ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ
ಪ್ರಾದೇಶಿಕ ಕಛೇರಿ, ಕಾರವಾರ
"ಪರಿಸರ ಭವನ", ನ್ಯೂ ಕೆ.ಎಚ್.ಬಿ. ಕಾಲೋನಿ,
ಹಬ್ಬುವಾಡಾ, ಕಾರವಾರ-581 306, ಉತ್ತರ ಕನ್ನಡ ಜಿಲ್ಲೆ.
ಫೋನ್ / ಫ್ಯಾಕ್ಸ್ : 08382-227058
ಇಮೇಲ್ : karwar@kspcb.gov.in
ವೆಬ್‌ಸೈಟ್ : http://kspcb.karnataka.gov.in

Karnataka State Pollution Control Board
Regional office, Karwar
"Parisara Bhavan", New K.H.B. Colony,Habbuwada,
Karwar-581 306 Uttara Kannada District.
Phone/Fax : 08382-227058
Email : karwar@kspcb.gov.in
Website : http://kspcb.karnataka.gov.in

ಕರ್ನಾಟಕ ರಾಜ್ಯ
ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ

towards a cleaner Karnataka

PCB/RO (KWR)/NGT /OA.No. 851/2022/2023-24/ ೧೧ **Date:** 6 MAY 2023

To,

The Member Secretary
Karnataka State Pollution Control Board
#49, Parisara Bhavana
Church Street, Bengaluru-01.

Kind attention: Law Officer-Legal Cell, KSPCB

Sir,

Subject: Submission of inspection report with respect to M/s. EID Parry (India) Ltd., Hullatti Village, Haliyal Taluk, Uttaar Kannada District in the matter of OA No. 851/2022, dated: 10.01.2023-reg.

Reference:

1. The Hon'ble National Green Tribunal, Principal Bench, New Delhi Order dated:10/01/2023 in respect of OA No.851/2022
2. Board office letter No. 7777, dated: 17/02/2023 addressed to the Deputy Commissioner, Karwar.
3. Inspection conducted by the committee on 24/02/2023.
4. Letter addressed to Board office regarding extension of timeline vide no. 1702 dated: 06/03/2023.

****

Hon'ble NGT, Principal Bench, New Delhi has passed an order in OA No.851/2022, vide reference-1 above, based on the application filed by Dr Prasad Bhandge complaining that M/s EID Parry (India) Ltd., is discharging untreated effluents in to the nearby Hanumantha pond and contaminated the ground water table affecting the source of drinking water available to live stock and residents nearby. The complainant also alleges that the discharge of effluents in the river Kali is also causing water pollution in the area and the fly ash generated in the unit is not handled scientifically and agricultural produce of the villagers are affected.

Hon'ble NGT, Principal Bench, New Delhi has called for a factual report covering the issues raised by the complainant and industry's compliance to the consent conditions. For this purpose, Hon'ble NGT has constituted a joint committee comprising of state PCB and District Magistrate of Karwar to visit the site and collect the relevant information & submit a factual report including the details of action taken within 02

months and further listed the matter for hearing on 24.03.2023. It is mentioned that the State Pollution Control Board would be the nodal agency for co-ordination and compliance. Based on the Hon'ble NGT order, KSPCB has issued the OM appointing Senior Environmental Officer, Zonal Office, Mangalore as the representative of KSPCB for inspection and submission of the reports vide OM No 7777, dated 17/02/2023. .

Further, it is to be submitted that the joint committee comprising of the Deputy Commissioner, Karwar and the Senior Officers of KSPCB, along with the representatives of the Agriculture Dept., have inspected the location in question on 24.02.2023 and collected the ground water samples and the soil samples in the surrounding village adjacent and downstream of the industry and the samples have been submitted for the analysis. Reports of analysis will take some time as there are several parameters to be analysed in each of the bore well samples and further soil analysis report will have to be submitted by the Agriculture Department. Hence, this office requested extension of time for submission of joint committee report vide ref (4).

Inspection report of joint committee with respect to M/s. EID Parry (India) Ltd., Haliyal along with photos taken during inspection, analysis report, and annexures 1 to 6 are here with submitted for kind perusal and needful.

Thanking you,

Your's faithfully,

Environmental Officer
KSPCB, RO, Karwar

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO: 851 OF 2022

Report of Joint Committee, as per National Green Tribunal (NGT), Principal Bench, New Delhi orders in the matter of Original Application number 851 of 2022, Dr. Prasad Bhandge Vs State of Karnataka, has passed an order dated 10th January, 2023.

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REPORT OF JOINT COMMITTEE CONSTITUTED IN THE MATTER OF ORIGINAL APPLICATION NO. 851 OF 2022 FILED BY DR PRASAD BHANDGE. VS STATE OF KARNATAKA, SUBMITTED BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH, NEW DELHI, AS PER ORDER DATED 10/01/2023, REGARDING POLLUTION CAUSED BY M/s EID PARRY (INDIA) LTD., HALIYAL, UTTARA KANNADA DISTRICT, KARNATAKA.

1.0 Preamble:

In the matter of Original Application No 851 of 2022, Dr. Prasad Bhandge Vs State of Karnataka, the National Green Tribunal (NGT), Principal Bench, New Delhi has passed an order dated 10th January, 2023 ***(Annexure 1)*** and directed that *"it is appropriate to obtain a factual report covering issues raised in para 2&3 above and the compliance with consented conditions. For the purpose thereof, we constitute a joint committee comprising of State PCB and District Magistrate, Karwar to visit the site, collect relevant information and submit a factual report including the details of action taken, if any, within two months by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF. The nodal agency for coordination and compliance will be State PCB".*

The applicant Dr. Prasad Bhandge has filed an application before the Hon'ble NGT that, M/s EIDParry sugar mill at Haliyal, District Uttara Kannada Karwar, Karnataka which is discharging untreated industrial effluent into nearby pond at Survey No. 39, Hanumanth Kere and also contaminating ground water table affecting the source of drinking water available to livestock and residents in nearby area. The complainant also has alleged that the discharge of effluents in the river Kali is also causing huge water pollution in the area and the fly ash generated in the unit is not being handled scientifically, but, is being dumped in open area and agricultural fields affecting agricultural produce of the villagers.

2.0 Constitution of the Committee:

In compliance to Hon'ble NGT order, the Member Secretary, Karnataka State Pollution Control Board (KSPCB) has nominated Senior Environmental Officer, Zonal Office, Mangalore as the representative of KSPCB for joint inspection, vide Office Memorandum No. PCB /137/HPI/2016-17/2023/7777, dated 17.02.2023 the copy of the same is enclosed as **Annexure 2**. Further, Deputy Commissioner has asked the local

Agriculture Officer to be part of the inspection. Accordingly, the Joint committee consisted of the following members:

Sl. No	Name & Designation	Details
1	Deputy Commissioner, Uttara Kannada Distrcit, Karwar.	Chairman
2	Regional Senior Environmental Officer – Mangaluru No.10B, Baikamady Industrial Area, Mangaluru-575011	Member
3	Agriculture Officer (Technical), Office of the Asst. Director of Agriculture (ADA), Haliyal representing the ADA, Haliyal	Invitee
4	Environmental Officer (I/c), Karnataka State Pollution Control Board, Regional Office, Udupi – 576 104	Member Convener

The Member Convener of the committee communicated the date of inspection to the Committee members for carrying out inspection on mutually agreed dates i.e. **February 24th, 2023**.

Accordingly, the site inspection was carried out on 24th February 2023 with the following members:

1) Sri. Prabhuling Kavalikatti IAS, Deputy Commissioner, Uttara Kannada Distrcit, Karwar.
2) Smt. Vijaya Hegde, Senior Environmental Officer, Karnataka State Pollution Control Board, Divisional Office, Mangaluru, Dakshina Kannada District
3) Dr. Ganapati Hegde, Deputy Environmental Officer, (Environmental Officer In charge), Karnataka State Pollution Control Board, Regional Officer, Karwar.
4) Sri. Theerthaya S. Chikkamath, Agriculture Officer (Technical-1), Office of the Assistant Director of Agriculture, Haliyal.

The Committee met the complainants near the Hanumantha kere (Hanumantha pond) at the backside of the industry in question and had discussion about the case, later, proceeded for field inspection and environmental samplings around M/s. EID Parry (India) Ltd., Haliyal. Sampling was carried out both within and outside the industry premises.

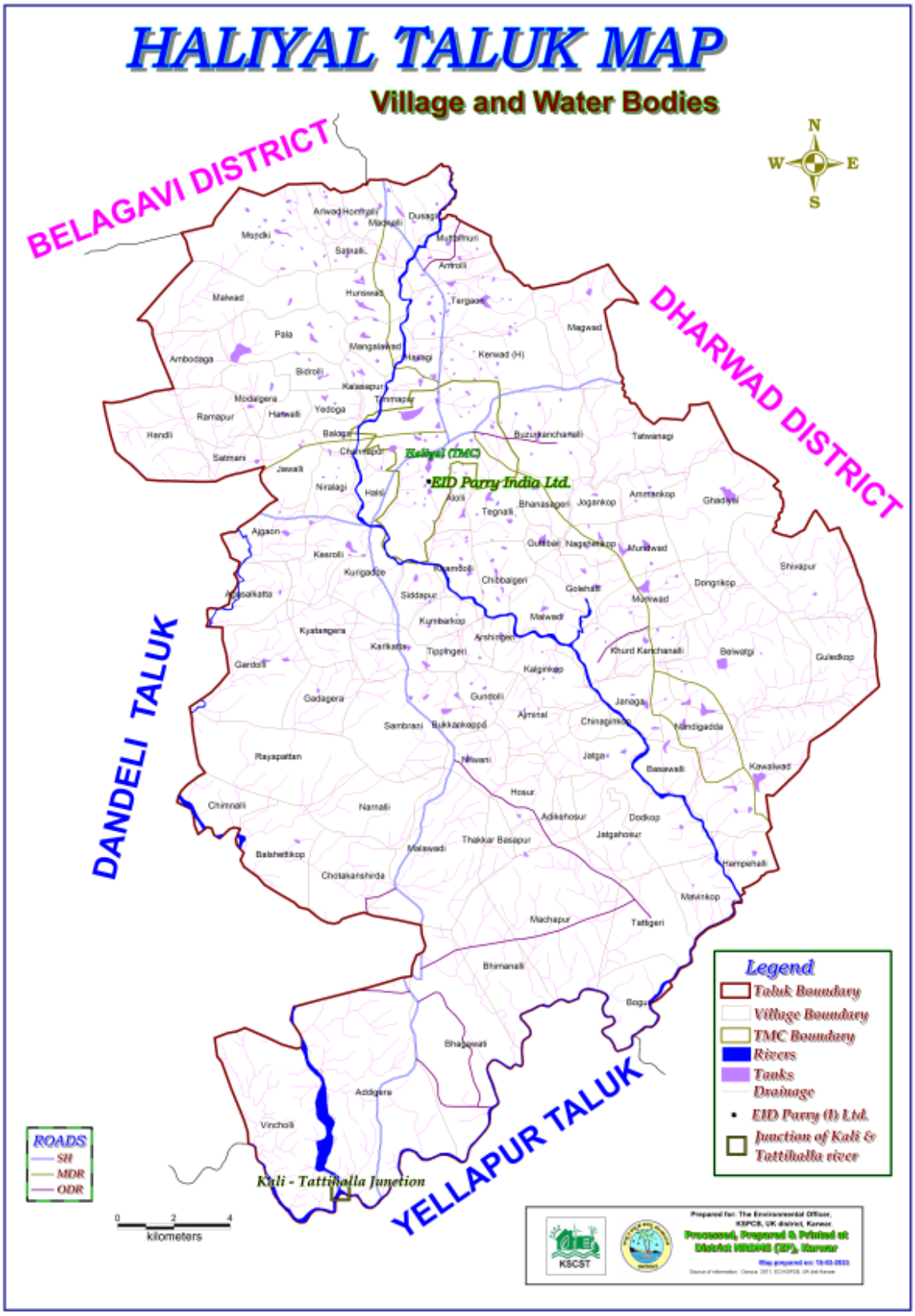
3.0 Background about Haliyal town:

Haliyal Taluka in Uttara Kannada District of Karnataka has population of 1,19,357 as per 2011 census. Haliyal is a Town Municipal Council formed on 19/03/2018 and as of 2011 census, its population is 24,232. The municipality consists of 23 wards. The industry, M/s EID Parry (India) Ltd., is located within this Haliyal Town Municipal limit at Hullatti village.

