROVED. By:327-r.o_327 Dt.: 30/06/2022

B.M.PARMAR,SO

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6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:353152 - Analysis Completion:29/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 44032

TEST REPORT

Test Report No. : 44032 **Date: 30/06/2022**

1. Name of the Customer	**: Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address	**: ,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample	**: REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)**
4. Sample Collected By	**: MR. JIGNESH JAYSUKHBHAI RAIYAN**
5. Quantity of Sample Received	**: 5 lit**
6. Code No. of the Sample	**: 353152**
7. Date & Time of Collection & Inwarding	**: 23/06/2022 , (1915 to 1915) & 24/06/2022**
8. Date of Start & Completion of Analysis	**: 24/06/2022 & 29/06/2022**
9. Sampling Point	**: From the VECL Channel Downstream of M/s. Mayur dye chem**
10. Flow Details (Remarks)	**intermediates private limited ~**
11. Mode of Disposal	**: Yes**
12. Ultimate Receiving Body	**: estuary of river mahi**
13. Temperature on Collection	**: No generation of industrial wastewater**
14. Carboys Nos for	**: 30 & pH Range on pH Strip :@7-8 on pH strip**
	: barcode & Color & Appearance :light yellowish
15. Water Consumption & W.W.G (KLPD)	**: Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	30
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	8.01
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	9500
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	66
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	12.66
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	7644
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	1240
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	170
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	33

Laboratory Remarks : APPROVED. By:327-r.o_327 Dt.: 30/06/2022

B.M.PARMAR,SO

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7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:353151 - Analysis Completion:29/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 44031

TEST REPORT

Test Report No. : 44031 **Date: 30/06/2022**

1. Name of the Customer	**: Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address	**: ,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample	**: REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)**
4. Sample Collected By	**: MR. JIGNESH JAYSUKHBHAI RAIYAN**
5. Quantity of Sample Received	**: 5 lit**
6. Code No. of the Sample	**: 353151**
7. Date & Time of Collection & Inwarding	**: 23/06/2022 , (1905 to 1905) & 24/06/2022**
8. Date of Start & Completion of Analysis	**: 24/06/2022 & 29/06/2022**
9. Sampling Point	**: From the VECL Channel Upstream of M/s. Kiri Industries (Unit –III) ~**
10. Flow Details (Remarks)	**: Yes**
11. Mode of Disposal	**: estuary of river mahi**
12. Ultimate Receiving Body	**: No generation of industrial wastewater**
13. Temperature on Collection	**: 30 & pH Range on pH Strip :@7-8 on pH strip**
14. Carboys Nos for	**: barcode & Color & Appearance :light yellowish**
	: Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000
15. Water Consumption & W.W.G (KLPD)	**: 12 ,Cap No & Weight :**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	30
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	8.00
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	9140
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	72
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	13.89
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	3934
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	1190
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	138
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	23

Laboratory Remarks : APPROVED. By:327-r.o_327 Dt.: 30/06/2022

B.M.PARMAR,SO

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6. Permissible Limits: as per Schedule VI of EPA Rules, 1986 as ammended by Second and Third ammendment 1993 for Effluents
7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:353150 - Analysis Completion:29/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 44030

TEST REPORT

Test Report No. : 44030 **Date: 30/06/2022**

1. Name of the Customer : Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875
2. Address : ,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In
3. Nature of Sample : REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)
4. Sample Collected By : MR. JIGNESH JAYSUKHBHAI RAIYAN
5. Quantity of Sample Received : 5 lit
6. Code No. of the Sample : 353150
7. Date & Time of Collection & Inwarding : 23/06/2022 , (1855 to 1855) & 24/06/2022
8. Date of Start & Completion of Analysis : 24/06/2022 & 29/06/2022
9. Sampling Point : From the VECL Channel Downstream of M/s. Kiri Industries (Unit – III) ~
10. Flow Details (Remarks) : Yes
11. Mode of Disposal : estuary of river mahi
12. Ultimate Receiving Body : No generation of industrial wastewater
13. Temperature on Collection : 30 & pH Range on pH Strip :@7-8 on pH strip
14. Carboys Nos for : barcode & Color & Appearance :light yellowish
15. Water Consumption & W.W.G (KLPD) : Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	30
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	8.02
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	9288
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	68
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	14.84
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	3755
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	1230
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	141
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	25

Laboratory Remarks : APPROVED. By:327-r.o_327 Dt.: 30/06/2022

B.M.PARMAR,SO

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7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:353149 - Analysis Completion:29/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 44029

TEST REPORT

Test Report No. : 44029 **Date: 30/06/2022**

1. Name of the Customer : Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875
2. Address : ,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In
3. Nature of Sample : REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)
4. Sample Collected By : MR. JIGNESH JAYSUKHBHAI RAIYAN
5. Quantity of Sample Received : 5 lit
6. Code No. of the Sample : 353149
7. Date & Time of Collection & Inwarding : 23/06/2022 , (1845 to 1845) & 24/06/2022
8. Date of Start & Completion of Analysis : 24/06/2022 & 29/06/2022
9. Sampling Point : From the VECL Channel Upstream of M/s. Bodal Chemical Ltd (Unit – VII) ~
10. Flow Details (Remarks) : yes
11. Mode of Disposal : estuary of river mahi
12. Ultimate Receiving Body : No generation of industrial wastewater
13. Temperature on Collection : 30 & pH Range on pH Strip :@7-8 on pH strip
14. Carboys Nos for : barcode & Color & Appearance :light yellowish
15. Water Consumption & W.W.G (KLPD) : Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	30
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.99
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	9024
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	108
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	13.05
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	3725
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	1140
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	161
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	31

Laboratory Remarks : APPROVED. By:327-r.o_327 Dt.: 30/06/2022

B.M.PARMAR,SO

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7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Gujarat Pollution Control Board
Vadodara
GERI Compound
Race Course Road
Vadodara - 390007
Tele:0265-2354850

Sample ID:353148 - Analysis Completion:29/06/2022

Common treatment and disposal facilities(CETP, TSDF, Ewaste recycling, CBMWTF, effluent conveyance project, incinerator, solvent/acid recovery plant, MSW sanitary landfill site) / LAB Inward : 44028

TEST REPORT

Test Report No. : 44028 **Date: 30/06/2022**

1. Name of the Customer : **Vadodara Enviro Channel Ltd -VECL , (formerly ECP) - 21875**
2. Address : **,VILL : DHANORA,(PO) PETROFILS Dhanoara-391346, Taluka : Vadodara, District : Vadodara, GIDC : Not In**
3. Nature of Sample : **REP-Representative/Grab, (Insp Type : OTH-Others/Higher Authority)**
4. Sample Collected By : **MR. JIGNESH JAYSUKHBHAI RAIYAN**
5. Quantity of Sample Received : **5 lit**
6. Code No. of the Sample : **353148**
7. Date & Time of Collection & Inwarding : **23/06/2022 , (1835 to 1835) & 24/06/2022**
8. Date of Start & Completion of Analysis : **24/06/2022 & 29/06/2022**
9. Sampling Point : **From the VECL Channel Downstream of M/s. Bodal Chemical Ltd**
10. Flow Details (Remarks) **(Unit –VII) ~**
11. Mode of Disposal : **yes**
12. Ultimate Receiving Body : **estuary of river mahi**
13. Temperature on Collection : **No generation of industrial wastewater**
14. Carboys Nos for : **30 & pH Range on pH Strip :@7-8 on pH strip**
: **barcode & Color & Appearance :light yellowish**
15. Water Consumption & W.W.G (KLPD) : **Ind :36.000 , Dom :75.000 & Ind :145000.000 , Dom :6.000**

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	Temperature	Centigrade	IS: 3025 (Part – 9) – 1984(Reaffirmed 2006)	Ambient oC - 60 oC	30
2	pH	pH Units	4500 H+ B APHA Standard Methods 23rd edi.2012	1 – 14 pH value As or	7.94
3	Colour	Pt.Co.Sc.	2120 B APHA Standard Methods 22nd edi. 2012	2 - to 99 Hazen & 1-50	20
4	Total Dissolved Solids	mg/l	Gravimetric method. (2540 C APHA Standard Method	10 – 200000 mg/L	10684
5	Suspended Solids	mg/l	Gravimetric method. (2540 D APHA Standard Method	2 – 10000 mg/L	66
6	Ammonical Nitrogen	mg/l	1).Titrimetric method (4500 NH3 B & C APHA Standa	1 - 2000 mg/l.	12.77
7	Chloride	mg/l	Argentometric method. (4500 Cl? B APHA Standard M	1 - 50000 mg/l	3934
8	Sulphate	mg/l	APHA(23rd edi) 4500 SO4 E	2-40mg/l	1170
9	Chemical Oxygen Demand	mg/l	APHA (23rd Edition)- 5220 B Open Reflux Method-2(	5.0- 50000 mg/l	190
10	Oil & Grease	mg/l	Liquid – Liquid Partition Gravimetric method. (5520 B	01 – 1000 mg/l	BDL
11	Phenolic Compounds	mg/l	4 Amino Antipyrene method without Chloroform Extra	0.1 – 50 mg/l	BDL
12	B.O.D (3 Days 27oC)	mg/l	3 – Day BOD test. (IS 3025 (Part 44) 1993 Reaffirmed	05–50000 mg/l	35

Laboratory Remarks : APPROVED. By:327-r.o_327 Dt.: 30/06/2022

B.M.PARMAR,SO

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7. Physicochemical and microbiological parameters, Std.Methods for Water and Waste Water- 23nd Edition by APHA.
8. Bioassay test (for toxicity) -IS:6582:Part-2:2001; Reaffirmed 2007.

Annexure - 8

Kiri Industries Limited

Future Full of Colours.....

GPCB ID: 22148

KIL/UNIT III/JV/2022/06-03 July 7, 2022

Regional Office,
Gujarat Pollution Control Board, G.E.R.I. Compound, Race Course Road,
Vadodara – 390 007.

INWARD
No. 49607
Date: 07/07/2022
G.P.C. BOARD, VADODARA.

