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

ORIGINAL APPLICATION No. 369 of 2024

In the matter of:
Monika (Sarpanch) Applicant

Vs.

State of Uttarakhand & Ors. Respondent(s)

INDEX

S.No.	PARTICULARS	Page No.
1.	**Reply** on behalf of Central Pollution Control Board, (CPCB) in compliance of Hon'ble NGT order dated 04.11.2024 in O.A. No. 530/2023 with OA No. 495/2023 with O.A. No. 369/ 2024 alongwith supporting affidavit.	
2.	**ANNEXURE I:** A copy of Hon'ble NGT order dated 04.11.2024.	
3.	**ANNEXURE II:** A copy of Joint Inspection Report dated 22.07.2024 filed before Hon'ble NGT in compliance to order dated 19.04.2024 in OA no. 495/ 2023 with OA No. 530/ 2023.	
4.	**ANNEXURE III:** A copy of Joint Inspection Report dated 21.11.2023 filed before Hon'ble NGT in compliance to order dated 19.04.2024 in OA no. 495/ 2023 with OA No. 530/ 2023.	
5.	**ANNEXURE IV:** A copy of Joint Inspection Report dated 24.01.2024 filed before Hon'ble NGT in compliance to order dated 19.04.2024 in OA no. 495/ 2023 with OA No. 530/ 2023.	

Filed by Adv. Suman Arora
On behalf of Central Pollution Control Board

Place : New Delhi
Date : 10.02.2025

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

ORIGINAL APPLICATION NO. 369 of 2024

In the matter of:
Monika (Sarpanch) Applicant

Vs.

State of Uttarakhand & Ors. Respondent(s)

REPLY ON BEHALF OF THE RESPONDENT No. 3, CENTRAL POLLUTION CONTROL BOARD (CPCB)

Most respectfully showeth:

PRELIMINARY SUBMISSIONS:

1. That Hon'ble NGT vide Order dated 04.11.2024 and Notice dated 19.11.2024 impleaded the Central Pollution Control Board (hereinafter referred as CPCB) as Respondent no. 03 in the instant matter. Thereby, the reply is made in succeeding paragraphs.

2. That at the outset, the answering respondent denies all claims, contentions, allegations and averments against answering respondent CPCB in the above OA contrary to anything stated or submitted in this reply. Nothing in the OA may be deemed to have been accepted or admitted by the answering Respondent for want of a specific denial, save any averment which has been expressly admitted hereinafter.

3. That, CPCB is constituted under Section 3 of The Water (Prevention and Control of Pollution) Act, 1974. It performs the functions under The Water (Prevention and Control of Pollution) Act, 1974, The Air (Prevention and

Control of Pollution) Act, 1981, and The Environment (Protection) Act, 1986.

4. That, the present application has been filed by Ms Monika (Sarpanch) against the water, soil and environment pollution caused by an industrial unit of Respondent no. 6 namely, "Rai Bahadur Narain Singh Sugar Mill Ltd. (Distillery Division)", which has been operating in Tehsil Laksar, District Haridwar in the state of Uttarakhand.

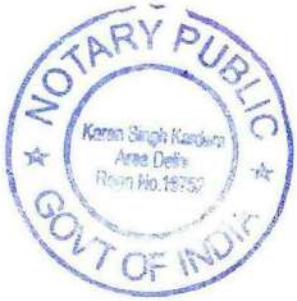
5. That the relevant para of Hon'ble National Green Tribunal Order dated 04.11.2024 in OA No. 495 of 2023 with OA No. 530 of 2023 with O.A No. 369 of 2024 is as follows:--

"6. O.A. No. 369/2024 is a connected matter raising the same issue. Submission of the counsel for the applicant is that additional material has been enclosed in the O.A. Issue notice on this OA."

PARAWISE REPLY

6. That, no comments are offered by this answering respondent over the averments made by the applicant in para 1 being introductory in nature.

7. That, with respect to the averments made in para 2 of the OA, the answering respondent submits that a team of CPCB officials visited Ms Rai Bahadur Narayan Singh Sugar Mills Ltd. (Distillery & Sugar unit), Village- Laksar, Dist.-Haridwar, Uttarakhand and Laksar drain (Upstream of unit, downstream of unit, and near Akhoda Kalan village (1.68 kms) downstream of unit before confluence with Hadwa drain) during 24.06.2024 – 25.06.2024 in compliance with the Hon'ble NGT's Order dated 19.04.2024 in O.A. No. 495/2023 with O.A. No 530/2023. Copy of Joint Inspection



report dated 22.07.2024 is annexed herewith as **Annexure II.** The unit was found non-operational at the time of inspection. The findings of the Inspection Team with reference to the averments submitted by the applicant are as follows:

a. No discharge of distillery effluent from bio-composting/lagoons was observed into the Laksar drain.

b. The analysis result of samples collected from drain (details in Table 1) indicate no impact of industrial discharge and reflect characteristics of surface run-off (BOD in the range of 05 – 41 mg/l & COD in the range of 38 – 129 mg/l). Details of samples collected from laksar drain are mentioned above in table – 1

Table 1: Analysis results of samples collected from Laksar drain

Parameters	Laksar drain upstream of unit	Laksar drain downstream of unit	Laksar drain near Akhoda Kalan village (1.68 Kms downstream of unit)
pH	7.7	8	7.9
BOD (mg/l)	20	05	41
COD (mg/l)	75	38	129
TSS (mg/l)	27	29	47
TDS (mg/l)	216	944	796
NO^{3-} (mg/l)	0.8	4.6	BDL

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SO_4^{2-} (mg/l)	36	68	144

c. Samples were collected from the borewell (sugar unit) and analysis results are mentioned in table 2 below:

Table 2 : Analysis results of samples collected from Borewell (Sugar unit in the same premises)

Parameters	Borewell (Sugar Unit)	BISIS10500:2012(Permissible limit in absence of alternative source)
pH	7.9	6.5-8.5
Conductivity (µmho/cm)	982	-
TDS	550	2000
COD	**10**	-
Total Hardness	379	600
Chloride	32	1000
Phosphate	0.1	-
Fluoride	0.39	1.5
Colour (Hazen)	BDL	15
Sulphate	59	400
Nitrate	0.57	45
Total Alkalinity	410	600
Note: All values are in mg/l except pH, colour, and conductivity		

8. That, the averments in para 3 & 4 are regarding complaints made to the applicant by the village people and thus no comments are offered by this answering respondent.

9. That, with regard to the averments made in para 5 & 6 of the OA, this answering respondent submits that as per the joint inspection report dated 21.11.2023, the unit has installed Biomethanation followed by Multi Effect Evaporators followed by biocomposting for spent wash management. For other low strength effluents, the unit has installed Condensate Polishing Unit (CPU). However, as per CPCB's Inspection Report dated 22.07.2024, the Unit has stopped all bio composting activities permanently since 01.01.2024 in compliance with the conditions mentioned in the CCA dated 06.10.2023 issued by UKPCB and has commissioned 02 nos. of dryers of capacity 45 TPH to achieve Zero Liquid Discharge (ZLD). Copy of Joint Inspection report dated 21.11.2023 is annexed herewith as **Annexure III.**

Further, the Inspection Team had also collected samples of ground water from the premises of the Unit, during its inspection on 14.09.2023. As per the inspection report dated 21.11.2023, sample collected from the handpump near bio-compost yard shows COD-73mg/l and color-43mg/l which indicates that water is not fit for drinking. However, during post monsoon visit on 11.10.2023 it was observed that the particular handpump was dismantled by local authorities.

As per joint committee report dated 24.01.2024, analysis results of samples collected from Borewell and piezo well located within molasses based distillery plant were found within the permissible limit as per BIS IS 10500:2012. However, COD (33 mg/l) was found in the sample collected

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from Piezo well near lagoon area of distillery which was found sealed with concrete during inspection on 24-25 June 2024.

During the inspection dated 24-25 June, 2024, analysis results of samples collected from borewell located in the sugar unit premises was found within the permissible limit as per BIS IS 10500:2012 except COD (10 mg/l). As per joint committee report dated 22.07.2024, it was recommended in the earlier report dated 21.11.2023 that UKPCB shall carry out detailed assessment of groundwater quality including ground water sampling & analysis in and around the unit to ascertain the groundwater contamination, if any, and need for remediation. Depending on such study, detailed remedial action plan be also prepared and executed by UKPCB in time bound manner. However, the detailed assessment of groundwater quality is yet to be initiated by UKPCB.

10. That, with regard to the averments made in para 7,8 & 9 of the OA, the answering respondent herein reiterates the submission made at para 7 of this reply and is not repeated herein for the sake of brevity.

11. That, with regard to the averments made in para 10 of the OA, the answering respondent herein reiterates the submission made at para 9 of this reply and is not repeated herein for the sake of brevity.

12. That, with regard to the averments made in para 11 of the OA, the answering respondent herein reiterates the submission made at para 9 of this reply and is not repeated herein for the sake of brevity.

13. That, with reference to the averments made in para 12 of the OA, this respondent submits that as per the joint committee report dated 24.01.2024, the unit has installed Biomethanation followed by Multi Effect Evaporators

followed by dryers (both the plants) for spent wash management to dry the concentrated spent wash into powder, hence installation of incineration boiler is not required which is in compliance of CPCB directions dated 07.12.2015. Copy of joint inspection report dated 24.01.2024 is annexed herewith as **Annexure IV.**

14. That, with regard to the averments made in para 13 & 14 of the OA, the answering respondent herein reiterates the submission made at para 7 & 9 of this reply and is not repeated herein for the sake of brevity.

15. That, with regard to the averments made in para 15 of the OA, the answering respondent herein reiterates the submission made at para 9 of this reply and is not repeated herein for the sake of brevity.

16. That, the paras 16 & 17 reflect the views of the applicant and thus no comments are offered over the averments.

REPLY ON GROUNDS

17. That, with regard to the averments made in para 18 & 19 of the OA, the answering respondent herein reiterates the submissions made in preceding paragraphs of this reply and the same are not repeated herein for the sake of brevity.

18. That no comments are offered over the averments made in paras 20 to 24 of the OA.

19. That, with regard to the averments made in para 25 of the OA, the answering respondent herein reiterates the submission made at para 7 of this reply and the same is not repeated herein for the sake of brevity.

20. That, no comments are offered over the averments made in paras 26 to 28 of the OA.

REPLY TO LIMITATION

21. The answering respondent offers no comments on the limitation.

22. That, the answering respondent no. 3 craves leave of the Hon'ble Tribunal to file additional reply, if required, in future.

23. That, in the light of the above submissions, it is respectfully submitted that this Answering Respondent, i.e., CPCB, shall abide by any order(s) or direction(s) passed by this Hon'ble Court in the instant OA.

Ajit Kumar Vidyarthi

(Ajit Kumar Vidyarthi)
Scientist F
Central Pollution Control Board
Delhi-110032

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Kiran Singh Kardam
Area Delhi
Regn No. 19752
GOVT OF INDIA

ए. के. विद्यार्थी / A. K. Vidyarthi
वैज्ञानिक 'एफ' / Scientist 'F'
केंद्रीय प्रदूषण नियंत्रण बोर्ड
Central Pollution Control Board
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार
M/o Env. Forest & Climate Change, Govt. of India
परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली–110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032

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

ORIGINAL APPLICATION NO. 369 of 2024

In the matter of:
Monika (Sarpanch) Applicant

Vs.

State of Uttarakhand & Ors. Respondent(s)

I, **A.K. Vidyarthi** working as Scientist 'F' in Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi, the Respondent No. 3 in the above matter, do hereby solemnly affirm, declare on oath and state as under:-

1. That I, the deponent herein is well conversant with the facts and circumstances of the present case on the basis of the information derived from the official records, and hence, I am competent to verify, sign and swear this affidavit on behalf of the Respondent CPCB.

2. That the accompanying reply may be read part and parcel of the present affidavit as I am competent to swear this affidavit.

3. That the accompanying reply has been drafted and filed under my instructions and authority the contents thereof are true and correct on the basis of the record maintained during ordinary course of business of CPCB and available records and documents and the contents of the same are read over and explained to me and are not repeated herein for the sake of brevity.

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Ajit Kumar Vidyarthi

DEPONENT

ए. के. विद्यार्थी / A. K. Vidyarthi
वैज्ञानिक 'एफ' / Scientist 'F'
केंद्रीय प्रदूषण नियंत्रण बोर्ड
Central Pollution Control Board
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार
M/o Env. Forest & Climate Change, Govt. of India
परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली-110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032

VERIFICATION:

Verified at New Delhi on this day of 10 FEB 2025 that the contents of the above reply are correct and true on the basis of the records of the case as mentioned in the day-to-day affairs of the CPCB. Nothing has been concealed therefrom or mis-stated.

Ajit Kumar Vidyarthi

DEPONENT

NOTARY PUBLIC
Karan Singh Kardam
New Delhi
Regn No. 19752
GOVT OF INDIA

ए. के. विद्यार्थी / A. K. Vidyarthi
वैज्ञानिक 'एफ' / Scientist 'F'
केंद्रीय प्रदूषण नियंत्रण बोर्ड
Central Pollution Control Board
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार
M/o Env. Forest & Climate Change, Govt. of India
परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली-110032
Parivesh Bhawan, East Arjun Nagar, Delhi-110032

ATTESTED

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DELHI (India)

10 FEB 2025

Annexure-I

Item Nos.7to9 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 530/2023

Anuj Kumar Applicant

Versus

State of Uttarakhand & Ors. Respondent(s)

With

Original Application No.495/2023

Mohd. Amjad Applicant

Versus

State of Uttar Pradesh & Ors. Respondent(s)

With

Original Application No.369/2024

Monika (Sarpanch) Applicant

Versus

State of Uttarakhand & Ors. Respondent(s)

Date of hearing: 04.11.2024

CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON'BLE DR. A. SENTHIL VEL, EXPERT MEMBER

Applicant: Mr. Prakash Pandey, Adv. for Applicant in OA 530/2023 (Through VC)
Mr. Rahul Khurana, Mr. Hasil Jain, Ms. Farha Khan & Mr. Shaiem ,Hasan Advs. for Applicant in OA 495/2023
Ms. Sweksha Prakash, Adv. for Applicant in OA 369/2024 (Through VC)

Respondent: Mr. Manish Singhvi, Senior Advocate with Mr. Manish Jain, Mr. Jugul Kishore Gupta & Mr. Vikash Kumar Verma, Advs. for R - 7 & 8
Mr. Neeraj, Mr. Rudra Paliwal & Mr. Sanjay Pal, Advs. for the State of Uttarakhand (Through VC)
Mr. Mukesh Verma & Ms. Vatsala Tripathi, Advs. for UKPCB (Through VC)
Mr. Pradeep Misra & Mr. Daleep Dhyani, Advs. for UPPCB (Through VC)
Mr. Vikrant Pachnanda, Adv. for MoEF & CC in OA 530/2023
Mr. Saurabh Balwani, Adv. for CPCB (Through VC)

ORDER

1. Learned Counsel for the project proponents Respondent No. 7 & 8 submits that compliance report in terms of 29.07.2024 has been filed 02.11.2024. Since it has been filed during the Diwali vacation the same has not come on record. Counsel for the other parties also do not have a copy of the compliance report.

2. Counsel for the project proponent is directed to supply copies thereof to the counsel of all the concerned parties within one week.

3. It will be open to the concerned parties to file objections to the said compliance report within two weeks thereafter.

4. Counsel for the applicant in O.A. No. 530/2023 submits that he has filed his objection to the report of CPCB during the vacation. Office is directed to place the same on record.

5. Counsel for the applicant is directed to supply copies of the objection to all other concerned parties within one week.

6. O.A. No. 369/2024 is a connected matter raising the same issue. Submission of the counsel for the applicant is that additional material has been enclosed in the O.A. Issue notice on this OA.

7. Mr. Manish Jain accepts notice on behalf of Respondent No. 6 and seeks four weeks time to file reply. It will be open to the applicant to file rejoinder within two weeks thereafter.

8. The applicant is directed to serve other respondents and file the affidavit of service at least one week before the next date of hearing.

9. Since a similar issue is involved in the connected OA 369/2024 also, the counsel for the applicant is permitted to download/obtain copies of reports/replies filed in the connected matter and respond thereto.

10. List on 12.02.2025.

Prakash Shrivastava, CP

Dr. A. Senthil Vel, EM

November 4, 2024
O.A. No. 530/2023
O.A. No. 495/2023
O.A. No. 369/2024..

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

ORIGINAL APPLICATION NO. 530 of 2023

In the matter of:

Anuj Kumar — Applicant

Vs.

State of Uttarakhand & Ors. — Respondent(s)

WITH

ORIGINAL APPLICATION NO. 495 of 2023

In the matter of:

Mohd. Amjad & Anr. — Applicant(s)

Vs.

State of Uttarakhand & Ors. — Respondent(s)

Index

11.	**Annexure-10:** A copy of the unit's letter dated 31.03.2024.	
12.	**Annexure-11:** A copy of the District administration letter dated 15.04.2024.	
13.	**Annexure-12:** A copy of the Adequacy and performance assessment report of ZLD scheme for molasses based distillery.	
14.	**Annexure-13:** A copy of the ETP validation report.	
15.	**Annexure-14:** A copy of the irrigation management plan.	
16.	**Annexure-15:** A copy of the logbook for ash disposal.	

