

Joint Inspection Report
(22.12.2020)
of
M/s Rudra-bilas Kisan Sahkari Chini Mills, Ltd. Bilaspur, Distt.
Rampur (U.P.)

In the Matter Of
M/s Kisan Sahkari Chini Mills Ltd. Vs Member Secretary,
UPPCB and Ors.

Appeal No. 23/2020, 24/2020 & 25/2020

-Prepared by-
The Joint Committee of CPCB & UPPCB

Constituted by
Hon'ble National Green Tribunal
(Order dated 03rd September, 2020)



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JOINT INSPECTION REPORT OF M/S RUDRA-BILAS KISAN SAHKARI CHINI MILLS LTD., BILASPUR, DISTRICT- RAMPUR, U.P. ON 22/12/2020 IN COMPLIANCE TO DIRECTION ISSUED BY HON'BLE NATIONAL GREEN TRIBUNAL IN APPEAL NO. 23/2020, 24/2020 & 25/2020, M/S KISAN SAHKARI CHINI MILLS LTD. Vs MEMBER SECRETARY, UPPCB AND ORS. - REG.

1.0 Background

Hon'ble NGT vide order dated 03.09.2020 in the matter of Ms Kisan Sahkari Chini Mills Ltd. Vs Member Secretary in Appeal No. 23/2020, 24/2020 & 25/2020, had directed following:

"We are of the view that without prejudice to the consideration of the contention after giving opportunity to file response to the state PCB, the issue whether the appellant was compliant during the relevant period may be independently ascertained by the Joint Committee of CPCB and state PCB within one month and till then impugned orders may not be given effect."

In compliance to the aforesaid direction, a joint team of officials from Central Pollution Control Board, Delhi, Regional Office, Moradabad, Uttar Pradesh Pollution Control Board (UPPCB) visited the unit's premise and interacted with the officials of the Unit on **22.12.2020**.

2.0 Inspection of M/s Rudra-Bilas Kisan Sahkari Chini Mills Ltd., Bilaspur, District- Rampur, U.P. on 22.12.2020 by Joint Committee of officials from CPCB & UPPCB

- In compliance to the Hon'ble NGT order dated 03.09.2020 inspection of M/s Rudra-bilas Kisan Sahkari Chini Mills Ltd., Bilaspur, District- Rampur, U.P (hereinafter referred as 'the unit') was carried out on 22nd December, 2020 by a joint team comprising of the officials from Regional Office, Moradabad, Uttar Pradesh Pollution Control Board (UPPCB) and Central Pollution Control Board (CPCB) Delhi.
- Prior to the entry into the sugar mill premise, the joint team visited the surrounding areas and nearby fields around M/s Rudra-bilas Kisan Sahkari Chini Mills Ltd., Bilaspur, District- Rampur, U.P and had interactions with the local residents of the area.
- The joint team observed a drain located outside the Unit, along the boundary wall of the sugar mill. There was odour and visible color of effluent in the drain. The team surveyed

the area along the boundary of sugar mill till the interior locations in the adjoining agriculture field to trace the origin/final discharge point of the drain. Sample was collected from the drain flowing outside the boundary wall of the unit for further physico-chemical analysis. Analysis results are presented in Table-1.

- The joint team then inspected the unit's manufacturing operation, wastewater management system and verified their logbooks.
- During inspection the unit was found operational however its ETP was not fully functional.
- The team observed bypass channel from ETP inlet which was extending beyond the spray pond and towards the boundary wall. Thus, the entire volume of raw effluent as well as spray pond overflow was being bypassed instead of reaching the ETP.
- The samples were collected from ETP inlet and bypass after spray pond. Analysis results are presented in Table-1
- The ETP was made operational only after team's arrival and no flow was observed at ETP outlet. Hence no sample could be collected from ETP outlet.
- Based on the observations made and analysis result of samples collected from ETP inlet, bypass channel after spray pond and drain outside the Unit premise, it can be concluded that the Unit is not operating its ETP properly, instead it is bypassing the raw untreated effluent and spray pond overflow through the drain outside the Unit premise.
- Detailed observation and recommendations of the joint inspection are enclosed herewith.

2.1 Analysis results of sample collected from groundwater from residential area of industrial premises

- The joint team also collected groundwater sample from the hand pump inside residential area of the industry and its analysis results are presented in Table 2.
- The analysis results of groundwater collected from hand-pump at residential area of sugar mill indicates **COD-5mg/l** and **Iron (Fe)- 0.43 mg/l**, levels are exceeding the acceptable limit of Drinking Water Standards (BIS) IS 10500:2012.