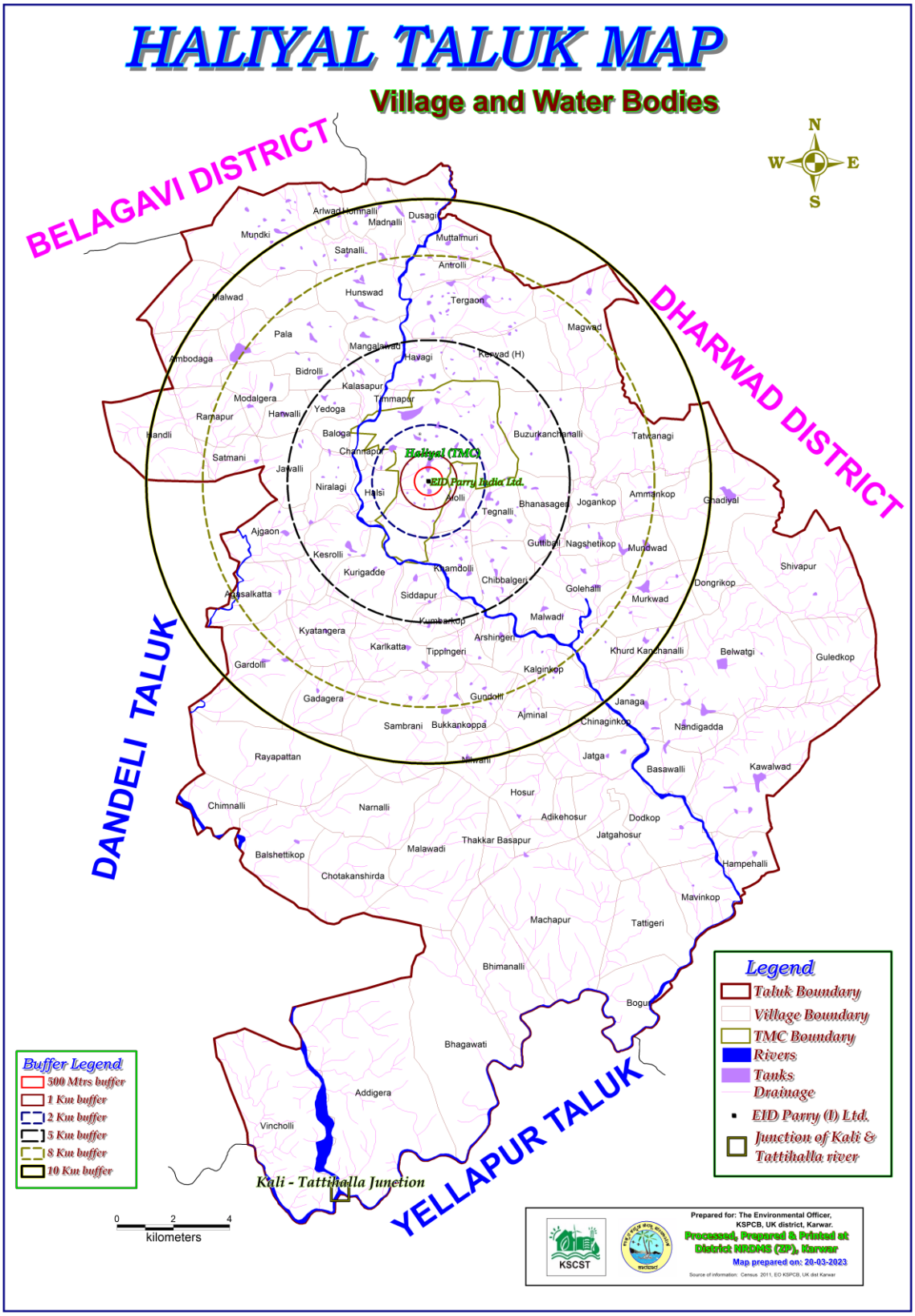
Haliyal TMC and Taluk is having agricultural, commercial and few industrial activities including rice and poha mills, paper board making using ETP sludge of paper mill industry located in the nearby Dandeli Taluk.

About 68% of the geographical area in Haliyal taluk is Forest area. In rest of the area, people do agriculture and cultivate crops like Maize, Paddy, fruits and vegetables, sugarcane and cotton. Water intensive crops like sugarcane and paddy are grown in 70% of total crop area. Irrigation from bore well accounts for about 65.6% of the total area irrigated whereas irrigation from tanks accounts for 32.6% of the total area of irrigation. Generally, the drainage pattern of the river is dendritic to sub dendritic. The soils of Haliyal taluk can broadly be classified into clayey and clayey skeletal soils. Haliyal town is not having sewerage network; residential households are having individual septic and soak pit for sewage disposal; sewerage network for Haliyal town is yet in the process of establishment. Town has solid waste management system with door to door collection and a landfill site.

Tatti halla is a small tributary of Kali river and it has lean flow of water during summer. The Kali River has its origin near the village of Kushavali of Joida Taluka, 15°14′56″N 074°17′58″E, in the Western Ghats. It flows eastwards into the Supa Dam Reservoir, and then Dandeli town and passing south of Dandeli, it flows southeast into the Bommanalli Reservoir. After the village of Bommanalli the Kali turns south and at 15°05′21″N 074°43′57″E is joined by the Tattihalla tributary from the left (west). The distance from M/s EID Parry (India) Ltd. to point where the Tattihalla tributary joins the Kali is approximately 30 Km. An irrigation dam is built across this rivulet at about 5Km before joining to river Kali.



Map 1: Haliyal taluk with TMC Boundary and river, tanks and drainage details



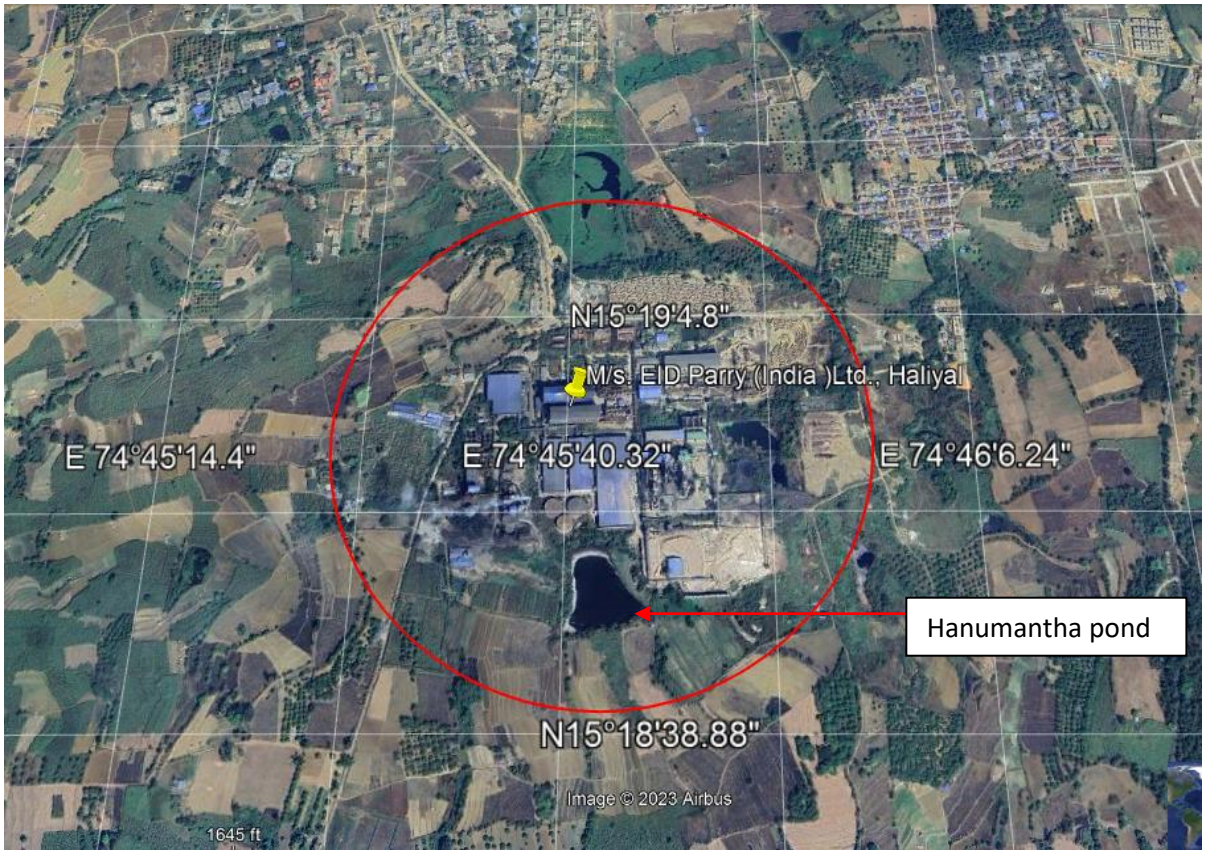
Map-2: Salient features around10 Km boundary of M/s EID Parry (India) Ltd., Haliyal

4.0 Inspection of M/s. EID Parry (India) Ltd., Hullatti, Haliyal & its compliances to Consent conditions of KSPCB:

I). Details of location, Category, production, consent and authorisation status:

<table>
<tr><td>Name & Location</td><td>M/s. EID Parry (India) Ltd.,
Hullatti Village, Haliyal-Taluk,
Uttara Kannada-Distrcit</td></tr>
<tr><td>Category and Classification</td><td>Large-Red (17-Category)
Sugar, Distillery and Co-generation plant<table><tr><td>Latitude</td><td>Longitude</td></tr><tr><td>15º18'58.40"N</td><td>74º45'40.90"E</td></tr></table></td></tr>
<tr><td>Activity & KSPCB consented Production Capacity</td><td>Manufacturing of white crystal sugar, Co-generation power, molasses-based distillery and its by-products as follows:
Refined Sugar/Plantation white sugar- 44,562.50MT/Month
Co-generation Power- 40,176 MWH
Bagasse- 1,01,602.50MT/Month
Filter Cake-7,672.5MT/Month
Molasses- 19,607.50MT/Month
R.S./ENA/I.S./ETHANOL-2,790 KL/Month</td></tr>
<tr><td>Status of consent and validity</td><td>Consent for operation (CFO) obtained under Water & Air Act is valid up to 30/06/2026 vide consent order no. AW-329434, dated; 25/01/2022.</td></tr>
<tr><td>Status of Authorization under Hazardous & Other Wastes (Management & Trans boundary Movement) Rules, 2016</td><td>Unit has valid Authorization under Hazardous & Other Wastes (Management & Trans boundary Movement) Rules, 2016 for the period up to 30/06/2026 vide no. 328508, dated; 3/12/2021.</td></tr>
<tr><td>Date of Inspection</td><td>24/02/2023</td></tr>
<tr><td>Persons Contacted during inspection and sampling time</td><td>Sri. Venkata Rao-Senior Vice President of the industry
Sri. Alam Sha-Manager Distillery
Sri. Ganeshan- Assistant Manager Water and Effluent Treatment Plant (WTP &ETP incharge)
Farmers and representative of complainant present;</td></tr>
</table>

	1. Sri. Prashanth Laad- Representative of Dr. Prasad Dandge (Complainant) 2. Mahesh Tergaonkar- Representative of Dr. Prasad Dandge (Complainant). 3. Sri. Manohar Narayan Bandge- Representative of Dr. Prasad Dandge (Complainant). 4. Sri. Bheemappa- Farmer 5. Sri. Parashuram Chauhan-Farmer 6. Sri. Hussain Sab Raje Sab Nadaf-Farmer 7. Sri. Mahadev Narayan Patil-Farmer 8. Sri. Pundalik Antrolkar-Farmer 9. Sri. Arun Mahendrakar-Farmer 10. Sri. Anvar Nabisab Nadaf-Farmer **11.** Sri. Parashuram Maruti Belganvkar



Map 3: Google image of M/s. EID Parry (India) Ltd., Haliyal and circle represents 500m radius

II) Preamble about the industry and its EC/CFE/CFO details: -

This industry was first established as M/s Bharat Sugars Ltd., at Hullatti Village, Haliyal Taluk, Uttara Kannada District, the industry had obtained the consent to operate from KSPCB for stand-alone sugar factory with sugarcane crushing capacity of 3500 TCD vide No. 105 dated 05.07.2006 and co-generation plant of 24 MW vide No. 215 dated 03.11.2006. Subsequently, they have sold this company to M/s GMR Sugars Ltd and M/s GMR Sugars have obtained CFE expansion for an additional molasses-based distillery of 50 KLPD vide No. 31 dated 17.05.2008 and continued to operate until 2010, they had valid consent under Water Act and Air Act from KSPCB for the period up to 30.06.2011. They had obtained necessary Environmental Clearance (EC) for the said products through MoEF (IA division) dated 18.10.2007.

Later, M/s GMR Industry was taken over by M/s. Parry's Sugar Industries Ltd., on 15.11.2010. Subsequently, the Parry Sugar Industries Ltd., has changed its name as M/s EID Parry (India) Ltd., and have expanded the sugar cane crushing capacities and also established a molasses-based distillery. The industry has obtained consent for expansion from KSPCB and obtained the required EC from MoEF and CC for its subsequent expansion activities as below:

Sl No	CFE/CFO/EC	Date of issue of consent/EC	Details of products
1	1st CFE expansion	KSPCB consent order no. 1290, dated; 24/01/2013.	• Sugar Cane Crushing capacity from 3500TCD to 4800TCD
2	Environmental clearance (EC)	Govt. of Karnataka vide No. FEE 78 ECO 2013 dated 13.12.2013	• Obtained EC for the increased production capacity from 3500 TCD to 4800 TCD crushing
3	Environmental Clearance (EC)	Ministry of Environment and Forest, Climate Change (IA Division) no. F. No. J-11011/336/2012 IA II (I), dated: 04/02/2015	• EC obtained for increasing the Sugar cane Crushing of Capacity from 4800 TCD to 6000 TCD, • Co-generation power plant of capacity from 24 MW to 34MW, • Molasses based distillery from 45 KLPD to 90KLPD and • power from incineration boiler of 3MW
4	CFE Expansion for expansion in	vide KSPCB consent order no. 1481, dated 5/11/2015.	• Sugar Cane crushing of capacity 4800TCD to 6000TCD,

	the name of M/s. EID Parry (India) Ltd.		• Co-generation from 24MW to 34 MW • molasses-based distillery from 45 KLD to 90KLD • Co-generation from spent wash incineration boiler of capacity 3MW
5	CFE Expansion for expansion in the name of M/s. EID Parry (India) Ltd.	Vide KSPCB consent order no. 1481, dated 5/11/2015.	• Sugar Cane crushing of capacity 4800TCD to 6000TCD, • Co-generation from 24MW to 34 MW • molasses-based distillery from 45 KLD to 90KLD • Co-generation from spent wash incineration boiler of capacity 3MW
6	Environmental clearance	Vide MoEF and CC order dated 11th August, 2020	• Sugar cane crushing from 6000 TCD to 11,500 TCD • Co-gen Power plant from 34 MW to 54 MW
7	CFE expansion	KSPCB consent order no CTE-323225, dated 29/01/2021	• Sugar cane crushing of 11,500 TCD • Co-gen power plant of 54 MW
8	Latest Consent for operation (CFO) by KSPCB	KSPCB combined consent for operation order vide No. AW-329434, dated: 25/01/2022 and is valid up to 30/06/2026. for sugar cane crushing capacity for 11500TPD, Cogeneration power plant of capacity 57MW (including 3 MW from incineration boiler) and molasses- based distillery of capacity 90KLD.	Consent order is issued for the following products/by-products • Refined Sugar/Plantation white sugar-44,562.50MT/Month, • Co-generation Power- 40,176 MWH, • Bagasse-1,01,602.50MT/Month, • Filter Cake-7,672.5MT/Month, • Molasses-19,607.50MT/Month, • R.S./ENA/I.S./ETHANOL-2,790 KLT/Month

- **Details of Complaint:**

  Earlier, based on the compliant dated 25/05/2022 from Dr. Prasad Bhandge and others that Hanumantha pond which is downside of M/s EID Parry (India) Ltd., is polluted due to the effluent discharge from the industry, local officers of KSPCB have inspected the industry and surrounding area on 26/05/2022. During inspection, it was observed that sudden and heavy pre-monsoon showers during the 3rd and 4th weeks of May 2022 have created surface run-off including stagnant water in the drains near sugar and distillery section and joined the Hanumantha tank, making the water of the pond brownish in colour. Based on the observations, local officer has issued notice dated 27/05/2022 for the non-compliances. Industry has submitted compliance report on 9/06/2022. Further, a meeting regarding tank conservation and development was held on 17/08/2022 under the chairmanship of Deputy Commissioner at Karwar, Uttara Kannada and during the meeting, it was directed to inspect and report on status of Hanumantha tank once again. Based on the above, industry was again inspected by the Environmental Officer (I/c), KSPCB on 18/08/2022 in the presence of officials of TMC-Haliyal and issued notice vide no. 869, dated 26/08/2022 for the non-compliances observed during inspection. Industry Authority has submitted compliance report to the notice on 09/09/2022. Further, Assistant Commissioner, Karwar and Environmental Officer (I/c), Karwar (IC) have jointly inspected the industry and its suburbs on 25/08/2022 followed by meeting with the industry and during the meeting, direction was given to industry authority for de-siltation and rejuvenation of Hanuman tank.