Ajit Kumar Vidyarthi

(Ajit Kumar Vidyarthi)
Scientist F
Central Pollution Control Board
Delhi-110032

Dated: 22.07.2024
Place: Delhi

COMPLIANCE VERIFICATION REPORT OF

M/s R.B.N.S LTD. (SUGAR & DISTILLERY UNIT), LAKSAR, HARIDWAR, UTTARAKHAND

INCOMPLIANCETO

HON'BLE NGT ORDER DATED 19.04.2024

IN THE MATTER OF

ANUJ KUMAR v/s STATE OF UTTARAKHAND & ORS.
[OA No. 530/2023]

WITH

MOHD. AMZAD &ORS. v/s STATE OF UTTAR PRADESH & ORS.
[OA No. 495/2023]

DATE OF VISIT: 24th&25thJUNE,2024

PREPARED BY

CENTRAL POLLUTION CONTROL BOARD, DELHI (CPCB)

Contents

List of Tables

VERIFICATION REPORT IN COMPLIANCE TO HON'BLE NATIONAL GREEN TRIBUNAL (NGT) ORDER DATED 19.04.2024 IN O.A. NO. 530/2023 &O.A. NO. 495/2023 IN THE MATTER OF ANUJ KUMAR V/S STATE OF UTTARAKHAND & ORS., AND MOHD. AMZAD & ORS. V/S STATE OF UTTAR PRADESH & ORS.

1. SUBJECTMATTER

1.1. MATTER:

O.A. NO. 530/2023 in the matter of Anuj Kumar v/s State of Uttarakhand & Ors.

With

O.A. NO. 495/2023 in the matter of Mohd. Amzad & Ors. v/s State of Uttar Pradesh & Ors.

1.2. BACKGROUND:

i. The detailed report of the Joint Committee was filed on 21.11.2023 before Hon'ble NGT in compliance to orders dated 14.8.2023 (in O.A. No.495/2023) and 23.08.2023 (in O.A. No. 530/2023) and thereafter another detailed report of the Joint Committee was filed on 24.01.2024 before Hon'ble NGT in compliance to order dated 22.11.2023 (in O. A No. 495/2023 with O.A. No 530/2023).

ii. Thereafter, in compliance to Hon'ble NGT order dated 21.03.2024 (in O. A No. 495/2023 with O.A. No 530/2023) Project proponent (PP) submitted point wise reply on 15.04.2024 against the findings (observations/recommendations) of the joint committee reports dated 21.11.2023 & 24.01.2024.

iii. **The Hon'ble NGT vide it's order dated 19.04.2024 passed following:**

"3. ..... Meanwhile, CPCB may ascertain the correctness of the compliance reflected by PP in the response dated 15.04.2024. If need so arises, CPCB can carry out fresh inspection of the unit and submit compliance report at least one week before next date of hearing. UKPCB will also file the report disclosing action taken for past violation against PP."

Copy of Hon'ble NGT order dated 19.04.2024 is placed at **Annexure – 1.**

2. INSPECTION REPORT IN COMPLIANCE TO HON'BLE NGT ORDER DATED 19.04.2024

2.1. Details of Site Visit

In compliance to Hon'ble NGT order dated 19.04.2024, for verification of correctness of the compliance reflected by project proponent **i.e. M/s Rai Bahadur Narayan Singh**

Sugar Mills Ltd. (Distillery & Sugar unit), Village- Laksar, Dist.-Haridwar, Uttarakhand (hereinafter referred as "the unit") as submitted by it in Hon'ble NGT , a team of CPCB officials visited M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Distillery & Sugar unit), Village- Laksar, Dist.-Haridwar, Uttarakhand (i.e. project proponent) and Laksar drain (upstream of unit, downstream of unit, and near Akhoda Kalan village (1.68 Kms) downstream of unit before confluence with Hadwa drain) during 24.06.2024 – 25.06.2024. Following officials from CPCB carried out the site visit:

1.Mrs. Reena Satavan, Scientist-E,

2. Ms. Anshul Kumari, Research Associate – III and

3. Mr. Ankit Shukla, Senior Research Fellow

2.2. Operational Status of the unit

1. During visit, the manufacturing processes in the distillery plant were found non – operational, and unit has intimated the same to UKPCB & CPCB vide letter dated 30.04.2024 regarding stoppage of manufacturing operations on 29.04.2024 (10:00 P.M.) due to shortage of molasses which is used as raw material. (**Refer Annexure – 2**).
2. During visit the manufacturing processes of sugar unit were found closed and it was informed by the unit that it has stopped the operations on 20th March, 2024due to end of crushing season, and has intimated the same to UKPCB & CPCB vide letter dated 20.03.2024 (**Refer Annexure – 3**).

   However, at the time of visit it was observed that maintenance/cleaning of machineries in the sugar plant was going on. Effluent treatment Plant (ETP) of capacity 1000 KLD installed in sugar unit was found operational. In accordance with consented discharge norms, the treated effluent from ETP outlet was partially being discharged into Laksar drain and remaining was being stored into the lagoon (sugar unit) of capacity 1290m^{3}for irrigation purpose hence wastewater samples were collected from ETP and lagoon.

2.3. Details of the sampling

1. Waste water samples were collected by the inspection team from following locations:
   a. Inlet & Outlet of ETP, Aeration tank of ETP and lagoon of Sugar unit
   b. Inlet & outlet of 03 nos. of STPs installed in residential colony of Sugar plant
   c. Laksar drain upstream of unit, downstream of unit, and near Akhoda Kalan village

(1.68 km) downstream of unit before confluence with Hadwa drain

2. Fresh water samples were collected by the inspection team from Borewell in Sugar plant. Borewell in Distillery plant found dismantled.

2.4 STATUARY COMPLIANCE STATUS:

1. The distillery unit of project proponent has obtained Consolidated Consent & Authorization (CCA) issued by UKPCB dated 06.10.2023 under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974 and under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981, which expired on 31.03.2024. **(Refer Annexure – 4)**
2. The distillery unit has applied for renewal of CCA on dated 01.03.2024. **(Refer Annexure – 5)**
3. The Central Ground Water Authority (CGWA) granted No Objection Certificate (NOC) to the distillery unit for groundwater abstraction from 01 no. of borewell. The NOC is having validity upto 25.11.2024. **(Refer Annexure – 6)**
4. The sugar unit of project proponent has obtained Consolidated Consent & Authorization (CCA) issued by UKPCB dated 26.07.2019 under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974 and under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981, which expired on 31.03.2024. **(Refer Annexure – 7)**
5. The sugar unit has applied for renewal of CCA on dated 29.02.2024. **(Refer Annexure – 8)**
6. The Central Ground Water Authority (CGWA) granted No Objection Certificate (NOC) to the sugar unit for groundwater abstraction from 01 no. of borewell. The NOC expired on 28.12.2023. **(Refer Annexure – 9).** The sugar unit has applied for renewal of NOC from CGWA.
7. The sugar unit has installed environmental data display board at entrance gate of the unit.

3.0 Factual status w.r.t to the recommendations made in the joint inspection reports dated 21.11.2023 & 24.01.2024 and Compliance submitted by project proponent

The inspection team visited the above mentioned sites and based on the observations/findings, the point-wise compliance status w.r.t. implementation of recommendations made by the Joint

Committee in the previous inspection reports dated 21.11.2023 & 24.01.2024, and verification of correctness of point – wise reply submitted by project proponent in Hon'ble NGT are presented below:

S. No. as per reply submitted by project proponent	Recommendations made in the Joint inspection reports dated 21.11.2023 & 24.01.2024, Compliance submitted by project proponent, and factual status observed by CPCB team during visit on 24th – 25th June, 2024
1.	**Recommendation** Provision of laying out a closed conduit pipe line at Laksar drain (which is currently flowing as open channel) starting from 500 meters upstream (u/s) to 500 meter downstream (d/s) of unit shall be made by the unit under supervision of UKPCB to rule out any possibility of discharge of treated/untreated effluent into drain. ***Compliance submitted by project proponent:*** • *Unit will make perfect provision fully covered RCC slab upto end of June, 2024 to avoid any possibility of any discharge of effluent into Laksar Drain. It is a Nagar Panchayat Drain.* • *Laksar is a flood prone area and conduit pipes obstruct flow of the uncounted water in rainy session.* • *Unit written letter dated 31.03.2024 to seek permission from Local body administration for installation of Conduit Pipe, however Local administration denied on 15.04.2024.* **Factual status observed by CPCB team on recent visit:** • The unit has not provided closed conduit pipe line at Laksar drain. Unit representative informed that this drain is in jurisdiction of Nagar Panchayat, Laksar. • Unit vide letter dated 31.03.2024 sought permission from district administration regarding construction/laying of closed conduit (pipe) over Laksar drain. • District administration (i.e. Nagar palika parishad) vide letter dated 15.04.2024 communicated to the unit that considering the fact that unit falls under flood prone area, construction/laying of closed conduit pipe is not advisable. Copy of unit's letter dated 31.03.2024 is attached as **Annexure – 10**. Copy of letter dated 15.04.2024 from District administration (i.e. Nagar palika parishad) is attached as **Annexure – 11.**
2., 4	**Recommendation:** • It shall be the responsibility of the unit to maintain the quality of Laksar drain at downstream of the unit in sync with the quality at upstream of the unit. • Based on the analysis results, the quality of Laksar drain near Akhoda Kalan village (1.68 Kms*) shows Deteriorated Condition, therefore, the possibility of effluent mixing with sewage in drain cannot be ruled out. ***Compliance submitted by project proponent:*** • *UKPCB is monitoring water quality of Laksar Drain regularly on monthly basis.* • *As per 2nd Joint Committee inspection on 13/14 Dec 2023 Relevant Portion of Report Table No. 20 on Page 647-48 upstream Result is pH-7.4, BOD-35, COD-112, TDS- 1404 & TSS-53, And Downstream result near Akoda Kalan Village is pH-7.0, BOD-108, COD-232, TDS-1804 & TSS-60. 1st JT Report table 11 on page no. 88-90. Laksar drain d/s R.B.N.S BOD-11 mg/L, COD-66 mg/L, TSS-18 mg/L & TDS-396 mg/L.*

- *The analysis result of samples collected from drain at U/s and D/s locations indicate the characteristics of domestic sewage. However, quality of Laksar drain near Akhoda Kalan village (1.68 Kms*) shows Deteriorated condition of drain, which indicate the possibility of effluent mixing with sewage in drain however, no bypass of industrial effluent (sugar/distillery) was observed from the unit during inspection".*
- *Akoda Kalan is about 1.68 km from sugar mill. Untreated Discharge from Khera, Kharanja & Akoda Kala village merge in the Laksar drain. Untreated sewage from More than 7-8 nalas falls into the Laksar Drain.*

Factual status observed by CPCB team on recent visit:

- To verify the quality of Laksar drain, the inspection team collected samples from the Laksar drain at different locations (Refer Photo 1, 2 & 3). Details are mentioned below in Table 1:

Table 1: Analysis results of samples collected from Laksar drain

Parameters	Laksar drain upstream of unit	Laksar drain downstream of unit	Laksar drain near Akhoda Kalan village (1.68 Kms downstream of unit)
pH	7.7	8	7.9
BOD (mg/l)	20	05	41
COD (mg/l)	75	38	129
TSS (mg/l)	27	29	47
TDS (mg/l)	216	944	796
NO^{3-} (mg/l)	0.8	4.6	BDL
SO_4^{2-} (mg/l)	36	68	144

- The analysis results of samples collected from drain at above mentioned locations indicate no impact of industrial discharge and reflect characteristics of surface run-off.

Compliance status: Complying

3.

Recommendation:

- The unit shall install flow meters at the abstraction points on both the bore wells of sugar and distillery unit.

Compliance submitted by project proponent:

- *The unit has installed water flow meters at bore wells of sugar mill and distillery unit.*

Factual status observed by CPCB on recent visit:

Borewell Location	Permitted no. of borewells as per NOC from CGWA	Actual no. of borewells installed	Flow meter installed (Yes/No)	Functional status
Sugar unit	01	01	Yes	Functional
Distillery unit	01	*Nil as on date of visit	Not relevant	Not relevant

Remark:

a. Flow meter with totalizer found installed at the delivery line of the Borewell within sugar unit (Refer Photo 18). This borewell was found operational.
Reading noted during visit:
Instantaneous reading – 42.0 m^3/hr;
Totalizer reading – 028276 m^3

b. *Borewell (distillery unit) was in dismantled condition as the submersible motor collapsed (Refer Photo 8) and the unit was in process of setting up of

	new Borewell (Refer Photo 9) within premises (Latitude: 29.748056, Longitude: 78.032222) **Pending Action:** Unit shall install flow meter with totalizer at the new borewell (distillery unit) when it becomes functional and logbook regarding groundwater withdrawal on daily basis. **Compliance status: Partial compliance. To be complied as &when new Borewell becomes functional**
5. 6. & 7	**Recommendation:** • The unit had 3 lagoons of total capacity of 5222 m^3 which were found fully filled with raw spent wash/ bio-methanated spent wash having total solids percentage less than 17% even during monsoon season and as these lagoons are located adjacent to Laksar drain hence there is potential of spillage/ overflow/ discharge of spent wash in the Laksar drain. This is the violation of CPCB direction dated 07.12.2015. • The unit shall consume the concentrate spent wash stored in lagoons of capacity 1925m^3 and 1375 m^3 in dryer in environmentally sound manner thereafter, unit shall dismantle 02 lagoons. • As per the consent, w.e.f. 01.01.2024 the unit is permitted to have lagoon capacity only to store 07 days equivalent of concentrated spent wash generated, however the unit is having excess lagoon capacity in violation of Consent condition. • The unit was storing Bio-methanated spent wash (BMSW)/ raw spent wash in lagoons with solid content <30%, which is in violation of CPCB direction dated 07.12.2015. **Compliance submitted by project proponent:** • *In Rainy session heavy rain fall was recorded as 1300 mm which is huge quantity of rain water.* • *During December 2023 by inspection solid % is 37 to 46 % found. (during time of Distillery was operational) which is as per directions of CPCB dated 07.12.2015.* • *One lagoon capacity 1372 m^3 has been dismantled and 2nd 1925 m^3 lagoon will be dismantled upto end of June, 2024.* • *Lagoon capacity is 1925, which is equivalent of 7 days' capacity of concentrated spent wash as per consent.* **Factual status observed by CPCB on recent visit:** The unit has filled/levelled 02 nos. of lagoons of capacity 1925 m^3 and 1375 m^3(located adjacent to Laksar drain) with boiler ash. (Refer Photo 10) • The unit has now retained only one lagoon (settling tank) of capacity 1925 m^3 which is dedicated for storage of bio-methanated spent wash and the same was found empty (Refer Photo 11). Hence currently available capacity is equivalent to 03 days' storage capacity (considering typical raw spent wash generation rate - 7 KL/KL of product, production capacity of 120 KLPD, therefore spent wash generation per day = 120 * 7 = 840 KLD or 840 m^3/day, hence available storage capacity equivalence in no. of days = 1925 m^3/ 840 m^3 per day = 2.29 i.e. 03 days), **which is in compliance of CPCB direction dated 07.12.2015**. • No overflow/spillage/discharge of spent wash/effluent from distillery unit found in the Laksar drain. • Logbooks were collected by the inspection team regarding following for duration 01.01.2024 – 30.04.2024 (plant closed from 30.04.2024 till date of visit) for verification of consumption of legacy spent wash in dryer (ZLD system): a. raw spent wash generation from old & new distillation plant, b. feed to old MEE & new MEE

c. concentrated spent wash generation from old MEE & new MEE
d. feed to dryer-1 (old) & dryer-2 (new)

- Details of data from above mentioned logbooks are mentioned in table 2 below:

Table 2: Details of raw spent wash generation, feed to MEE, concentrated spent wash generation and spent wash feed to dryer

	Raw Spent wash generation (MT)	Feed to MEE (MT)	Concentrated Spent wash from MEE (MT)	Condensate from MEE (MT)	Concentrated Spent wash feed to Dryer (MT)
Old plant	37764.48	37764.71	11193.42	26571.29	11840.72
New plant	30551.81	30550.88	9071.72	21479.16	8953.93
Total	68316.29	68315.59	20265.14	48050.45	20794.65
Difference between quantity of concentrated spent wash generated from both MEE and feed to dryers = 20265.14 MT – 20794.65 MT = - **529.51 MT**					

- **It is evident from the above data that unit has consumed 529.51 MT of legacy spent wash that was found stored in lagoons during last visit (13th – 14th Dec, 2023)**
- Unit has installed Condensate Polishing Unit (CPU) for treatment of low strength effluents (i.e. MEE condensate, spent lees, boiler blowdown, cooling tower blowdown and floor washings), and as per the effluent management scheme the treated effluent from CPU is being reused in molasses dilution, floor washing and as make up water in cooling tower.

Compliance status: **Complying**

8.

Recommendation:

- The unit is discharging its distillery effluent from bio-composting/lagoons and sugar effluent in to the Laksar drain, which is the violation to Zero Liquid Discharge (ZLD)/discharge condition resulting in high pollution level of BOD (626 mg/l) and COD (1638 mg/l) which is about 17% higher than the upstream water quality of the drain.