**3.0 INSPECTION REPORT OF M/s RUDRA-BILAS KISAN SAHKARI CHINI MILLS LTD.,
BILASPUR, DISTT. –RAMPUR, U.P. 244923**

A. GENERAL INFORMATION

1.	Date of Inspection	22.12.2020	
2.	Name of the unit with complete postal address	M/s Rudra-Bilas Kisan Sahkari Chini Mills Ltd., Bilaspur, Distt. –Rampur, U.P.- - 244923	
3.	Spatial Co-ordinates Latitude and longitude (in Decimal format only)	NL: 25.459831 EL: 76.221277	
4.	Type of Sugar Industry	Standalone sugar unit involved in manufacturing of white crystalline sugar	
5.	Year of commissioning	1978	
6.	License capacity of sugar Mill (TCD)	2200 TCD	
7.	Average actual crush rate (TCD)	1500-1650 TCD Molasses: (600-900Qt/D), Press mud: (300 - 500 Qt/D)	
8.	Consent status & its Validity with date (Expired/ Applied for renewal/First time applied/Never applied) a. Water consent b. Air Consent c. Hazardous Waste Authorization	Valid upto 31.12.2021. (Annexure- 1) Valid upto 31.12.2020, (Applied for renewal) (Annexure- 2) Applied for renewal on 2020.09.07 (fee receipt for renewal of authorization attached as (Annexure- 3))	
9.	NOC from CGWA & its Validity with date	Applied, No document provided	
10.	Start period of crushing season 2020-21	23.11.2020	
11.	Operational status during visit	Operational	
12.	Name of contact person	Designation	Contact No & E- mail
	Shri Rajesh Gupta	General Manager	rudra.sugar@gmail .com
	Sri R.K Saxena	I/c- Chief chemist	rudra.sugar@gmail .com

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B. OPERATIONAL STATUS

S.No.	Particulars		
1.	Sources of fresh water		
	a. Tube well & Its No's	Tube-well: 01 no.	
	b. Flow meter Installation at wells	Yes	
	c. Reading of Flow Meter during visit	Reading was null (00.00) since bore-well was not in use at the time of inspection.	
	d. Any Logbook maintained	Yes (Annexure-4)	
	e. Totalizer Reading	324744.2299 m ³	
	f. Quantity of water withdrawal (KLD)	410 KLD	
2.	Fresh water consumption (m³/hr)		
	a. Sugar plant	14.50 m ³ /hr.	
	b. co-generation	Not applicable	
	c. Residential etc.	2.6	
	d. Total fresh water Consumption (m ³ /hr)	18.23 m ³ /hr (Average consumption from logbook for the month of November, 2020)	
e. Log book maintained	Yes		
3.	Details of Hot & Cold water recycling system	Number	Capacity
	a. Details of Hot water UGR.	NA	NA
	b. Cold water UGR and cooling towers	1+1	720 m ³ + 20 T/hr
4.	Details of tube cleaning method adopted	Chemical	
5.	Availability of Hazardous tank to collect wash water generated during chemical/Mechanical cleaning of evaporator tubes.	Not observed at the time of inspection	
6.	Aeration in equalization tank	Yes	
7.	Type of aeration in aeration tank	Diffused and surface both	
8.	Schematic diagram of ETP	Yes, Annexure- 5 Inlet→ Oil & Grease trap with mechanical oil skimmer→ Surge tank→ Equalization Tank→ Primary Clarifier→ Anaerobic Tank→ Aeration Tank→ Secondary Clarifier→ Chlorination→ MGF→ ACF	