Kind Attn. : Shri R. B. Trivedi - Regional Officer

Sub. : Inspection visit to our unit on 23-06-2022

Ref. : **Our letter no. KIL/Unit III/JV/2022/06-01 dated 29-06-2022**

Dear Sir ,

With reference to above stated subject matter and our letter no. KIL/Unit III/JV/2022/06-01 dated 29-06-2022, we hereby undertake that:

- We have provided comprehensive effluent treatment facility to treat various wastewater streams coming from production plants. Entire quantity of wastewater generated from our production plants are being treated, recovered, recycled and reused efficiently. Concentrated wastewater streams are being evaporated in in-house multiple effect evaporators (MEEs)/ mechanical vapor recompression (MVR) system/spray dryers to achieve Zero Liquid Discharge of industrial effluent through concentration and evaporation in actuality.

  We have installed BIO-STP plant for treatment and safe disposal of domestic waste water / sewage water and further reuse it for gardening purpose.

- Consented systems installed for Zero Liquid Discharge of treated effluent are as given below:

Description	Capacity	Date of Installation	Remarks
Incinerator	4000 L/h	01/10/2012	To be surrendered
Spray Dryer	12000 L/h	10/07/2017	In Operation
Spray Dryer	12000 L/h	19/09/2018	In Operation
Falling Film Multiple Effect Evaporator	9000 Lit./Hr	31/08/2007	In Operation
Forced Draft Multiple Effect Evaporator	9000 Lit./Hr	13/08/2009	In Operation
Forced Draft Multiple Effect Evaporator	15000 Lit/Hour	21/09/2018	In Operation
MVR system	21000 Lit./Hr.	25-/12/2018	In Operation
Crystallizer	15 KL/hr	11/09/2017	In Operation

DYES
Plot No : 299/1/A & B, Phase-II, Nr. Water Tank, GIDC, Vatva, Ahmedabad – 382 445, Gujarat, India.
Phone : +91-79-25894477
Fax : +91-79-25834960
Email : engage@kiriindustries.com **Web :** www.kiriindustries.com

INTERMEDIATES
Plot No : 396 /399/403/404, EPC Canal Road, Village : Dudhwada, Tal. : Padra, Dist. : Vadodara - 391450. Gujarat, India.
Phone : +91-2662 -273 444
Fax : +91-2662 -273 444
Email : intermediates@kiriindustries.com **Web :** www.kiriindustries.com

CHEMICALS
Plot No : 552-A, 566, 567, 569-71, Village : Dudhwada, Tal. : Padra, Dist. : Vadodara- 391 450 Gujarat , India.
Phone : +91-2662-273724, 25
Fax : +91-2662-273726
Email : intermediates@kiriindustries.com **Web :** www.kiriindustries.com

REGISTERED OFFICE : 7th Floor, Hasubhai Chamber, Opp. Town Hall, Ellisbridge, Ahmedabad – 380 006. Gujarat (India). Phone : + 91-79-2657 4371-72-73 Fax : + 91-79-2657 4374

CIN No. : L24231GJ1998PLC034094

- Our justification of Zero Liquid Discharge system installed to treat wastewater generated due to full capacity utilization of our production capacity as per CC&A – amendment order dated 19-09-2018 as well as from ground water remediation plant are as given below :

Production details	
Consented Quantity of Production	6200 MT/Month
Consented Quantity of Production per day	206.66 MT/day
Ground water remediation plant (GWRP) details	
Total quantity of water extraction from ground water remediation plant	845 KL/day
Quantity of Nano Filtration (NF) plant reject from ground water remediation plant to MEE/MVR system	170 KL/day
Quantity of RO reject from ground water remediation plant to MEE/MVR system	52.50 KL/day
Total quantity of NF/RO reject from GWRP to MEE/MVR system	222.5 KL/day = 10.6 (KL/hour) based on 21 working hour **(A)**
Consented quantity of wastewater generation details	
Consented quantity of effluent going to crystallizer	310 KL/day
Consented quantity of effluent going to MEE	367.72 KL/day **(B)**
Consented quantity of dilute effluent stream going to MEE/MVR (earlier treated in dilute stream ETP)	68 KL/day **(C)**
Total quantity of effluent going to MEE	**658.22 KL/day** (225.5 KLD [A] + 367.72 KLD [B] +68 KL/day [C]
Consented quantity of effluent going to MVR system	**468.18 KL/day**
Total quantity of effluent going to MEE+ MVR system	**1126.4 KL/day (658.22 KLD+468.18KLD) = 53.64 KL/hour based on 21 working hour**
Total quantity of effluent going to spray dryers	**310 KL/day (228.54 KLD +81 KLD GWRP) = 12.9 KL/hour**
Consented capacity of Evaporation system	
Consented evaporation capacity of MEEs+MVR	**1134 KL/day (9 KLH + 9KLH +15KLH + 21KLH) = Capacity is 54 KL/hour**
Consented evaporation capacity of spray dryers	**24 KL/hour (12KLH + 12KLH)**
Consented quantity of salt recovered	52.49 MT/Day
Consented quantity of condensate reused	~~53.97~~ KL/day 533.97 KL/day

Break-up of consented production capacity, product wise wastewater generation, Nano filtration plant reject, RO reject generation and its treatment to achieve Zero Liquid Discharge is attached as **Annexure – A.**

DYES
Plot No : 299/1/A & B, Phase-II, Nr. Water Tank, GIDC, Vatva, Ahmedabad – 382 445, Gujarat, India.
Phone : +91-79-25894477
Fax : +91-79-25834960
Email : engage@kiriindustries.com **Web :** www.kiriindustries.com

INTERMEDIATES
Plot No : 396 /399/403/404, EPC Canal Road, Village : Dudhwada, Tal. : Padra, Dist. : Vadodara - 391450. Gujarat, India.
Phone : +91-2662 -273 444
Fax : +91-2662 -273 444
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CHEMICALS
Plot No : 552-A, 566, 567, 569-71, Village : Dudhwada, Tal. : Padra, Dist. : Vadodara- 391 450 Gujarat , India.
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CIN No. : L24231GJ1998PLC034094

- We are committed to operate and maintain our effluent treatment units (ZLD) and bio STP plants efficiently and diligently.

We do hope the above meets with your requirements.

Thanking you,

Sincerely,

For **Kiri Industries Limited, Unit III**

Jayesh Vyas -COO & CFO (Unit-III&V)

CC: **Mrs. Diptiben Shah – Unit Head (Vadodara),**
Gujarat Pollution Control Board, Paryavaran Bhavan, Sector – 10 A, Gandhinagar – 382 010.

Annexure - A

Productwise effluent generation and treatment capacity

Name of product	Quantity (MT/Month)	Qty/Day	Effluent KL/Day	NF	RO	Crystallizer	MEE	MVR	Salt	Cond	SD
Vinyl Sulphone Esters	1500.00	50.00	280.55	0.00	0.00	0.00	0.00	280.55	33.67	182.36	64.53
OAVS Ester	100.00	3.33	29.40	0.00	0.00	0.00	0.00	29.40	3.53	19.11	6.76
PCVS Ester	100.00	3.33	23.08	0.00	0.00	0.00	0.00	23.08	2.77	15.00	5.31
DMAVS Ester	350.00	11.67	92.87	0.00	0.00	0.00	92.87	0.00	0.00	0.00	0.00
Sulpho VS Ester	150.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meta VS Ester	75.00	2.50	8.28	0.00	0.00	0.00	0.00	8.28	0.99	5.38	1.90
Sulpho 2 Amino (Amino Sulfone – E)	75.00	2.50	32.47	0.00	0.00	0.00	0.00	32.47	3.90	21.10	7.47
DASA	500.00	16.67	92.33	0.00	0.00	0.00	0.00	92.33	7.39	60.02	24.93
NEPA Ester	50.00	1.67	1.61	0.00	0.00	0.00	0.00	1.61	0.19	1.05	0.37
MAE Ester	25.00	0.83	0.47	0.00	0.00	0.00	0.00	0.47	0.06	0.30	0.11
Royal Blue ER Ester	75.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H Acid	500.00	16.67	293.85	0.00	0.00	52.89	240.96	0.00	0.00	156.62	84.33
ACLAP (6- Acetyl OAPSA)	10.00	0.33	4.16	0.00	0.00	0.00	4.16	0.00	0.00	2.70	1.46
4 Sulpho Hydrozone	10.00	0.33	2.61	0.00	0.00	0.00	2.61	0.00	0.00	1.70	0.91
K Acid	50.00	1.67	9.12	0.00	0.00	0.00	9.12	0.00	0.00	5.93	3.19
Sulfo Tobias Acid	30.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulfo J Acid	10.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MPDSA Free Acid	20.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acetyl MPDSA (AMPDSA)	10.00	0.33	1.56	0.00	0.00	0.00	1.56	0.00	0.00	1.01	0.55
Sodium salt (MPDSA)	15.00	0.50	7.47	0.00	0.00	1.87	5.60	0.00	0.00	3.64	1.96
R R Acid	20.00	0.67	8.22	0.00	0.00	1.23	6.99	0.00	0.00	4.54	2.44
M.U.A	25.00	0.83	3.86	0.00	0.00	0.00	3.86	0.00	0.00	2.51	1.35
Acetanilide Flakes	1500.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.55
O A Flakes	200.00	6.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Sulphanilic Acid	750.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crude Acetyl Para Crisidine	50.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dilute stream			68.00	0.00	0.00	0.00	68.00	0.00	0.00	51.00	17.00
Total per day	**6200.00**	**206.66**	**959.90**	**0.00**	**0.00**	**55.99**	**435.72**	**468.18**	**52.49**	**533.97**	**228.54**
GWRP	25350.00	845.00	845.00	170.00	52.50	0.00	222.50	0.00	0.00	166.875	81.00
Total per day	31550.00	1051.66	1804.90	170.00	52.50	55.99	658.22	468.18	52.49	700.85	309.54

22148

Kiri Industries Limited

Future Full of Colours.....

GPCB ID: 22148

KIL/UNIT III/JV/2022/06-01

June 29, 2022

Regional Office,
Gujarat Pollution Control Board, G.E.R.I. Compound, Race Course Road,
Vadodara – 390 007.