Compliance submitted by project proponent:

- *No effluents discharged by the distillery. Unit has complied with ZLD norms as per CPCB. see details of UKPCB Affidavit on page No. 772.*
- *Bio-composting has been stopped since 01.01.2024 as per CCA of UKPCB dated 06.10.2023. Page no. 667.*
- *Due to non-operation of Bio-composting, Unit is facing huge loss in terms of Money and 14.02 Acre Land, Machinery etc.*

Factual status observed by CPCB team on recent visit:

1. No bio-composting activities were going on and the infrastructure such as covered shed (including truss structure) was being dismantled. (Refer Photo 12 & 13)
2. The unit has filled/levelled 02 nos. of lagoons of capacity 1925 m^3 and 1375 m^3 with boiler ash and one lagoon of capacity 1925 m^3 was found empty.
3. No discharge of distillery effluent from bio-composting/lagoons observed in to the Laksar drain.
4. Treated effluent from ETP (sugar unit) was being discharged in to the Laksar drain. Samples were collected from ETP outlet and analysis results show BOD – 05 mg/l (against the norm of 30 mg/l); COD – 29 mg/l (against the norm of 250 mg/l); TSS – 16 mg/l (against the norm of 30 mg/l); TDS – 884 mg/l (against the norm of 2100 mg/l); Oil & grease – BDL mg/l (against the norm of 10 mg/l). These results indicate compliance w.r.t. stipulated discharge norms except **pH – 8.7** which is marginally exceeding the norm of 8.5.
5. The analysis result of samples collected from drain (details in Table 1 above) indicate no impact of industrial discharge and reflect characteristics of surface run-off (BOD

	in the range of 05 – 41 mg/l & COD in the range of 38 – 129 mg/l). Details of samples collected from laksar drain are mentioned above in table – 1. **Compliance status: Complying**
9., 10. & 11.	**Recommendation:** • In bio-compost yard, the covered shed was damaged and improper. Ready bio-compost was found stored in damaged covered shed. Also, the leachate collection drain and pits were not observed around the periphery of bio-compost yard for leachate management. Also, the unit had not constructed any boundary wall near the compost yard. This is the violation of CPCB bio-compositing SOP. • The unit shall dispose all the stored ready bio-compost and press mud in bio-compost yard by adapting appropriate scientific method under the supervision of UKPCB within two months and after that the unit shall clean the bio-compost area and shall submit photographic evidence to UKPCB. **Compliance submitted by project proponent:** • *Total sale of Bio-compost will be achieved up to the end of June, 2024.* • *No need for covered shed required in future.* • *Unit had constructed Boundary walls since 2014 to protect Bio-compost yard.* • *During rainy season 2023, a piece of Boundary wall about 20-25 meters was damaged at the time of Flood.* • *Damaged wall has already been constructed* • *Unit will make all efforts to dispose stored Bio-Compost upto end of June, 2024.* • *Unit will definitely submit photographic as evidence to UKPCB.* • *NSI team visited on 19/20.12.2023. At the time of inspection New Dryer was under trial. Both (2) spent wash dryers are in working condition and compatible to achieve the ZLD norms in Distillery unit. see details of CPCB Affidavit.* • *Unit has complied with ZLD norms as per CPCB. see details of UKPCB Affidavit* **Factual status observed by CPCB team on recent visit:** • Since 01.01.2024, the unit has stopped bio-composting activities in compliance to the conditions mentioned in the CCA dated 06.10.2023 issued by UKPCB, hence, now there is no relevance of covered shed, leachate collection drain & pits and the applicability of SOP for bio-composting operations is also not relevant. (Refer Photo 12 & 13) • Unit has constructed boundary wall near the bio-compost yard. (Refer Photo 14) • Cleaning of bio-compost yard was under process. Though, no bio-compositing activity was taking place and the covered shade were being dismantled. • Around 70000 – 80000kg of ready bio-compost found stored in the yard in form of heaps, and unit representative informed that they will sell this bio-compost till 15th July, 2024. (Refer Photo 13) **Pending Action:** Unit shall clear up all the ready bio-compost stored in compost yard at the earliest and submit photographic evidence to CPCB & UKPCB. Also to avoid leachate run-off discharge in drain, the unit shall ensure to keep the stored ready bio-compost covered till it is completely removed from the bio-compost yard. **Compliance status: Partial compliance**

12.	**Recommendation:** • The unit shall prepare adequacy and performance assessment report of ZLD scheme for molasses based distillery as unit has expanded its production capacity from 60 KLPD to 120 KLPD and has installed spray dryers as ZLD system. **Compliance submitted by project proponent:** • *NSI team visited on 19/20.12.2023. At the time of inspection New Dryer was under trial. Both (2) spent wash dryers are in working condition and compatible to achieve the ZLD norms in Distillery unit.* • *Unit has complied with ZLD norms as per CPCB* **Factual status observed by CPCB team on recent visit:** • The unit has provided a copy of "Adequacy and performance assessment report of ZLD scheme for molasses based distillery" prepared by National Sugar Institute, Kanpur (NSI), which is based on the old scheme of ZLD through bio-composting route. • However, since 01.01.2024 the unit has stopped the bio-composting route permanently, and commissioned 02 nos. of dryers of capacity 45 TPH to achieve ZLD. Adequacy and performance assessment report of ZLD for current scheme is not provided. Copy of "Adequacy and performance assessment report of ZLD scheme for molasses based distillery" is attached as **Annexure – 12** **Pending Action:** The unit shall submit the "Adequacy and performance assessment report of ZLD scheme for molasses based distillery", as per new scheme clearly mentioning about the details of 02 nos. of dryers. **Compliance status: Non – compliance**
13.	**Recommendation:** • The unit shall comply with the consent conditions issued by UKPCB and shall ensure that no fresh concentrated spent wash shall be disposed through bio-composting and entire spent wash shall be totally disposed through spray dryer. **Compliance submitted by project proponent:** • *Spent wash dryers are in working condition and compatible to achieve the ZLD norms in Distillery unit.* • *Unit has complied with ZLD norms as per CPCB* **Factual status observed by CPCB team on recent visit:** • As per the consent conditions, unit is complying for following: a. The unit has stopped bio-composting since 01.01.2024 and shifted to dryer technology for achieving ZLD b. The unit has restricted the lagoon capacity to 03 days (<07 days) c. The unit has filled/levelled 02 nos. of lagoons of capacity 1925 m^3 and 1375 m^3 with boiler ash. • As per the details mentioned in Table 2 at S. No. 5, 6 & 7, it is evident that unit has not disposed any fresh concentrated spent wash through bio-composting. Entire quantity of spent wash has been disposed through 02 nos. of spray dryers. **Compliance status: Complying**

14.

Recommendation:

- Analysis results of samples collected from Bore well (sugar unit), piezo well located within molasses based distillery plant and hand pump located outside of the unit showed high value of COD in the range of 6 to 33 mg/l, which indicate posing potential threat to ground water and need urgent attention towards improvement of housekeeping, prevention of seepage, spillage etc.

Compliance submitted by project proponent:

- *The sample was taken by the Joint Committee just after heavy rains and floods in this area.*
- *Housekeeping is proper; there is no seepage and spillage etc. NSI Report in Dec 20123 of Bore well are as per standard norms as pH-7.2, BOD-BDL, COD-BDL, TDS-426 ppm & TSS-BDL*

Factual status observed by CPCB team on recent visit:

- Samples were collected from the Borewell (sugar unit) and analysis results are mentioned in table 3 below:

Table 3: Analysis results of samples collected from Borewell (Sugar unit)

Parameters	Borewell (Sugar Unit)	BISIS10500:2012(Permissible limit in absence of alternative source)
pH	7.9	6.5-8.5
Conductivity (µmho/cm)	982	-
TDS	550	2000
COD	**10**	-
Total Hardness	379	600
Chloride	32	1000
Phosphate	0.1	-
Fluoride	0.39	1.5
Colour (Hazen)	BDL	15
Sulphate	59	400
Nitrate	0.57	45
Total Alkalinity	410	600
Note: All values are in mg/l except pH, colour, and conductivity		

- Analysis results of samples collected from Borewell located in unit premise was found within the permissible limit as per BIS IS 10500:2012 except COD (10 mg/l).
- The unit has sealed the piezowell (located near molasses tanks within distillery plant) with concrete to avoid the possibility of contamination of groundwater in piezowell due to seepage or spillage.
- Housekeeping found satisfactory.
- No seepage, spillage of effluent observed within and outside of premise.
- It was recommended in the earlier report dated 21.11.2023 that UKPCB shall carry out detailed assessment of groundwater quality including ground water sampling & analysis in and around the unit to ascertain the groundwater contamination, if any, and need for remediation. Depending on such study, detailed remedial action plan be also prepared and executed by UKPCB in time bound manner. However, the detailed assessment of groundwater quality is yet to be initiated by UKPCB.

Compliance status: Non-Compliance

15.	**Recommendation:** • The unit should get evaluation of its Effluent Treatment Plant (ETP) for its performance from Expert Institute of Repute/Experts in the field. **Compliance submitted by project proponent:** • *All water samples taken by NSI and found that the results are as per Standard norms including Ground water.* • *Except MGF and ACF, all the observation has been complied with,* • *regarding ACF and MGF order has been placed* **Factual status observed by CPCB team on recent visit:** • The unit has submitted adequacy assessment report of ETP (sugar plant) prepared by NSI, Kanpur for the crushing season 2023 – 2024. • As per the claim made by the unit regarding recent modifications in the ETP, the inspection team observed: a. The unit has relocated the oil & grease skimmer equipment. b. The unit has installed a perforated pipeline inside the equalization tank and connected it with a blower (capacity 170 m^3 /H.P) as an air mixing system. c. Additional newly purchased Multi Grade Filter (MGF) & Activated Carbon Filter (ACF) were under installation, and expected to be made operational before starting of upcoming cane crushing season 2024 – 2025. Copy of ETP validation report is attached at **Annexure – 13**. **Compliance status: Complying**
16.	**Recommendation:** • The unit does not properly operate the effluent treatment plant installed in sugar unit as it was found NON COMPLIANT w.r.t. the notified discharge norms. **Compliance submitted by project proponent:** • *Complied with all the recommendations.* • *As per NSI and UKPCB, ETP treated water reports as per prescribed norms. Therefore, ETP performance is up-to the mark. pH - 7.1, BOD - 29 mg/Ltr., COD - 120 mg/Ltr., TSS - 22 mg/Ltr., TDS - 560 mg/Ltr* **Factual status observed by CPCB team on recent visit:** • During visit, the inspection team collected samples from ETP inlet, aeration tank, ETP outlet and lagoon (for sugar unit). Analysis results are mentioned in table 4 below: **Table 4: Analysis results of samples collected from inlet, outlet & aeration tank of ETP, and lagoon in the Sugar unit**

Location	pH	BOD	COD	TSS	TDS	SO_4^{2-}	Oil & grease
ETP Inlet	7.7	179	568	207	1480	380	-
ETP Outlet	**8.7**	05	29	16	884	121	BDL
Lagoon (Sugar unit)	**8.8**	20	132	25	700	109	-
Norms as per consent	6.5 – 8.5	30	250	30	2100	-	10
Aeration Tank: MLSS – 3043 mg/l & MLVSS – 1449 mg/l							

All values are in mg/l except pH

	• Analysis results of samples collected from outlet of ETP (sugar unit) & lagoon (sugar unit) indicates compliance w.r.t. stipulated discharge norms except **pH – 8.7 & 8.8.** **Compliance status: Partial non-compliance as pH (8.7 & 8.8)** was found marginally exceeding the prescribed norm of 6.5-8.5 in treated effluent from ETP outlet & lagoon which require proper chemical dosing.
17., 18., 19. & 20.	**Recommendation:** • The unit shall install air mixing system in Equalization Tank for proper homogenization of effluent. • The unit shall relocate the oil and skimmer belt at appropriate place to collect the entire Oil & Grease content of the effluent. • The unit shall ensure proper functioning of lime dosing system. • The unit shall operate Primary Clarifier properly to avoid anaerobic condition in the tank. **Compliance submitted by project proponent:** *Complied* **Factual status observed by CPCB team on recent visit:** • The unit has installed a perforated pipeline inside the equalization tank and connected it with a blower (capacity 170 m^3 /H.P) as an air mixing system. (Refer Photo 17) • The unit has relocated the oil & grease skimmer equipment (Refer Photo 18) • Since unit is non-operational, hence no trade effluent was being generated during visit, however wastewater is being generated from cleaning activities only within plant which was being treated in ETP. **Compliance status:Complying**
21.	**Recommendation:** • As per consent provided by UKPCB, unit has to install the sewage treatment plant (STP) in their premises for treatment of generated sewage. However, as per the joint inspection report dated 21.11.2023, no STP is installed by the unit thus violating the consent condition. **Compliance submitted by project proponent:** *Complied* **Factual status observed by CPCB team of recent visit:** • Unit has installed 03 nos. of STPs of capacity 15 KLD each for treatment of sewage generated from residential dwellings in Officers colony, Gurudwara colony & New colony. All 03 nos. of STPs were found operational during visit. (Refer Photo 23 to 28) • STPs receive wastewater from majorly two sources: i. Wastewater generated from kitchens, washrooms, etc. (except toilets) ii. Overflow of septic tanks provided for storage of wastewater generated from toilets • The treatment scheme observed during visit is as below: Raw Sewage→ Screen chamber & Collection tank → MBBR tank (02 nos.) → Tube settler → Clear water tank → MGF → ACF → Outlet to gardening. • Filter press has been installed for mechanical dewatering of raw sludge collected from the bottom of tube settler. • Flow meters have been installed at outlet of all 03 nos. of STPs. • Samples were collected from inlet and outlet of all 03 nos. of STPs and analysis results are mentioned in table 5 below:

Table 5: Analysis results of samples collected from inlet & outlet of 03 nos. of STPs installed in residential colony of Sugar unit

Location	pH	BOD	COD	TSS	TDS	NO_3^-	SO_4^{2-}
STP – 1 (Officers colony)							
Inlet	7.7	25	94	24	908	BDL	94
Outlet	8.2	05	19	11	544	11	78
STP – 2 (Gurudwara colony)							
Inlet	7.5	11	33	22	380	BDL	63
Outlet	8.4	03	17	BDL	476	11	104
STP – 3 (New colony)							
Inlet	7.7	28	85	83	884	BDL	71
Outlet	7.4	12	67	BDL	296	BDL	45
Standards as per MoEF&CC notification dated 13.10.2017	6.5 – 9.0	30	-	100	-	-	-

- Analysis results of samples collected from outlet of all 03 nos. of STPs indicates compliance w.r.t. stipulated discharge norms.

Compliance status: Complying

22.

Recommendation:

- The unit has not yet prepared a comprehensive irrigation management plan validated by SPCB/ Agricultural Universities for utilizing the treated effluent in irrigation as per notified treated irrigation protocol for sugar industries.

Compliance submitted by project proponent:

- *NSI visited unit on 09/10 April 2024 for assessment of irrigation management plan*

Factual status observed by CPCB team on recent visit:

- Unit has submitted irrigation management plan prepared by NSI, Kanpurdated9-10 April, 2024 The report stated that the unit has adequate land area for utilization of treated effluent generated @ 200litres/ton of cane crushed.

Copy of irrigation management plan is attached at **Annexure – 14**

Compliance status: Complying

23.

Recommendation:

- The unit shall maintain the proper record of ash disposal in low lying area. Logbooks were collected by the inspection team regarding Ash generation and disposal for duration 01.12.2024 – 30.04.2024. The details are as follows;

Months	**Cane Crush (MT)**	**Bagasse Generation (MT)**	**Bagasse Consumption (MT)**	**Ash Generation (MT)**	**Ash at Bio-compost (MT)**	**Ash at Low Land RBNS Area(MT)**
Total (Dec, 2023 to April , 2024	763985	209976	173973	1400	140.0	1252.2

Compliance submitted by project proponent: *Complied*

	Factual status observed by CPCB team on recent visit: • The unit has maintained proper record of ash disposal and provided logbooks of the same. **(Refer Annexure – 15)** **Compliance status:Complying**
24.	**Recommendation:** • Unit must ensure regular water sprinkling in and around the boiler and near bagasse storage area of the unit to minimize the dust dispersion in the ambient environment. **Compliance submitted by project proponent:** *Complied* **Factual status observed by CPCB team on recent visit:** • The unit has covered the stored bagasse with HDPE sheets. Boiler was found non-operational, hence no ash generation. • Unit has provided water sprinkling arrangement by installation of hydro-jets. **Compliance status:Complying**

4. 0 CONCLUSION

1. Out of 24 recommendations of the joint committee reports dated 21.11.2023 & 24.1.2024; the unit has complied 16 recommendations.
2. Partial compliance was observed on other 05 recommendations w.r.t. install flow meter with totalizer at the new borewell (distillery unit), bio-compost storage and compliance of the effluent treatment plant installed in sugar as detailed in Sl. No. 3; 9, 10 &11, and; 16 of the Table under section 3 above.
3. Non-compliance was observed in rest of the 03 recommendations:
   (i) Unit is yet to comply regarding adequacy and performance assessment report of ZLD scheme for molasses based distillery as per new scheme. [please refer Sl. No.12 of the Table under section 3 above]
   (ii) Analysis results of samples collected from Borewell located in unit premise was found within the permissible limit as per BIS IS 10500:2012 except **COD (10 mg/l).** [please refer Sl. No.14 of the Table under section 3 above]
   (iii)The unit has shown inability to comply with recommendation no. 1 i.e. laying of the closed conduit pipeline at Laksar drain due to administrative reasons. [please refer Sl. No.1 of the Table under section 3 above]

5.0 RECOMMENDATIONS

1. Unit shall install flow meter with totalizer at the new Borewell (distillery unit) when it becomes functional and maintain logbook regarding groundwater withdrawal on daily basis.
2. Unit shall clear up all the ready bio-compost stored in compost yard at the earliest and submit photographic evidence to CPCB & UKPCB.
3. The unit shall ensure proper functioning of chemical dosing system in effluent treatment plant of sugar unit.
4. Unit shall submit the "Adequacy and performance assessment report of ZLD scheme for molasses based distillery", clearly mentioning about the details of 02 nos. of dryers.
5. Unit shall install flow meter with totalizer at the inlet line of all three STPs and maintain

logbooks for quantity of sewage fed into STPs and treated sewage used in gardening.

6. Unit shall implement the recommendations made in ETP adequacy report prepared by NSI, Kanpur w.r.t installation of MGF & ACF prior to starting its operation.
7. UKPCB shall carry out detailed assessment of groundwater quality including ground water sampling & analysis in and around the unit to ascertain the groundwater contamination, if any, and need for remediation. Depending on such study, detailed remedial action plan be also prepared and executed by UKPCB in time bound manner.
8. State Revenue Department, Irrigation Department and SPCB may assess the possibility of laying of closed conduit pipe line on Laksar drain. In case not feasible, they may suggest alternative arrangement to rule out any possibility of discharge of partially treated/untreated effluent into drain.