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9.	Tertiary treatment	Yes, ACF, MGF both having dimensions -1800 mm H X 1500mm Dia.	
10.	Treatment capacity of ETP (KLD)	400 KLD	
11.	Retention time (Min/hr)	Retention Time/Contact Time (Mentioned in CPCB charter)	As per Industry
	1. Bar screen Chamber	30 minutes	3-5 minutes
	2. Oil & grease tank	45 minutes	1 hr
	3. Equalization tank with aeration	6 hrs	7 hr
	4. Primary Clarifier	5-6 hrs	Tube settler, 5 hr
	5. Aeration tank	24-28 hrs	24 hr
	6. Secondary Clarifier	7-8 hrs	7 hr
	7. Sand/multi grade filter	20-25 minutes	25 minutes
	8. Activated carbon filter	20-25 minutes	25 minutes
	9. Sludge drying bed	Not <0.03 m ³ per ton of cane	0.04 m ³ /T of cane
12.	Brief processing details	Cane→Crushing-milling→Raw juice (from mill)→ Raw juice heating (70°C) → liming + sulphitation→ Heating→ Clarification→ heating (103°C)→Evaporation→Crystallization→Centrifugals→White sugar	
13.	ETP Analysis: - The joint team collected samples from inlet of ETP, bypass after spray pond and from drain flowing along the boundary wall in the outside of the Unit. Analysis results are mentioned in Table-1 .		
14.	Groundwater Analysis Report: - The Joint Team collected samples from the hand pump of residential area inside the industrial premises. The results are mentioned in Table-2 .		
15.	Storage of treated Effluent:		
	a. No. & size of lagoons	01 nos. , 6000m ³	
	b. Retention time	15 days	
	c. Lagoon type- permeable/impermeable	Impermeable	

16.	Sludge Handling Process	
	a. Sludge Drying Process	Yes, Sludge Drying Beds were observed but they were not in use.
	b. Final Disposal of Sludge	No details have been provided regarding final disposal
17.	Quantity & way of Disposal of Any Hazardous Substances	Yes, Waste oil & grease emulsion are produced. Quantity not specified but method of disposal through incineration in boiler.
18.	Manpower employed for ETP operation & maintenance.	One operator in each shift and one chemist/supervisor
19.	Details of irrigation system & treated effluent used quantity (As per the Irrigation Management Plan provided by the Unit)	400 KLD, During inspection no treated effluent was observed to be provided for irrigation purpose and the treated effluent storage lagoon was found dry.
	1. Own land area for irrigation	Yes, 4.8 hectare
	2. Farmer land area and their agreement	Yes, 45 hectare
	3. Net effluent generation left for Irrigation (KLD)	400 KLD
	4. Flow meter to measure amount of water used for irrigation.	No
	5. Distance of land Area from the Unit (Km)	0.5 km
	6. Total Available Area (Hectare)	53.8 hectare
	7. Soil Texture of land	Sandy
	8. Crop area under effluent application	37.66 hectare
20.	Cleaning mechanism at ETP and factory floor	Manually

4.0 OBSERVATIONS

<ol style="list-style-type: none"> The unit has valid Consent to Operate for cane crushing under the Water (Prevention & Control of Pollution) Act, 1974 (Consent no. 7649432) which is valid up to 31.12.2021 (Annexure-1) and the Air (Prevention & Control of Pollution) Act, 1981 (Consent No. 7649479) which was valid up to 31.12.2020 (Annexure-2). The unit has applied for obtaining Hazardous Waste Authorization for storage and disposal of hazardous wastes (Annexure-3). The unit could not provide any document of the application to CGWA for NOC. Display board for Hazardous Waste generation and disposal was not observed at the main gate of the mill.
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5. The unit is engaged in production of white crystalline sugar by double sulphitation method. The unit has started its crushing season 2020-21 on 23rd November, 2020. The unit was found operational at the time of inspection.
6. The unit is having ETP with capacity of 400 KLD. ETP comprises of bar screen, oil skimmer &, equalization tank, pH correction tank (Lime dosing), primary clarifier, aeration tank (02), secondary clarifier (02), chlorine contact tank (NaOCl), MGF, Activated Carbon Filter (ACF), sludge sump and centrifuge.
7. At the time of inspection, the unit's officials informed that the ETP was not in operation before the joint team arrived because of some mechanical fault but was made operational after the team's arrival. However, following components of the ETP were found non-operational during inspection:
 - Oil & Grease trap
 - spray pond overflow
 - Tertiary treatment units i.e. ACF & MGF (they were in corroded condition)
 - Primary and secondary clarifier
 - Aeration Tank
 - Empty/dry storage lagoonThus only the lime dosing, equalization tank and surge tank were operational at the time of inspection.
8. At the time of inspection, the spray pond overflow treatment system was also not in operation and flow meters were not installed at inlet and outlet of spray pond over flow.
9. The inspection team observed that the raw effluent generated in the process was reaching the ETP inlet from where it was diverted through a bypass channel which was extended beyond the spray pond such that spray pond overflow could also be discharged into the same channel. The channel appears to be reaching all the way till the boundary wall however the immediate vicinity of the boundary wall inside Unit premise was not approachable due to thick over growth of vegetation. A similar channel/drain was observed outside the boundary wall and flowing along it till the agriculture fields and beyond.
10. The Joint team collected Samples from a.) ETP inlet, b.) portion of the channel after the spray pond overflow leading towards the boundary wall and c.) from the drain outside the Unit premise flowing along unit's boundary wall. The analysis result of the samples is presented in Table-1.
11. The ETP was only partially operational and no flow was observed at ETP outlet. Hence no sample could be collected from ETP outlet.