INWARD
No.: 49322
Date: 30 JUN 2022
G.P.C. BOARD, VADODARA

Kind Attn. : Shri R. B. Trivedi - Regional Officer

Sub. : Inspection visit to our unit on 23-06-2022 (Annexure-A)

Dear Sir ,

We request you to note following:

- We have not discharged single drop of effluent from 12th February 2020 to till date in VECL effluent conveyance system.

- On 1st April, 2022 as a part of our global sustainability goal i.e. Responsible Consumption and Production, we have voluntarily declared our unit iii as zero liquid discharge unit.

- On 13th April, 2022, VECL had disconnected treated wastewater discharge line from our outlet to channel.

- We have provided comprehensive effluent treatment facility to treat various wastewater streams coming from production plants. Entire quantity of wastewater generated from our production plants are being treated, recovered, recycled and reused efficiently.

  Concentrated wastewater streams are being evaporated in in-house multiple effect evaporators (MEEs)/ mechanical vapor recompression (MVR) system/spray dryers to achieve Zero Liquid Discharge of industrial effluent through concentration and evaporation in actuality.

  We have installed BIO-STP plant for treatment and safe disposal of domestic waste water / sewage water and further reuse it for gardening purpose.

- **Details of systems installed for Zero Liquid Discharge of treated effluent are as given below:**

Description	Capacity	Date of Installation	Remarks
Existing Consented Evaporation systems			
Incinerator	4000 L/h	01/10/2012	To be surrendered as directed by GPCB
Spray Dryer	12000 L/h	10/07/2017	In Operation
Spray Dryer	12000 L/h	19/09/2018	In Operation

P+S file Reduction 30/07/2022

DYES
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CIN No. : L24231GJ1998PLC034094

Description	Capacity	Date of Installation	Remarks
Falling Film Multiple Effect Evaporator	9000 Lit./Hr	31/08/2007	In Operation
Forced Draft Multiple Effect Evaporator	9000 Lit./Hr	13/08/2009	In Operation
Forced Draft Multiple Effect Evaporator	15000 Lit/Hour	21/09/2018	In Operation
MVR system	21000 Lit./Hr.	25/12/2018	In Operation
Crystallizer	15000 Lit./hr	11/09/2017	In Operation
Proposed additional evaporation systems (for evaporation of dilute effluent stream + RO reject water from ground water remediation plant (GWRP) + NF reject from GWRP)			
Crystallizer	15000 Lit./hr	Proposed	To be installed after obtaining CTE-Amendment
Multiple Effect Evaporator	15000 Lit./Hr	Proposed	To be installed after obtaining CTE-Amendment
Multiple Effect Evaporator	15000 Lit./Hr	Proposed	To be installed after obtaining CTE-Amendment

Technical specifications of each system installed for ZLD system are attached as **Annexure – B.**

JUSTIFICATION OF ZLD SYSTEM INSTALLED TO TREAT WASTEWATER GENERATED DUE TO FULL CAPACITY UTILISATION OF OUR PRODUCTION CAPACITY ARE AS GIVEN BELOW :

Existing scenario :

- Consented quantity of effluent going to crystallizer is 1391 KL/day
- Consented quantity of effluent going to MEEs is 1128 KL/day
- Consented evaporation capacity of MEEs + MVR = 54 KL/hr. (9 KLH+9 KLH+15KLH+21 KLH) x 21 working hours = 1134 KL/day

Proposed scenario:

- Additional quantity of effluent going to MEE is 68 KLD (dilute effluent stream) + 270 KL/day (RO reject from GWRP)+ 170 KL/day (NF reject from GWRP) = 508 KL/Day
- Proposed additional capacity of MEEs required = 30 KL/hr. x 21 hr. = 630 KL/day Evaporation

- Total quantity of effluent after GWRP going to MEE = 1636 KL/Day (1128 KL/day existing consented effluent going to MEEs + 508 KL/day additional effluent going to MEEs)

- Total capacity of MEE required is about 78 KL/hour based on 21 working hours per day. At present we have 54 KL/hr. consented capacity therefore, we have proposed additional 15 KL/hr. MEEs (2 no.)

- Capacity of spray dryers = 24 KL/hr. x 24 = 576 KLD

- Total quantity of effluent going for spray drying after GWRP will be 506 KLD

- Total quantity of condensate from MEE will be 1130 KLD which will be reused.

It may be noted that we are in the process of applying for CTE-Amendment to Board for additional evaporation system required for evaporation of dilute effluent stream + RO reject from ground water remediation plant + NF reject from ground water remediation plant.

Justification of ZLD system with respect to production and related effluent generation for the last three months are as given below:

Production details:

Average quantity of production during last 3 months	Quantity (MT/Month)		
	Vinyl Sulphone	H-Acid	Acetanilide
	664.0	160.034	417.61

Wastewater generation details:

Average quantity of wastewater generation during last 3 months	Quantity (KL/Month)		
	From Vinyl Sulphone plant	From H-Acid plant	Acetanilide plant
	7063.1	3208.6	0

Waste water treatment and ZLD details:

Average quantity of wastewater treatment and disposal details of last 3 months	Quantity (KL/Month)				
	Effluent taken to MEE (ML of H-Acid)	Effluent taken to Spray dryer (Concentrate effluent after MEE & MVR)	Effluent taken to MVR plant(effluent from VS)	Condensate generated from MEE & MVR	Condensate recycled to water tank
	3208.6	2974.2	7063.1	7069.7	7069.7

- We have submitted yearly Environmental Audit report carried out by GPCB authorized Schedule 1 Environmental Auditor M/s. DDIT to Board on 07-07-2021 having ZLD information for the last year. EMS adequacy certificate of the same is attached as **Annexure – C.** EMS adequacy certificate for the current year having ZLD information for the current year will be submitted to Board within 10 days' time period.

- We are committed to operate and maintain our effluent treatment units (ZLD) and bio STP plants efficiently and diligently.

We do hope the above is self-explanatory. Nevertheless, please let us know if any further information and clarification required.

Thanking you,

Sincerely,

For **Kiri Industries Limited, Unit III**

Rajesh Kothari
GM-Commercial

CC:

1. **Mrs. Diptiben Shah – Unit Head (Vadodara),**
   Gujarat Pollution Control Board, Paryavaran Bhavan, Sector – 10 A, Gandhinagar – 382 010.

2. **Shri A. B. Gor, IAS, Collector & DM (Vadodara),**
   853W+948 Kothi Biulding, Kothi Cross Road, Raopura, Vadodara – 39001.

REGIONAL OFFICE

GUJARAT POLLUTION CONTROL BOARD

IS/ISO 9001 : 2008 AND IS/ISO 14001 : 2004 CERTIFIED ORGANIZATION

GERI COMPOUND, RACECOURSE ROAD, VADODARA – 390 007 Phone : 2354850 Fax : 2339205

WEB SITE: www.gpcb.gov.inONLINE APPLICATION SITE :http://gpcbxgn.gujarat.gov.in

Email Id (RO): ro-gpcb-vado@gujarat.gov.in Email Id (UH): uh-gpcb-vado@gujarat.gov.in

સ્થળ તપાસની નિરિક્ષણ નોંધ

આઇ.ડી.નં: 22148 કેટેગરી/સ્કેલ: Red / large, Latitude/ longitude 22.187297 73.891929

શ્રીમાન,

આપશ્રીને જણાવવાનું કે, આજ તા. 23/06/22 16:15 hrs ના રોજ આપશ્રીના એકમની મુલાકાત લઈ સ્થળ તપાસ કરી ઈન્સ્પેક્શન કરેલ છે જે દરમ્યાન હવા/પાણી/જોખમી કચરા/........ના ...../...../..... /.........નમૂના પૃથ્થકરણ અર્થે એકત્રીત કરેલ છે.

આપશ્રીના એકમની મુલાકાત દરમ્યાન પર્યાવરણીય કાયદાઓના સંદર્ભે ત્રુટીઓ/ક્ષતિઓ જોવા/જાણવા મળેલ છે, જે આધારે પડતર અરજી સંદર્ભે નિર્ણય લેતા પહેલા અને/અથવા કાયદાકીય પગલાં લેવા અને/ અથવા પર્યાવરણ નુકશાન વળતર લેતા પહેલા કુદરતી ન્યાયના સિદ્ધાંત મુજબ આપશ્રીને સાંભળવાની તક પુરી પાડવાના હેતુથી અત્રે લેખિતમાં સ્થળસ્થિતિ/ મુદ્દાઓ/સૂચનાઓ આપવામાં આવે છે.

આ પરત્વે આપશ્રી નીચે લેખિતમાં રજૂઆત કરી શકો છો અથવા લેખિત ખુલાસો/સ્પષ્ટતા/પુર્તતા અહેવાલ કામકાજના દિન-૦૩ માં બોર્ડની વડી કચેરી, ગાંધીનગર તેમજ અત્રેની કચેરીને લેખિતમાં અથવા XGN પર અથવા Emailથી રજૂ કરવા નોટીસ આપવામાં આવે છે.

સ્થળ તપાસ દરમ્યાન જોવા મળેલ સ્થળસ્થિતિ/ ત્રુટીઓ/ક્ષતિઓ/ ખામીઓ:

૧.) એકમના દ્વારા ZLD system ક્યારથી બેસાડેલ છે. અને ક્યારથી કાર્યરત છે. તે જણાવવું. તેમજ ZLD system ની certified technical specifications રજૂ કરવા. વધુમાં હયાત ZLD system, effluent generation/production સાથે સુસંગત છે કે કેમ તેના certified પુરાવા રજૂ કરવા.

ગુ.પ્ર.નિ.બોર્ડના નામે અને સહી.