6.0. PHOTOGRAPHS TAKEN DURING VISIT

Photographs of Laksar drain

Photo 1: Laksar drain upstream of unit

Photo 2: Laksar drain Akhoda Kalan village (1.68 Kms*) downstream

Photo 3: Laksar drain downstream of unit

Photographs of Distillery unit

Photo 4: Entrance gate of the unit

Photo 5: Environmental data display board

Photo 6: Distillery machineries non-operational

Photo 7: Distillery Piezowell found sealed with concrete

Photo 8: Distillery borewell found dismantled

Photo 9: New borewell for distillery plant under installation

Photo 10: Lagoons filled/levelled with ash and covered with brick lining

	
Photo 11: Lagoon/Settling tank of capacity 1925 $m^3$for bio-methanated spent wash	**Photo 12: Bio-composting yard being dismantled**
	
Photo 13: Bio-compost yard cleaning under process, ready bio-compost (around 700-800 Qtl.)	**Photo 14: Boundary wall created near bio-compost yard**
Photographs of Sugar unit	
	
Photo 15: Borewell equipped with flow meter	**Photo 16: ETP inlet channel & bar screen**

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,

Principal Bench, New Delhi

Original Application No.495/2023

With

Original Application No. 530/2023

Mohd. Amjad & Anr. — Applicant(s)

Vs.

State of U.P. & Ors. — Respondent(s)

With

Anuj Kumar — Applicant

Vs.

State of Uttarakhand & Ors. — Respondent(s)

	Control of Pollution) Act, 1974 and under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981	
9.	**Annexure-VII:** Copy of the Hon'ble NGT Order dated 14.08.2023 in OA No. 495/2023	
10	**Annexure-VIII:** Copy of the Hon'ble NGT Order dated 23.08.2023 in OA No. 530/2023.	

(Reena Satavan)
Scientist E
Central Pollution Control Board
Delhi-110032

Date: 21.11.2023
Place: Delhi

Report of Joint Committee in compliance to Hon'ble NGT orders dated 14/08/2023 in OA 495/2023 and 23/08/2023 in OA 530/2023 regarding pollution in river Banganga at Shukratal, Muzaffarnagar (U.P.)

CENTRAL POLLUTION CONTROL BOARD
Ministry of Environment Forest & Climate Change
Parivesh Bhawan, East Arjun Nagar, Delhi- 110032
(November, 2023)

Contents

List of Tables

List of Figures

1. Background

In response to the water pollution issue at Shukratal Ganga Ghat in Muzaffarnagar, Uttar Pradesh, the Hon'ble National Green Tribunal (NGT), vide its order dated 14/08/2023, in OA No. 495/2023 (Mohd. Amzad & Anr. Vs State of U.P. & Ors.), directed the formation of a Joint Committee to verify the factual position. The NGT stated, *"In view of the averments made in the application, we consider it appropriate that a Joint Committee be constituted to verify the factual position. Accordingly, we constitute a Joint Committee comprising of Central Pollution Control Board (CPCB), Regional Office, Ministry of Environment, Forest and Climate Change (MoEF&CC), National Mission for Clean Ganga (NMCG), Uttarakhand Environment Protection and Pollution Control Board (UEPPCB), Uttar Pradesh Pollution Control Board (UPPCB) and District Magistrates (DMs) of Haridwar and Muzaffarnagar and direct the same to meet within one week, undertake visits to the site, look into the grievances of the applicant, associate the applicant and representatives of the concerned project proponents, verify the factual position which shall include (i) details of industries located in Laksar Industrial area and Muzaffarnagar Industrial area which are discharging effluents in the drain connecting to the River Banganga; (ii) details of industries which are functioning without consent/EC; (iii) functioning of STP/ETP and other waste water treatment mechanism and (iv) mechanism for utilization of waste water for agriculture and other land use purposes rather than discharging in the drain and take appropriate remedial action by following due course of law and giving opportunity of being heard to the concerned project proponents. The CPCB will be the nodal agency for coordination and compliance."*

The Hon'ble NGT vide order dated 23/08/2023, in OA No. 530/2023 (Anuj Kumar Vs State of U.P. & Ors.), directed that, "*Since the Committee has already been constituted, therefore, we direct the said Committee to look into and consider the grievance of the present application also and submit the report in respect thereof along with the report in terms of the earlier directions*."

Both the matters are listed for further consideration on 22/11/2023.

2. Actions taken by Committee:

I. Meeting of the committee on 28/08/2023 through VC

II. Site visit on 14-15, September, 2023

a) Interaction with complainant Md. Amjad in OA 495/2023 and Mr. Anuj Kumar in OA 530/2023

b) Interaction with project proponent of M/s RBNS Sugar & Distillery and Cavendish India Ltd.

c) Industrial inspection of M/s RBNS Sugar & Distillery, Laksar and M/s Cavendish India ltd, Laksar

III. Post -monsoon committee visit on 11-12, October, 2023

a) Mapping and monitoring of River Banganga

b) Mapping and monitoring of River Solani

c) Mapping and monitoring of Laksar

d) Mapping and monitoring of Hadwa drain

2.1. Meeting of committee on 28/08/2023:

To discuss the actions required to comply with the Hon'ble NGT's order dated 14/08/2023, in OA No. 495/2023 (Mohd. Amzad & Anr. Vs State of U.P. & Ors.), a meeting of the committee was convened on 28/08/2023. This meeting was attended by officials from CPCB, MoEF&CC, NMCG, UPPCB, UKPCB, and district administrations of Haridwar and Muzaffarnagar. Following extensive discussions, the committee reached the following conclusions:

1. State Pollution Control Boards (SPCBs) and concerned District Administrations will collaborate with project proponents (PPs) to compile an inventory of industries situated in the Laksar industrial area, gather data on wastewater generated by these industries, and provide information on Sewage Treatment Plants (STPs). Additionally, they will involve District Agriculture Officers to explore the utilization of wastewater for agricultural purposes. All details must be submitted to the Committee by 10/09/2023.
2. SPCBs will coordinate with PPs to obtain written submissions, if any.
3. It was reported by the representatives from the Regional Offices of UPPCB, Muzaffarnagar and UKPCB, Roorkee that no industries were discharging into River Banganga. Therefore, it was decided that the SPCBs demarcate the catchment area of River Banganga, West Kali, and River Solani and provide written confirmation if no industries are discharging into these rivers.

4. Details of industries discharging into Idrispur drain must be submitted by SPCBs by 10/09/2023.
5. Another meeting is scheduled for September 14-15, 2023, at Shukratal, Muzaffarnagar, to discuss the next steps. During these dates, the teams will also conduct visits to industries.
6. UKPCB shall coordinate with relevant PPs, and UPPCB will coordinate with the Applicant for their meeting & discussion with the committee on September 14,15, 2023 at Shukartal.
7. The Committee agreed to conduct post-monsoon monitoring of drains.
8. Information regarding the FIR filed in March 2023 and July 2023, as well as progress on these cases, will be provided to the Committee by the District Administration of Muzaffarnagar.
9. NMCG's representative requested additional time to provide their comments.

2.2. Site visit by Committee on Sep 14, 2023

A committee meeting, was held at Shukratal Ganga Ghat, Muzaffarnagar, on 14/09/2023. It was attended by officials from CPCB, MoEF&CC Regional Offices in Dehradun and Lucknow, NMCG, UKPCB Regional Office in Roorkee, UPPCB Regional Office in Muzaffarnagar, Uttar Pradesh Irrigation Department and the District Administrations of Roorkee & Muzaffarnagar (**Figure-2).** List of participants is attached as ***Annexure-I.***

2.2.1. Brief description of sites and locations:

M/s RBNS Pvt. Ltd. (Sugar and Distillery) is located in the catchment area of Laksar drain and confluence of Laksar drain into River Banganga near Idrishpur village, Uttarakhand. Laksar is a small town, near Haridwar city and Nagar Palika in Haridwar district of the Indian state of Uttarakhand. The average elevation of Laksar town is approximately 227 meters (745 feet) above sea level. It is located between the towns of Khanpur and Sultanpur, and in close proximity to the towns of Pathri, Jhabrera, and Roorkee, all of which are situated in the Haridwar district of Uttarakhand.

Another industry, known as M/s Cavendish Industries Ltd., is also situated within the catchment area of the Hadwa drain, which is a subsidiary drain of the Laksar drain. The River Solani, a tributary of the River Banganga, confluences with the River Banganga near Shukratal in Muzaffarnagar, Uttar Pradesh.

A joint committee conducted a pollution source mapping study for the Rivers Banganga and Solani, as well as the drains namely Laksar and Hadwa. The committee also monitored 33 MLD Sewage Treatment Plant (STP) in Saliyar, which is located within the catchment area of the Solani River. A map illustrating the monitoring locations on rivers & drains along with industries & STP is provided in Figure-1.

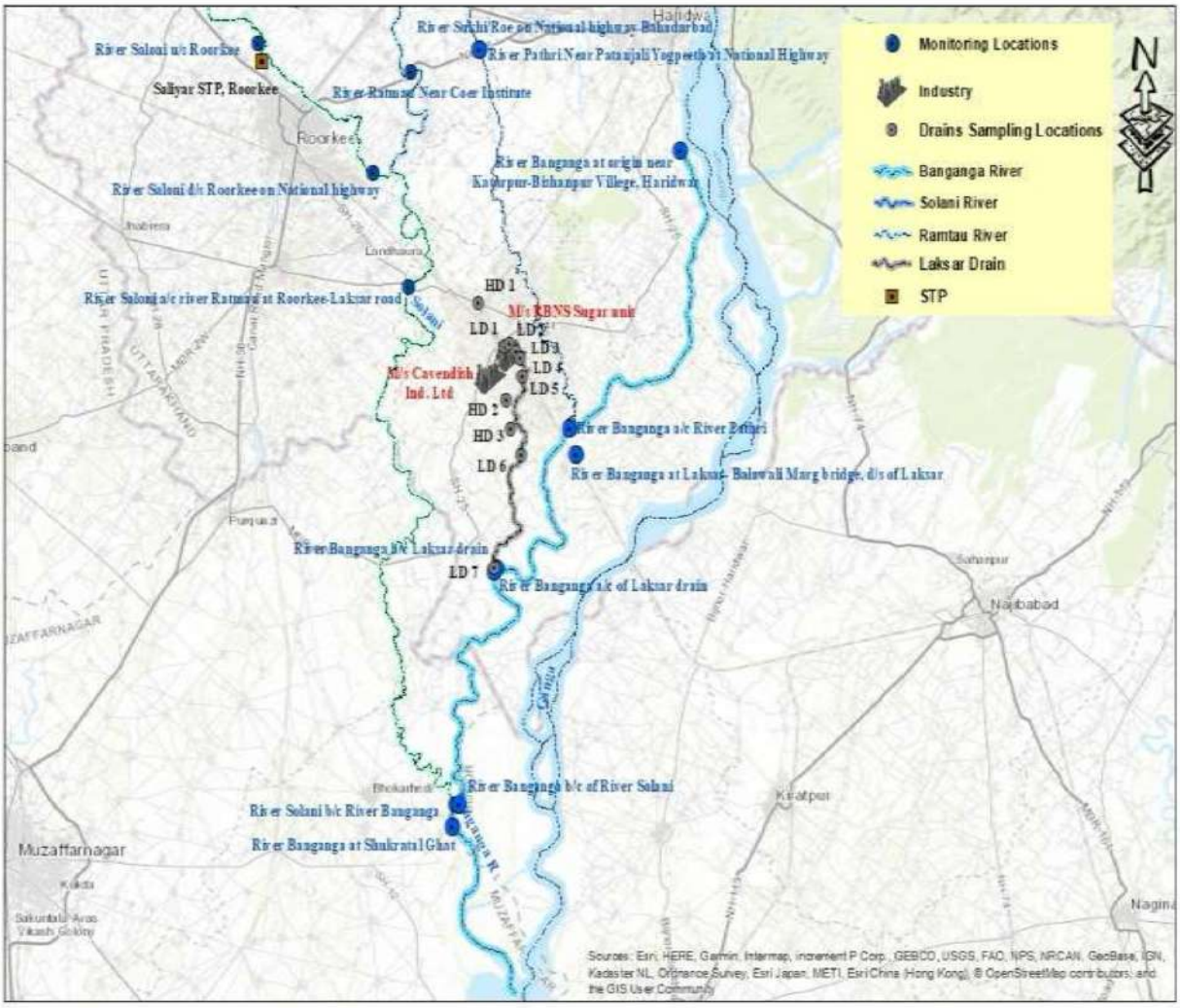


Figure 1: Location map showing monitoring locations on rivers (Banganga, Solani, Ratmau & Sukhi) and drains (Laksar & Hadwa)

2.2.2. Details of Committee visit:

2.2.2.1. Visit to Shukratal area:

The Committee discussed the next steps in the matter and conducted a site visit to the confluence point of River Solani with River Banganga via motorboat, approximately 1.3 kilometres upstream of Shukratal Ganga Ghat (**Figures- 2 to 6**). The water in River Banganga at Shukratal appeared clear, and fish species were observed at the Ganga Ghat.

Due to recent rainfall, there was adequate flow in the river. Considering the weather conditions, the committee decided to carry out monitoring of rivers and drains during the post-monsoon season, tentatively scheduled during 1st-2nd week of October 2023, to collect representative samples and assess the true characteristics of rivers and drains. A groundwater sample was collected from a hand pump in Shukratal (**Figure-7**). The laboratory analysis results indicated that Total Hardness (205 mg/L) and Iron (0.39 mg/L) exceeded the acceptable limit notified by the Bureau of Indian Standards (BIS) IS 10500:2012 (**Table**-1):

Table 1: Laboratory analysis results of groundwater collected near Shukratal Ghat, Muzaffarnagar (U.P.)

Parameters	Monitoring location	
	Hand pump near Shukratal Ghat (29.486343, 77.989746)	BIS IS 10500:2012 (Acceptable limit)
pH	7.99	**6.5-8.5**
Conductivity (µmho/cm)	378	**-**
TDS	238	**500**
COD	BDL	**-**
Total Hardness	**205**	**200**
Chloride	15	**250**
Phosphate	0.05	**-**
Fluoride	0.33	**1.0**
Total alkalinity as $CaCO_3$	192	**200**
Sulphate	07	**200**
Nitrate	0.04	**45**
Colour (Hazen)	BDL	**05**
Cd	BDL	**0.003**
Co	BDL	**-**
Cr	BDL	**0.05**
Cu	BDL	**0.05**
Fe	**0.39**	**0.3**
Mn	0.02	**0.1**
Ni	BDL	**0.02**
Pb	BDL	**0.01**
Sb	BDL	**-**
Se	BDL	**0.01**
V	BDL	**-**
Zn	0.55	**05**

Figure 2: Meeting of committee at Shukratal Ganga Ghat, Muzaffarnagar

Figure 3: Visit of committee members to confluence point of River Solani with River Banganga via motor boat

Figure 4: Confluence point of River Solani with River Banganga

Figure 5: River Banganga after confluence of River Solani

Figure 6: River Banganga at Shukratal, Muzaffarnagar

Figure 7: Collection of groundwater in Shukratal, Muzaffarnagar

Also, UPPCB vide letter dated 3.11.23 submitted that *"in district Muzaffarnagar from the location at Shukratal where both river Solani and Banganga meets till the location at Haiderpur wetland where these rivers joins the main stem of Ganga River, there are no industries which discharge their effluent directly or indirectly in any of the three rivers. The nearest industry located in district Muzaffarnagar is M/s The Ganga Kisan Sahkari Chini Mills Ltd. Morna which is at about aerial distance of 8 Km. (Approx.) from Shukratal Ghat and uses its treated effluent in irrigation and recycling. Also, there is no identified drain in district Muzaffarnagar discharging effluent into river Ganga at Shukratal Ghat or Solani and Banganga river. Hence, industrial water pollution sources having a tendency to pollute Ganga at Shukratal Ghat is not present in the area of district Muzaffarnagar."*

2.2.2.2. Interaction with complainant in OA No 495/2023

During this meeting, the committee interacted with the complainant, Mohd. Amjad, in OA No. 495/2023, at Shukratal Ghat who submitted there were no additional issues beyond those submitted to the NGT. He provided copy of his Aadhar card as Id proof.

2.2.2.3. Visit to Laksar area on 14-15, Sept, 2023:

UKPCB vide letter dated 13.9.23 has submitted the list of 13 industries in catchment area of Laksar drain to which consent to operate was issued under Water (Prevention and Control of Pollution) Act, 1974 (***Annexure-II***). It was submitted by the UKPCB to the committee that, apart from M/s R.B.N.S. Pvt. Ltd., no other unit is discharging untreated/partially treated effluent into any drain/water body in the catchment area of Laksar drain. It was observed by the committee that, in catchment area of Hadwa drain, one major unit namely M/s Cavendish Industries Ltd. (formerly Birla Tyres), a unit of J K Tyres, located in Village Khedi Mubarakpur, Uttarakhand was observed. Considering the potential of M/s Cavendish Industries Ltd. to pollute the water bodies/drains in the catchment, the committee decided to visit the industry. Committee also visited the surroundings of other units namely M/s JMV Ispat, M/s Shree Cement Ltd., M/s Yogi Industries, M/s Green Biofeeds Pvt Ltd, M/s B S Rolling Mills, M/s Narmada Agro Fertilizer & Chemicals, M/s Ruchi Soya Industries Ltd, M/s Alfa Ingot Pvt Ltd, M/s APT Packaging Pvt Ltd, M/s Chaudhary Enterprises Pvt Ltd., M/s Keshav Dev Industries and M/s Shiv India Pharmaceuticals and observed that these industries don't have potential to discharge in Laksar and Hadwada drain. The details about the other units in terms of product manufactured, consented water requirement & discharge quantity and mode of disposal of treated waste water is attached as ***Annexure-III.***

In Laksar area the committee visited Laksar drain at upstream and downstream of M/s Rai Bahadur Narayan Singh Pvt. Ltd. (**Figure- 8 & 9**). It was observed that at upstream, the drain carried storm water due to rain, while downstream, the wastewater appeared light reddish-brown in colour.

Figure 8: Laksar drain upstream M/s Rai Bahadur Narayan Singh Pvt. Ltd.

Figure 9: Laksar drain downstream M/s Rai Bahadur Narayan Singh Pvt. Ltd.