III) Manufacturing Process details:

- **Sugar Mill section:**

  Reception of sugar cane -> Shedder/crusher-> Diffuser-> Screening of juice-> Evaporation-> Boiling-> Crystallization-> Centrifugals -> Sugar and molasses separated.

- **Distillery Section;**

  Molasses-> Dilution of Molasses ->Fermentation-> Distillation-> Rectified Spirit and Ethanol generation.

IV) Observations made during inspection:

a) Water Pollution Control Status:

The source of water is Kali River**.** The water is consumed for manufacturing process, boiler and domestic purpose; permitted water consumption and waste water generation as per the KSPCB consent are as below:

Sl. No	Purpose	Water Consumption in KLD	Waste water generation in KLD	Final disposal
1	Domestic purpose	45	36	Septic Tank and Soak Pit
2	Boiler Feed	668	331	The trade effluent generating from the existing unit shall be treated in the existing ETP of capacity 1600 KLD. The trade effluent generated from the expansion activity shall be treated in the new ETP of capacity 1000 KLD in addition to the existing ETP and treated water shall be used for on land irrigation within the agricultural land of the industry in an area of 62 Acres.
3	Cooling water	1845	125	
4	Manufacturing purpose (Sugar mill)	142	1134	
5	Manufacturing purpose (distillery and Co-gen plant)	791 KLD fresh water (+200 KLD of sugar mill condensate water)	868	
	Total	3491 KLD fresh water	2494	

b) ETP Details:

Effluent treatment plant area was visited. Unit has provided ETP of capacity 2600 m^3/day (1600 m^3/day old ETP & 1000 m^3/day new ETP) and all the units of ETP were under operation during inspection.

The unit operations of old and new ETP are as below.

Old ETP of capacity 1600 KLD		
Sl. No.	**ETP units**	**capacity**
1	Bar screen chamber	4.2cum
2	Oil removal tank	20.4cum
3	Oil collection pit	1.0cum
4	Equalization tank	500cum
5	Lime dosing tank	3.375cum
6	Flash mixer tank	10.58cum
7	Tube settler tank	45cum
8	Feed tank	48.6cum
9	Anaerobic reactor	755.65cum
10	Bio-tower	384cum
11	Settling tank	41.5cum
12	Aeration tank-1	225cum

13	New Aeration tank-2	2106cum
14	Primary clarifier	158.96cum
15	New secondary clarifier	450cum
16	Treated effluent collection tank	41.4cum
17	New sludge drain bed	350cum
18	Sludge drying bed	350cum
19	Filter chamber	9cum
New ETP of capacity 1000 KLD		
Sl. No.	**ETP units**	**capacity**
1	Bar screen chamber	30 cum
2	Oil skimmer tank	115 cum
3	Equalization tank	1450 cum
4	Lime dosing tank	4 cum
5	Aeration tank	4854 cum
6	Clarifier	330 cum
7	Sludge drying beds	350 cum

c) Online Monitoring Details of ETP: ETP was under operation during inspection. The industry has provided online continuous effluent monitoring system which shows real time data for the parameters such as pH, Flow rate, BOD, COD and TSS. The real time data is connected to CPCB server. The online reading during inspection are as follows,

Parameter	Readings
pH	7.09
COD (mg/L)	116.18
BOD (mg/L)	46.42
TSS (mg/L)	13.8
Temperature (°C)	31.8

d) Air Pollution Control Status:

i) The sources of air pollution in the unit and control measures adopted is as below: -

Sl. No.	**Air Pollution source**	**Air Pollution control measures provided**
1	Vibratory screen- 10 TPH coal screening	Chimney Ht.15m. AGL with multi cyclone dust collector.
2	Boiler- 15 TPH (Coal fired)	Chimney Ht.50m. AGL with Bag filter.

3	Boiler- 45 TPH (Bagasse fired)	Chimney Ht.44m. AGL with E.S.P.
4	Boiler- 120 TPH (Bagasse fired)	Chimney Ht.72m. AGL with E.S.P.
5	D.G. Set -500 KVA	Chimney Ht.30m AGL with acoustic enclosures.
6	D.G. Set -1000 KVA	Chimney Ht.30m AGL with acoustic enclosures.
7	Boiler- 100 TPH - (Bagasse fired)	Chimney Ht.70m. AGL with E.S. P

ii) OCEMS of stack: Industry has installed Online Continuous Stack Emission Monitoring System (OCEMS) to the chimney attached to the boiler of capacity 15TPH at distillery section for PM, SOx and NOx to measure the real time data about its emissions as per the CPCB directions and consent conditions. Readings noted during inspection are as below:

Parameter	Readings	Prescribed limit mg/nm^3
Particulate Matter (mg/nm^3)	62.91	150
SOx(mg/nm^3)	61.0	600
NOx mg/nm^3.	272.0	300

iii) Stack Monitoring by KSPCB:

Samples of emission from other stacks of sugar mill section and also distillery section were monitored manually by the KSPCB on 30.01.2023 and the results of analysis are as below:

Boiler	Particulate Matter (mg/nm^3)	
	Prescribed limit	Measured value
120 TPH boiler	150	121
100 TPH boiler		99
15 TPH boiler		132

The results are conforming to the prescribed limits as per consent order.

e) Hazardous Waste Management:

Industry has obtained authorization from KSPCB under Hazardous and Other Wastes (Management, Handling & Transboundary Movement) Rules, 2016 vide no. 328508, dated: 3/12/2021 for the period up to 30/06/2026.

Type of hazardous waste generated and mode of disposal for which authorization given are as follows: -

Waste Category	Hazardous Waste generated	Authorized Quantity	Method of disposal as per authorization
5.1	Used Oil	0.5 MT/A	Shall be stored in secured manner and handed over to authorized re-processors/recyclers.
5.2	Wastes Residues Contaminated with Oil	0.002 MT/A	Shall be stored in secured manner and handed over to KSPCB authorized incinerators/co-processing in cement kiln.
33.1	Empty barrels/containers/liners contaminated with hazardous chemicals/wastes.	0.01 MT/A	Shall be stored in secured manner and handed over to KSPCB authorized recycler.

Authorities have submitted the annual returns under Hazardous and Other Wastes (Management, Handling & Transboundary Movement) Rules, 2016 for the financial year 2021-22. As per the annual returns, the generation of used oil is 80 Litres, oil-soaked cotton waste is 70 Kg and Empty barrels/containers/liners contaminated with hazardous chemicals/wastes are not generated. Cotton waste was incinerated in the boiler and 95 Litres (including previous year stock 30 L) of used oil was utilized internally for lubrication and presently they have stored about 42 L of used oil in secured manner in barrel. The industry has generated waste category 5.2 more than the authorised quantity, hence, they have been directed to obtain an amendment in the authorisation to that extent.

f) Solid Waste Management:

Industry is generating following types of solid wastes within its premises from the process:

S. no.	Type of Solid Waste	Quantity generation in TPD	Mode of storage, treatment and disposal
1	Boiler Ash (Both fly ash and bottom ash) from sugar mill	**46.7**	Fly ash from Bagasse fired boiler is given to farmers as soil conditioner to be used in agricultural land and also for brick manufacturers
2	Distillery boiler ash	**15**	Is given to fertilizer plant owned by the same management for blending with the fertiliser as it is rich in Potash content.
3	Lime Sludge from	**2.0**	Mixed with press mud and given to

	Sugar industry		farmers as soil conditioner
4	Press mud	**247.5**	Is given to farmers to be used as compost/ manure.
5	ETP sludge	**0.46**	Given to farmers to be used as a manure.
6	Yeast sludge	**12**	Mixed with concentrated spent wash and incinerated in the boiler

As per the observations, the industry is disposing the solid wastes as per the consent issued by KSPCB and kept records for its disposal.

g) Compliance to Consent conditions of KSPCB:

Compliance to consent conditions issued by KSPCB is enclosed here with the report as **Annexure-3**. Industry has generally complied with most of the conditions such as, providing the required ETP, Air pollution control measures and meeting with the prescribed standards, however, certain non-compliances are observed which are as follows:

Sl. No.	Consent conditions	Non-Compliance observed
1	Industry shall explore the possibility of treating the sewage by providing STP of required capacity as the total domestic sewage generation is 24 KLD. Industry shall submit the details of source of domestic sewage along with plan of action for providing STP.	At present domestic sewage generated from toilet blocks and other washings are being discharged in to septic tank and soak pit. However, about 10KL of wash water from canteen facility is being treated in existing ETP. Industry has to provide the plan of action for providing the STP.
2	Fugitive emission near manufacturing area has to be controlled by adopting advanced technology. Progress made in this regard shall be furnished.	Fugitive emissions were noticed in sugar mill boiler section, bagasse handling area, coal handling area and distillery section and it has to be rectified/ controlled by industry by using advanced technologies and other control measures like, providing additional silos for storage of ash, water sprinkling arrangement, multiple rows of plantations on industry boundary, pavement of roads near the coal crusher area, etc.
3	The applicant shall submit storm water management plan & shall implement the same and submit the action taken report to the Board.	Storm water management plan provided by the industry is to be improved upon. Industry has provided rain water harvesting facility for its rooftop water and recharging its bore wells with collection pit of capacity about 6000 m^3 capacity. However, industry land is sloping on one side towards Hanumantha pond and as such any

		rain water from industry premises will directly reach the pond, if there are any spillages, the same gets carried away with rains. Industry shall take immediate action to contain the spillages locally and shall not allow the spillages/leakages to mix with the rain water. Otherwise, they shall collect the rain water contaminated with spillages separately and discharge the same only after giving preliminary treatment such as flocculation and sedimentation.
4	The industry shall provide metalled road for transportation of cane along with metalling of lateral roads.	Provided with metalled road for transportation of cane and concrete platform for vehicle parking. But, in other areas, specially ash handling and coal handling area, roads have to be metalled yet.
5	The industry shall provide 15 days storage tank for storing treated trade effluent.	Unit has provided one storage tank of capacity 8800 m^3 for collection of treated trade effluent. This is designed for the old crushing capacity and considering the expanded crushing capacity of 11500 TCD, the storage tank is insufficient to hold 15 days storage.
6	The applicant shall always store the bagasse and boiler ash in a closed shed and ensure that the bagasse & boiler ash shall not be stored in an open land, which may cause dust nuisance in the surrounding area during wind blow.	Unit has provided three number of ash silos with a total storage capacity of 40 Tons. A small quantities of fly ash are being stored temporarily in open area near bagasse handling section and sugar mill boiler section. Bagasse was stored in open yard and is provided with wind breaking wall. Recently, industry has installed briquette manufacturing unit at bagasse yard, but, it is not in operation yet.