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Table: 1 Analysis results of sample collected from Outside of unit, ETP Inlet and By-Pass after Spray pond overflow

S.No.	Sample Analysis	pH	COD (mg/L)	BOD (mg/L)	TSS (mg/L)	TDS (mg/L)	Color (Hz)	Sulphur/ Sulphate (mg/L)
1.	Outside of unit along the boundary wall	3.9	4335	2535	248	2040	34	253
2.	ETP Inlet	3.5	8234	5100	762	2908	36	300
3.	By-Pass after Spray pond	4.1	614	333	87	1068	8	-
4.	Prescribed standards for surface water discharge [as per the Consent granted by UPPCB]	5.5 to 8.5	250	30	30	2100	-	-

12. The analysis results of bypass effluent collected from **the drain outside the unit (flowing along its boundary wall)** shows non-compliance w.r.t. **pH-3.9** (against 5.5-8.5), **COD- 4335 mg/l** (against 250 mg/l), **BOD- 2535 mg/l** (against 30 mg/l), **TSS- 248 mg/l** (against 30 mg/l) for surface water discharge.
13. The analysis result of sample collected from **ETP inlet** shows the value of **pH-3.5, COD- 8234 mg/l, BOD- 5100 mg/l, TSS- 762 mg/l**.
14. The analysis results of **effluent collected from bypass channel after spray pond** shows non-compliance w.r.t. **pH-4.1** (against 5.5-8.5, **COD- 614 mg/l** (against 250 mg/l), **BOD- 333 mg/l** (against 30 mg/l), **TSS- 87 mg/l** (against 30 mg/l) for surface water discharge.
15. As per the analysis report, the characteristics of sample collected from ETP inlet (**pH-3.5, colour-36 Hz**) **was comparable** to the sample collected from the drain outside Unit's boundary wall (**pH-3.9, colour-34 Hz**). The sample collected from the bypass channel after the spray pond indicates comparatively lower COD- 614 mg/l, BOD-333 mg/l, TSS- 87 mg/l, TDS- 1068 mg/l, Color- 8 Hz while pH was 4.1.
16. On the basis of analysis results, it can be concluded that untreated effluent was being sent to the ETP inlet from where it was discharged through bypass channel which was connected to the drain outside the boundary wall of the Unit. Untreated effluent which flowing through the bypass channel, beyond the spray pond, was also diluted with fresh water to avoid detection of bypass.



17. The unit has not maintained logbook record of total waste water (effluent) generation i.e. waste water generation from process area, Spray pond overflow and usage of treated effluent etc. Therefore, Wastewater generation could not be estimated.
18. At the time of inspection, the lagoon having capacity 6000 m³ for storage of treated effluent was found completely empty and dry. Thus, it can be deduced that the Unit is not operating the ETP properly and bypassing the untreated effluent instead of holding treated water for the irrigation purpose as per the conditions of consent.
19. The unit has not maintained the logbook for generation and disposal of sludge
20. There is no arrangement made by the Unit to supply treated effluent to the farmers although as per irrigation management plan, 45 hectare of farmer's land area shall be irrigated by the Unit.
21. During the inspection, Online Continuous Effluent Monitoring System (OCEMS) sensor found installed at the outlet of secondary clarifier however as there was no overflow in clarifier, therefore the sensor was not fully submerged in water.
22. Inaccurate OCEMS reading were observed w.r.t. Flow- 0.09 m³/hr, COD- 90.9 mg/l, BOD-12.5 mg/l, TSS-28.3 mg/l during the visit.
23. The unit has maintained the log book w.r.t daily readings of Online Continuous Emission Monitoring System. **(Annexure- 6).**
24. Ground water is abstracted from one bore-well installed in the unit premise. Average fresh water abstraction is 410 KLD.
25. Joint team has also taken the samples for groundwater from the hand pump of residential area of the unit. The analysis results are presented in **Table-2.**