P.S. Chaudhary (AEE)	J.J. Raiyani (AEE)	R.B. Trivedi (RO)

મુલાકાત લેવામાં આવેલ હોય તે એકમના પ્રતિનિધીની રજૂઆત: (જે લાગુ પડે તેની સામે જ સહી કરવી)

મુલાકાત દરમ્યાન અધિકારીશ્રીઓએ ....1......મુદ્દાઓ માટે સ્થળસ્થિતિ/ સૂચનાઓ/સુધારાત્મક પગલાં ભરવા જણાવેલ છે., જેમાં,

(૧) આ સ્થળસ્થિતિ/ સૂચનાઓ સાથે હું, નીચે સહી કરનાર સંપૂર્ણ સહમત છું .	
(૨) જેમા દર્શાવેલ સ્થળસ્થિતિ/ સૂચનાઓમાંથી મુદ્દા નં ....–........ સાથે હું, નીચે સહી કરનાર અસહમત છું. જેના માટે મારી નીચે પ્રમાણેની રજૂઆત છે.:	

એકમના પ્રતિનિધી / આ નોંધ મેળવનાર નું નામ, હોદ્દો અને સહી: Mr. Neil Patel (Sr. Exe - Environment)

તા.: 23/06/22

Annexure – B

MEE - 1 Plant Details

SECTION – [I]

BASIS OF DESIGN

A] Basis of Design &Expected Performance parameters – For Evaporator

Description	Unit	Parameters
Product Name	-	Feed containing crystalline salts only
Scheme	-	Fourth Effect Evaporator with out TVR (4– Forced Circulation)
Plant Capacity	M3/Day	300
Feed Density	Kg/M3	1000 (Assumed)
No. of operating hours	-	20
Feed rate	Kg/Hr	15000
Initial solids in feed	%	12(w/w) Dissolved
product rate	Kg/Hr	4500
Final Concentration	%	40
Water Evaporation Rate	Kg/Hr	10500
Feed Temp.	°C	30 (Assumed)
Feed pH	-	6 - 8
Specific heat of feed	Kcal/Kg°C	0.97 (Assumed)
Solvent in feed		**Nil**
Product Temp.	**°C**	**≤ 55 (Anticipated)**
Steam Pressure	**Kg/Cm2(G)**	**3 – Dry Saturated**
Cooling water inlet / Outlet temp.	**°C**	**32 / 38**
Cooling water supply pressure	**Kg/Cm2(G)**	**2.5 – 3**
Power		**415 ± 10% V, 50 Hz, 3Φ**
Area		**Non-flameproof , Non- Hazardous**

CHEM
Process Systems P.Ltd.

Triple Effect Forced Circulation Evaporation Plant

Technical Specifications:

Sr. No.	Description	Unit	Value
1.	Feed rate	Kg/hr.	7875
2.	Feed Temperature	Deg. C	30
3.	Total Evaporation Capacity	Kg/hr	6490
4.	Initial Solids TDS	%	16
5.	Evaporation in Evaporator	Kg/hr	6075
6.	Concentrate Out from Evaporator (70%)	Kg/hr	1800
7.	Evaporation in ATFD	Kg/hr	415
8.	Wet Solids outlet After ATFD (with 8 to 10% moisture)	kg/hr	1385
9.	Motive Steam Pressure	Kg/cm^2 (g)	7.0
10.	Cooling Water Inlet Temperature	°C	32
11.	Cooling Water Outlet Temperature	°C	40
12.	Cooling Water Quantity (Evaporator)	M^3/hr	155
13.	Motive Steam Consumption • Evaporator • Ejector	Kg/hr	1890 78
14.	Power Consumption (Evaporator)	KW absorbed	61.68
15.	Power Consumption (Cooling Tower Fan and Cooling Water Pump)	KW absorbed	22.3

Utility:

Sr. No.	Description	Unit	Value
1.	**Motive Steam Consumption** • Evaporator • Ejector **Total**	Kg/hr	 1890 78 **1968**
2.	**Power Consumption** (i) Evaporator (ii) C. W. Circulation and Cooling Tower Fan **Total**	KW absorbed	 **61.68** **22.3** **83.98**

NOTE:

1) ALL UTILITES AND CAPACITIES OF THE PLANT IS GURANTEE FOR **± 5%**

MEE – 3 Plant Details

TECHNICAL DATA SHEETS/PARAMETERS FOR THE PLANT

Plant Parameters

Part – A: Existing plant: Triple Effect Falling Film Evaporation Plant

New Upgraded plant: Quadruple Effect Falling Film Evaporation Plant

Sr. No.	Description	Unit	New
1.	Feed rate	Kg/hr.	9000
2.	Evaporation Capacity	Kg/hr	4820 (53.55%)
3.	Initial TDS	%	13
4.	Concentrate Outlet (28%)	kg/hr	4180
5.	Motive Steam Pressure	Kg/cm^2 (g)	7.0
6.	Motive Steam Consumption - Evaporator	Kg/hr	1295
7.	Cooling Water Inlet Temperature	^0C	32
8.	Cooling Water Outlet Temperature	^0C	38
9.	Cooling Water Quantity	M^3/hr	130
10.	Power Consumption – Additional (Evaporator)	KW abs.	9

Part – B: Continuous Crystallizer

Sr. No.	Description	Unit	New
1.	Feed Capacity @ 28%	Kg/hr	4180
2.	Glauber's Salt outlet with 15-20% free moisture	Kg/hr	2500 (59.8 %)
3.	ML outlet @ 12%	Kg/hr	1400 (33.49%)
4.	Steam Pressure	Kg/cm^2 (g)	7.0
5.	Steam Consumption	Kg/hr	1120
6.	Water Evaporation	Kg/hr	780
7.	ML Inlet Temperature	^0C	32
8.	ML Outlet Temperature	^0C	10
9.	Cooling Water Inlet Temperature	^0C	32
10.	Cooling Water Outlet Temperature	^0C	38
11.	Cooling Water Flow rate	M^3/hr	144

MVR Plant Details

- Temperature and pressure

No.	Bit No	Use	Fluid name	TEMP. (℃)	PRE. (MPa (G))
1	TG 110	Compressor oil cooler outlet water temperature	water	37	
2	TG 111	Circulating cooling water manifold return water temperature	water	32	
3	TG 113	Heater preheating steam temperature	NaCl、Na_2SO_4、organic matter、water	92	
4	TG 114	Liquid temperature of centrifugal mother liquor tank	NaCl、Na_2SO_4、organic matter、water		
5	TG 115	Liquid temperature of condensate water tank	condensate water		
6	TG 116	Condensate temperature after preheating	water	40	
7	TIC 101	Temperature of feed waste water after preheating	NaCl、Na_2SO_4、organic matter、water		
8	TI 102	Preheating temperature of waste water after alkali hydrolysis	NaCl、Na_2SO_4、organic matter、water		
9	TI 103	Liquid phase temperature of separator	NaCl、Na_2SO_4、organic matter、water	92	
10	TI 104	Gas phase temperature of separator	steam		
11	TI 105	Heater inlet temperature	NaCl、Na_2SO_4、organic matter、water	92	
12	TI 106	Heater outlet temperature	NaCl、Na_2SO_4、organic matter、water	92	
13	TI 107	Heater shell side temperature	steam	97	
14	TI 108	Inlet steam temperature of compressor	steam	80	
15	TI 109	Compressor outlet steam temperature	steam	97	
16	TI 112	Inlet temperature of vacuum pump	non condensate gas、steam		
17	PG 101A/B	Outlet pressure of condensate water pump	condensate water		0.3
18	PG 102A/B	Outlet pressure of feed pump	NaCl、Na_2SO_4、organic matter、water		0.3
19	PG 103A/B	Outlet pressure of discharge pump	NaCl、Na_2SO_4、organic matter、water		0.3
20	PG 104A/B	The outlet pressure of centrifugal mother liquid pump	NaCl、Na_2SO_4、organic matter、water		0.3
21	PG 105	Outlet pressure of sewage pump	NaCl、Na_2SO_4、organic matter、water		0.3
22	PG 106	Outlet pressure of axial-flow pump	NaCl、Na_2SO_4、organic matter、water		0.3
23	PG 107A/B	Outlet pressure of sealed water pump	RO water		0.3
24	PG 110	Inlet pressure of vacuum pump	non condensate gas、steam		-0.05

25	PG 112	Compressor seal steam pressure	steam		0.4
26	PG 113	Inlet water pressure of compressor oil cooler	process water		0.3
27	PG 114	Outlet water pressure of compressor oil cooler	process water		0.3
28	PG 115	Top pressure of condensate water tank	steam		-0.05
29	PG 118	Pressure of raw steam main pipe after decompression	steam		0.3
30	PG 119	Sealing pressure of axial flow pump	RO water		0.35
31	PG 122A/B	Condensate delivery pump outlet pressure	condensate water		0.3
32	PG 123	Outlet pressure of alkali washing pump	sodium hydroxide 、 water		0.3
33	PI 108	Heater shell side steam pressure	steam		0.1
34	PI 109	Gas phase pressure of separator	steam		-0.05
35	PI 110	Compressor inlet steam pressure	steam		-0.05
36	PI 111	Compressor outlet steam pressure	steam		0.1
37	PI 116	Circulating water supply manifold pressure	cooling water		0.3
38	PI 117	Steam main manifold pressure	steam		0.5
39	PI 120	Machine seal inlet manifold pressure	RO water		0.1
40	PI 121	Compressed air manifold pressure	air compression		0.55

- **Flow**

No.	Bit No	Use	Fluid name	TEMP.(℃)	PRE.(Mpa(G)	Flow (m3/h)		
						Maximum	Normal	Minimum
1	FIQ 101	Feed flow	NaCl、Na_2SO_4、organic matter、water				23	
2	FIQ 102	Condensate water flow	condensate water				18	
3	FIQ 103	Compressor spray water flow	condensate water、tap water				0.8-1.5	
4	FIQ 104	Discharge pump outlet flow	NaCl、Na_2SO_4、organic matter、water				40	
5	FIQ 105	Centrifugal mother liquid pump outlet flow	NaCl、Na_2SO_4、organic matter、water				35	
6	FI 106	Axial flow pump seals cooling water flow	NaCl、Na_2SO_4、organic matter、water				0.5-1	
7	FI 107	Liquid alkali flow	sodium hydroxide 、 water					

- Level/density

No.	Bit No	Use	Fluid name	TEMP. (℃)	PRE. (MPa. (G))	Normal level(m)	Liquid level measuring range H(mm)
1	LIC 101	Heater condensate water tank level	condensate water			0.8-1	
2	LICA 103	Centrifugal mother liquid tank level	NaCl、Na2SO4、organic matter、water			0.8-1	
3	LIA 104	Sealed water tank level	RO water			0.8-1	
4	LICA 106	Condensate water tank level	condensate water			2-2.5	
5	LICA 102A/B	Separator level	NaCl、Na2SO4、organic matter、water			1.4	
6	LS 101 LS 102	Compressor drain water tank level	condensate water				
7	DRI 101	Densimeter	NaCl、Na2SO4、organic matter、water				

SPRAY DRYER :
Technical Specifications:

Sr.No.	Description	Unit	Capacity
1.	Feed Rate	Kg/hr	12001
2.	Evaporation Rate	Kg/hr	7533
3.	Product Rate	Kg/hr	4468
4.	Ash carry over from air heater	Kg/hr	55
5.	Feed Temperature	^{0}C	32-35
6.	Dry solids moisture (w/w)	% w/w	6
7.	Inlet Air Temperature	^{0}C	690-710
8.	Outlet Air Temperature	^{0}C	190-216
9.	Vent Height (From G.L)	m	13-14*
10.	Vent Diameter	m	1.7

Note: * We are in process to increase Vent height by another 3 m.