2.2.2.4. Interaction with complainant in OA No. 530/2023

On 15/09/2023, the committee interacted with the complainant, Shri Anuj Kumar, in reference to Hon'ble NGT order dated 23/08/2023 in O.A. No. 530/2023 regarding non-compliance and violation of the directions issued by the Pollution Control Board to M/s Rai Bahadur Narayan Singh Sugar Mills Limited. The committee discussed the issues raised by the complainant and other villagers. Villagers provided written statements ***(Annexure-IV)*** regarding the impact of industrial pollution on human health and agriculture.

2.2.2.5. Inspection of M/s Rai Bahadur Narayan Singh Sugar Mill Pvt. Ltd. (Sugar & Distillery), Shekhpuri, Laksar, Uttarakhand:

On 14/09/2023, the committee inspected M/s Rai Bahadur Narayan Singh Sugar Mill Pvt. Ltd. and M/s Rai Bahadur Narayan Singh Distillery Pvt. Ltd., located in Shekhpuri, Laksar, Uttarakhand. Committee also interacted with the industry representative Sh. S.P.Singh, (Unit Head) and he informed that both Sugar & Distillery plants are non-operational and unit is not discharging any effluent into the Laksar drain. The major observations made by the committee during inspection of the industry - M/s Rai Bahadur Narayan Singh Pvt. Ltd. are as follows:

- On the day of inspection, both sugar and distillery unit were found non-operational.

- It was informed by the unit representative that the Distillery unit has stopped its production from 24.06.2023 due to monsoon, and will resume its operations after rainy season and the sugar unit has stopped in manufacturing operations from 21 May, 2023 due to completion of crushing season and will resume its operations after 15 Nov, 2023.

2.2.2.5.1. Inspection Report of M/s RBNS Sugar unit:

- Unit was established in year 1935 and engaged in production of plantation white sugar with consented crushing capacity of 10000 TCD using sugarcane as a raw material.
- As per final manufacturing report R.T. 8 (C) for the season 2022-23, average daily crushing rate is observed as 8497.2 TCD during 195 operational days (From date of start on 07.11.2022 to date of finish on 21.05.2023).
- Unit has valid Consent to Operate under section 21/22 of Air (Prevention & Control of Pollution) Act, 1981 (as amended) and under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 (as amended) up to 31.03.2024. The unit is having valid Authorization issued under the provisions of Hazardous and disposal of hazardous wastes up to 31/03/2024.
- Unit has an Effluent Treatment Plant (ETP) of capacity 1000 KLD for treatment of mill house & boiling house effluent. ETP based on ASP technology followed by tertiary filtration system, was found non-operational. However, joint team observed that biological system was under stabilization stage as aeration system (surface aerator) was in operation.
- Joint team observed improper hydraulic design of ETP sub-units as pumping was observed between aeration tank and secondary clarifier (settling tank) rather than gravity flow as standard practice for effective settling of MLSS in secondary clarifier.
- The joint team has observed that Lakshar drain flow besides the ETP unit and there is no boundary wall near the ETP area for demarcation. As there is no boundary wall between ETP & Lakshar drain, possibility of discharge of untreated effluent in to drain can't be ruled out.
- Unit is having two lagoons, one in ETP area having capacity 1200 m^3 and another in distillery area of capacity 3500m^3 for storage of treated effluent for further recycling & irrigation purposes. Pumping arrangement was provided to transfer treated water from ETP to lagoon in distillery area.

- It was observed that unit is having multiple discharge options from ETP outlet. Treated effluent is stored in 1200m^3 lagoon for use in process & 3500m^3 for use in irrigation. One outlet drain was observed from ETP outlet towards Laksar drain.
- Unit has 15 hectare of own land area for irrigation.
- Housekeeping near the ETP was very poor as the shrubs found grown all over the ETP area.
- As per consent provided by UKPCB, unit has to install the sewage treatment plant (STP) in their premises for treatment of generated sewage. However, till date no STP is installed by the unit thus violating the consent condition.

Recommendations:

i. As the unit is having a colony of approx 100 houses from which approximately 40KLD of sewage is generated hence, the unit shall install STP of adequate capacity for treatment of domestic sewage.
ii. Unit shall construct boundary wall behind ETP to demarcate it from adjacent Laksar drain.
iii. Unit to carry out adequacy and performance assessment of ETP.
iv. Unit shall make provision for gravitional flow from aeration tank to secondary clarifier for effective performance of clarifier.
v. Unit shall submit irrigation management plan to UKPCB.
vi. Unit to ensure metering at all treated water consumption and discharge points and accordingly ensure proper record keeping.

2.2.2.5.2. Inspection report of M/S Rai Bahadur Narayan Singh Pvt. Ltd. Distillery unit:

General Details of molasses based distillery plant

Consents & Authorization

The unit has obtained Consolidated Consent & Authorization (CCA) issued by Uttarakhand Pollution Control Board (UKPCB) dated 06.10.2023 under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974 and under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981 having validity upto 31.03.2023 for production of 60 KLPD of Ethanol/ENA/RS + 60 KLPD of Ethanol by using 372 m3/day of molasses. ***(Annexure –A1).*** Unit has applied for the renewal of CCA dated 12.092022 on 13.03.2023.

The salient conditions of the Consolidated Consent to Operate are as follow:

a. The unit shall carry out production of Ethanol/ENA/RS + 60 KLPD of Ethanol @ 120 KLPD using 372 m^3/day of C – Heavy molasses or B – Heavy molasses.

b. Unit shall comply with the conditions of NOC issued by Ground Water Department Govt. for abstraction of ground water.
c. Unit shall maintain Zero Liquid Discharge, and no effluent is allowed to discharge outside the premises.
d. The final storage capacity of lagoon for storage of concentrated spent wash after MEE to be utilized in bio-composting shall be strictly restricted to thirty days equivalent of Concentrated spent wash.
e. The unit having uncovered bio-compost area shall stop its bio-compost activities in monsoon period. The Unit shall make extra land arrangement for storage of press mud and ready bio-compost.
f. The unit shall use bio-composting only up to December 2023, thereafter no fresh concentrated spent wash shall be disposed through bio-composting yard and spent wash shall be totally disposed through spray dryer.
g. Flow meter to be installed in all water abstraction points and usage of fresh water to be minimized.
h. Industry shall maintain Online Continuous Effluent and emission Monitoring System (OCEMS) on ETP and stack & connect it with SPCB and CPCB server, before start of production as per the direction of CPCB.
i. The industry should ensure the operation of the air pollution control system (APCS) in such a manner that the air emission confirms with the standards prescribed under the E.P Act 1986 as amended.

Compliance status of conditions stipulated in consent to Operate

Production Capacity:

- On the day of visit, the distillery unit of capacity (120 KLD) were found non-operational.
- It was informed by the unit representative that Distillery unit has stopped its production from 24.06.2023 due to monsoon, and will resume its operations after rainy season, however during committee's post monsoon visit on 11.10.2023 the unit was again found non-operational.
- The unit representative has informed that the old distillation plant of capacity 60 KLD was commissioned in 2014 and the new distillation plant of capacity 60 KLD was commissioned in 2022.

Groundwater abstraction:

- The Uttarakhand Ground Water Department (UKGWD) granted No Objection Certificate (NOC) to the unit for groundwater abstraction from 01 no. of borewell, having validity upto 17.08.2026 for two borewells and upto 18.08.2026 for 03rd Borewell. As per the conditions of NOC, the unit can abstract groundwater at a maximum rate of 500 KL/day. During visit the team noticed that the borewell flow meter readings were 0.0 m^3/hr

Verification of Zero Liquid Discharge as stipulated in Consolidated Consent to Operate issued by UKPCB on 06.10.2023

- For management of spent wash, the unit is currently following below mentioned scheme:

  Raw Spent Wash (old plant)→ Bio-methanation→Standalone MEE →lagoon →Bio-composting

- Raw Spent Wash (new plant) →Integrated MEE → Bio-methanation→ Standalone MEE→Dryer

Table 2: Design capacity of various ZLD units:

S. No.	Particulars	Nos.	Size /capacity / feed rate
1.	IMEE (for new plant)	01	25 m^3/hr
2.	Bio-digesters	04	1000 m^3 (02 no.) (in use) 7500 m^3 & 8000 m^3 (for future use)
3.	Evaporator (6 stage) (for old plant)	01	25 m^3/hr (02 forced circulations and 04 falling film)
4.	Evaporator (6 stage) for new plant	01	25 m^3/hr
5.	Lagoon for storage of concentrated spent wash/bio-methanated spent wash	03	Total = 5222 m^3
6.	Lagoon found filled	01	2800 m^3 (found filled with boiler ash)
7.	Lagoon for storage of sugar water	01	3500m^3

- The unit has installed mass flow meters with totalizer at, inlet and outlet of IMEE, Inlet and outlet of MEE. All mass flow meters are connected to CPCB server. Since the unit

was found non-operational, raw spent wash was not available, therefore performance evaluation of spent wash management system could not be assessed.

- For management of raw spent wash, the unit has 03 digesters of capacity 10000 m3 (2 nos.) and 7500 m3 six stage Multiple Effect Evaporator (MEE) of capacity 600 KLD (2 nos.) and CPU of capacity 1050 m3 which were found non-operational during visit.
- For treatment of MEE condensate, and other low strength effluent, the unit has installed common Condensate Polishing Unit (CPU) of capacity 1050 KLD (for sugar and distillery unit).
- The CPU comprising of equalization tank, UASB, aeration tank, clarifier and lamella. The UASB reactor was found vacant and not in operation during the visit, the unit has informed that treated water from CPU is being utilized in cooling tower and in molasses dilution.

Lagoons:

- For storage of concentrated spent wash, unit has 03 lagoons of capacity 1925m3, 1925m3 and 1372 m3 (total capacity 5222m3. The joint team observed that these 03 lagoons were found filled with approx. 80-85 % of spent wash (Approx. 4000m3-4500m3).
- The team also observed that the unit has two more lagoons of capacity 3500m3 and 2800 m3. Out of which one lagoon of capacity 2800m^3 was found filled with mud/ boiler ash and the another lagoon of capacity 3500 m^3 was found filled with rain water, which is informed by the unit's representative that the lagoon of capacity 3500m^3 is used for storing treated effluent from sugar mills.
- It was observed that Laksar drain carrying sewage from Laksar town flows from Laksar city is passing through the premises of the unit via open channel. The drain flows adjacent to the lagoons.
- The joint team collected samples from three lagoons which is according to the unit used for storing concentrated spent wash. Analysis results are mentioned in Table-3 below:

Table 3: Analysis results of spent wash samples collected from unit

Sr. No.	Sample Location	pH	COD (mg/l)	BOD (mg/l)	TS (mg/l)	(% Total Solids)
1.	Lagoon-1	6.4	93922	39429	82090	8.2
2.	Lagoon-2	5.1	182376	51500	176740	17
3.	Lagoon-3	6.2	82416	36000	75640	7.5

- Analysis result of sample collected from lagoon-1, lagoon-2 and lagoon-3 shows pH- 6.4, 5.1 & 6.2, COD – 93922 mg/l, 182376 mg/l and 82416 mg/l, BOD – 39429 mg/l, 51500, and 36000 mg/l and Total Solid % of spent wash is 8.2%, 17% and 7.5% respectively.
- Analysis results of the samples collected from the lagoons clearly indicate that the unit is storing bio-methanated spent wash (BMSW) in lagoons-1 & lagoon -3, raw spent wash (RSW) in lagoon -2. which is in violation of CPCB direction dated 07.12.2015.
- CPCB direction adted 7.12.2015 clearly stated that in case of bio-composting, the unit could strictly restrict its lagoon capacity to thirty days' storage equivalent of concentrated spent. However, even during monsoon season lagoons were found filled with BMSW/RSW and as these lagoons are located adjacent to Laksar drain hence the possibility of overflow/discharge of spent wash in the Laksar drain can't be ruled out. Since the unit was non-operational thus, the industrial impact on drain couldn't be verified.
- The team has also collected sample from the storm water drain (near cooling tower) outlet towards Laksar drain. Analysis results of the samples collected from the outlet of storm water drain near shows pH- 7.1, COD- 220 mg/l BOD-44 mg/l TSS-117 mg/l, TDS 1540, Cl- 106 mg/l, colour 21, sulphate-34 mg/l and Phosphate 0.2mg/l.
- It was observed that Laksar drain carrying sewage from Laksar town flows from Laksar city is passing through the premises of the unit via open channel. The drain flows adjacent to the lagoons.
- The team has also collected sample from the outlet of storm water drain near CPU area. Analysis results of the samples collected from the outlet of storm water drain near shows pH- 7.1, COD- 220 mg/l BOD-44 mg/l TSS-117 mg/l, TDS 1540, Cl- 106 mg/l, colour 21, sulphate-34 mg/l and Phosphate 0.2mg/l which indicates discharge of cleaning effluent into Laksar drain.

Dryer

The unit has installed two spray dryers having capacity of 45 TPH and 45 TPH for both the distillation plant (60 KLD each). The details of dryer are as follows;

Table 4: Details of Dryers

S. No.	Capacity	Fuel & Stack Height	Air Pollution Control Device (APCD)
1.	Spray dryer (45 TPD)	Bagasse fired 40mtr	Wet scrubber

2.	Spray dryer (45 TPF)	Bio-gas 40mtr	Wet scrubber

Bio-composting

- As per the consent, the unit is allowed to bio-composting only up to December 2023, thereafter no fresh concentrated spent wash shall be disposed through bio-composting yard and spent wash shall be totally disposed through spray dryer.
- The unit representative has informed that, from January 2024, the unit consume all its spent wash through dryer and the practice of bio-composting will be stopped thereafter.
- The unit is having total 14 acres of active area which was visited by the joint team on 14.09.23 & 11.10.23. Out of 14 acres, 4.56 acres of land is covered and the remaining 9.66 acres of land is open/uncovered where four cycles of bio-compost per annum can be carried out. As per the calculation (considering spent wash generation rate 6 kl/kl of production), the unit is requiring 7.14 of bio-compost area, which is found adequate.
- Following were observed by the team during the visit to bio-compost yard:
    i. No Bio-compositing activity was going on at the time of visit however, ready bio-compost was found stored in the covered shed. The covered shed was damaged and improper.
    ii. Bio-compost yard, leachate collection drain and pits were not observed around the periphery of bio-compost yard for leachate management. Leachate was found filled in the bio-compost yard.
    iii. The unit has not constructed any boundary wall near the compost yard, however the team re-visited the unit on 11.10.2023 and it was found that the unit has constructed boundary wall near compost yard.
    iv. A tank of capacity 300 kl was observed in the bio-compost yard which is used for storing concentrated spent wash for bio-composting purpose.

Violations observed by the committee in M/s RBNS Sugar & Distillery units:

i. Lakshar drain flow besides the ETP unit and there is no boundary wall near the ETP area for demarcation. As there is no boundary wall between ETP & Lakshar drain, possibility of discharge of untreated effluent in to drain can't be ruled out.
ii. Unit is not having an comprehensive irrigation management plan.
iii. Unit is not having any sewage treatment plant as stipulated in the consent.

iv. In the distillery plant, as per the analysis results of the samples collected from all the lagoons the total solids were found below 30% which is in violation of CPCB direction dated 07.12.2015.

v. Unit was not complying with CPCB bio-compositing SOP.

Recommendations:

1. UKPCB shall restrict the production capacity of the unit such that the entire quantity of spent wash i.e about 4500m3 stored in three lagoons of capacity (1925m3, 1925m3 and 1372 m3) be consumed through dryer in environmentally sound manner within two monts time and thereafter, shall dismantle all the 03 lagoons.
2. The unit shall dispose all the stored ready bio-compost and press mud in bio-compost yard by adapting appropriate scientific method under the supervision of UKPCB within two months.
3. The unit shall prepare adequacy and performance assessment report of ZLD scheme for molasses based distillery as unit has expanded its production capacity from 60 KLPD to 120 KLPD and has installed spray dryers as ZLD system.
4. The unit shall make provision under supervision of UKPCB for flow of Laksar drain through the closed conduit pipe line starting from 500 meters upstream (u/s) to 500 meter downstream (d/s) of the unit to rule out any possibility of discharge of treated/untreated effluent into drain.
5. It shall be the responsibility of the unit to maintain the quality of Laksar drain at downstream of the unit in sync with the quality at upstream of the unit. Also, unit shall be responsible for the maintenance of the closed conduit pipeline.
6. UKPCB shall carry out regular monitoring of u/s & d/s location of the Laksar drain on random basis.
7. The Unit shall comply with ZLD norms as per CPCB direction dated 07.12.2015 issued under Section 18(1) (b) of Water (Prevention & Control of Pollution) Act, 1974.
8. The unit shall comply with the consent conditions issued by UKPCB and shall ensure that no fresh concentrated spent wash shall be disposed through bio-composting and entire spent wash shall be totally disposed through spray dryer.

2.2.2.6. Groundwater monitoring in Laksar:

Three samples in and around the unit were collected by the committee. Details of the samples along with analysis results is tabulated below.

A groundwater sample near the industry (coordinates - 29.748295, 78.030729) was collected, which appeared yellowish in colour (**Figure-10**).

Figure 10: Groundwater sample collected near Industry - M/s Rai Bahadur Narayan Singh Pvt. Ltd.