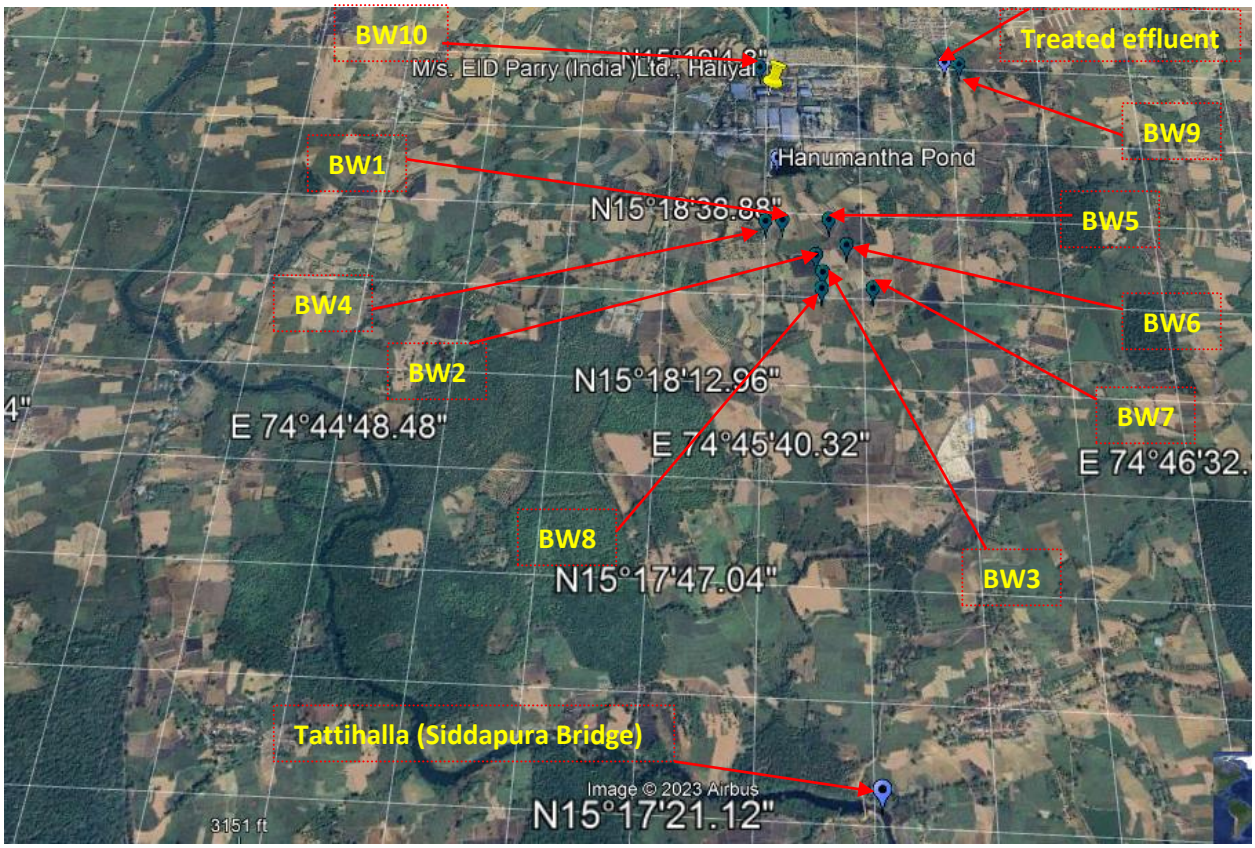
Industry has to come out with its action plan for complying with these consent conditions.

5. Collection of Ground water, Treated effluents samples and soil samples during inspection:

Joint committee has monitored the agricultural fields in the surroundings of the industry where the Hanumantha pond water and treated effluents are utilised for irrigation on a regular basis. During inspection, the joint committee has collected the samples of ground water, treated effluents and the soil samples which are as follows. The GPS readings of the sampling points and detailed location map of sampling is as below:

I. Bore-well Water Samples collected from nearby Farm Lands		
Sl. No.	Sample number	Sampling location details (GPS)
1	BW-1	N: 15.31388-E: 74.75803, Sy.No. 36, Alolli, Haliyal-Taluk (Dr. Prasad Bhandge's (complainant's)- farm land)
2	BW -2	N: 15.30823-E: 74.76275 Sy.No.46, Alolli, Haliyal-Taluk (Sri. Parashuram Chauhan-Sugar cane field)
3	BW -3	N: 15.30751-E: 74.76346 Sy.No.43, Alolli, Haliyal-Taluk (Sri. Hussain sab Raje Sab Nadaf-Sugar cane field)
4	BW -4	N: 15.30957-E: 74.76129 Sy.No. 32/2, Alolli, Haliyal-Taluk (Sri. Mahadev Narayan Patil-Sugar cane field)
5	BW -5	N: 15.30906-E: 74.75510 Sy.No. 32/2/4, Alolli, Haliyal-Taluk (Sri. Pundalik Antrolkar-Sugar cane field).
6	BW -6	N: 15.30873-E: 74.76419 Sy.No. 42/2B, Alolli, Haliyal (Sri. Arun Mahendrakar-Sugar cane field)
7	BW -7	N: 15.30685-E: 74.76508 Sy.No. 38/5, Alolli, Haliyal-Taluk (Sri. Anvar Nabisab Nadaf-Sugar cane field)
8	BW -8	N: 15.30908-E: 74.75520 Sy.No. 39/3, Alolli, Haliyal-Taluk (Sri Parashuram Maruti Belgavkar-Sugar cane field).
II. M/s. EID Parry (India) Ltd., Hullatti, Haliyal		
9	BW -9	N: 15.19027- E:74.46076 Bore well water sample near ETP of M/s. EID Parry (India) Ltd.,
10	BW -10	N: 15.19008- E:74.45392 Bore well water sample near Admin block of M/s. EID Parry (India) Ltd..
11	-	N: 15.19032- E:74.46056

		Treated Trade Effluent of M/s. EID Parry (India) Ltd., Collected from final treated water holding tank.
III. Pond and Nala water samples:		
12	-	N: 15.18457-E: 74.45416 Hanuman Tank, Haliyal- (At the boundary line to M/s. EID Parry (India) Pvt Ltd.,).
13	-	N: 15.17224-E:74.45540 Tattihalla (Siddapura bridge), Haliyal-Taluk.



Map3: Locations where environmental samplings conducted

The environmental samples (Treated effluent samples, Ground water samples and surface water samples) collected by the Committee were carried to the Regional Laboratory, KSPCB, Dharwad for further analysis. Soil samples collected by the Agriculture Officer, Haliyal was handed over to Asst. Agriculture officer, Sirsi for analysis. The environmental samples analysis report was made available to the Committee on March 23, 2023, and 19.04.2023, accordingly the committee finalized the report.

i) Analysis Results of the borewell water samples collected by the committee from adjacent farm lands:

SL. NO.	Parameters	Unit	PROTOCOL	(IS 10500) Drinking water standards		Results							
				Acceptable	Permissible	BW-1	BW-2	BW-3	BW-4	BW-5	BW-6	BW-7	BW-8
1	pH	Unit	4500-H	6.5 to 8.5	N R	7.1	7.1	6.9	7.2	7.6	7.8	7.7	7.5
2	B.O.D at 27^0 C, 3 days	Mg/ l	IS3025-44	--	--	1.1	1.2	1.2	1.2	1.4	1.2	1.1	1.3
3	Conductivity	µsiemens/Cm	2510b	--	--	1305	1570	1250	704	1037	1337	846	712
4	Turbidity	NTU	2130B	1	5	3	3	3	2	4	4	2	4
5	Dissolved Solids (DS)	Mg/ l	2540B	500	2000	840	1020	810	440	670	860	540	460
6	Total Hardness (CaCO3)	Mg/ l	2340C	200	600	560	528	432	264	352	440	268	224
7	Calcium (Ca)	Mg/ l	3500CaB	75	200	145.9	137.6	112.5	68.8	91.7	114.6	69.8	58.4
8	Magnesium (Mg)	Mg/ l	3500MgB	30	100	47.6	44.9	36.7	22.5	29.3	37.4	22.8	19.1
9	Chloride (Cl)	Mg/ l	4500-Cl-B	250	1000	188	240	184	104	108	168	92	104
10	Sulphate (SO_4)	Mg/ l	4500-SO^{-2} E	200	400	46.2	69.5	37.5	14.6	8.5	14.2	13.3	15.1
11	Nitrate (NO_3)	Mg/ l	SOP/WTD/22	45	NR	2.1	1.8	1.6	1.3	1.5	1.8	1.4	1.5
12	Iron (Fe)	Mg/ l	3111-Fe, B	1	NR	0.071	0.12	0.18	0.14	0.074	0.067	0.072	0.069
13	Fluoride (F)	Mg/ l	413D 16Ed	1	1.5	0.3	0.3	0.4	0.2	0.3	0.2	0.3	0.3
14	Phosphate (P)	Mg/ l	4500-P	--	--	0.011	0.014	0.021	0.019	0.012	0.011	0.009	0.01
15	Alkalinity (Alk,$CaCO_3$)	Mg/ l	2320B	200	600	360	364	344	192	428	496	312	196
16	Lead, (Pb)	Mg/ l	3111Pb, B	0.01	NR	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17	Cadmium (Cd)	Mg/ l	3111 B	0.003	NR	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18	Chromium (Cr)	Mg/ l	3111Cr, B	0.05	NR	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19	Copper (Cu)	Mg/ l	3111Cu, B	0.05	1.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20	Zinc (Zn)	Mg/ l	3111 Zn B	5	15	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21	Nickel (Ni)	Mg/ l	3111Ni, B	0.02	NR	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22	Manganese (Mn)	Mg/ l	3111-Mn, B	0.1	0.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

The above table reveals that the bore well samples collected from farm lands adjacent to M/s. EID Parry (India) Ltd., Hullatti, Haliyal and its downstream are within the permissible limits of IS 10500 drinking water standards for the analyzed parameters.

ii) Analysis Results of the borewell water sample collected by the committee within industry premises:

SL. NO.	Parameters	Unit	PROTOCOL	IS 10500 Drinking water standards		Result	
				Acceptable	Permissible	BW-9 Near ETP	BW-10 back side of AO
1	pH	Unit	4500-H	6.5 to 8.5	N R	6.9	7.7
2	B.O.D at 27^0 C, 3 days	Mg/ l	IS3025-44	--	--	1.1	1.3
3	Conductivity	µsiemens/Cm	2510b	--	--	72	1211
4	Turbidity	NTU	2130B	1	5	2	3
5	Dissolved Solids (DS)	Mg/ l	2540B	500	2000	50	780
6	Total Hardness (CaCO3)	Mg/ l	2340C	200	600	28	256
7	Calcium (Ca)	Mg/ l	3500Ca B	75	200	7.3	66.7
8	Magnesium (Mg)	Mg/ l	3500Mg B	30	100	2.4	21.8
9	Chloride (Cl)	Mg/ l	4500-Cl-B	250	1000	8	136
10	Sulphate ($SO_{4)}$	Mg/ l	4500-SO^{-2} E	200	400	2.5	24.2
11	Nitrate ($NO_{3)}$	Mg/ l	SOP/WTD/22	45	NR	1.3	1.6
12	Iron (Fe)	Mg/ l	3111-Fe,B	1	NR	BDL	0.081
13	Fluoride (F)	Mg/ l	413D 16Ed	1	1.5	0.2	0.3
14	Phosphate (P)	Mg/ l	4500-P	--	--	0.009	0.015
15	Alkalinity (Alk, $CaCO_{3)}$	Mg/ l	2320B	200	600	24	436
16	Lead, (Pb)	Mg/ l	3111Pb,B	0.01	NR	BDL	BDL
17	Cadmium (Cd)	Mg/ l	3111 B	0.003	NR	BDL	BDL
18	Chromium (Cr)	Mg/ l	3111Cr, B	0.05	NR	BDL	BDL
19	Copper (Cu)	Mg/ l	3111Cu,B	0.05	1.5	BDL	BDL
20	Zink (Zn)	Mg/ l	3111 Zn B	5	15	BDL	BDL
21	Nickel (Ni)	Mg/ l	3111Ni, B	0.02	NR	BDL	BDL
22	Manganese (Mn)	Mg/ l	3111-Mn, B	0.1	0.3	BDL	BDL

The above table reveals that the bore well samples collected within the premises of M/s. EID Parry (India) Ltd., Hullatti, Haliyal are within the acceptable limits of IS 10500 standards except for the TDS in one of the samples which is within the permissible limits.

iii) Analysis Results of the Hanumanth water tank and Tattihalla collected by the committee:

Sl.No	Parametrs	Unit	Protocol	Result	
				Hanumanth water tank	Tattihalla nala/rivulet water
1	pH	Unit	4500-H	6.3	7.8
2	B.O.D at 27^0 C, 3 days	Mg/ l	IS3025-44	24.6	2.4
3	Free Ammonia, ($NH_{3)}$	Mg/ l	SOP/WTD/21	0.014	0.12
4	Dissolved Oxygen (D.O)	Mg/ l	4500-O	6.1	7.2
5	Sodium Absorption Ratio (S.A.R)	Mg/ l	SOP/WTD/14	0.56	1.7
6	Boron. B	Mg/ l	4500B	0.15	0.05
7	Conductivity	µsiemens/Cm	2510B	1934	552
8	Iron (Fe)	Mg/ l	3111-Fe,B	0.078	0.068
9	Fluoride (F)	Mg/ l	413D 16Ed	0.4	0.3
10	Nitrate ($NO_{3)}$	Mg/ l	SOP/WTD/22	6.1	2.2
11	Phosphate (P)	Mg/ l	4500-P	0.152	0.056
12	Sulphate ($SO_{4)}$	Mg/ l	4500-SO-2 E	32.4	6.5
13	Nitrite ($NO_{2)}$	Mg/ l	$4500NO_2$	BDL	BDL
14	Faecal Coliform	MPN/100 ml	IS 1622: 1981	94	48
15	Total Coliform	MPN/100 ml	IS 1622: 1981	148	94
16	Faecal Streptococci	MPN/100 ml	IS 1622: 1981	48	26
				Meeting Class D of CPCB	**meeting Class C of CPCB**

The above table reveals that the sample collected from Hanumanth water tank located adjacent and downstream of M/s. EID Parry (India) Ltd., Hullatti, Haliyal falls under Class- 'D' (Propagation of Wild life and Fisheries) of the CPCB Water Quality Criteria for designated best use. Similarly, the sample collected from Thattihalla (Siddapura Bridge), Haliyal Taluk falls under Class- 'C' (Drinking water source after conventional treatment and disinfection) of the CPCB Water Quality Criteria for designated best use.

iv) Analysis Results of the treated trade effluent samples collected by the committee;

Sl.No.	Parameters	Protocol	Unit	Limits	Result
1	pH	4500-H	Unit	5.5 - 8.5	7.2
2	B.O.D at 270 C, 3 days	IS3025-44	Mg / l	100	69
3	Suspended Solids (S.S)	2540D	Mg / l	100	80
4	Oil & grease (O&G)	5520B	Mg / l	10	BDL
5	Dissolved Solids (D.S)	2540B	Mg / l	2100	790

The above table reveals that the **treated trade effluent** sample collected from treated water holding tank of M/s. EID Parry (India) Ltd., Hullatti, Haliyal is **conforming** to the prescribed standards and parameters are well within the prescribed limits for on land for irrigation.

Apart from this, KSPCB is analyzing the treated effluent samples from the industry every month on a regular basis and the samples are meeting the KSPCB prescribed standards for irrigation. Analysis results of past one year is compiled and presented in **Annexure-4.**

v) Analysis report of Soil samples collected from Murkwada Hoble, Hullatti Village, Haliyal:

The soil samples were collected by the Agricultural Officer, Haliyal from the farm lands of the following farmers, farm lands are adjacent to the industry and some of these farmers are using the Hanumantha pond water for their sugar cane fields.