APCM: 1) Twin Cyclone Separator

1) Two Stage Wet Scrubber

HOT AIR GENERATOR : 60 Lacs KCal

Power for Motors	Voltage: 415 V / 4 wire / 3 phase Frequency : 50 HZ
Fuel push blower	7.5 hp
Combustion blower	75 hp
Coal feeder screw (2hpx3 no):	6 hp
Rotary valve	1.5 hp
Connected load	90.0 hp
Consumed load	68.8 hp

Fuel consumption :	**Conditioned coal or suitable solid waste or DOC**
Normal consumption at 3800 kcal/kg cal value	**1414.0 kg/hr**

THE ADEQUACY CERTIFICATE OF ENVIRONMENT MANAGEMENT SYSTEM

M/s Dharmsinh Desai University, Department of Chemical Engineering is recognized by the GPCB, Gandhinagar under the Environmental Audit Scheme introduced by the Hon'ble High Court Gujarat, vide its Orders dated. 20/12/96 & 13/3/97 and modified vide Order dtd. 16/9/99 as and Environmental Auditor for the purpose of the auditing, having carried out Environmental Audit of

a) **M/S** : **Kiri Industries Limited (Unit-III)**

b) **Located at** : ECP Channel Road, Village- Dudhwada
Taluka-Padra, Vadodara, Gujarat

c) **Manufacturing products as under** : **As per CCA amendment dated 19-09-2018**

Sr. No.	Product / By-product	Consent Quantity (TPM)
1	Vinyl Sulphone	1500
2	OAVS	100
3	PCVS	100
4	DMAVS Ester	350
5	Sulpho VS Ester	150
6	Meta VS Ester	75
7	Sulpho 2- Amino	75
8	DASA	500
9	NEPA Ester	50
10	MAE Ester	25
11	Royal Blue E-FR Ester	75
12	H-Acid	500
13	ACLAP	10
14	4 Sulpho Hydrozone	10
15	K Acid	50
16	Sulpho Tobias Acid	30
17	Sulpho J Acid	10
18	MPDSA Free Acid	20
19	Acvetyl MPDSA	10
20	Sodium Salt (MPDSA)	15
21	R R Acid	20
22	M.U.A	25
23	Acetanilide	1500

Sr. No.	Product / By-product	Consent Quantity (TPM)
24	O A Flakes	200
25	Sulphanilic Acid	750
26	PC Flakes	50
	Total	**6200**

Having completed the Environmental Audit period on personal monitoring, and audit report, prepared as per the direction of Hon'ble High Court in Environmental Audit Scheme, it is certified that the Environmental Management System (EMS) provided by this industry for the products manufactured and capacity as stated above is adequate and efficient to achieve the quality of effluents (Air + Wastewater + Solid Waste) as specified in Consent/Notifications by GPCB, Gandhinagar for the following quantity of waste generation.

a) Liquid effluent : **68 KL/Day (Industrial Effluent) &**
20 KL/Day (Sewage effluent)

b) Solid Waste :

Sr.	Type of Waste	Category	Quantity (TPA)
1.	Used Spent Oil	5.1	26 (KL/Y)
2.	Iron Sludge	26.1	21170 (MT/Y)
3.	Process Gypsum Sludge	26.1	47085 (MT/Y)
4.	Glaubber Salt	26.1	9900 (MT/Y)
5.	Discarded Bags & Discarded Containers	33.1	72600 (Nos./Yr) & 122 (Nos./Yr)
6.	ETP Sludge	35.3	36 MT/Y
7.	Incineration Ash	37.2	8100 (MT/Y)
8.	Hydrochloric acid	B15	850 (MT/Month)
9.	Acetic acid	B15	1050 (MT/Month)
10.	Spent Sulphuric acid	B15	13850 (MT/Month)

c) Air Emission (Flue gas stack as well as process stacks) : Adequate/~~not adequate~~ efficacious/~~not efficacious~~

This certificate is valid for the audit period only. However, it is subject to automatic cancellation in case of any change in product profile/capacity, quality & quantity of effluents (Air + Water + Solid/Hazardous) and efficiency of EMS equipment.

This certificate forms part of Environmental Audit report.

Date: 22-06-2021
Place: **Nadiad**

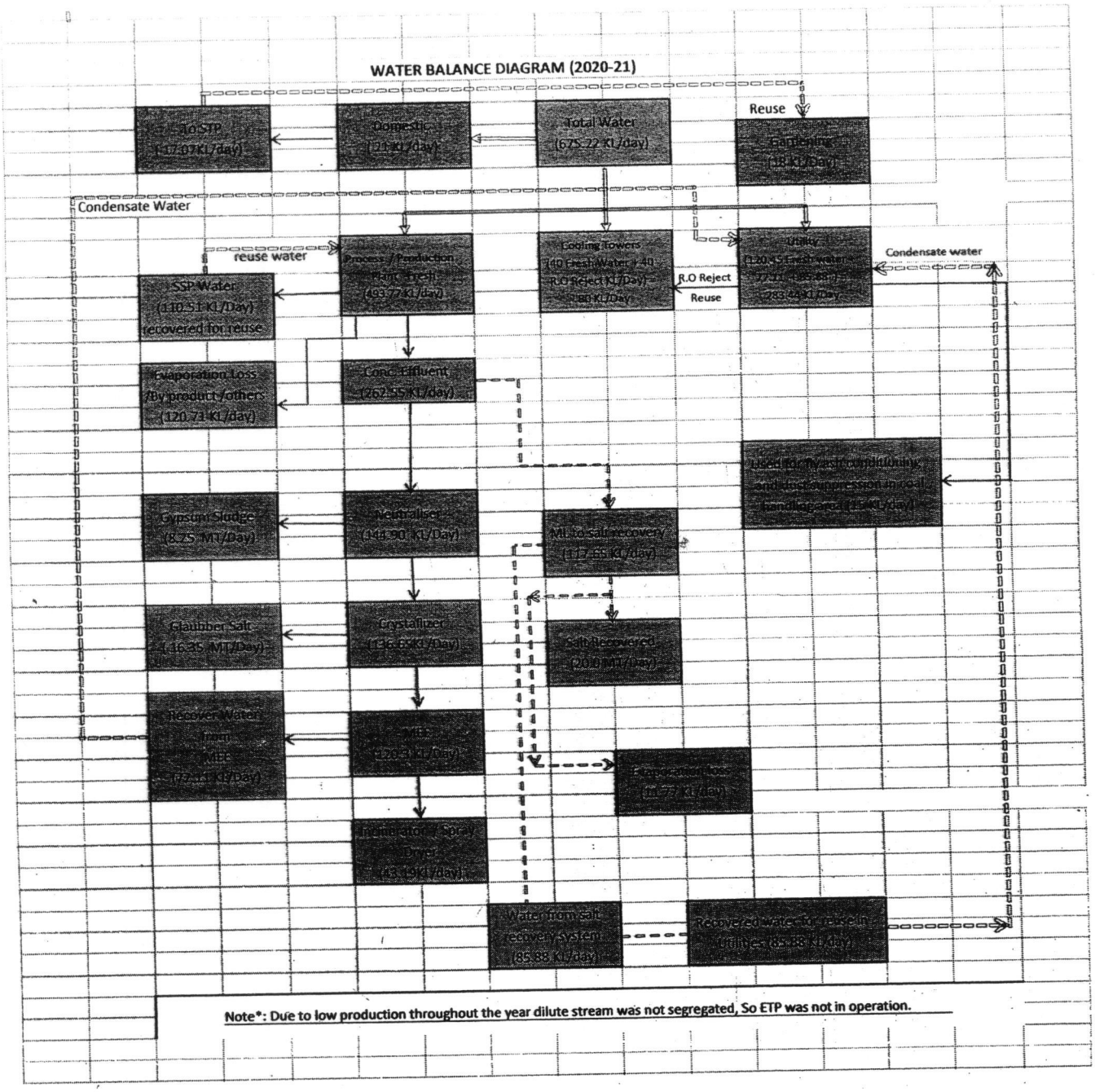
Name & Address of the Auditor:
Dharmsinh Desai University,
College Road,
Nadiad – 387 001.

Signature of the Authorized Person

Coordinator
Environmental Consultancy Cell

Dharmsinh Desai University • College Road, Nadiad • (Guj.) INDIA

WATER BALANCE DAIGRAM
2020-2021



Note*: Due to low production throughout the year dilute stream was not segregated, So ETP was not in operation.

Annexure - 9

GPCB RO VADODARA

Loxim Industries Ltd (PCB ID: 22199)

A. Weekly review of compliance with respect to action plan submitted by the unit under the Directions (under Water Act) of the Board.