Table: 2 Analysis results of sample collected from Groundwater

Parameters, mg/l except pH, Color in Hazen and Conductivity in μ mho/cm			
Sampling Locations			
Sampling Point	Groundwater sample - hand-pump inside the residential area of the unit	(Acceptable limit) Drinking water standards (BIS) DRINKING WATER – SPECIFICATION (Second Revision) IS 10500: 2012	(Permissible limit in the absence of alternate source) Drinking water standards (BIS) DRINKING WATER – SPECIFICATION (Second Revision) IS 10500: 2012
Color	BDL	5	15
pH	7.6	6.5-8.5	6.5-8.5
Conductivity	364	---	---
TDS	242	500	2000



COD	05	---	---
BOD	BDL	---	---
Total Hardness	315	200	600
SO ₄	10	200	400
Heavy Metal Analysis			
As	BDL	0.01	0.05
Cd	BDL	0.003	NR*
Co	BDL	---	---
Cr	BDL	0.05	NR*
Cu	BDL	0.05	1.5
Fe	0.43	0.3	NR*
Mn	BDL	0.1	0.3
Ni	BDL	0.02	NR*
Pb	BDL	0.01	NR*
Sb	BDL	---	---
Se	BDL	0.01	NR*
V	BDL	---	---
Zn	0.06	5	15
NR*=No Relaxation			

26. The analysis result of groundwater collected from hand-pump at residential area of sugar mill indicates **COD-5mg/l** and **Iron (Fe)- 0.43 mg/l**, levels are exceeding the acceptable limit of Drinking Water Standards (BIS) IS 10500:2012.
27. The unit has separate environmental laboratory facility for analysis of daily parameters of ETP effluent, however the required equipments for analysis and lab analysis log book were not maintained properly.
28. As discussed with mill representatives, around 120 people are residing in the mill premises, however no Sewage Treatment Plant (STP) was installed for the treatment of domestic sewage generated from the residential area.
29. The joint team observed leakages in the overhead pipes in the mill house and mill staff were observed working without personal protective equipment.
30. Wet scrubber was found installed as Air Pollution Control Device (APCD) to control the particulate matter (PM) in the mill premises and surrounding area, however it was not in operation during the inspection.
31. Housekeeping of the mill was poor. The joint team also observed littering of bagasse in the air around the mill premises
32. Flow meters for hot water recycling system at Mill house were installed at imbibition water, sugar melting, pan boiling, molasses conditioning. But the readings of the flow meters were not accessible because the location of installed flow meters were unapproachable. Flow Meters were also not installed at cold water recycling points.



33. Press mud dumping in an open area near the bypass channel after spray pond was observed and the concerned log book was not maintained.
34. The unit has one low pressure boiler having capacity of 20 kg/cm².
35. The unit has not stored boiler ash according to CPCB/SPCB guidelines and log book for the same not maintained.
36. No hazardous tank was observed by the joint team at the time of inspection.
37. Flow meters were not installed at outlet of mill house, boiling house as well as outlet of steam generation house.
38. The roads inside the unit premises was found unpaved and full of dust and no water sprinkling was observed.

5.0 RECOMMENDATIONS:

1. The unit shall immediately dismantle the bypass channel from ETP inlet, after spray pond overflow and outside its boundary wall.
2. The unit shall maintain the functioning of each treatment units of ETP system in order to operate the ETP properly.
3. The unit shall maintain the documents related to waste water generation and treated waste water discharge along with ETP logbooks.
4. The unit shall maintain the record/log book w.r.t. spray pond overflow.
5. A display board for Hazardous Waste generation and disposal shall be placed at the entry gate of the mill.
6. The unit shall install the flow meter at ETP outlet and shall repair the dysfunctional flowmeters at ETP inlet.
7. The unit shall upgrade the environmental laboratory for daily analysis of parameters and maintain record for the same.
8. The unit shall install OCEMS sensor at final outlet of ETP and shall maintain the calibration record for the same.
9. The machineries inside the mill house and boiler house needs rigorous maintenance and refurbishment as leakages were observed in mill house during the inspection.
10. Wet scrubber needs maintenance in order to control the particulate matter (PM) in the mill premises and surrounding area.
11. The unit shall relocate the flow meters inside the Mill House at accessible places.
12. The unit shall make sure that the staff working inside the unit specially the mill house must wear the protective gears as it is unsafe to walk inside the unit.
13. The unit shall improve its overall housekeeping.
14. The unit needs to make a proper management of bagasse and arrangements shall be made to feed the bagasse via closed chute into boiler.