S.No	Name of the farmer	village	Survey No.	Present crop	pH	EC	Organic Carbon (In Percent)	P2O5 (Avail P in Kg/Ac)	K_2O (Avail K in Kg/Ac)	N (in Kg/Ac)
1	Bheemappa Parasannanavr	Hullatti	32/5 A	Sugar Cane	5.71	0.18	1.91	13.39	82.14	113.56
		Classification			Neutral	suitable	Excess	Medium	Medium	Very less
2	Parashuram Parasannanavr	Hullatti	32/5 B	Sugar Cane	5.37	0.24	1.8	6.79	120.23	113.56
		Classification			Neutral	suitable	Excess	less	Medium	Very less
3	Abdul Khadar Abdul Kareem Chibbalgeri	Hullatti	32/4A	Sugar Cane	7.01	0.31	1.89	6.15	130.65	113.56
		Classification			Neutral	suitable	Excess	less	Medium	Very less
4	Mahadev Narayan Patil urf Gowda	Hullatti	32/2	Sugar Cane	5.4	0.18	1.71	17.92	113.27	127.76
		Classification			Neutral	suitable	Excess	Medium	Less	Very less
5	Mohamadshafi Bidvale	Hullatti	37/1	Sugar Cane	5.32	0.07	1.64	6.53	80.03	127.76
		Classification			Neutral	Suitable	Excess	Less	Less	less
6	Manohar Narayan Bhandagi	Hullatti	36	Sugar Cane	6.5	0.14	1.36	13.01	115.38	113.56
		Classification			Neutral	suitable	Excess	Medium	Less	Very less
7	Manohar Narayan Bhandagi	Hullatti	36	Paddy	6.08	0.18	1.12	11.52	125.32	99.37
		Classification			Neutral	suitable	Excess	Medium	Medium	Very less
8	Parashuram Chowhan	Hullatti	42/2 C	Sugar Cane	6.01	0.16	1.74	29.04	132.09	99.37
		Classification			Neutral	suitable	Excess	Excess	Medium	Very less
9	Hussen sab Rajesab Nadaf	Hullatti	41/1	Sugar Cane	6.25	0.21	1.65	14.21	135.52	85.17
		Classification			Neutral	suitable	Excess	Medium	Medium	Very less

10	Prabhakhar Shripad Deshpande	Hullatti	38/2	Paddy	5.87	0.09	1.3	9.3	75.78	99.37
		Classification			Neutral	suitable	Excess	less	Less	Very less
11	Natalin Raimond Rodrigas	Hullatti	80	Sugar Cane	6.72	0.15	1.28	16.27	110.31	85.17
		Classification			Neutral	suitable	Excess	Medium	Less	Very less
12	Rudrappa Uppin	Hullatti	48/1 B	Sugar Cane	6.52	0.41	1.7	40.01	137.36	85.17
		Classification			Neutral	suitable	Excess	Excess	Medium	Very less
13	Anil Piraji Gouli	Hullatti	39/1 A	Sugar Cane	6.82	0.26	1.48	7.62	127.72	99.37
		Classification			Neutral	suitable	Excess	less	Medium	Very less
14	Ratnavva Ganapati Kamble	Hullatti	56/B 1	Sugar Cane	6.28	0.35	1.52	10.71	104.56	99.37
		Classification			Neutral	Suitable	Excess	Medium	Medium	Very less
15	Malleshi Basavanyeppa Uppin	Hullatti	47/1	Sugar Cane	6.54	0.17	1.29	6.32	102.13	99.37
		Classification			Neutral	suitable	Excess	less	Medium	Very less
16	Shankhar Jakkappa Mindolkhar	Hullatti	32/3	Sugar Cane	5.82	0.22	1.95	12.36	128.22	113.56
		Classification			Neutral	suitable	Excess	Medium	Excess	Very less

Analysis report of Soil samples collected from Murkwada Hoble, Hullatti Village, Haliyal Taluk

S.No	**Name of the farmer**	**village**	**Survey No.**	**Present crop**	Avail Cu (in ppm)	Avail Fe (in ppm)	Avail Mn (in ppm)	Avail Zn (in ppm)	Avail Sulphur (in ppm)	Avail Boron (in ppm)
1	Bheemanna Parasannanavr	Hullatti	32/5 A	Sugar Cane	3.902	54.32	13.33	0.514	30.68	0.056
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
2	Parashuram Parasannanavr	Hullatti	32/5 B	Sugar Cane	5.33	64.5	14.07	0.27	47.83	0.112
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
3	Abdul Khadar Abdul Kareem Chibbalgeri	Hullatti	32/4A	Sugar Cane	3.034	30.4	9.82	0.142	52.98	0.203
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
4	Mahadev Narayan Patil urf Gowda	Hullatti	32/2	Sugar Cane	3.142	60.96	14.64	0.572	44.22	0.322
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
5	Mohamadshafi Bidvale	Hullatti	37/1	Sugar Cane	4.714	59.06	14.45	0.564	17.21	0.189
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
6	Manohar Narayan Bhandagi	Hullatti	36	Sugar Cane	3.034	33.86	12.08	0.194	33.39	0.154
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
7	Manohar Narayan Bhandagi	Hullatti	36	Paddy	2.862	37.8	7.81	0.15	27.07	0.119
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
8	Parashuram Chowhan	Hullatti	42/2 A	Sugar Cane	3.774	54.06	13.75	0.834	50.78	0.182
		Classification			Adequate	adequate	adequate	adequate	adequate	deficiency
9	Hussen sab Rajesab Nadaf	Hullatti	41/1	Sugar Cane	4.082	46.64	9.49	0.792	57.76	0.203

		Classification			Adequate	adequate	adequate	adequate	adequate	deficiency
10	Prabhakhar Shripad Deshpande	Hullatti	38/2	Paddy	4.28	50.94	8.13	0.866	38.8	0.147
		Classification			Adequate	adequate	adequate	adequate	adequate	deficiency
11	Natalin Raimond Rodrigas	Hullatti	80	Sugar Cane	2.98	37.66	8.22	0.11	28.88	0.077
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
12	Rudrappa Uppin	Hullatti	48/1 B	Sugar Cane	3.594	40.24	8.01	1.06	58.07	0.147
		Classification			Adequate	adequate	adequate	adequate	adequate	deficiency
13	Anil Piraji Gouli	Hullatti	39/1 A	Sugar Cane	3.07	41.1	8.85	0.404	36.1	0.091
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
14	Ratnavva Ganapati Kamble	Hullatti	56/B 1	Sugar Cane	3.304	35.76	6.402	0.154	58.6	0.189
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
15	Malleshi Basavanyeppa Uppin À	Hullatti	47/1	Sugar Cane	2.798	32.82	6.956	0.156	15.34	0.07
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency
16	Shankhar Jakkappa Mindolkhar	Hullatti	32/3	Sugar Cane	3.142	57.76	14.02	0.378	35.19	0.091
		Classification			Adequate	adequate	adequate	deficiency	adequate	deficiency

As per the Agricultural Officer, Haliyal, the soil sample collected from the above farmlands are suitable for carrying out agricultural activity by using additional major and minor nutrients based on crop type and with good agricultural practices. Report from Agriculture Officer is enclosed as **Annexure-5.**

6. Submission of Environmental Statement by the industry:

Industry has submitted environmental statement in Form-V for the year 2021-22 on 1/08/2022 and production details are as follows and production is found to be much below the consented capacities;

Products	Consented production capacity	Production for the year 2021-22 as per Form-V
Bagasse	53,010 MT/Month	333697MT
Molasses	10,230 MT/Month	59215.316MT
R.S./ENA/I.S/ETHANOL	2,790 KLT/Month	13750.118 KL
Sugar	23,250 MT/Month	141938.5MT

7. Other Observations made during inspection of the Joint Committee:

- Industry was under operation during inspection and sugar cane crushing activity which commenced on 11/11/2022 was still going on. Distillery unit was under operation as well.

- The industry was found to be surrounded by agricultural activity mainly sugar cane fields and few other crops like Mango plantations and Maize.
- The source of water is from Kali River. Total water requirement is 4686 cum/day, out of which the fresh water requirement will be 3491 cum/day.
- Industry has provided flow meters to the inlet and outlet of the ETP and keeping records of inflow and out flow of ETP.
- It has provided separate energy meters for the operation of ETP units and maintaining records.
- Industry has provided one coal shed at sugar mill section, however, portion of coal was stored in open area near Distillery unit creating fugitive emissions.
- Industry has stored bagasse in open yard in North-Eastern directions of the Hanumantha tank and is provided with GI sheet barricade towards tank boundary. It was the run off from this yard which escaped during heavy pre-monsoon showers May 2022 that reached the Hanumantha tank.
- Spent wash generated in distillery unit is being concentrated in MEE and concentrated spent wash is being burnt in boiler. Bottom ash is being taken to fertilizer plant and used as one of the ingredients for production of fertilizer.
- Boiler Ash from Sugar Mill section is being handed over to farmers to use as manure in their agricultural field and also for brick manufacturers. Unit has provided three number ash silos with a total storage capacity of 40 Tons. Apart from this, small quantities of fly ash are being stored temporarily in open area near bagasse handling section and sugar mill boiler section. Additional ash silos are required to be provided in order to avoid storage of ash in the open area which creates fugitive emissions.
- Construction of metalled internal road is under progress for movement of vehicles and concrete platform for parking lot to avoid fugitive emissions. Metalled roads are to be provided near the distillery boiler area and in coal crusher area.
- Unit has provided condensate polishing unit of capacity 1800 m^3/day as per the requirement of consent conditions of KSPCB. Civil work completed, plant and machineries were erected, however, trial run of the plant is under progress. The Vice president informed that, by the end February 2023, it will be taken for operation after trial run. Earlier, before expansion, this condensate was about 600 KLD and was taken to ETP directly. Now, with the condensate polishing unit, they are utilising this entire 1800 KLD as raw water for their process.
- There is a small irrigation pond of 4.38 acres, located at Sy No. 29 and belonging to TMC, Haliyal attached to the southern boundary of the industry, the slope of

industrial land is towards the pond. During rainy season, surface run off from the sloping lands of the industry reaches this pond. The runoff carries along with it any spillages/pump gland leakages from the distillery area on the industrial side and hence, the water in the pond has light brown colour. This water gets stocked in to the pond and overflow flows in the drain in between the sugar cane and paddy fields which further joins a rivulet (Thattihalla) 3-4 Km downward side. But, during summer, the overflow stops, the stocked water in this Hanumantha tank are pumped out for irrigating the sugarcane crops by some farmers. The pond water also serves as recharge pond for the surrounding bore wells. The pond completely dries up by mid-March every year. Thattihalla rivulet flows downward and at about 25 Km downstream, an irrigation dam is built across this rivulet.

- At the time of inspection, there was no discharge into Hanumatha tank. It was observed that the industry has taken the initiative for de-siltation and bund construction around Hanumanth tank, as per directions of Assistant Commissioner, Karwar, during his joint inspection on 25/08/2022. Water in the pond had turned muddy because of the desilting work.
- Hanumantha pond was having very small quantity water in it. This water was also turned muddy because of the desilting work undertaken by the industry. Bunding was being done around the pond.
- Photos taken during inspection are enclosed as **Annexure-6.**

8.0 Conclusions and recommendations of the Committee

- The industry is treating the sugar effluents in the ETP and the treatment consists of anaerobic and aerobic systems followed by tertiary filtration (PSF and ACF) units. The industry has ETP for treating 2600 KLD of effluents both from the sugar and distillery section. The treated effluents are meeting with the KSPCB stipulated standards and real time data of treated effluent quality is connected to the CPCB server. Treated effluents are collected every month from KSPCB and the results of analysis show that the parameters are within the prescribed limits to use it for irrigation. Even the treated effluent samples collected on the day of inspection is also meeting with the stipulated standards for irrigation.

- Similarly, spent wash from the distillery section are concentrated in Multiple effect evaporators and incinerated in the incineration boiler. Only the distillery condensate is

taken to the Sugar ETP for further treatment. During the off- season (from March to September), the influent to ETP consists of only distillery condensate.

- Spillages/pump gland leakages in the distillery section are taken to a collection tank through the rain water carrying drains and pumped to ETP. During first shower, rain water gets mixed up with these spillages/pump gland leakages and the overflow from the collection tank reaches the Hanumantha pond. The industry should completely avoid this and give proposal for containing the spillages/leakages locally without allowing it to come in contact with the rains. A proper storm water management plan has to be submitted by the industry to contain the spillages/leakages in the distillery section.

- At present domestic sewage generating from toilet blocks and other washings are being discharged to septic tank and soak pit. About 10KL of wash water from canteen facility is being treated in existing ETP. Industry has to submit proposal for Sewage Treatment Plant as per consent conditions of KSPCB.

- Industry has totally 04 boilers; one coal fired incineration boiler of 15 TPH for which it has provided bag filer followed by required chimney height and three bagasse fired boilers of 100 TPH, 120 TPH and 45 TPH for which it has provided individual ESP followed by individual chimneys of required height. For the coal fired boilers, they have provided Online continuous emission monitoring system (OCEMS) and connected to CPCB server. It is desirable to provide Online emission monitoring system (OCEMS) to the rest of the bagasse fired boilers also and connect them to CPCB server even though the CPCB directions do not make OCEMS mandatory for the bagasse fired boilers.

- Fly ash /bottom ash from sugar mill is stored in three numbers of silos of total capacity 40 tons and that from distillery in one silo of 15 Tons capacities. There is pneumatic conveyor system for the ash handling in sugar mill section, but, ash handling is manually done through trucks in distillery section leading to fugitive emissions. Industry has to handle this ash also through pneumatic system.