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time Limit	Status as per review meeting Dt. 02-07-2022	Status as per review meeting Dt. 08-07-2022
1	Except aeration tank all other ETP units were observed not in operation. Looking to the site situation, primary settling tank and clarifier are not in operation since long.	Unit has to submit EMS adequecy certificate from schedule 2 auditor, order for the same was placed on 18/05/2022.	To submit EMS Adequecy certificate	25-06-2022	EMS Adequacy Cerificate submitted, so Complied	Complied
2	Provided primary settling tank and secondary clarifier was found empty. It seems that, unit is not operating their ETP units regularly and efficiently.					
3	Sludge drying bed is not used since long as grass is observed in the sludge drying bed and sludge kept on floor.					
4	VECL collected wastewater sample from official final discharge of unit in to VECL channel on 07/05/2022 and official from VECL sent wastewater sample to GPCB, Vadodara for analysis purpose. Analysis report of sample shows pH-10.02, COD-1063 mg/L, which is higher that consented norms.					
5	During inspection wastewater samples collected from final treated wastewater holding cum disposal tank of ETP and analysis result shows pH-8.14, COD-17 mg/L, NH3-N - BDL, Oil & Grease-BDL, Phenol-BDL, Color20 Pt.Co.Sc. However, analysis report of ample collected by VECL officials of VECL on 07/05/2022 and analysis report of sample shows pH-10.02, COD-1063 mg/L, which indicated unit is not discharging industrial wastewater Ito VECL as prescribed norms and unit is in violation of consented parameters.					

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time Limit	Status as per review meeting Dt. 02-07-2022	Status as per review meeting Dt. 08-07-2022
6	Unit has not provided flow meters at strategic locations in ETP except on RO permeate line.	Unit has to installed water flow meter at stretegic locations on efflunet conveying pipeline.	Flow meters detais		Unit has provided flow meter at 4 location in ETP as below (1) After Equalization tank (2) Before RO system (3) RO permeate line (4) RO reject line	Complied
7	Unit is not maintaining cumulative flow meter readings on daily basis of RO permeate.	Unit has to make loogbook for ETP & RO operation	Logbook details	Immediate	Unit has made ETP & RO logbook.	Complied
8	Unit is not maintaining any records for operation of ETP.					
9	Unit is not provided 3-way valve on final treated wastewater discharge line in to VECL.	Unit has placed purchase order for the same	Required compliance in coordination with VECL.	31-07-2022	Unit has placed purchase order and instllation work will completed before 31/07/2022	In Process
10	Flexible pipeline & open tray type arrangement connected to sensor box is provided, which is not temper proof & false/misleading results might be shown by diluting effluent manually in open tray.	During visit it is observed that unit has provided fix pipeline for abstraction of waste water sample from discharge pipeline, however sensor box is found not completely temper proof. Unit has provided OCEMS and found in operational condition.	Required compliance in coordination with VECL.		They have covered open tray of the sensor box of OCMS.	VECL has disconnected their outlet and put up their case to their Board to decide upon permenent removal of the Membership of the unit. VECL has been asked to inform GPCB regarding the steps being taken by them.
11	Auto sampler provided on final VECL discharge line is observed in idle condition.	Unit has provided auto sampler.				
12	IOT valve provided on final treated effluent discharge line into VECL is observed in open condition.	Need to make tamper proof IOT valve.			IOT valve has to be made tamper proof and to be under the control of VECL.	

GPCB RO VADODARA

Mayur Dye Chem Intermediates Private Limited Unit - III

A. Weekly review of compliance with respect to action plan submitted by the unit under the Directions (under Water Act) of the Board.

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details of action plans	Time Limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt. 02-07-2022	Status as per review meeting Dt. 08-07-2022
1	Unit is taking production of H-acid (62.5% Higher) and Vinly Sulphone (175% Higher) at the rate much higher than the consented quantity. (H-acid CCA Quantity-200 MT/Month & VS CCA Quantity-150Mt/Month).	Unit has submitted undertaking that they will not carry out production of H acid & VS more than consented quantity.	Unit has submitted undertaking that they will not carry out production more than concensted quality.	one week	Complied	Complied	Complied	Complied
2	Unit is taking production of Acetanilide for selling outside instead of reuse for which unit has not obtained necessary permission of the Board.	As claimed, unit is not selling Acetanilide to other company and they are using it in their unit-1 Mayur Dye Chem Intermediate ltd, Vatva, which is not acceptable.	Unit has submitted undertaking that they will not sell Acetanilide outside to any other company or unit and use for captivre purpose only.	one week	Complied	Complied	Complied	Complied
3	Unit is not having flow measurement at source of generation and other strategic stages of EMS and therefore no data at various stages are maintained.	Unit has now provided flow meter at H acid and VS effluent discharge line from collection tank. Unit has still not provided systematic & strategic flow measuring system to verify the efficiency & efficacy of ind effluent & ground water remediation to be carried out as recommended. Hence, unit has been instructed to provide flow meter on all strategic locations (inlet/receiving and Outlet/disposal). And also to maintain data daily in hard bound logbook with page numbers.	Required flow measuring system at every stage of source with undertaking. (time limit)	30 days	Unit has provided all flow meters (21 nos) at strategic locations.	Complied	Complied	Complied
			Required steam measuring system i.e. Steam Meter	180 days	Unit yet not isntalled any steam meter	Unit yet not isntalled any steam meter	Steam Flow meter quotation process is going on will be installed by Jan-2023.	In Process
4	Unit has not provided STP for the treatment of domestic wastewater.	STP will be installed within one Month.	Undertaking for installation with time bound action plan.	30 days	Unit has installed STP and now commisssioning activity is going on.	STP Commissioned	STP in operation.	Complied

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details of action plans	Time Limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt. 02-07-2022	Status as per review meeting Dt. 08-07-2022
5	Unit has not obtained authorization for generation/disposal of Sodium Bisulphite.	Unit has CCA for SBS as by product.	Authorization amendment required.	One week to apply for	Unit yet not applied for the same.	Not Complied.	Not Complied.	Unit has been asked to apply for ammendment.
6	Unit has provided OCMS for measuring quality of effluent being discharged into VECL, however, flexible pipeline & open tray type arrangement connected to sensor box is provided, which is not temper proof & false/misleading results might be shown by diluting effluent manually in open tray.	Required compliance in coordination with VECL.	Undertaking with time bound action.	3 months	OCMS is presently within premises, it is being brought outside with a separate cabin to contain OCMS, 3-Way valve, Auto sampler etc to be kept within the control of VECL.	Started civil work for shifting OCMS at outside of premises. OCMS shifting work will complited on 31/07/2022.	Civil work almost comleted.	In progress
7	Unit has still not provided the OCMS facility on VECL channel at upstream & downstream of their unit to monitor effluent quality variation in VECL.	Required compliance with coordination with VECL.	Undertaking with time bound action.	3 months	GPCB, VECL will visit on 20/06/2022 for identify location for to provide OCMS facility before and after their discharge point into VECL as per direction issued by the Board.	GPCB and VECL jointly visited on 20/06/2022 and idetified/decided locations to rearrenge RTOM/OCMS in VECL with respect to upstream and downstream of unit.	Unit has released PO for OCMS and installation on upstraem and down stream in VECL will be completed and commission by Aug 2022.	In progress
8	Provided auto sampler with OCMS was found idle during visit.	Unit has submitted that Auto sampler provided and operated by VECL for monitoring quality of effluent being discharged into VECL channel. However, unit is yet not maintaining the records of sample collected by VECL from the Auto sampler.	coordination with VECL.	3 months	Auto sampler is also to be shifted in outside cabin of OCMS.	Civil works in progress	Civil work almost comleted.	In progress
9	Ground water quality in the premises of the unit is highly contaminated after remediation process and unit has not provided dedicated treatment system for contaminated ground water.	Unit has not justified or yet not submitted any full proof plan to stop fresh water usage, & to use only contaminated borewell water, as recommended for ground water remediation. Latest progress report doesn't reflect any apparent improvement or whole hearted efforts put by the unit for ground water remediation, as recommended.	Compliance for NOD issued on 14/12/2021 with give detais for remediation with extraction system. Undertaking for not using freshwater for industrial purpose is to be submitted.	Within 60 days for NOD complinces and further action plan. And Abstract 150 KLD contaminated ground wateras per designed rate by 180 days	They had submitted undertaking to increase abstraction upto 100 KLD.	In Process	Abstraction increased up to 80 KLD.	Partially complied, unit asked to comply with NOD issued by the Board in this regard.
10	Unit is not carryout proper investigation, assessment and development of method to adopted for effective remediation.							
11	Unit is not using treated ground water from the contaminated wells from premises to control the fresh water demand for process requirements in the units and still using fresh water into premises.							
12	Unit has not submitted fresh progress report of remediation work to remove ground							

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details of action plans	Time Limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt. 02-07-2022	Status as per review meeting Dt. 08-07-2022
B. Weekly review of compliance with respect to action plan submitted by the unit under the Directions (under Air Act) of the Board								
Sr. No.	**Direction Points**	**Compliance status as verified w.r.to revocation application**	**Required details of action plans**	**Time Limit**	**Status as per review meeting Dt. 17/06/2022**	**Status as per review meeting Dt. 27/06/2022**	**Status as per review meeting Dt. 02-07-2022**	**Status as per review meeting Dt. 08-07-2022**
1	As per CCA, natural gas consumption 4000(For Boiler) + 7400(for CPP) = 11400 NM3/day. Whereas, average gas consumption recorded as above is found to be 21190.42 NM3/day, which is 86% higher than the consented quantity.	Unit will apply for amendment to the Board.	Undertaking for use of fuel as per CCA.	one week for submission of undertaking	As per undertaking submitted, unit has not agreed upon to reduce natural gas consumption as per CCA.	Not Complied	Not Complied	Not Complied. Unit has been asked to comply with concent condition.
2	Unit has provided additional generator with CPP without permission of the Board.	Unit has submitted that they will use only two nos of CPP at that time and they will apply for amendment to the Board.	Require to discontinue the additional one.	one week for submission of undertaking	Unit has disconnected old CPP.	Not Complied, as not removed as per direction.	Not Complied, as not removed as per direction.	Not Complied. Unit has been asked to comply with the directions.
3	Unit has also provided additional TFH without permission of the Board.	Unit has also provide TFH without permission from the Board.	Required to remove additional TFH with time limit.	30 days	As per undertaking submitted, unit has not agreed to remove TFH.	Not Complied	Not Complied	Not Complied. Unit has been asked to comply with the directions.
4	Unit is using less coal as per requirement, it is indicated that, unit is not operating effluent spray dryer properly & adequately as per requirement.	As per claimed, unit has received 1238 MT coal for six month. Coal is used only for spray dryer. As per CCA, 1350 MT/Month coal is used in spray dryer. So, their justification in this regard is not convincing & not acceptable.	Unit will use coal as per CCA and will operate spray dryer efficiently. And maintain logbook for operating spray dryer.	one week for submission of undertaking	As per undertaking, They use coal as per CCA.	Complied	Complied	Complied

GPCB RO VADODARA

Kiri Industries Limited -Unit-III (PCB ID: 22148)

A. Weekly review of compliance with respect to action plan submitted by the unit under the Directions (under Water Act) of the Board.