Table 5: Laboratory analysis results of groundwater samples collected in and around M/s R.B.N.S. Pvt. Ltd., Laksar (Uttarakhand)

Parameters	Monitoring location			
	Borewell within M/s R.B.N.S. Sugar unit (29.747809, 78.029911)	**Hand pump outside M/s R.B.N.S. distillery (near bio-compost yard) (29.748295, 78.030729)**	**Hand pump near Laksar Roadways bus stand (29.755945, 78.032244)**	**BIS IS 10500:2012 (Acceptable limit)**
pH	7.76	7.78	7.6	6.5-8.5
Conductivity (µmho/cm)	959	1186	921	-
TDS	**532**	**730**	**530**	500
COD	17	**73**	BDL	-
Total Hardness	332	448	239	200
Chloride	28	65	38	250
Phosphate	BDL	BDL	BDL	-
Fluoride	0.25	0.29	BDL	1.0
Total alkalinity as $CaCO_3$	**300**	**342**	**257**	200
Sulphate	59	67	59	200
Nitrate	0.10	0.45	BDL	45
Colour (Hazen)	**07**	**43**	BDL	05
As	-	-	0.04	-
Cd	BDL	BDL	BDL	0.003

Parameters	Monitoring location			
	Borewell within M/s R.B.N.S. Sugar unit (29.747809, 78.029911)	Hand pump outside M/s R.B.N.S. distillery (near bio-compost yard) (29.748295, 78.030729)	Hand pump near Laksar Roadways bus stand (29.755945, 78.032244)	BIS IS 10500:2012 (Acceptable limit)
Co	BDL	BDL	-	-
Cr	BDL	0.01	BDL	0.05
Cu	BDL	0.01	BDL	0.05
Fe	**3.28**	**34.53**	**4.5**	0.3
Mn	**0.47**	**1.01**	**0.24**	0.1
Ni	BDL	BDL	BDL	0.02
Pb	BDL	0.01	BDL	0.01
Sb	BDL	BDL	-	-
Se	BDL	BDL	-	0.01
V	BDL	BDL	-	-
Zn	0.07	0.46	0.16	05

- The laboratory analysis results indicated that TDS, Total alkalinity, Iron and Manganese exceeded the acceptable limit notified by the Bureau of Indian Standards (BIS) IS 10500:2012 in all three samples.
- Colour exceeded the acceptable limit in two samples viz. within M/s R.B.N.S. Sugar unit (7 Hazen) and M/s R.B.N.S. distillery (near bio-compost yard) (43 Hazen).
- Sample collected from the handpump near bio-compost yard shows COD-73mg/l and color-43mg/l which indicates that water is not fit for drinking. However, during post-monsoon visit on 11.10.23 it was observed that the particular handpump was dismantled by local authorities.

2.2.2.7. Survey of surroundings of M/s R.B.N.S. Pvt. Ltd., Laksar (Uttarakhand)

The committee visited agricultural fields near the bio-compost yard of M/s Rai Bahadur Narayan Singh Pvt. Ltd. (Sugar & Distillery) and found that fields belonging to farmers from nearby villages were inundated with water from the compost yard or rain. A sample of the collected wastewater on agricultural fields was collected (**Figure-11**). Sub-divisional Magistrate of Muzaffarnagar district informed the committee that the government has also provided monetary compensation to farmers whose agricultural fields have been inundated during monsoon-induced flood.

Figure 11: Agricultural fields of farmers near bio-compost yard of M/s Rai Bahadur Narayan Singh Pvt. Ltd. (Distillery Unit)

Analysis results of the sample collected from the fields near bio-compost yard shows pH-7.5, COD- 168 mg/l BOD-25 mg/l TSS-98 mg/l, TDS 1272, Cl- 80 mg/l and Phosphate 0.1mg/l. From Analysis results it is quite evident that though the low lying area was filled with rain water but the impact of seepage of spent wash from bio-compost yard can't be ruled out.

2.2.2.8. Inspection report of M/s Cavendish Industries Ltd. (formerly Birla Tyres), a unit of J K Tyres, Laksar:

Key observations made during this inspection are as follows:

- Unit was found operational on the day of visit i.e., 15/09/2023.
- The salient findings & observations of the committee are mentioned below:
  1. Unit is engaged in manufacturing of tubes and tyres. It was also observed that three production units were present within same complex of M/s Cavendish Industries Ltd.
  2. Unit has obtained separate Consent to Operate for all three production units as mentioned below:

Table 6: Consent to Operate M/s Cavendish Industries Ltd.

Unit no.	Consent validity date	Validity	Capacity/Product
Unit-II	30.09.2024	Valid	Tubes- 1500 MT/month & Tyre-7500 MT/month
Unit-III	30.09.2024	Valid	Radial Tyre- 6750 MT/month

Unit-IV	31.03.2023	Invalid	Automobile Tyre- 2790 MT/month

3. It was observed that unit has 07 no. of Borewells within the industrial complex for meeting process water and domestic requirements.
4. Unit has obtained No Objection Certificate (NOC) from Central Ground Water Authority (CGWA) for groundwater abstraction from 08 no. of Borewells and details are mentioned below:

Table 7: No Objection Certificate (NOC) from Central Ground Water Authority (CGWA)

Unit no.	Permitted no. of borewells	Permitted groundwater abstraction limit	Validity date	Valid/Invalid
Unit-II	05	1253 KLD	30.02.2024	Valid
Unit-III	03	622 KLD	17.01.2024	Valid

5. As per the logbook/data provided by unit, avg. groundwater withdrawal from 07 nos. of Borewells (duration 01.08.2023 – 15.09.2023) was calculated as 1394 KLD against the total permitted capacity of 1875 KLD (as mentioned in NOC issued by CGWA).
6. Unit has installed flow meters on all 07 Borewells and maintained logbooks for the same.
7. Unit has installed two ETPs, based on ASP technology, and both ETPs were found operational.
8. ETP-1 of 1800 KLD capacity has been provided for treatment of effluent generated from Unit-II & IV whereas ETP-2 of 1200 KLD capacity has been provided for treatment of effluent generated from Unit-III.
9. Unit has installed two STPs of 160 KLD capacity each for treatment of sewage generated and both STPs were found operational. Combined outlet of STP-1&2 was being fed into ETP-2 for further treatment.
10. Outlet of ETP-1 was being used in gardening, dust suppression and fire hydrant i.e. 345.65 KLD.
11. Outlet of ETP-2 (which includes combined outlet of STP-1&2) is fed into Softener and soft water is used as make-up in 05 nos. of Cooling Tower @ 539.95 KLD
12. Unit has installed flow meters at Inlet and Outlet of STP & ETP.

13. Sample were collected from inlet and Outlet of ETP-1 and laboratory analysis results of inlet sample show pH- 7.5; BOD – 05 mg/l; COD – 43 mg/l; TSS – 21 mg/l ; TDS – 724 mg/l and Colour – BDL.
14. Analysis results of outlet sample show pH- 7.5 (against norm of 5.5 – 9.0); BOD – 03 mg/l (against norm of 30 mg/l); COD – 24 mg/l (against norm of 250 mg/l); TSS – 05 mg/l (against norm of 100 mg/l); TDS – 684 mg/l and Colour – BDL which indicates that unit is complying w.r.t. discharge norms as mentioned in Consent issued by UKPCB.
15. On the day of visit i.e. 15.09.2023, joint team observed that a stormwater drain from the unit meets Hadwada drain. During the visit, backflow of wastewater from Hadwada drain into the stormwater drain from the industry was observed. Diluted wastewater was observed in Hadwada drain due to rain.
16. However, during visit carried out on 12.10.2023, joint team collected a sample from stormwater drain coming from the unit. Analysis results of sample collected show pH-7.0; BOD – 16 mg/l; COD – 72 mg/l; TSS – 08 mg/l; TDS – 664 mg/l, Sulphate – 64 mg/l and Colour – BDL.
17. Unit has made agreement with TSDF (i.e. M/s Bharat Oil & Waste Management Ltd.) for disposal of hazardous waste.
18. As per data provided unit and calculations performed by joint team it has been observed that outlet from ETP-2 (i.e. 539.95 KLD) is much higher than the inlet quantity (i.e. 373.63 KLD).

Recommendations:

1. Unit shall get a water audit done by a reputed expert government technical institute and submit the report to UKPCB.
2. Unit shall obtain valid Consent to operate for Unit-IV at the earliest.

2.3. Post-monsoon drain and river monitoring

As decided during the meeting of the committee on 15/09/2023, the post-monsoon river & drain monitoring was scheduled during Oct 11th – 12th, 2023:

Committee's visit during Oct 11-12, 2023

The objectives of the visit were:

- Pollution source mapping of Banganga River.

- Pollution source mapping of Solani River.
- Pollution source mapping of Laksar drain and Hadwa drain.

2.3.1. Pollution source mapping of rivers and drains

Pollution source mapping of rivers (Banganga & Solani) and drains (Laksar & Hadwa) was carried out. A map illustrating the monitoring locations on rivers and drains is provided in **Figure-12.**

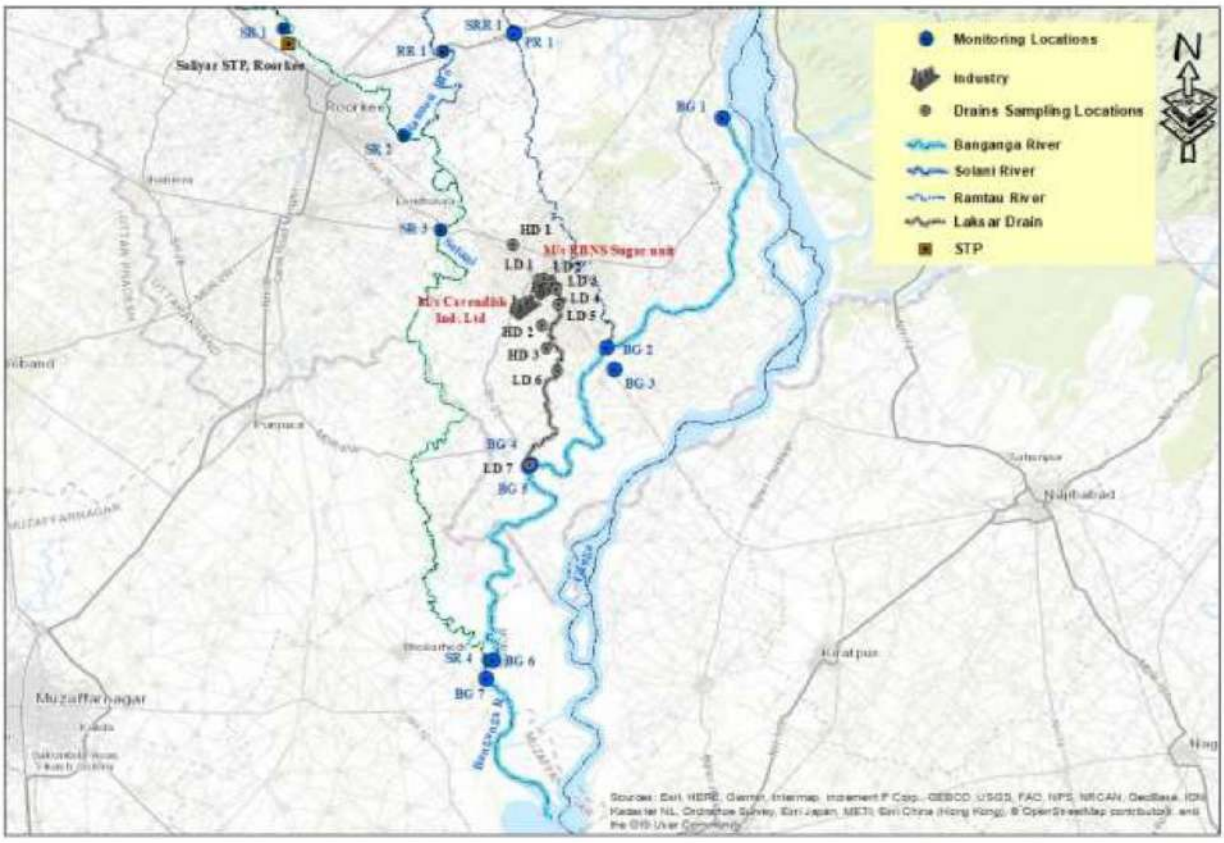


Figure 12: Location map showing monitoring locations on rivers (Banganga, Solani, Ratmau & Sukhi) and drains (Laksar & Hadwa)

2.3.1.1. River Banganga

River Banganga is presumed to be originated from a diversion/stream of River Ganga near Katarpur Alipur village in Bahadrabad Tehsil in Haridwar District, Uttarakhand and travel around 70 km before confluencing with River Ganga near village Shukratal in Muzaffarnagar district of Uttar Pradesh. However, during monitoring, the joint team did not observe any fresh water stream emerging in to River Banganga from River Ganga. River Banganga gained flow after receiving untreated sewage from nearby villages such as Mahtauli, Tanda, Mubarakpur, Chamrawal, Nehandpur Suthari and Muzaffarpur Gujra Jadeed. For pollution source mapping, the joint team carried out monitoring and sampling of River during October

11-12, 2023. The location map showing monitoring locations on river Banganga, its tributaries river Pathri, Sukhi & Solani and Laksar & Hadwa drains is shown in **Figure-13.**

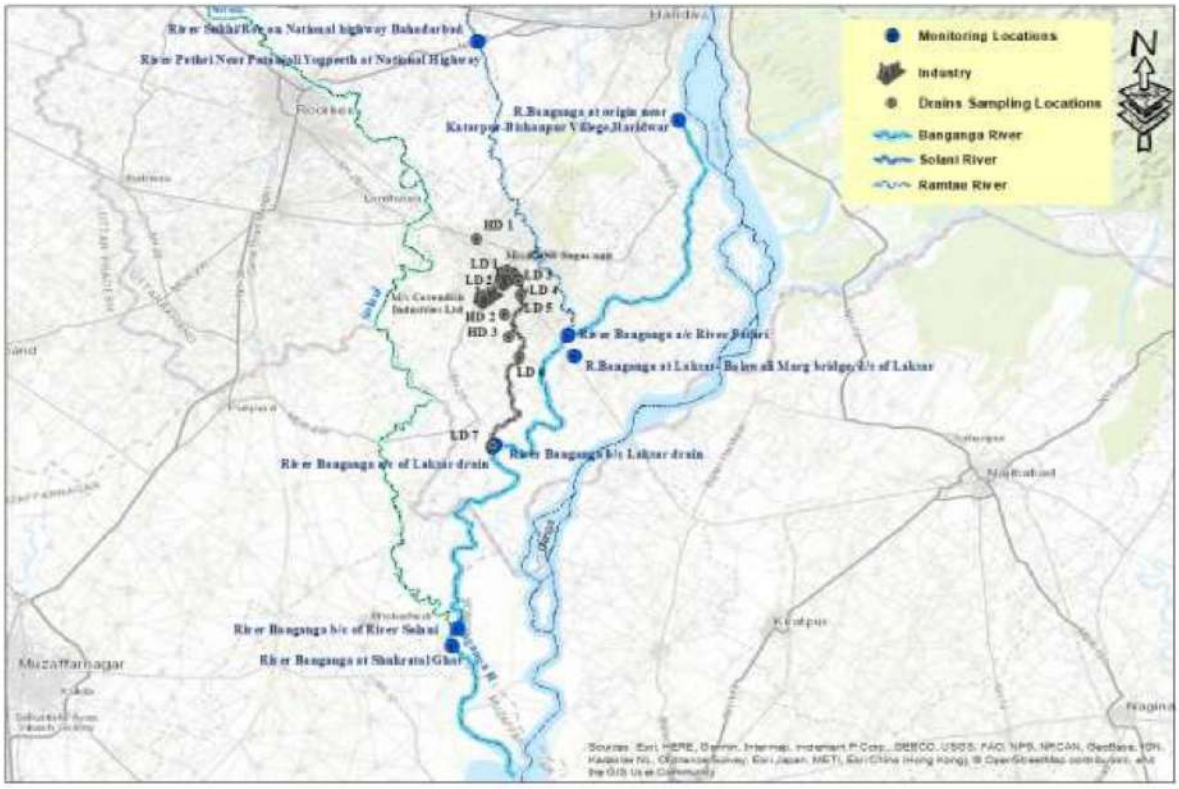


Figure 13: Location map showing monitoring locations on river Banganga, its tributaries river Pathri, Sukhi & Solani and Laksar & Hadwa drains

The objectives of the pollution mapping were:

- Tracing and mapping the course of the river
- Characterization of water quality of river at various locations
- Identification, quantification and characterization of major tributaries /drains joining the river.
- Impact on water quality of River Banganga b/c and a/c with River Solani
- Impact on water quality of River Banganga b/c and a/c with Laksar drain

During the pollution mapping and exploratory survey, the course of Banganga river was mapped from origin near Mahtauli village in Haridwar to the confluence in River Ganga at village Shukratal in Muzaffarnagar district. The details of the same is presented in **Figure-14 to 20.**

Figure 14: River Banganga at origin near Katarpur-Bishanpur Village, Haridwar

Figure 15: River Banganga after confluence of River Pathri

Figure 16: River Banganga at Laksar-Balawali Marg bridge, d/s of Laksar

Figure 17: River Pathri near Patanjali Yogpeeth at national Highway

Figure 18: Sukhi or Roe River at Bridge on National Highway Bahadarabad

Figure 19: River Banganga before confluence with River Solani

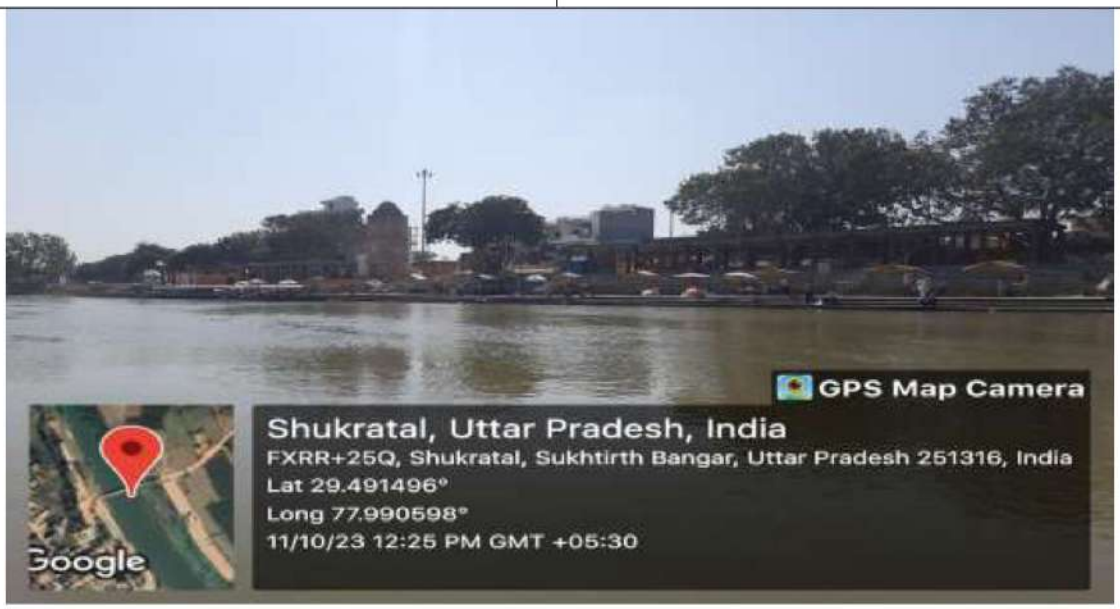


Figure 20: River Banganga after confluence with River at Shukratal Ghat, Muzaffarnagar

Five river samples were collected to analyse the status of water quality (**Table …**) and to understand the characteristics of possible polluting sources at different locations along the course of the river.