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15. The unit shall make proper arrangement for disposal of press mud in a proper way and keep proper log book for the same.
16. The unit shall maintain Hazardous Tank for collection of wash water generated during chemical/mechanical cleaning of evaporator tubes along with the logbook of the same.
17. The various passages inside the industry needs to be paved to reduce dust and subsequent air pollution.
18. The unit shall submit the analysis report of ground water by the NABL accredited laboratory periodically.
19. The unit shall install Sewage Treatment Plant (STP) for treatment of generated domestic waste water from the residential colony within the premises.

6.0 PHOTOGRAPHS:



1. Main Entry Gate of the unit



2. Drain outside the industry premises



3. ETP Inlet



4. Bypass at ETP Inlet

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5. Equalization Tank



6. Aeration Tank



7. Dysfunctional Spray Pond



8. Bypass After Spray Pond Overflow



9. Mill House



10. Hot Water Imbibition at Mill

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9. Overhead leakages from Pipe in Mill House



10. Boiler



11. Poor housekeeping inside the industry premises



12. Boiler



13. Fresh Water Storage Tank



14. Poor Condition of Machinery

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15. Open dumping and mismanagement of bagasse storage



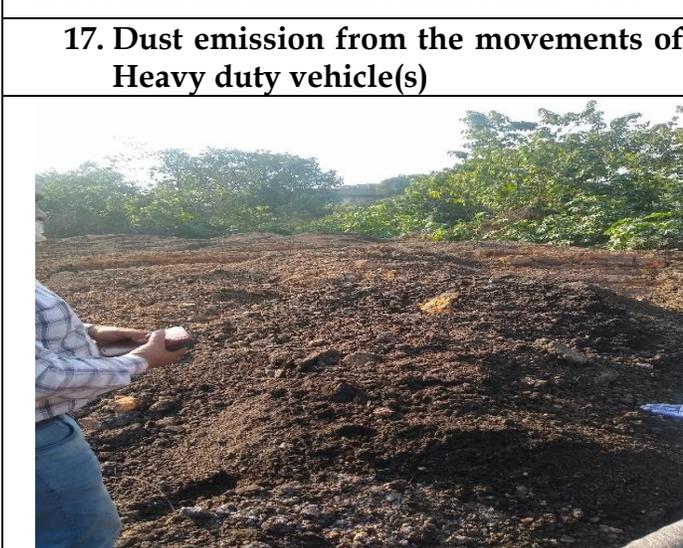
16. Fugitive emission of bagasse near boiler



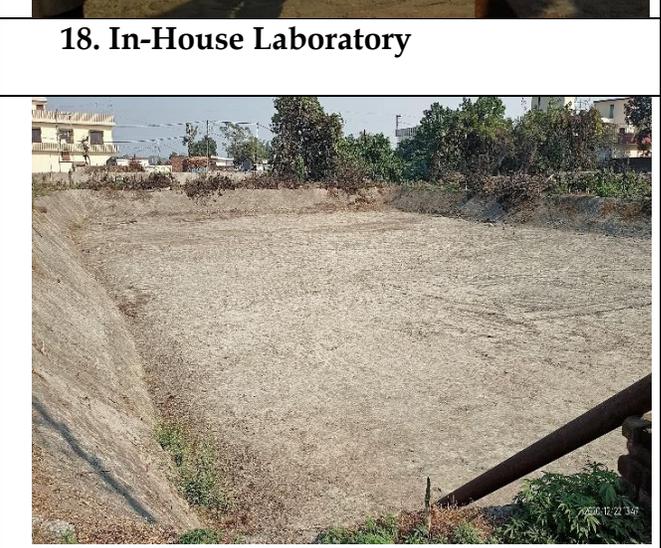
17. Dust emission from the movements of Heavy duty vehicle(s)