- Further, the silos provided are inadequate compared to the daily generation of ash and because of this gap, industry has opted for temporary storage of ash in the open area leading to lot of fugitive emissions. Industry has to make up this gap by providing additional silos for storage of ash. Apart from this, industry shall control the fugitive emissions by using advanced technologies and other control measures like, water sprinkling arrangement, multiple rows of plantations on industry boundary, pavement of roads near the coal crusher area, etc

- There is a coal crusher of capacity 10 TPH for which multi cyclone dust collector is provided, however, coal is brought to the crusher through trucks and as the area near the coal crusher is not paved/metalled, there is lot of fugitive emissions due to truck movements. Hence, industry should take up pavement/metalling of roads near the coal crusher area and distillery boiler area.

- Industry also has to plant enough number of multiple rows of saplings along its boundaries in all directions. Further, coal crusher shed is to be completely covered so as to avoid escape of any dust from this section. Also, conveyor belts have to be covered.

- Unit has provided one storage tank of capacity 8800 m^3 for collection of treated trade effluent. This is designed for the old crushing capacity and considering the expanded crushing capacity of 11500 TCD, the storage tank is insufficient to hold 15 days storage.

- There was no discharge of industrial effluents in to the Hanumantha tank. The industry was constructing bunds/trenches around the pond as a preventive step towards run off water joining the pond during the rainy seasons. But, this may end up in the reduction of pond life itself as all the surface run off are re-routed towards the open drain and there is possibility of water scarcity for farmers for irrigating their crops as this pond serves as recharge for the surrounding bore wells also. So, instead of industry re- routing the surface run off coming from its premises, it is desirable to keep the flow in to the pond, but, the industry shall control the spillages/any pump gland leakages in the distillery section locally.

- All the Ground water samples collected from the bore wells in the downstream of the Hanumantha pond including the one from the complainant's land were analysed for the drinking water parameters as per IS 10500. The analysis results show that the ground water quality is within the acceptable/permissible limits.

- The water analysis of Thattihalla rivulet (3-4 Km downstream of the industry) was also done and as per the results of analysis the water quality of the rivulet meets the Class "C" (Drinking water source after conventional treatment and disinfection) standards of water quality criteria based on designated best use of CPCB.

- As per the results of analysis of soil samples, soil quality has not deteriorated as on date. The Agricultural officer is of the opinion that the soil samples collected from farm lands are suitable for agricultural activity by using additional major and minor nutrients based on crop type and with good agricultural practices.

- Based on the observations of the Joint committee, KSPCB local office has issued a show cause notice to the Industry and sought the time bound action plan to comply with the observations. Industry has to submit the same to the KSPCB.

Sri. Theerthaya S. Chikkamath,
Agriculture Officer (Technical-1),
Office of the Assistant Director of Agriculture, Haliyal.

Dr. Ganapati Hegde,
Deputy Environmental Officer, Karnataka State Pollution Control Board, Regional Officer, Karwar.

5/5/2023

Smt. Vijaya Hegde
SEO, KSPCB, Divisional Office, Mangalore, Dakshina Kannada District.

Sri. Prabhuling Kavalikatti (I.A.S)
Deputy Commissioner and
District Magistrate,
Uttara Kannada District, Karwar.

Item No. 15 Court No. 2

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Video Conferencing)

Original Application No. 851/2022

Dr. Prasad Bhandge Applicant

Versus

State of Karnataka Respondent

Date of hearing: 10.01.2023

CORAM: HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE PROF. A. SENTHIL VEL, EXPERT MEMBER

Applicant: Dr. Prasad Bhandge, Applicant in Person

Application is registered based on a complaint received by e-mail

ORDER

1. Heard applicant in person and perused record.

2. This original application under Sections 14 and 15 of National Green Tribunal Act, 2010 (hereinafter referred to as 'NGT Act, 2010') has been registered on a letter petition dated 20.06.2022 received from Dr. Prasad Bhandge, Subhas Road, Haliyal complaining that there is a sugar mill namely; EIA Parry Sugar mill at Haliyal, District Uttara Kannada Karwar, Karnataka which is discharging untreated industrial effluent into nearby pond at Survey No. 39, Hanumanth Kere and also contaminating ground water table affecting the source of drinking water available to livestock and residents in nearby area.

3. It is also said that direct discharge of effluent in river Kali is also causing huge water pollution in the area and fly ash generated in the unit is not being handled scientifically but is being dumped in open area and agricultural fields affecting agricultural produce of villagers.

4. In our view, a substantial question relating to environment has arisen due to implementation of scheduled enactments under NGT Act, 2010. However, before taking any further action, we find it appropriate to obtain a factual report covering issues raised in para 2&3 above and the compliance with consented conditions. For the purpose thereof, we constitute a joint committee comprising State PCB and District Magistrate, Karwar to visit thesite, collect relevant information and submit a factual report including the details of action taken, if any, within two months by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF. The nodal agency for coordination and compliance will be State PCB.

5. List the matter for further consideration on 24.03.2023.

6. A copy of this order along with copy of the complaint be forwarded to State PCB and District Magistrate, Karwar by email for compliance

Sudhir Agarwal, JM

Prof. A. Senthil Vel, EM

January 10, 2023
Original Application No. 851/2022
AB

ಹೆಲ್ಪ್‌ಲೈನ್ / Helpline : 080-25582559
ಈಮೇಲ್ / Email : contact@kspcb.gov.in
ವೆಬ್‌ಸೈಟ್ / Website : kspcb.karnataka.gov.in

ಕರ್ನಾಟಕ KARNATAKA

☎ 080-25581383, 25589112
080-25589113, 25589114

ಕರ್ನಾಟಕ ರಾಜ್ಯ ಮಾಲಿನ್ಯ ನಿಯಂತ್ರಣ ಮಂಡಳಿ
Karnataka State Pollution Control Board

"ಪರಿಸರ ಭವನ", 1 ರಿಂದ 5ನೇ ಮಹಡಿಗಳು, ನಂ. 49, ಚರ್ಚ್ ಸ್ಟ್ರೀಟ್, ಬೆಂಗಳೂರು - 560 001, ಕರ್ನಾಟಕ ರಾಜ್ಯ, ಭಾರತ
"Parisara Bhavan", 1st to 5th Floor, # 49, Church Street, Bangalore - 560 001, Karnataka State, India

No: PCB/137/HPI/2016-17/2023/ 7777 Dated: 17 FEB 2023

To:

The Deputy Commissioner
Uttara Kannada District
Karwar-581301

Sir,

Sub: Directions of Hon'ble National Green Tribunal, Principal Bench, New Delhi in OA NO. 851/2022 dated 10.01.2023– reg.

Ref : Order of Hon'ble National Green Tribunal, Principal Bench, New Delhi in OA NO. 851/2022 dated 10.01.2023

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Adverting to the above subject, based on a letter petition dated 20.06.2022 by Dr. Prasad Bhandge, Subhas Road, Haliyal regarding pollution caused by M/s. EID Parry (India) Ltd. Haliyal, the Hon'ble National Green Tribunal, Principal Bench, New Delhi has registered OA No. 851/2022 and issued order on 10.01.2023. The copy of the order is attached for your reference.

In the said order, the Hon'ble NGT has constituted a joint committee comprising State PCB and District Magistrate, Karwar to visit the site, collect relevant information and submit a factual report including the details of action taken, if any, within 2 months.

In this regard, the Zonal Senior Environmental Officer, Karnataka State Pollution Control Board, No. 10B, Baikampady Industrial Area, Mangaluru-575011 is nominated to the committee for joint inspection and reporting to the Hon'ble NGT.

You are requested to conduct the inspection and furnish the report to Hon'ble NGT within 2 months from the date of order i.e., on or before 10.03.2023.

Yours faithfully
Sd/-
MEMBER SECRETARY

Copy to:

1. RSEO Mangaluru for necessary actions.
2. RO, KSPCB, Karwar for information. You are informed to coordinate with DC Karwar and ZSEO Mangaluru to carry out joint inspection and submission of report to Hon'ble NGT within the stipulated time.

ಪ್ರಾದೇಶಿಕ ಕಛೇರಿ
ಕ.ರಾ.ಮಾ.ನಿ.ಮಂ. ಕಾರವಾರ
ದಿನಾಂಕ : 27-02-2023
ಪತ್ರಿಕೆ ಸಂಖ್ಯೆ : 2353
ಇವರಿಗೆ :

MEMBER SECRETARY

ANNEXURE-3

Compliance to Consent conditions by M/s EID Parry (India) Ltd. Haliyal

Sl. No.	Conditions	Action taken to comply with the consent conditions
1	The applicant shall comply with all the conditions stipulated in the Environmental Clearance issued by MoEF& CC for expansion of Sugar-cane crushing of capacity from 6000 TPD to 11500 TPD and Cogeneration power plant capacity from 37 MW (3 MW from incineration boiler) to 57 MW vide letter No. J-11011/382/2016-IA-II(I), dated: 11.08.2020.	Industry is submitting compliance report to MoEF& CC regularly every 6 months. Last report submitted on 01/12/2022.
2	The trade effluent generating from the existing unit shall be treated in the existing ETP of capacity 1600 KLD. Now, the trade effluent generated from the proposed expansion n activity shall be treated in the new ETP of capacity 1000 KLD for in addition to the existing ETP and the treated water shall be used for on land irrigation within the agricultural land in an area of 62 acres, within the industry premises after conforming to the Standards as stipulated.	Both the effluent treatment plants were under operation and are meeting the standards. Provided Online Continuous Effluent Monitoring System for treated effluent and same is connected to CPCB server and reading are within the stipulated standards.
3	The existing ETP shall consist of Bar screen chamber, Oil removal tank, Oil collection pit, Equalization tank, Lime dosing tank, Flash mixer tank, Tube settler tank, Feed tank, Anaerobic reactor, Bio-tower, settling tank, Aeration tank-1, New Aeration tank-2, Primary clarifier, New secondary clarifier, Treated effluent collection tank, New sludge drying bed, Sludge drying bed and Filter chamber.	Provided all the units in the existing ETP and all units are under operation.
4	The industry shall treat the trade effluent generated from the proposed expansion activity in the ETP of capacity 1000 KLD and the ETP shall consist of Bar screen Chamber, Oil Skimmers, Equalization Tank, Lime Dosing Tank, Aeration Tank,	Provided all the units in the ETP proposed for expansion activity and all units are under operation.

	Clarifier and Sludge drying beds.	
5	The applicant shall treat the condensate water in the CPU and the treated CPU effluent shall be recycled back to the process completely.	Unit has provided condensate polishing unit of capacity 1800 m^3/day as per the requirement of consent conditions of KSPCB. Civil work completed, plant and machineries were installed, however, trial run of the plant is under progress. The Vice president informed that, by the end February 2023, plant will be taken for operation after trial run. Earlier, before expansion, this condensate was about 600 KLD and was taken to ETP directly. Now, with the condensate polishing unit, they are utilizing this entire 1800 KLD as raw water for their process.
6	The treated trade effluent shall be used for on land for irrigation in agricultural field in an area of 62 Acres after confirming to the standards.	Treated effluent is meeting the standards stipulated and being used for irrigation in agricultural fields within and outside (farmers land) the industry premises. Industry is owning about 62 acres of sugar cane field and 43 acres of green belt area. Apart from this, industry is also giving its treated water for irrigating the sugar cane fields of some farmers outside the industry premises. An irrigation management plan as per CPCB guidelines is prepared and industry is utilizing the treated water for irrigation of sugar cane fields. As per the irrigation management submitted by the industry, industry is supplying the treated water to those farmers against their demand and there is adequate land available for irrigation.
7	The treated water which is used on land for irrigation in agriculture lands of 105 Acres shall comply with the conditions, as per CPCB Guidelines;	
8	Industry shall explore the possibility of treating the sewage by providing STP of required capacity as the total domestic sewage generation is 24 KLD. Industry shall submit the details of source of domestic sewage along with plan of action for providing STP.	At present domestic sewage generated from toilet blocks and other washings are being discharged in to septic tank and soak pit. However, about 10KL of wash water from canteen facility is being treated in existing ETP. Industry yet to submit proposal for Sewage

		Treatment Plant.
9	The applicant shall not dig the new Bore wells within the premises.	Not observed and any new bore well in the premises.
10	The applicant shall take suitable steps so that there will be reduction of the fresh water consumption as well as waste water generation from the industry.	They have installed condensate polishing unit of capacity 1800 m^3/day as per the requirement of consent conditions of KSPCB. Now, with the condensate polishing unit, they are utilizing this entire 1800 KLD as raw water for their process.
B. DISCHARGE OF EMISSIONS UNDER THE AIR ACT: -		
1	The discharge of emissions from the premises of the applicant shall pass through the air pollution control equipment and discharged through stacks/chimneys where, from the Board shall be free to collect the samples at any time in accordance with the provisions of the Act and Rules made there under.	Unit has installed air pollution control measures as per consent conditions, provided port hole with platform for sample collection and are under operation. Provided online continuous emission monitoring system at distillery section for incineration boiler and same is connected to CPCB server.
2	Fugitive emission near manufacturing area has to be controlled by adopting advanced technology. Progress made in this regard shall be furnished.	Fugitive emissions were noticed in sugar mill boiler section, bagasse handling area, coal handling area and distillery section and it has to be rectified/ controlled by industry by using advanced technologies and other control measures like, providing additional silos for storage of ash, water sprinkling arrangement, multiple rows of plantations on industry boundary, pavement of roads near the coal crusher area, etc.
3	If there is going to be any new air pollution sources in future, the project authorities shall apply and obtain consent for establishment for the same from the Board.	Not taken up any new/additional activity.
C	HAZARDOUS WASTES (MANAGEMENT, HANDLING & TRANSBOUNDRY MOVEMENT) RULES 2016:	
1	The industry shall apply and obtain authorization under Hazardous Wastes (Management, Handling &Transboundry Movement) Rules 2016, and comply with the conditions of the authorization. The applicant shall comply with the terms and conditions stipulated in authorization.	Unit has obtained authorization under Hazardous and Other Wastes (Management, Handling & Transboundary Movement) Rules, 2016 vide no. 328508, dated: 3/12/2021 for the period up to 30/06/2026.
2	The applicant shall dispose the empty raw	Authorities have submitted the annual