During mapping joint teams observed that river Banganga presently receive discharge from runoff rain water, untreated sewage from towns/villages in the catchment area, domestic & industrial discharge through Laksar drain, domestic discharge through Sultanpur drain and tributaries namely Pathri river & Solani river.

River Banganga is divided into three stretches for study that have been classified on the basis of comparable values of flow and water quality. The three stretches are:

- Stretch – I: Origin to d/s of Sultanpur
- Stretch – II: d/s of Sultanpur to u/s of Shukratal
- Stretch – III: Shukratal to the confluence point in River Ganga

Stretch – I: Origin to d/s of Sultanpur

In this stretch, intermittent flow observed in the river. No source of fresh water draining into River Banganga was observed during this stretch including at origin. River receive discharge from runoff rain water, untreated sewage from Sultanpur drain and villages in the catchment area such as Mahtauli, Tanda, Mubarakpur, Chamrawal, Nehandpur Suthari and Muzaffarpur Gujra Jadeed. No water sample was collected.

Stretch – II: d/s of Sultanpur to u/s of Shukratal

In this stretch, River receive fresh water from Pathri River which is one of the major tributaries of River Banganga. Water of River Banganga was observed clean which indicated that there is no visible pollution. One sample from River Banganga was collected near Netwala Saidabad village. For river water quality assessment. Analysis results of river sample shows pH-8.2, DO-4.46 mg/l, BOD-2.21 mg/l, COD-10 mg/l, TSS-19 mg/l, TDS-372 mg/l and FC-1300 MPN/100 mL indicating that quality of river water is found clean in this stretch. River water quality was meeting primary water quality criteria for bathing w.r.t. pH (8.2), BOD (2.21 mg/L) and FC (1300 MPN/100 mL).

Stretch – III: Shukratal to the confluence point in River Ganga

In this stretch, River receive discharge from Laksar drain and River Saloni. Water samples of River Banganga were collected before and after confluence of Laksar drain (near Idrishpur village) and River Solani (near Shukratal, Muzaffarnagar). In this stretch, River Banganga was meeting the primary water quality w.r.t. pH (8.2), DO (5.8-7.1 mg/L), BOD (BDL-2.29 mg/L) and FC (78-490 MPN/100 mL).

The water sample from the Banganga River after the confluence with the Solani River was collected at Shukratal Ghat, Muzaffarnagar, which is situated approximately 1.3 kilometers downstream from the confluence point of Solani River and Banganga River. The dissolved oxygen levels in the Banganga River before and after the confluence of the Solani River were found to be 7.12 mg/L and 6.39 mg/L, respectively.

The laboratory analysis results are shown in **Table-8** given below:

Table 8: Laboratory analysis results of water samples collected from River Banganga

Stretch	Monitoring location	Physical observations	Quality	Remarks
I: Origin to d/s of Sultanpur	-	• Intermittent flow observed in the river. • No source of fresh water draining into River Banganga.	Not applicable	-
II: d/s of Sultanpur to u/s of Shukratal	River Banganga a/c River Pathri	-	pH-8.2, DO-4.46 mg/l, BOD-2.21 mg/l, COD-10 mg/l, TSS-19 mg/l, TDS-372 mg/l and FC-1300 MPN/100 ml	Water quality of river was meeting primary water quality criteria for bathing w.r.t. pH, BOD and FC.
III: Shukratal to the confluence point in River Ganga	River Banganga b/c Laksar Drain	Clear water in river was observed.	pH-8.2, DO-6.2 mg/l, BOD-1.85 mg/l, COD-10 mg/l, TSS-9 mg/l, TDS-344 mg/l and FC-78 MPN/100 ml	Water quality of river was meeting primary water quality criteria for bathing w.r.t. pH, DO, BOD and FC.
	River Banganga a/c Laksar drain	Clear water in river was observed.	pH-8.2, DO-5.8 mg/l, BOD-BDL, COD-BDL, TSS-26 mg/l, TDS-304 mg/l and FC-490 MPN/100 ml	• No impact of Laksar drain on river Banganga was observed. • Water quality of river was meeting primary water quality criteria for bathing w.r.t. pH, DO, BOD and FC.
	River Banganga b/c River Solani	Clear water in river was observed.	pH-8.2, DO-7.1 mg/l, BOD-1.19 mg/l, COD-8 mg/l, TSS-24 mg/l, TDS-334 mg/l and FC-130 MPN/100 ml	Water quality of river was meeting primary water quality criteria for bathing w.r.t. pH, DO, BOD and FC.
	River Banganga a/c River Solani at Shukratal Ghat, Muzaffarnagar (U.P.)	• Clear water in river was observed. • Fish species were observed in River Banganga at Shukratal Ghat, Muzaffarnagar (U.P.)	pH 8.2, DO-6.4 mg/l, BOD-2.29 mg/l, COD-9 mg/l, TSS-44 mg/l, TDS-276 mg/l and FC-230 MPN/100 ml	• Water quality of river was meeting primary water quality criteria for bathing w.r.t. pH, DO, BOD and FC.

2.3.1.2. River Solani

The Solani River originates from the Himalayan foothills, near Dehradun and runs along an approximate length of 145 km through Biharigarh, Bhagwanpur, Roorkee, Laksar city/towns before falling into River Banganga at upstream of Shukratal. River Solani is a rain feed river. For pollution source mapping, joint team carried out monitoring and sampling of River during October 11 to 12, 2023. The location map showing monitoring locations on river Solani and its tributary river Ratmau is shown in **Figure-21.**

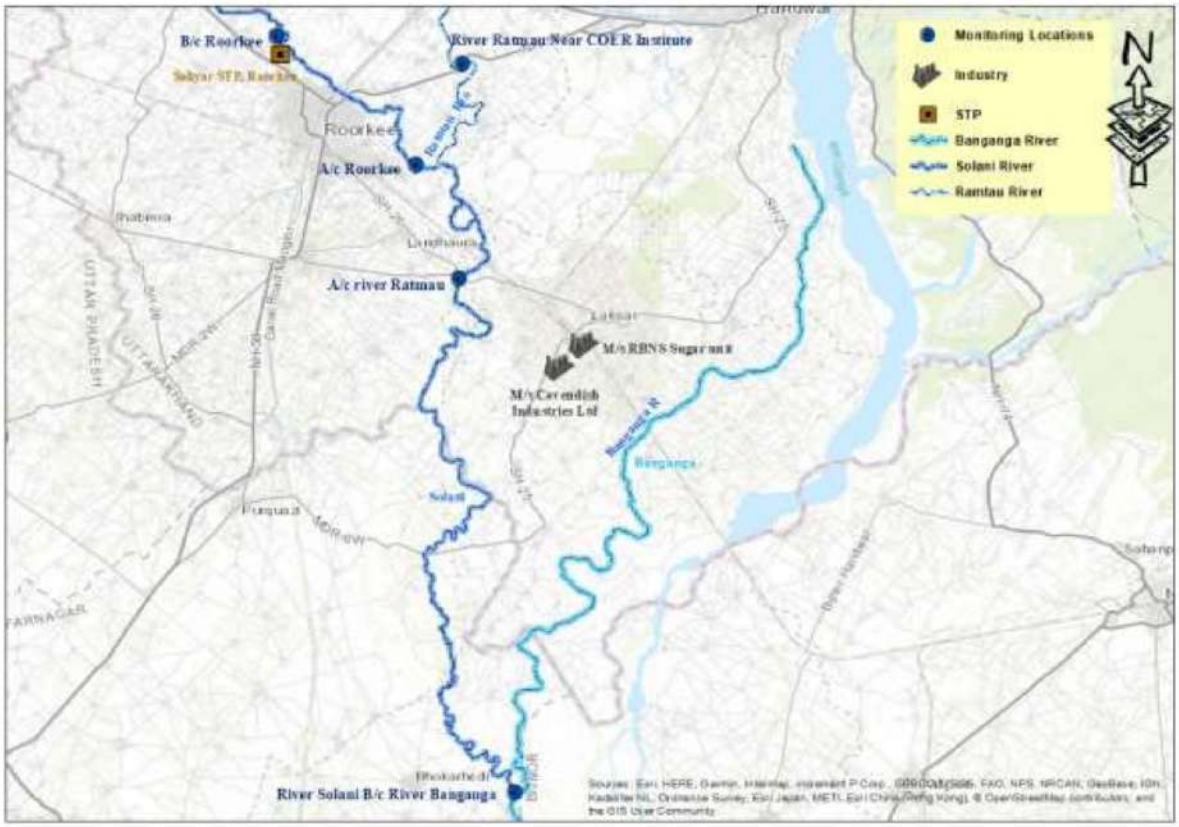


Figure 21: Location map showing monitoring locations on river Solani and its tributary river Ratmau

The objectives of the pollution source mapping were:

- Tracing and mapping the course of the river.
- Characterization of water quality of river at various locations.
- Identification, quantification and characterization of major tributaries /drains joining the river.
- Impact on water quality of River Banganga b/c and a/c with River Solani.
- Assessment of sewage management in catchment area of Solani river.

During the pollution mapping and exploratory survey, the course of Solani river was mapped from upstream of Roorkee till confluence into the River Banganga. The details of the same is presented in **Figure-22 to 26.**

Figure 22: River Solani upstream of Roorkee

Figure 23: River Solani downstream of Roorkee at bridge on National Highway

Figure 24: River Ratmau near Coer Institute, National Highway, Roorkee

Figure 25: River Solani after confluence with river Ratmau at Roorkee-Laksar Road

Figure 26: River Solani before confluence with River Banganga

Four samples from River Solani and one sample from the tributary River Ratmau were collected to analyze the status of river water quality (***Annexure-V***) and to understand the characteristics of possible polluting sources at different locations along the course of the river.

During mapping joint teams observed that apart from rain water, the river receives discharge of untreated sewage from major towns (Bhagwanpur, Roorkee) & several villages along its stretch including discharge of treated sewage from 33 MLD STP in Roorkee city.

River Solani is divided into three stretches for study that have been classified on the basis of comparable values of flow and water quality. The three stretches are:

- Stretch – I: Origin to u/s of Roorkee
- Stretch – II: u/s of Roorkee to u/s of Laksar
- Stretch – III: D/s of Laksar to River Solani before confluence with River Banganga

Stretch – I: Origin to u/s of Roorkee

In this stretch, river receive flow from rain along with discharge of untreated sewage from nearby villages namely Kishanpur, Hasanpur, on its travel length. River water observed clean indicated that there is no visible pollution. One sample was collected for river water quality assessment. Analysis results of river sample shows pH-8.5, DO-6.2 mg/l, BOD-2.51 mg/l, COD-14 mg/l, TSS-41 mg/l and TDS-290 mg/l indicating that quality of river water is found clean in this stretch. River water quality was meeting primary water quality criteria for bathing w.r.t. pH (8.5), DO (6.2 mg/l) and BOD (2.51 mg/l).

Stretch – II: u/s of Roorkee to u/s of Laksar

In this stretch, river receive major flow from discharge of 9 domestic drains (near Sultanpur) from Roorkee city, discharge of treated sewage from 33 MLD STP Roorkee along with one tributary namely Ratmau river which also originate from foothills of Shivalik range of Himalayas near Dehradun. Three river samples including one from Ratmau river were collected to analyze the status of river water quality in this stretch. Analysis results of Ratmau river water sample shows pH-8.1, DO-6 mg/l, BOD-1.17 mg/l, COD-9 mg/l, TSS-70 mg/l and TDS-204 mg/l. Values of Bio-chemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) in Solani river water samples are found in the range from BDL-7 mg/L and 7-29 mg/L, respectively indicating moderate organic load of polluting sources. Value of dissolve oxygen found in the range of 6-6.2 mg/l. However, the overall water quality observed in this stretch has characteristics of moderate pollution which may be attributed to the discharge of treated sewage from STP & untreated sewage of Roorkee via drains. Water quality of river Solani after confluence of river Ratmau was meeting primary water quality criteria for bathing w.r.t. pH (8.1), DO (6.2 mg/l) and BOD (BDL).

Monitoring of 33 MLD Saliyar STP-Roorkee:

Joint team also carried out inspection and monitoring of 33 MLD STP Roorkee for verification of compliance. Detailed inspection report is attached as ***Annexure-VI***. Major observations are as follows:

a. STP found operational during visit on 11.10.2023.
b. STP operating agency has not obtained CCA from UKPCB.
c. STP receive sewage via two no. of SPS namely Ganesh Nagar (12.5 MLD) and Mahigram (32 MLD). Presently STP receive only 8 MLD of sewage against design capacity of 33 MLD.
d. Ultrasonic type flow meter found installed at inlet & outlet of STP.
e. STP is operating on SBR technology with 03 nos. of SBR basins. One no. of SBR basin found non-operational during visit
f. Centrifuge (03 nos.) has been installed for the dewatering of raw sludge.
g. Chlorination through Cl_2 gas chlorinator dosing @ 3 – 6 kg/hr is being carried out for disinfection of treated sewage.
h. Sensor for online monitoring of BOD, COD and TSS found installed at inlet & outlet of STP but not connected with CPCB server.

i. Analysis results of samples collected from the SBR basin the during aeration phase show MLSS – 2391 mg/l & MLVSS – 994 mg/l.

j. Grab samples were collected from the inlet, outlet and SBR basin during the visit. Analysis results of samples collected from STP outlet indicate that STP is complying for w.r.t discharge norms prescribed under Hon'ble NGT order dated 30.04.2019 in O.A. No. 1069/2018 except **total phosphorus-2.7 mg/l (against norm of 1 mg/l) and fecal coliform-14×10^4 MPN/100 ml (against norm of <230 MPN/100 ml).**

k. Treated sewage is directly discharged into river Saloni via pipeline.

STP operating agency shall be directed to comply the following:

a. Augmentation of sewage network in STP catchment area to ensure optimum utilization of design capacity of STP.
b. Install OCEMS and provide its connectivity with CPCB/SPCB server.
c. Ensure consistent compliance with the discharge norms prescribed under Hon'ble NGT order dated 30.04.2019 in O.A. No. 1069/2018.
d. Optimize disinfection system as per feed flow condition.
e. STP shall obtain valid CCA from UKPCB.

Stretch – III: D/s of Laksar to River Solani before confluence with River Banganga

In this stretch, river receive flow from small domestic drains from nearby villages. One sample before confluence with River Banganga was collected for river water quality assessment. Analysis results of river sample shows pH-8.1, DO-6.1 mg/l, BOD-BDL, COD-BDL, TSS-87 mg/l, TDS-258 mg/l and FC-230 MPN/100 ml indicating that quality of river water is clean in this stretch. River was meeting primary water quality for bathing w.r.t. pH (8.1), DO (6.1 mg/L), BOD (BDL) & FC (230 MPN/100 ml).

After confluence of Laksar drain in Banganga River, the River Banganga traverses a distance of approximately 23.3 Kms before meeting the Solani River. Water sample was collected from River Solani before confluence with Banganga River. The dissolved oxygen level in the Solani River was observed to be 6.12 mg/L. To assess the impact of the Solani River on the Banganga River, water samples were collected from the Banganga River before and after the confluence with the Solani River.

The laboratory analysis results are shown in **Table-9** given below:

Table 9: Laboratory analysis results of water samples collected from River Solani

Stretch	Monitoring location	Physical observations	Quality	Remarks
I: Origin to u/s of Roorkee	River Solani u/s STP Saliyar	-	pH-8.5, DO-6.2 mg/l, BOD-2.51 mg/l, COD-14 mg/l, TSS-41 mg/l and TDS-290 mg/l	Water quality of river was meeting primary water quality criteria for bathing w.r.t. pH, DO and BOD.
II: u/s of Roorkee to u/s of Laksar	River Solani d/s Roorkee bridge	-	pH-8.1, DO-6 mg/l, BOD-7 mg/l, COD-29 mg/l, TSS-28 mg/l and TDS-354 mg/l	Water quality of river was meeting primary water quality criteria for bathing w.r.t. pH and DO.
	River Sonali a/c River Ratmau	-	pH-8.1, DO-6.2 mg/l, BOD-BDL, COD-7 mg/l, TSS-74 mg/l and TDS-258 mg/l	Water quality of river was meeting primary water quality criteria for bathing w.r.t. pH, DO and BOD.
III: D/s of Laksar to River Solani before confluence with River Banganga	Solani b/c to Banganga	River water was slightly turbid.	pH-8.1, DO-6.1 mg/l, BOD-BDL, COD-BDL, TSS-87 mg/l, TDS-258 mg/l and FC-230 MPN/100 ml	Water quality of river was meeting primary water quality criteria for bathing w.r.t. pH, DO, BOD and FC.

2.3.2. Pollution source mapping of Laksar drain

Pollution source mapping of Laksar drain was carried out from its origin in Laksar town (Uttar Pradesh) to confluence with River Banganga near Idrishpur village in Uttar Pradesh during Oct 11th – 12th, 2023 by the committee. From origin to confluence with River Ganga, Laksar drain was monitored and wastewater samples from the drain were collected at five locations. To assess the impact of Laksar drain on River Banganga, water samples of River Banganga were also collected before and after the confluence of the Laksar drain.