18. In-House Laboratory

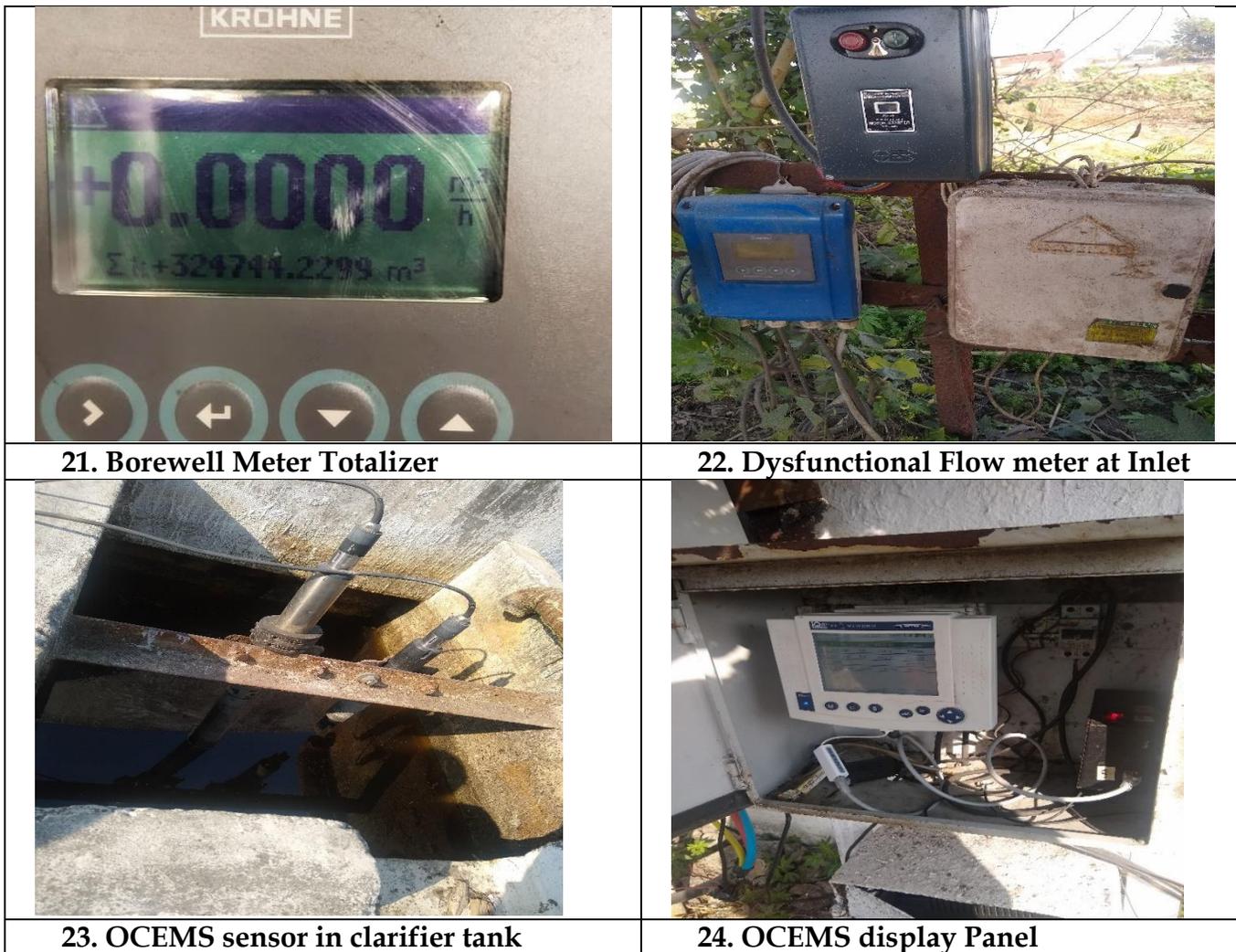


19. Press Mud found dumped



20. Dry and Empty Lagoon-No treated water for irrigation

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7.0 INSPECTION TEAM:

S. No.	Name of the inspecting officers	Designation	Signature
1.	Ms. Reena Satavan	Scientist-'D', Central Pollution Control Board, Delhi	
2.	Sh. S. S. Singh	Assistant Env. Engg., Regional Office, Moradabad, Uttar Pradesh Pollution Control Board	
3.	Dr. Prabhat Ranjan	Scientist- B, Central Pollution Control Board, Delhi	
4.	Sh. Ashwani K. Singh	Research Associate -II, Central Pollution Control Board, Delhi	
5.	Ms. Sonam Lally	Senior Research Fellow, Central Pollution Control Board, Delhi	