	material cans back to the supplier and shall maintain the manifest to this process. The details shall be submitted to the Board.	returns under Hazardous and Other Wastes (Management, Handling & Transboundary Movement) Rules, 2016 for the financial year 2021-22. As per the annual returns, the generation of used oil is 80L, oil-soaked cotton waste is 70kg and Empty barrels/containers/liners contaminated with hazardous chemicals/wastes are not generated. Cotton waste was incinerated in the boiler and 95L (including previous year stock 30L) of used oil was utilized internally for lubrication and presently they have stored about 42L of used oil in secured manner in barrel. The industry has generated more of oil-soaked cotton waste than authorized quantity for which they are directed to apply for amendment of authorization.
3	The applicant shall sell the boiler ash to the farmers along with press-mud and ETP sludge to use as manure in their lands for green belt development and gardening.	Authorities are selling ash to farmers as a soil conditioner along with press mud and also for brick manufactures as a binding material and ETP sludge being used as manure in their farm land. Records maintained for the same.
D. GENERAL CONDITIONS		
1	The applicant shall not allow the discharge from the other premises to mix with the discharge from his premises.	No such incident noticed.
2	The Ambient Noise generated in the factory premises shall be within the prescribed limits of 75 dB (A) leq. During day time and 70 dB (A) leq during night time.	Industry maintaining the Ambient noise within the limits.
3	The applicant shall comply with the noise standard for work zone exposure for industrial workers as per the Factories Act / The Noise Pollution (Regulation and Control) Rules, 2000.	Industry maintaining the Ambient noise within the standards and not received any compliant/issue regarding the same.
4	There shall not be any complaint against the industry on water, air, noise pollution from the surrounding general public.	-
5	The applicant shall carryout intensive plantation/ thick vegetation all round,	No residential area nearby industry, however, plantation activity is being

	especially towards residential apartment to minimize air & noise pollution. The action taken report shall be submitted to the Board immediately.	carried out by the industry.
6	The Storm water shall not be allowed to mix with the effluents on the upstream of the terminal manhole where the flow measuring devices are installed.	Not observed any mixing of storm water with effluent. However, separate collection system shall be provided for leakages noticed near distillery section and shall be devoid of storm water drain.
7	The applicant shall submit storm water management plan & shall implement the same and submit the action taken report to the Board.	Storm water management plan providedby the industry is to be improved upon. Industry has provided rain water harvesting facility for rooftop and recharging bore wells with collection pit of capacity about 6000 m^3 capacity. However, industry land is sloping on one side towards Hanumantha pond and as such any rain water from industry premises will directly reach the pond and if there are any spillages, the same gets carried away with rains. Industry shall take immediate action to contain the spillages locally and shall not allow the spillages/leakages to mix with the rain water. Otherwise, they shall collect the rain water contaminated with spillages separately and discharge the same only after giving preliminary treatment such as flocculation and sedimentation.
8	The applicant shall not discharge treated water/untreated water in to the water bodies (if any in the surrounding area) at any point of time.	No such discharge observed
9	Industry shall explore the possibility of treating the sewage by providing STP of required capacity as the total domestic sewage generation is 24 KLD. Industry shall submit the details of source of domestic sewage along with plan of action for providing STP.	Industry is yet to submit proposal for new Sewage Treatment Plant. At present domestic sewage generating from toilet blocks and other washings are being discharged to septic tank and soak pit. However, about 10KL of wash water from canteen facility is being treated in existing ETP. Industry is yet to submit proposal for Sewage Treatment Plant.
10	Industry shall provide dyke wall of	Provided with adequate dyke wall.

	sufficient height for molasses storage tank.	
11	The industry shall provide metalled road for transportation of cane along with metalling of lateral roads.	Provided with metalled road for transportation of cane and concrete platform for vehicle parking. But, in other areas, specially ash handling and coal handling area, roads have to be metalled yet.
12	The industry shall provide 15 days storage tank for storing treated trade effluent.	Unit has provided one storage tank of capacity 8800$m^3$for collection of treated trade effluent.This is designed for the old crushing capacity and considering the expanded crushing capacity of 11500 TCD, the storage tank is insufficient to hold 15 days storage.
13	The applicant shall always store the bagasse and boiler ash in a closed shed and ensure that the bagasse & boiler ash shall not be stored in an open land, which may cause dust nuisance in the surrounding area during wind blow.	Unit has provided three number of ash silos with a total storage capacity of 40 Tons. A small quantities of fly ash are being stored temporarily in open area near bagasse handling section and sugar mill boiler section. Bagasse was stored in open yard and is provided with wind breaking wall. Recently, industry has installed briquette manufacturing unit at bagasse yard, but, it is not in operation yet.
14	The applicant shall store the metal scrap, plastic waste, glass wool and other solid waste scientifically in a designated separate shed within the industrial premises and the same shall be handed over to authorized recycler/agency with proper approval from the Board.	Separate area marked for storage of scrap and other waste.
15	The applicant shall store the used containers scientifically in a designated separate shed within the industrial premises and the same shall be handed over to authorized recycler/agency with proper approval from the Board.	Not observed such kind of waste during inspection. Containers contaminated with hazardous chemicals were being treated as hazardous waste and separate storage area is designated as per authorization conditions.
16	Industry shall provide separate coal shed to store the coal in a secured manner.	Unit has one coal storage shed of capacity 1500MTof adequate capacity to store coal for one month.
17	Industry shall convert the bagasse into briquette and the same shall be used as fuel	Unit has installed briquette manufacturing unit at bagasse yard.

	in boiler instead of bagasse to avoid fugitive emissions during feeding activity.	However, same is not in operation and at present bagasse is being directly used as fuel in boiler section.
18	Industry shall improve the efficiency of the ETP and provide additional tertiary treatment for better improvement of the treated effluent standards	Industry has not given proposals for additional tertiary treatment for improving the treated effluent quality. At present treated effluents are meeting the prescribed standards.

Annexure-4

Sl.No.	Parameters	Protocol	Unit	Limits	Month and Year of treated trade effluent sample collected										
					Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
					(7.4.22)	(5.5.22)	(8.6.22)	(6.7.22)	(3.8.22)	(6.9.22)	(7.10.22)	(3.11.22)	(3.12.22)	(4.1.23)	(8.2.23)
1	pH	4500-H	Unit	5.5 - 8.5	7.4	7.2	6.7	7.8	7.2	6.7	6.8	6.9	6.6	7.3	6.8
2	B.O.D at 270 C, 3 days	IS3025-44	Mg / l	100	84	75	64	53	61	83	74	87	83	61.2	65
3	Suspended Solids (S.S)	2540D	Mg / l	100	80	80	70	60	50	70	60	80	70	70	70
4	Oil & grease (O&G)	5520B	Mg / l	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
5	Dissolved Solids (D.S)	2540B	Mg / l	2100	-	-	320	-	-	-	440	990	-	580	760

ಹಳಿಯಾಳ ತಾಲೂಕಿನ ಮುರ್ಕವಾಡ ಹೋಬಳಿಯ ಹುಲ್ಲಟ್ಟಿ ಗ್ರಾಮದ ರೈತರ ಮಣ್ಣು ಮಾದರಿಗಳ ವಿಶ್ಲೇಷಣಾ ಫಲಿತಾಂಶ ವರದಿ

ಕ್ರ.ಸಂ.	ರೈತರ ಹೆಸರು	ಗ್ರಾಮ	ಸರ್ವೆ ನಂ.	ಪ್ರಸ್ತುತ ಬೆಳೆ	pH	EC	Organic Carbon (In Percent)	P2O5 (Avail P in Kg/Ac)	K_2O (Avail K in Kg/Ac)	N (in Kg/Ac)	Avail Cu (in ppm)	Avail Fe (in ppm)	Avail Mn (in ppm)	Avail Zn (in ppm)	Avail Sulphur (in ppm)	Avail Boron (in ppm)
1	ಭೀಮಪ್ಪ ಪರಸಣ್ಣವರ	ಹುಲ್ಲಟ್ಟಿ	32/5 ಅ	ಕಬ್ಬು	5.71	0.18	1.91	13.39	82.14	113.56	3.902	54.32	13.33	0.514	30.68	0.056
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
2	ಪರಶುರಾಮ ಪರಸಣ್ಣವರ	ಹುಲ್ಲಟ್ಟಿ	32/5 ಬ	ಕಬ್ಬು	5.37	0.24	1.8	6.79	120.23	113.56	5.33	64.5	14.07	0.27	47.83	0.112
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಕಡಿಮೆ	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
3	ಅಬ್ದುಲಖಾದರ ಅಬ್ದುಲ ಕರೀಮ ಚಿಬ್ಬಲಗೇರಿ	ಹುಲ್ಲಟ್ಟಿ	32/4ಅ	ಕಬ್ಬು	7.01	0.31	1.89	6.15	130.65	113.56	3.034	30.4	9.82	0.142	52.98	0.203
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಕಡಿಮೆ	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
4	ಮಹಾದೇವ ನಾರಾಯಣ ಪಾಟೀಲ ಉರ್ಫ ಗೌಡಾ	ಹುಲ್ಲಟ್ಟಿ	32/2	ಕಬ್ಬು	5.4	0.18	1.71	17.92	113.27	127.76	3.142	60.96	14.64	0.572	44.22	0.322
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಕಡಿಮೆ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
5	ಮಹಮ್ಮದಶಫೀ ಬಿಡಿವಾಲೆ	ಹುಲ್ಲಟ್ಟಿ	37/1	ಕಬ್ಬು	5.32	0.07	1.64	6.53	80.03	127.76	4.714	59.06	14.45	0.564	17.21	0.189
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಕಡಿಮೆ	ಕಡಿಮೆ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
6	ಮನೋಹರ ನಾರಾಯಣ ಭಡಂಗಿ	ಹುಲ್ಲಟ್ಟಿ	36	ಕಬ್ಬು	6.5	0.14	1.36	13.01	115.38	113.56	3.034	33.86	12.08	0.194	33.39	0.154
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಕಡಿಮೆ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
7	ಮನೋಹರ ನಾರಾಯಣ ಭಡಂಗಿ	ಹುಲ್ಲಟ್ಟಿ	36	ಭತ್ತ	6.08	0.18	1.12	11.52	125.32	99.37	2.862	37.8	7.81	0.15	27.07	0.119
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
8	ಪರಶುರಾಮ ಚವ್ಹಾಣ	ಹುಲ್ಲಟ್ಟಿ	42/2 ಅ	ಕಬ್ಬು	6.01	0.16	1.74	29.04	132.09	99.37	3.774	54.06	13.75	0.834	50.78	0.182
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ
9	ಹುಸೇನಸಾಬ ರಾಜೇಸಾಬ ನದಾಫ	ಹುಲ್ಲಟ್ಟಿ	41/1	ಕಬ್ಬು	6.25	0.21	1.65	14.21	135.52	85.17	4.082	46.64	9.49	0.792	57.76	0.203
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ
10	ಪ್ರಭಾಕರ ಶ್ರೀಪಾದ ದೇಶಪಾಂಡೆ	ಹುಲ್ಲಟ್ಟಿ	38/2	ಭತ್ತ	5.87	0.09	1.3	9.3	75.78	99.37	4.28	50.94	8.13	0.866	38.8	0.147
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಕಡಿಮೆ	ಕಡಿಮೆ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ
11	ನತಾಲಿನ ರೈಮಂಡ ರೋಡ್ರಿಗಸ	ಹುಲ್ಲಟ್ಟಿ	80	ಕಬ್ಬು	6.72	0.15	1.28	16.27	110.31	85.17	2.98	37.66	8.22	0.11	28.88	0.077
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಕಡಿಮೆ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
12	ರುದ್ರಪ್ಪಾ ಉಪ್ಪಿನ	ಹುಲ್ಲಟ್ಟಿ	48/1 ಬ	ಕಬ್ಬು	6.52	0.41	1.7	40.01	137.36	85.17	3.594	40.24	8.01	1.06	58.07	0.147
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಅತಿ ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ
13	ಅನಿಲ ಪಿರಾಜಿ ಗೌಳಿ	ಹುಲ್ಲಟ್ಟಿ	39/1 ಅ	ಕಬ್ಬು	6.82	0.26	1.48	7.62	127.72	99.37	3.07	41.1	8.85	0.404	36.1	0.091
		ವರ್ಗೀಕರಣ			ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಕಡಿಮೆ	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ

14	ರತ್ನವ್ವಾ ಗಣಪತಿ ಕಾಂಬಳೆ	ಹುಲ್ಲಟ್ಟಿ 56/ಬ 1	ಕಬ್ಬು	6.28	0.35	1.52	10.71	104.56	99.37	3.304	35.76	6.402	0.154	58.6	0.189
		ವರ್ಗೀಕರಣ		ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
15	ಮಲ್ಲೇಶಿ ಬಸವಣ್ಣೆಪ್ಪಾ ಉಪ್ಪಿನ	ಹುಲ್ಲಟ್ಟಿ 47/1	ಕಬ್ಬು	6.54	0.17	1.29	6.32	102.13	99.37	2.798	32.82	6.956	0.156	15.34	0.07
		ವರ್ಗೀಕರಣ		ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಕಡಿಮೆ	ಮಧ್ಯಮ	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ
16	ಶಂಕರ ಜಕ್ಕಪ್ಪಾ ಮಿಂಡೋಳಕರ	ಹುಲ್ಲಟ್ಟಿ 32/3	ಕಬ್ಬು	5.82	0.22	1.95	12.36	128.22	113.56	3.142	57.76	14.02	0.378	35.19	0.091
		ವರ್ಗೀಕರಣ		ತಟಸ್ಥ	ಸಮರ್ಪಕ	ಹೆಚ್ಚು	ಮಧ್ಯಮ	ಹೆಚ್ಚು	ಅತಿ ಕಡಿಮೆ	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಸಾಕಷ್ಟು	ಕೊರತೆ	ಸಾಕಷ್ಟು	ಕೊರತೆ

ಮೇಲ್ಕಂಡ ಜಮೀನಿನಲ್ಲಿಯ ಮಣ್ಣು ಮಾದರಿಗಳ ವಿಶ್ಲೇಷಣಾ ಫಲಿತಂಶಗಳನ್ನು ಪರಿಶಿಲಿಸಲಾಗಿ ಸದರಿ ಜಮೀನುಗಳಲ್ಲಿಯ ಮಣ್ಣು ಕೃಷಿ ಬೆಳೆ ಬೆಳೆಯಲು ಯೋಗ್ಯವಾಗಿರುತ್ತದೆ. ಮೇಲ್ಕಂಡ ಮಣ್ಣಿನ ಮಾದರಿಗಳ ಫಲಿತಂಶಗಳನ್ನು ಪರಿಶಿಲಿಸಲಾಗಿ ಫಲಿತಾಂಶದ ಸಾರಾಂಶವು ಕೆಳಗಿನಂತಿರುತ್ತದೆ.