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt. 02/07/2022	Status as per review meeting Dt. 08/07/2022
1	Unit is taking production of H Acid-Average-584.37 MT/month (CCA Quantity-500 MT/month) @ 16.87% higher than the consented quantity.	Unit's higher production & thus violation of EC, CCA & Padra Policy have been found out from verification of ERP system and not from the gate register. So, their justification in this regard is not convincing & not acceptable.	Undertaking required for production as per CCA.	One week	Complied (unit has submitted undertaking for not to carry out more production than CCA)	Complied	Complied	Complied
2	Unit is manufacturing KD-040B (Average 10.6 MT/Month) & KD-40 B (JW) (Average: 7.05 MT/month) product without permission of the Board.	Their claim of KD040B & KD-40 B (JW) as trade name of Acetyl MPDSA (CAS No. 88-64-2) is verified as this product is manufactured in New Intermediate plant-1.	Required name in CCA as trade name with undertaking.	Mentioned in CCA-Renewal	Complied	Complied	Complied	Complied
3	Unit has provided flow meter only on NF reject line and reading was observed during visit 20584.927 KL, however unit has not provided meter after collection tank, RO permeate line, RO reject line, therefore data was not received to find out exact groundwater remediation carried out by unit.	Unit has now provided flow meter on NF reject and permeate line and RO reject and permeate line. Unit has still not provided systematic & strategic flow measuring system to verify the efficiency & efficacy of ground water remediation to be carried out as recommended. Hence, unit has been instructed to provide flow meter on all strategic locations (inlet/receiving and Outlet/disposal). And also to maintain data daily in hard bound logbook with page numbers.	Required flow measuring system at every stage of source to be diceided by 26th May with undertaking.	26th May 2022	They have to installed ten flow meters on efflunet conveyance pipeline	Work in progress.	Nine nos of flow meters are installed, and remaining one is in progress.	All 10 nos of flow meters are installed and commissioned.
		Steam meter	Install new Steam meter	180 days	Unit yet not installed steam meters.	Unit yet not installed steam meters.	Unit has identified locations for installation of eight steam flow meters.	Quotation received and yet to be ordered.
4	Unit has 39 % higher generation of spent HCI (Average 1181.62 MT/month) than consented quantity. (CCA Quantity-850 MT/month)	They have claimed that quantity increased due to provision of more scrubbers for efficient scrubbing. There's no qualitative/quantitative data management found to support their claim of captive use of spent HCl, that too dilute/low conc. HCl.	Required proper mass balance & water balance with technical justification. (with time limit)	One week for applying amendment	They have submitted mass and water balance.	They have to apply for quantity ammendment in CCA as per mass balance submitted.	They have yet not applied for CCA-Ammendment.	Not complied. They have been asked to apply for ammendment.

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt. 02/07/2022	Status as per review meeting Dt. 08/07/2022
5	Unit is having much higher generation of SBS solution (Average-1470 MT/month) than consented quantity. (CCA Quantity-107.33 MT/month)	Unit has claimed that, SBS is their co-product which is used as captive consumption in the same form. Due to modification of existing two stage alkali scrubbing system to three stage alkali scrubbing system, quantity of SBS generation has been increased. And they will obtain the CTE and CCA from the board for the same. Recorded quantity of SBS generation is much (13.7 times) higher which is not justified as claimed.	Required proper mass balance & water balance with technical justification. (with time limit)	One week for applying amendment	Unit has submitted product wise material balance with w/w generation details.	They have to apply for quantity ammendment in CCA as per mass balance submitted.	They have yet not applied for CCA-Ammendment.	Not complied. They have been asked to apply for ammendment.
6	Gross discrepancy observed in recorded spent sulphuric acid as compared to consented quantity. (CCA Quantity-13850 MT/Month, Generate-@ 4.185 MT/Month).	This data are taken from details furnished by the unit during inspection which is maintained in ERP software. Even after correction of decimal as submitted, recorded generation of spent sulphuric @ 4185 MT/M is less than one third of consented qty (13850 MT/M), indicating false data management & thus unauthorized disposal.	Required proper mass balance & water balance with technical justification.	One week for applying amendment	Unit has submitted product wise material balance with w/w generation.	They have to apply for quantity ammendment in CCA as per mass balance submitted.	They have yet not applied for CCA-Ammendment.	Not complied. They have been asked to apply for ammendment.
7	Unit has not obtained authorization for generation of sodium sulphate.	Sodium sulphate generates from MVR treatment of VS effluent, whereas Glauber Salt generates from crystalizer of H-acid effluent.	Clarification of sodium sulphate for generated from MVR treatment. Also amendment required for quantity.	One week after CCA-Renewal.	Unit will apply CCA-Amendment (for sodium salphate generate from MVR)7 days on receipt of CCA-Renewal. Now CCA renewal of this unit under process.	CCA Renewal under process	CCA Renewal under process	CCA Renewal under process.
8	Unit has not provided OCMS facility before and after their discharge point into VECL as per Directions of the Board.	Unit has still not provided OCMS facility on upstream & downstream of their unit to monitor the quality variation, if any in the effluent of VECL channel passing alongside the unit. Hence unit has been instructed to submit time bound action plant for installation of OCMS as per direction issued by the board.	Undertaking with time bound and also reflect flow measuring in OCEMS.	30 days	GPCB, VECL will visit on 20/06/2022 for identify location for to provide OCMS facility before and after their discharge point into VECL as per direction issued by the Board.	GPCB and VECL jointly visited on 20/06/2022 and idetified/decided locations to rearrenge RTOM/OCMS in VECL with respect to upstream and downstream of unit.	Unit has to shift the existing cabin of OCMS in downstream to further down stream at new location decided.	Not yet started any activity in this regard.
9	Auto sampler is provided with OCMS, however it is found idle during visit.		Not applicable	--	Not applicable	Not applicable	Not applicable	Not applicable

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt. 02/07/2022	Status as per review meeting Dt. 08/07/2022
10	IOT valve provided on final treated effluent discharge line into VECL, is not observed tobe tamper proof and it can be operated/manipulated by member unit also.	Auto sampler, OCMS & IOT valve became irrelevant & not required now, as VECL has disconnected their official final outlet.	Not applicable	--	Not applicable	Not applicable	Not applicable	Not applicable
11	Unit is not using treated ground water from the contaminated wells from premises to control the fresh water demand for process requirements in the units and still using freshwater into premises.	As per data furnished by the unit during previous inspection, water consumption from contaminated wells is @235.13 KLD, whereas they have submitted that as per ERM study they have to abstract 845 KLD water from ground water for remediation purpose. So, considering the same, unit has to stop fresh water usage.	Undertaking for not to utilize fresh water for industrial purpose with time limit.	Will be provided technical detail within 7 days.	Techanical detail submitted. As per the details exisitng neno filters of ground water remidiation plant are damaged, membranes of which are to be replaced by new 06 nos of membranes, which will be received on 11/07/2022.	Purchase order for membranes are given	Delivery of membranes is awaited by the unit, expected to be delivered and fitted within a week.	06 nos of membrans arrived, however as found later on another 18 are also to be replaced which are expected to be received by next week.
		Unit has not justified or yet not submitted any full proof plan to stop fresh water usage, & to use only contaminated borewell water, as recommended for ground water remediation.	Also Required proper details with technical data for extraction of Ground Water as per design of remediation plan.		Unit has release PO for new neno filter for more qty of ground water will remidiate. This Neno filter will start operating by 30 Apr 2023.	Delivery of new nano filters is awaited	Delivery of new nano filters is awaited	Delivery of new nano filters is awaited
12	Unit has not submitted fresh progress report of remediation work to remove groundwater contamination.	Latest progress report doesn't reflect any apparent improvement or whole hearted efforts put by the unit for ground water remediation, as recommended.	Above mentioned upgradations are required.	--	In progress as above.	In progress as above.	In progress as above.	In progress as above.
13	Unit has provided internal conveyance pipelines without colour coding, nomenclature and indication of flow direction.	Yet not provided, and also not submitted any time bound action plan in this regard for Colour coding with flow directions mentioned on above ground effluent conveyance lines.	Undertaking with time limit.	90 days	Unit has already provided above ground pipeline for effluent conveyance. Unit has yet not started colour coding, nomenclature and indication of flow direction, however as per schedule it is to be completed by 31 Aug 2022.	Work started and completed @ 10 %	Work in progress and completed @ 25%	Will be completed within 10 days.

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt. 02/07/2022	Status as per review meeting Dt. 08/07/2022

B. Weekly review of compliance with respect to action plan submitted by the unit under the Directions (under Air Act) of the Board.

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time Limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt. 02/07/2022	Status as per review meeting Dt. 08/07/2022
1	Unit has not obtained consent from the Board for provided 20 TPH boiler.	Unit has provided 20 TPH boiler without prior permission from the board, which is also a violation of EC & Padra Policy.	Required EMS, one MEE, Crystalizer, MVR which are already exisitng and consented machinery to achieve ZLD.	One week for submission of undertaking	Unit has disconnected 20 TPH boiler from steam header.	20 TPH boiler not in use.	20 TPH boiler not in use.	20 TPH boiler not in use.
			Installation for new MEE (2 Nos.) with technical justification and proper reason for installation.		Unit has released PO for one new MEE & Crystalizer (15 KL/hr) and unit has started civil construction activity. For second new MEE (15 Kl/hr), quotation finilized and techanical scrutiny under progress.	Work in progress, will be complted by 30 Apr 2023.	Work in progress, will be complted by 30 Apr 2023.	Work in progress, will be complted by 30 Apr 2023.
		Unit has yet not applied for necessary amendment in this regard. Its requirement for existing & proposed EMS is also not justified as claimed, because existing ones are to be operated on consented boiler, & proposed ones didn't require any steam before commissioning.	Till then new boiler should not be used and undertaking for the same to be given.		Unit will apply CTE-Amendment for 20 TPH boiler after installation of two new MEEs. Unit has disconnected 20 TPH boiler from steam header.	20 TPH boiler not in use.	20 TPH boiler not in use.	20 TPH boiler not in use.
2	Unit is using FO as fuel in product dryers but in CCA, FO is permitted for incinerator only, which is not in operation since long. Also, now FO is no more an approved fuel.	Unit has proposed to use RDF/Coal/LDO/Agro briquette as fuel, but not provided any timeline for compliance. Hence unit has been instructed to submit time bound action plan for usage of any approved fuel in place of FO.	FO to be discontinued to use and Undertaking for new fuel and time bound action plan for use of all fuel.	Immediately stop use of FO. For new system required 1 year.	Immediately stop use of FO. And now LDO is used as fuel.	Complied	Complied	Complied

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt. 02/07/2022	Status as per review meeting Dt. 08/07/2022
3	Unit is using less coal as per requirement, it is indicated that, unit is not operating effluent spray dryer properly & adequately as per requirement.	Less coal consumption indicates less/inadequate operation of spray dryer, which further indicates possibility of surreptitious discharge through some illegal arrangement. Thus, their justification/claim in this regard is not convincing.	Replied not justify and submit actual reason for use of less quantity of coal. Undertaking for compliance with time limit.	One week	They have claimed that they are using 16 MT/Hr steam from sister concern unit.	Complied	Complied	Complied
4	Unit has not provided proper APCM with Steam Boiler & TFH as per current solid fuel guideline.	Unit has yet not provided proper APCMs as per solid fuel guideline. Hence unit has been instructed to submit time bound action for installation of APCM with boiler and TFH as per solid fuel guideline.	Undertaking for compliance with time limit and also required purchase order for APCM.	APCM for 7 TPH boiler already done and for other required 60 days	Unit has provided dry scrubber for 7 TPH & 12 TPH capacity of exisitng boilers.	Complied	Complied	Complied

GPCB RO VADODARA

Bodal Chemicals Ltd (Unit-Vii) (PCB ID: 21752)

Weekly review of compliance with respect to action plan submitted by the unit under the Directions (under Water Act) of the Board.

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time Limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt.02-07-2022	Status as per review meeting Dt. 08-07-2022
1	Unit is not having Flow measurement at source of effluent generation and strategic stages of EMS and therefore no data at various stages are maintained.	Unit has provided flow meter at effluent generation source i.e. H-acid plant, VS plant, Dyes Plant – 1, 2 & 3 and B-napthol plant, inlet and outlet of effluent treatment unit i.e. ETP, MEE, spray drier and unit has started to maintain the record of the same. Unit has isnatlled required additionals 11 nos flowmeters on strategic locaation of efflunet conveyince lines. Unit is instructed to maintained record in hard bound printed registered/logbook having page nos.	--	One week	Complied	Complied	Complied	Complied
2	Gap of 1214.65 KL/month observed in effluent generation recorded from H-acid manufacturing. This indicates that 44% of effluent generation is not recorded.	Unit has submitted that, they are reducing the wastewater generation by reutilizing the wash water however there is no any supporting document, quantitative study, records furnished during the visit which support this claim.	Required proper mass balance & water balance with technical justification. (with time limit)	10 days	Unit has submitted Mass balance with w/w generaton details of H acid and VS only.	Complied	Complied	Complied
3	Gap of 72.63 KL/month observed in effluent generation recorded from VS manufacturing. This indicates that about 2.8 % of effluent generation is not recorded.	Unit has provided flow meter at H-acid and VS plant on effluent transfer pipeline so that the actual effluent generation can be known.	Required proper mass balance & water balance with technical justification. (with time limit)	10 days	Unit has submitted Mass balance with w/w generaton details of H acid and VS only.	Complied	Complied	Complied
4	Unit is not having flow meter at feedline of spray dryer hence exact quantity of concentrated ML spray dried could not be calculated.	Unit has provided flow meter at spray dryer and started to maintain the records of the same.	--	Complied	Complied	Complied	Complied	Complied

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time Limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt.02-07-2022	Status as per review meeting Dt. 08-07-2022
5	Unit is not having flow measurement at intermediate effluent storage tank to MEE feed line, hence exact quantity of B-Napthol effluent treatment could not be calculated.	Unit has provided flow meter at B-napthol plant on effluent transfer pipeline to intermediate storage at MEE plant so that exact quantity of effluent generation from b-napthol plant can be known.	--	Complied	Complied	Complied	Complied	Complied
6	Unit has discharged more effluent than the consented quantity in month of OCT-2021- 13891 KL, NOV-2021-14487 KL and DEC-2021-15517 KL. (CCA Quantity-452 KL/day i.e. 13560 KL/Month)	Unit has submitted that effluent (475 KLD) from the sister concern unit M/s. Bodal Chemical Ltd Unit VII Sulphur Division (PCB ID: 33329) is transferred to this unit (PCB ID: 21752) and ultimately discharged into VECL as per CCA of M/s. Bodal Chemical Ltd Unit VII Sulphur Division (PCB ID: 33329). However, it is not mentioned in existing CCA of this unit.	Required CCA-Amendment.	Apply at time of CCA-Renewal	Yet not applied CCA-Ammedment	Unit will apply CCA-Amendment Before 03/07/2022	Unit has applied for renewal but not for necessary ammendment.	Unit has applied for renewal but not for necessary ammendment.
7	3 way valve system provided at OCMS to return back non-conforming effluent is having pipe connected to final disposal tank of treated effluent, which should actually be connected to collection tank for retreating such effluent.	Unit has now connected the return line of non-conforming effluent from 3-way valve provided at OCMS to collection tank before primary treatment in ETP for re-treating such effluent.	Required compliance in coordination with VECL.	30 days	OCMS is presently within premises, it is being brought outside with a separate cabin to contain OCMS, 3-Way valve, Auto sampler etc to be kept within the control of VECL.	Started civil work for shifting OCMS at outside of premises. OCMS shifting work will complited on 31/07/2022.	Civil work almost 20 % completed and OCMS with 3-way valve outside premises will commission on 31/07/2022.	Civil Work completed
8	Unit has provided OCMS for measuring quality of effluent being discharged into VECL, however, flexible pipeline & open tray type arrangement connected to sensor box is provided, which is not temper proof &false/misleading results might be shown by diluting effluent manually in open tray.	Unit has submitted that the OCMS and its related machinery are provided, operated and maintained by VECL. During visit, open tray type arrangement connected to sensor box is still provided as observed earlier, which is not temper proof & false/misleading results might be shown by diluting effluent manually in open tray. Hence, unit is instructed to get/make it temper proof so that the manual intervention can be avoided.	Required compliance in coordination with VECL.	30 days				
9	Unit has not provided OCMS facility before and after their discharge point into VECL as per Directions of the board.	Unit has still not provided the OCMS facility on VECL channel at upstream & downstream of their unit to monitor effluent quality variation in VECL. Unit is instructed to submit the time bound action plan to install OCMS facility on VECL at upstream and downstream of the unit.	Required compliance in coordination with VECL.	80 days.	GPCB, VECL will visit on 20/06/2022 for identify location for to provide OCMS facility before and after their discharge point into VECL as per direction issued by the Board.	GPCB and VECL jointly visited on 20/06/2022 and idetified/decided locations to rearrenge RTOM/OCMS in VECL with respect to upstream and downstream of unit.	OCMS received at site and installation on upstraem and down stream in VECL will be completed and commission by Aug 2022.	In Progress

Sr. No.	Direction Points	Compliance status as verified w.r.to revocation application	Required details	Time Limit	Status as per review meeting Dt. 17/06/2022	Status as per review meeting Dt. 27/06/2022	Status as per review meeting Dt.02-07-2022	Status as per review meeting Dt. 08-07-2022
10	Provided Auto sampler with OCMS was found idle during visit.	Unit has submitted that Auto sampler provided and operated by VECL for monitoring quality of effluent being discharged into VECL channel. However, unit is yet not maintaining the records of sample collected by VECL from the Auto sampler.	Required compliance in coordination with VECL.	80 days	Auto sampler is also to be shifted in outside cabin of OCMS.	Civil works in progress	Civil works almost 20% completed, auto sampler along with OCMS and 3-way valve out side of premises will be installed and commissioned by 31/07/2022.	In Progress
11	IOT valve provided on final treated effluent discharge line into VECL is not observed to be tamper proof and it can be operated / manipulated by member unit also.	Not applicable as the unit has membership of VECL for 24-hour effluent discharge so that IOT valve is not installed.	--	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
12	Above ground pipeline network with colour coding, nomenclature & flow direction.	Unit has now provided above ground pipeline for effluent conveyance, except effluent return line from 3-way valve to collection tank. Colour coding with flow directions mentioned on above ground effluent conveyance lines.	Undertaking with time limit.	One week	Complied (Unit has made above ground pipeline network with colour coding, nomenclature & flow direction on effluent conveying pipeline).	Complied	Complied	Complied
13	Ground water quality in the premises of the unit is highly contaminated after remediation process and unit has not provided dedicated treatment system for contaminated ground water.	Ground water remeditation plant/scheme is operated as it is.	Undertaking for not to utilize fresh water for industrial purpose with time limit and revised proposal is to be submitted.	60 days	They had submitted latest report from M/s. Kadam Environment to continue with abstraction of contaminated ground water @ 250 KLD only.	Unit has not submitted any revised proposal in this regards.	Unit has not submitted any revised proposal in this regards.	As per the latest report, consultant has recommended to increase the depth of the pump of abstraction well and to abstract maximum ground water for remediation purpose.
14	Required steam meter	Required Steam meter	Also required steam meter for steam measuring.	180 days	Unt has released PO for steam meter and will be instlled by AUG 2022.	Steam meters are awaited	Steam meters are awaited	06 nos steam meters are installed.