1 **ರಸಸಾರ(pH):**, ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳ ರಸಸಾರವು 5.32 ರಿಂದ 7.01 ರವರೆಗೆ ಇದ್ದು ಮಣ್ಣಿನ ರಸಸಾರವು ಆಮ್ಲೀಯ ಅಥವಾ ಕ್ಷಾರಿಯವಾಗಿರದೆ ತಟಸ್ಥವಾಗಿದ್ದು ಕೃಷಿ ಬೆಳೆ ಬೆಳೆಯಲು ಉತ್ತಮವಾಗಿರುತ್ತದೆ.

2 **ಲವಣಾಂಶ(EC):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳ ಲವಣಾಂಶವು 0.09 ರಿಂದ 0.41 ರವರೆಗೆ ಇದ್ದು ಲವಣಾಂಶವು 1.00 ಕ್ಕಿಂತ ಕಡಿಮೆ ಇರುವುದರಿಂದ ಸಮರ್ಪಕವಾಗಿರುತ್ತದೆ.

3 **ಪ್ರಧಾನ ಪೋಷಕಾಂಶಗಳು:**

3a **ಸಾವಯವ ಇಂಗಾಲ(Organic Carbon in %):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳ ಸಾವಯವ ಇಂಗಾಲವು 1.12 ರಿಂದ 1.95 ರವರೆಗೆ ಇದ್ದು ಮಣ್ಣಿನ ಸಾವಯವ ಇಂಗಾಲವು ಅತಿ ಹೆಚ್ಚು ಇದ್ದು ಕೃಷಿ ಬೆಳೆ ಬೆಳೆಯಲು ಉತ್ತಮವಾಗಿರುತ್ತದೆ.

3b **ರಂಜಕ(P2O5-Available P in Kg/Ac):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ರಂಜಕವು 6.15 ರಿಂದ 40.01 ರವರೆಗೆ ಇದ್ದು ಕಡಿಮೆ, ಮಧ್ಯಮ ಹಾಗೂ ಅತಿ ಹೆಚ್ಚು ರಂಜಕ ಹೊಂದಿದ್ದು ಫಲಿತಾಂಶದಿಂದ ಕಂಡುಬರುತ್ತದೆ. ರೈತರು ಮೇಲುಗೊಬ್ಬರವಾಗಿ ರಂಜಕವನ್ನು ಬೆಳೆಗಳಿಗೆ ನೀಡಿ ಬೆಳೆಯನ್ನು ಉತ್ತಮವಾಗಿ ಬೆಳೆಯಬಹುದಿರುತ್ತದೆ.

3c **ಪೊಟ್ಯಾಷ್(K2O-Available K in Kg/Ha):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ಪೊಟ್ಯಾಷ ಪೋಷಕಾಂಶವು 80.03 ರಿಂದ 137.36 ರವರೆಗೆ ಇದ್ದು ಕಡಿಮೆಯಿಂದ ಮಧ್ಯಮದವರೆಗೆ ಪೊಟ್ಯಾಷ್ ಪೋಷಕಾಂಶವನ್ನು ಮಣ್ಣು ಹೊಂದಿದ್ದು ರೈತರು ಪೊಟ್ಯಾಷ ಗೊಬ್ಬರವನ್ನು ಮೇಲುಗೊಬ್ಬರವಾಗಿ ಬೆಳೆಗಳಿಗೆ ನೀಡಿ ಬೆಳೆಯನ್ನು ಉತ್ತಮವಾಗಿ ಬೆಳೆಯಬಹುದಾಗಿರುತ್ತದೆ.

3d **ಸಾರಜನಕ(N-in Kg/Ac):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ಸಾರಜನಕ ಪೋಷಕಾಂಶವು 85.17 ರಿಂದ 127.76 ರವರೆಗೆ ಇದ್ದು ಮಣ್ಣಿನಲ್ಲಿ ಸಾರಜನಕ ಪೋಷಕಾಂಶದ ಪ್ರಮಾಣವು ಅತಿ ಕಡಿಮೆ ಇದ್ದು ಸಾರಜನಕವನ್ನು ಬೆಳೆಗಳಿಗೆ ಮೇಲುಗೊಬ್ಬರವಾಗಿ ನೀಡಿ ಬೆಳೆಯನ್ನು ಉತ್ತಮವಾಗಿ ಬೆಳೆಯಬಹುದಾಗಿರುತ್ತದೆ.

4 **ಲಘುಪೋಷಕಾಂಶಗಳು:**

4a **ತಾಮ್ರ(Available Cu in ppm):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ತಾಮ್ರ ಲಘುಪೋಷಕಾಂಶವು 2.798 ರಿಂದ 3.902 ರವೆಗೆ ಇದ್ದು ಸದರಿ ಪೋಷಕಾಂಶದ ಮಟ್ಟವು ಸಾಕಷ್ಟಿರುತ್ತದೆ.

4b **ಕಬ್ಬಿಣ(Available Fe in ppm):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ಕಬ್ಬಿಣ ಲಘುಪೋಷಕಾಂಶವು 30.40 ರಿಂದ 64.5 ರವೆಗೆ ಇದ್ದು ಸದರಿ ಪೋಷಕಾಂಶದ ಮೊತ್ತವು ಸಾಕಷ್ಟಿರುತ್ತದೆ.

4c **ಮ್ಯಾಂಗನೀಸ(Available Mn in ppm):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ಮ್ಯಾಂಗನೀಸ ಲಘುಪೋಷಕಾಂಶವು 6.402 ರಿಂದ 14.64 ರವೆಗೆ ಇದ್ದು ಸದರಿ ಪೋಷಕಾಂಶದ ಮೊತ್ತವು ಸಾಕಷ್ಟಿರುತ್ತದೆ.

4d **ಜಿಂಕ್(Available Zn in ppm):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ಜಿಂಕ್ ಲಘುಪೋಷಕಾಂಶವು 0.11 ರಿಂದ 0.866 ರವೆಗೆ ಇದ್ದು ಕೊರತೆಯಿಂದ ಸಾಕಷ್ಟು ಪ್ರಮಾಣದಲ್ಲಿರುವುದು ಕಂಡುಬಂದಿದ್ದು ಕೊರತೆ ಇರುವಲ್ಲಿ ಸದರಿ ಲಘುಪೋಷಕಾಂಶವನ್ನು ಬೆಳೆಗಳಿಗೆ ಮೇಲುಗೊಬ್ಬರವಾಗಿ ನೀಡಿ, ಬೆಳೆಯನ್ನು ಉತ್ತಮವಾಗಿ ಬೆಳೆಯಬಹುದಿರುತ್ತದೆ.

4e **ಮ್ಯಾಂಗನೀಸ(Available Mn in ppm):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ಮ್ಯಾಂಗನೀಸ ಲಘುಪೋಷಕಾಂಶವು 6.402 ರಿಂದ 14.64 ರವೆಗೆ ಇದ್ದು ಸದರಿ ಪೋಷಕಾಂಶದ ಮೊತ್ತವು ಸಾಕಷ್ಟಿರುತ್ತದೆ.

4f **ಗಂಧಕ(Available Sulphur in ppm)** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ಗಂಧಕ ಲಘುಪೋಷಕಾಂಶವು 15.34 ರಿಂದ 58.07 ರವರೆಗೆ ಇದ್ದು ಸದರಿ ಪೋಷಕಾಂಶದ ಮಟ್ಟವು ಸಾಕಷ್ಟಿರುತ್ತದೆ.

4g **ಬೋರಾನ್(Available Boran in ppm):** ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳಲ್ಲಿ ಬೋರಾನ ಲಘುಪೋಷಕಾಂಶವು 0.07 ರಿಂದ 0.322 ವರೆಗೆ ಇದ್ದು ಸದರಿ ಲಘುಪೋಷಕಾಂಶದ ಕರತೆಯು ಮಣ್ಣಿನಲ್ಲಿರುವುದು ಕಂಡುಬಂದಿದೆ. ಕಾರಣ ರೈತರು ಸದರಿ ಗೊಬ್ಬರವನ್ನು ಮೇಲುಗೊಬ್ಬರವಾಗಿ ನೀಡಿ ಬೆಳೆಯನ್ನು ಉತ್ತಮವಾಗಿ ಬೆಳೆಯಬಹುದಾಗಿರುತ್ತದೆ.

ಒಟ್ಟಾರೆಯಾಗಿ ಮೇಲ್ಕಂಡಂತೆ ಫಲಿತಾಂಶಗಳನ್ನು ಪರಿಶೀಲಿಸಲಾಗಿ ಸದರಿ ಮಣ್ಣಿನ ಮಾದರಿಗಳ ಜಮೀನಿನಲ್ಲಿ ಕೃಷಿ ಬೆಳೆ ಬೆಳೆಯಲು ಯೋಗ್ಯವಾಗಿದ್ದು ಮಣ್ಣಿನ ಫಲಿತಾಂಶದ ಆಧಾರದ ಮೇಲೆ ಪ್ರಧಾನ ಪೋಷಕಾಂಶಗಳು ಹಾಗೂ ಲಘು ಪೋಷಕಾಂಶಗಳನ್ನು ರೈತರು ಬೆಳೆಯುವ ಬೆಳೆಗಳಿಗೆ ತಕ್ಕಂತೆ ಮೇಲುಗೊಬ್ಬರವಾಗಿ ಬಳಸಿ ಹಾಗೂ ಸಮಯಕ್ಕೆ ಸರಿಯಾಗಿ ಬೇಸಾಯ ಕ್ರಮ ಚಟುವಟಿಎಗಳನ್ನು ಕೈಗೊಂಡಲ್ಲಿ ಉತ್ತಮ ಇಳುವರಿಯನ್ನು ಪಡೆಯಬಹುದಾಗಿರುತ್ತದೆ. ಸದರಿ ವರದಿಯನ್ನು ತಮ್ಮ ಕೋರಿಕೆಯಂತೆ ಸಲ್ಲಿಸಿದೆ.

ಸಹಾಯಕ ಕೃಷಿ ನಿರ್ದೇಶಕರು,
ಹಳಿಯಾಳ(ಉ.ಕ)
ಸಹಾಯಕ ಕೃಷಿ ನಿರ್ದೇಶಕರು
ಹಳಿಯಾಳ (ಉ. ಕ.)

ಅಡಕ: ಸಹಾಯಕ ಕೃಷಿ ನಿರ್ದೇಶಕರು, ಮಣ್ಣು ಆರೋಗ್ಯ ಕೇಂದ್ರ, ಶಿರಸಿಯವರು ಸಲ್ಲಿಸಿದ
ಮಣ್ಣು ಮಾದರಿಗಳ ವಿಶ್ಲೇಷಣಾ ಫಲಿತಾಂಶ ವರದಿ

ANNEXURE-6

Photos Taken during joint committee inspection of M/s. EID Parry (India) Ltd., Haliyal

Discussion with industry authority during committee visit near Hanumantha pond

Discussion with farmers and representatives of complainant during committee visit near distillery unit

Coal crushing section adjacent to distillery section boiler (dust can be seen)

Industry premises metalled internal road

Hanumantha pond view from Distillery side of the industry

Hanumantha pond located adjacent to industry

Sugar cane seedling at farm land

Farm land located downward position of the industry

Bore well and soil sample collection at complainant farm land

Bore well and soil sample collection at sugar cane filed towards downward position of the factory

Drain flowing between farm lands from the mouth Hanumantha pond towrads Tattihalli

Soil sample collection at farm land

Bore well water sample collection at sugar cane filed at downward position of the factory

Bore well at farm land downward position of the factory

Mango plantation downward position of the factory

Seedlings of the sugar cane downward position of the factory

Sugar cane fields downward position of the factory

Cashew plantation downward position of the factory

Sugar cane filed adjacent (down stream) of Hanumnatha pond

Cane filed adjacent distillery unit belongs to factory

Back side view of industry from distillery section

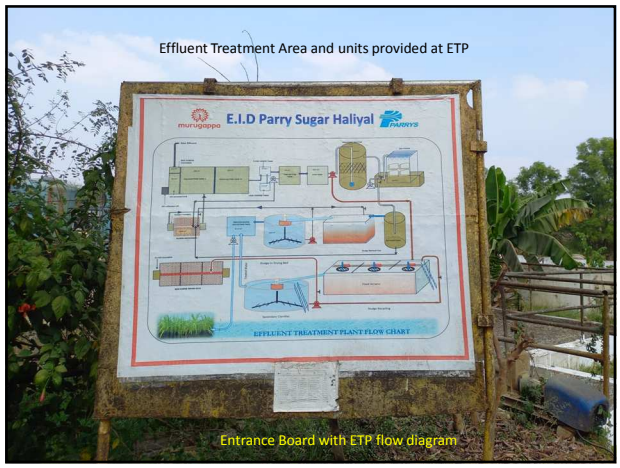
Open dumping of fly ash near sugar mill

Baggasse storage yard area near sugar-mill boiler area

Boiler section at Sugar mill unit

Concrete plat form at vehicle parking area

Effluent Treatment Area and units provided at ETP



Entrance Board with ETP flow diagram

Cooling tower and Equalization tank with aeration

Clarifier unit

Surface aeration tank

Sludge drying beds

Online continuous effluent monitoring system display

Online continuous effluent monitoring system display

Activated carbon and sand filters

Condensate polishing unit filtration system

Condensate polishing unit