The water samples collected from drains and Rivers were analyzed for physico-chemical properties. The laboratory analysis results are collectively attached as *Annexure-V.* The monitoring locations on Laksar drain and River Banganga are given in **Table-10**:

Table 10: Monitoring locations on Laksar drain and River Banganga

S. no.	Monitoring locations on drain	Date of monitoring	Flow (MLD)	Geographical coordinates		Sample collected
				Latitude	Longitude	
1.	Laksar drain near railway track (0.4 Kms from origin)	12/10/2023	Could not be	29.749017	78.024849	Yes

S. no.	Monitoring locations on drain	Date of monitoring	Flow (MLD)	Geographical coordinates		Sample collected
				Latitude	Longitude	
			measured			
2.	Laksar drain upstream of M/s R.B.N.S. Private Limited, Shekhpuri, Laksar (Uttarakhand) (0.34 Kms*)	11/10/2023	3.6	29.750117	78.027595	Yes
3.	Laksar drain near Nasrullapur village (downstream of M/s R.B.N.S. Private Limited, Shekhpuri, Laksar (Uttarakhand)) (1.46 Kms*)	11/10/2023	Could not be measured	29.742559	78.03486	Yes
4.	Laksar drain near Akhoda Kalan village (1.68 Kms*)	11/10/2023	Could not be measured	29.732718	78.036621	Yes
5.	Hadwa drain before confluence with Laksar drain	12/10/2023	25.8	29.704305	78.02871	No
6.	Laksar drain after confluence with Hadwa drain (6.78 Kms*)	12/10/2023	143.5	29.690158	78.035797	Yes
7.	Laksar drain before confluence with River Banganga (9.71 Kms*)	11/10/2023	372	29.629473	78.01801	Yes

* Distance from previous monitoring location

The Laksar drain originates from Laksar town in Uttarakhand and carries storm water along with the untreated sewage of Laksar town. From origin to confluence with River Banganga, Laksar drain carry untreated sewage of several villages in the catchment. The drain traverses a distance of approximately 20.37 kilometers before confluence with River Banganga near Idrishpur village in Uttarakhand. The monitoring team interacted with the residents of the villages in the catchment of the drain. The villagers informed that polluted water in Laksar drain is observed when the unit is in operation.

Based on the pollution source mapping of Laksar drain, the total length of Laksar drain is divided into three stretches for study which are as follows:

- Stretch-I: Origin to upstream of Unit
- Stretch-II: Downstream of Unit to before confluence with Hadwa drain
- Stretch-III: After confluence with Hadwa drain to before confluence with river Banganga

The wastewater characteristics of Laksar drain as well as the observations made during monitoring are given in **Table-11**:

Table 11: Wastewater characteristics of Laksar drain

Stretch	Monitoring location	Physical observations	Quality	Remarks
I: Origin to upstream of Unit	Laksar drain near railway track	Solid waste dumping in drain was observed.	BOD-12 mg/L, COD-68 mg/L, TSS-20 mg/L & TDS-380 mg/L	Wastewater characteristics indicated that Laksar drain carry sewage only.
	Laksar drain u/s M/s R.B.N.S. Pvt. Ltd.	Flow-3.6 MLD	BOD-14 mg/L, COD-76 mg/L, TSS-27 mg/L & TDS-392 mg/L	
II: Downstream of Unit to before confluence with Hadwa drain	Laksar drain d/s M/s R.B.N.S. Pvt. Ltd.	-	BOD-11 mg/L, COD-66 mg/L, TSS-18 mg/L & TDS-396 mg/L	No impact of industrial discharge on Laksar drain was observed.
	Laksar drain near Akhoda Kalan village	-	BOD-15 mg/L, COD-76 mg/L, TSS-17 mg/L & TDS-488 mg/L	
III: After confluence with Hadwa drain to before confluence with river Banganga	Laksar drain a/c with Hadwa drain	• Flow significantly increased. • Fishing activities observed.	BOD-7 mg/L, COD-46 mg/L, TSS-21 mg/L & TDS-356 mg/L	Water quality of Laksar drain improved a/c with Hadwa drain.
	Laksar drain b/c with River Banganga	• Clear water. • Fish species observed.	BOD-7 mg/L, COD-40 mg/L, TSS-18 mg/L & TDS-360 mg/L	

Stretch-I: Origin to upstream of Unit

After approximately 0.4 kilometers from the origin, wastewater sampling was done from the Laksar drain near the railway track adjacent to the unit (**Figure-27**). Flow in the drain could not be measured due to high width and depth. Wastewater characteristics (BOD-12 mg/L and COD-68 mg/L) indicated that the drain carry sewage only.

Figure 27: Laksar drain near railway track (upstream of unit)

Further, at approximately 0.34 kilometers downstream, wastewater sampling was done from the Laksar drain at upstream of unit. Flow in the drain near lagoons was measured as 3.6 MLD. Municipal solid waste was dumped along the drain (**Figure-29**). Wastewater characteristics (BOD-14 mg/L and COD-76 mg/L) indicated that the drain carry sewage only.

Figure 28: Laksar drain upstream of unit

Figure 29: Solid waste dumped along Laksar drain

Stretch-II: Downstream of Unit to before confluence with Hadwa drain

The Laksar drain passes through the industry premises via an open channel. The industry has installed five lagoons, of which three were used for storing spent wash, one was used for storing treated effluent while one was not in use. The drain flow adjacent to these lagoons, and damage to the lagoon walls at various locations indicated the possibility of episodic

discharge of untreated wastewater into Laksar drain (**Figure-30**). Further, the Laksar drain passes adjacent to the ETP of Sugar plant with no defined boundary between the unit's ETP and Laksar drain which further indicates the possibility of discharge of untreated/partially treated effluent into the Laksar drain.

Further, at approximately 1.46 kilometers downstream, wastewater sampling was done from the Laksar drain near Nasrullapur village (downstream of M/s R.B.N.S. Private Limited, Shekhpuri, Laksar (Uttarakhand)). Flow in the drain could not be measured due to high width and depth. Wastewater characteristics (BOD-11 mg/L and COD-66 mg/L) did not indicate any impact of industrial discharge from the unit, i.e., M/s R.B.N.S. Pvt. Ltd., into Laksar drain.

Figure 30: Laksar drain near lagoons of the unit

Figure 31: Laksar drain near Nasrullapur village (downstream of unit)

Further, at approximately 1.68 kilometers downstream, wastewater sampling was done from the Laksar drain near Akhoda Kalan village. Flow in the drain could not be measured due to high width and depth. Wastewater characteristics (BOD-15 mg/L and COD-76 mg/L) did not indicate any impact of any industrial discharge from the unit, i.e., M/s R.B.N.S. Pvt. Ltd., into Laksar drain.

Stretch-III: After confluence with Hadwa drain to before confluence with river Banganga

After approximately 6.2 kilometers downstream, another drain namely Hadwa drain, which carries untreated sewage from villages in its catchment area, meets the Laksar drain near Mirzapur Sadat village. The drain flows adjacent to M/s Cavendish Industries Ltd., village

Khedi Mubarakpur, Uttarakhand. The flow of the Hadwa drain was measured near Bijopura village and was found to be 25.8 MLD (**Figure-32**).

Subsequently, approximately 6.78 kilometers downstream, the Laksar drain was monitored after its confluence with the Hadwa drain. After confluence, significant increase in the flow of Laksar drain was observed. Flow in drain was measured as 143.5 MLD (**Figure-33**). Clear water and fish population in the drain was observed and fishing activity by local people in the drain has been observed. Wastewater characteristics (BOD-7 mg/L and COD-46 mg/L) showed improvement in water quality of Laksar drain after confluence of Hadwa drain.

Figure 32: Hadwa drain before confluence with Laksar drain

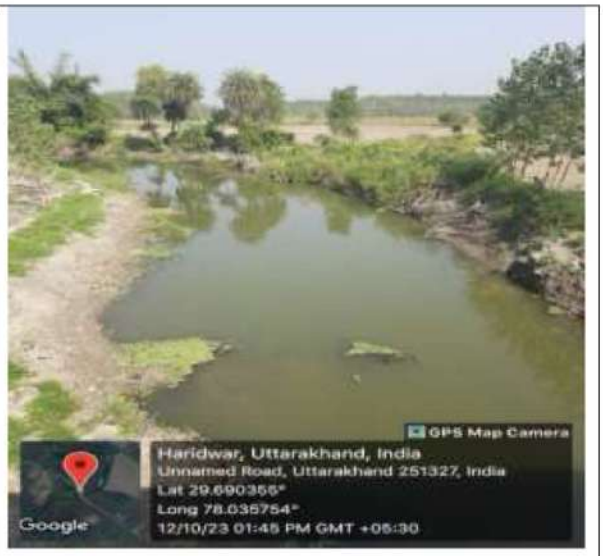


Figure 33: Laksar drain after confluence with Hadwa drain

Further, at approximately 9.71 kilometers downstream, wastewater sampling from the Laksar drain was done before confluence with River Banganga near Idrishpur village in Uttarakhand (**Figure-34**). At this location, clear water was observed in the drain, and various fish species were seen. The flow in the Laksar drain before its confluence with the Banganga River was measured as 372 MLD. Such high flow in Laksar drain may be attributed to the intrusion of freshwater from streams emanating from natural water bodies such as ponds, wetlands, etc. and discharge of untreated sewage from villages in the catchment area of the Laksar drain such as Bahdarpur, Dayalpuri, Tughlakpur, Khanpur, Tanda Jalalpur, Podowali, Lalchandwala, Kanewali Raisingh. Wastewater analysis results showed BOD-7 mg/L and COD-40 mg/L in Laksar drain b/c with river Banganga.

To evaluate the impact of Laksar drain on the Banganga River, water samples were collected from River Banganga before and after confluence of Laksar drain (**Figure-35**). The dissolved

oxygen levels in the Banganga River were found to be 6.18 mg/L and 5.84 mg/L before and after the confluence of the Laksar drain, respectively.

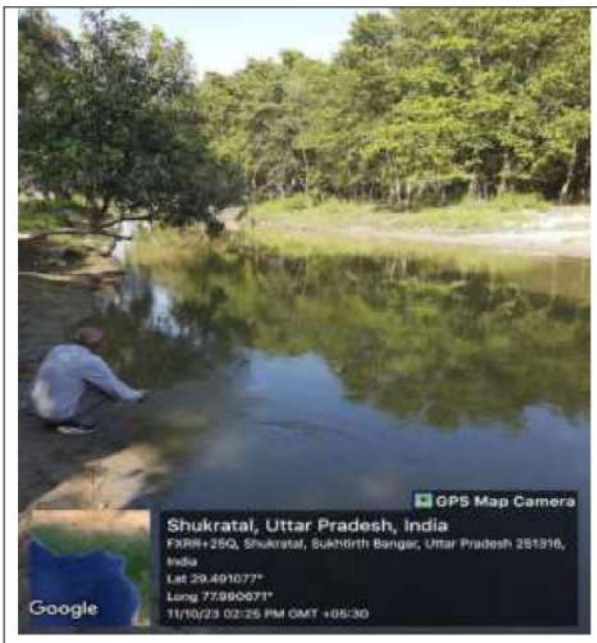


Figure 34: Laksar drain before confluence with River Banganga near Idrishpur village (Uttarakhand)

Figure 35: Confluence point of Laksar drain with River Banganga

2.3.3. Pollution source mapping of Hadwa drain

Hadwa drain is a subsidiary drain of Laksar drain which originates Laksar town and carry untreated sewage of villages in Laksar area. Hadwa drain meets Laksar drain near Mirzapur Sadat village. Hadwa drain was monitored at two locations. Wastewater sampling of Hadwa drain was done at Roorkee-Laksar Road, which is upstream of Laksar town (**Figure-36**). Flow was measured as 2 MLD. Wastewater characteristics (BOD-11 mg/L and COD-60 mg/L) indicated that Hadwa drain carry sewage only. Further downstream, wastewater sampling was done from Hadwa drain before confluence with Laksar drain which is also the downstream of M/s Cavendish Industries Ltd. Village Khedi Mubarakpur, Uttarakhand (**Figure-37**). Flow was measured as 25.8 MLD, BOD-8 mg/L and COD-46 mg/L. Increased flow in Hadwa drain was observed due to discharge of untreated sewage from nearby villages in the catchment such as Majri, Kheri Mubarakpur and Maheshwara. The wastewater characteristics of Hadwa drain are shown in **Table**-12:

Table 12: Wastewater characteristics of Hadwa drain

Monitoring location	Physical observation	Quality	Remarks
Hadwa Drain u/s Laksar	Flow-2 MLD	BOD-11 mg/L, COD-60 mg/L, TSS-25 mg/L, TDS-388 mg/L, Sulphate-17 mg/L	Drain carry sewage of villages ion the catchment.
Hadwa drain b/c of Laksar drain	Flow-15 MLD	BOD-8 mg/L, COD-46 mg/L, TSS-28 mg/L, TDS-384 mg/L, Sulphate-13 mg/L	No impact of industrial discharge on drain was observed.

Figure 36: Hadwa drain at Roorkee- Laksar road, u/s of Laksar

Figure 37: Hadwa drain b/c with Laksar drain

3. Conclusions

1. Joint committee comprising of officials from CPCB, MoEF&CC, NMCG, UPPCB, UKPCB, and district administrations of Haridwar and Muzaffarnagar convened meeting and site visits in compliance to Hon'ble NGT orders dated 14.8.23 & 23.8.23 in OA No 495/2023 & 530/2023.

2. Details of the site visit undertaken by committee are mentioned in Para 2.2.

3. In compliance to Hon'ble NGT orders mentioned above the committee interacted with both applicants and same are mentioned in Para 2.2.2.2 & 2.2.2.5.

4. The committee verified the factual status w.r.t. industries located in Laksar & Muzaffarnagar areas and same are mentioned in Para 2.2 & 2.3.

5. Also, committee carrried out mapping and monitoring of River Banganga, its tributary (River Solani) and Laksar drain & its first order drain (Hadwada drain). The conclusion on water quality of rivers are mentioned in below point 6 onwards.

6. ***River Banganga:***

i. River Banganga originates near Mahtauli village in Roorkee district, Uttarakhand after receiving untreated sewage from villages such as Mahtauli, Tanda, Mubarakpur, Chamrawal, Nehandpur Suthari and Muzaffarpur Gujra Jadeed and confluences with river Ganga near Haiderpur wetland near Bijnor Ganga Barrage in Uttar Pradesh.

ii. River Banganga lacks freshwater source from its origin till downstream of Sultanpur town in Uttarakhand. River Banganga receive freshwater from Pathri river and, after confluence of Pathri river, water quality of river Banganga was meeting primary water quality criteria for bathing w.r.t. pH, BOD and FC.

iii. Near Idrishpur village in Roorkee district, Uttarakhand, Laksar drain confluences with river Banganga. No industrial pollution in Laksar drain was observed however during visit, the industries in the catchment of Laksar drain i.e., M/s R.B.N.S. Pvt. Ltd. (Sugar & Distillery) were found non-operational.

iv. Fishes were observed in Laksar drain after confluence of Hadwa drain till its confluence with river Banganga. Water quality of river Banganga improved after confluence of Laksar drain and was meeting primary water quality criteria for bathing w.r.t. pH, DO, BOD and FC.

v. At approximately 1.3 Kms upstream of Shukratal Ghat in Muzaffarnagar district, river Solani meets with Banganga and water quality of river Banganga was meeting primary water quality criteria for bathing w.r.t. pH, DO, BOD and FC.

7. River Solani:

i. River Solani originates from the Himalayan foothills, near Dehradun and runs along an approximate length of 145 km through Biharigarh, Bhagwanpur, Roorkee, Laksar city/towns before falling into River Banganga at upstream of Shukratal in Muzaffarnagar.

ii. River Solani receive flow from rain along with discharge of untreated sewage from nearby villages namely Kishanpur, Hasanpur etc and treated sewage of 33 MLD STP

Roorkee. Moderate pollution in river was observed from origin to upstream of Laksar town. The STP was found complying w.r.t discharge norms prescribed under Hon'ble NGT order dated 30.04.2019 in O.A. No. 1069/2018 except Total phosphorus (2.7 mg/L against norm of 1 mg/l) and Faecal coliform (14 x 10^4 MPN/ 100 ml against norm of <230 MPN/100 ml).

iii. The water quality of river Solani before confluence with river Banganga was meeting primary water quality criteria for bathing w.r.t. pH, DO, BOD and FC.

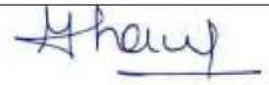
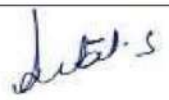
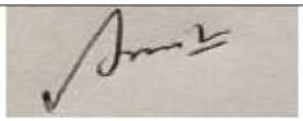
iv. Water quality of River Banganga after confluence of River Solani at Shukratal Ghat, Muzaffarnagar was meeting primary water quality criteria for bathing w.r.t. pH, DO, BOD and FC.

8. Due to non-operation of M/s RBNS Sugar & Distillery the industrial impact on Laksar drain couldn't be assesed. Analysis results of the samples collected from Laksar drain doesn't indicates any industrial pollution impact and after confluence with Hadwada drain fishes were observed in it till its confluence to Banganga river. However, industrial units namely M/s RBNS Sugar & Distillery units have potential to pollute Laksar drain. Similarly, M/s Cavendish India ltd. has potential to pollute the Hadwa drain which ultimately meets Laksar drain.

9. The recommendations of the committee w.r.t. Sugar unit, Distillery unit, M/s Cavendish India Ltd and STP as mentioned in respective sections may be implemented under supervision of UKPCB.

10. In view of colour in the groundwater sample collected from the handpump near the bio-compost yard of the distillery complex, it is recommended that UKPCB shall carry out detailed assessment of groundwater quality including ground water sampling & analysis in and around the unit to ascertain the groundwater contamination, if any, and need for remediation. Depending on such study, detailed remedial action plan be also prepared and executed by UKPCB in time bound manner.

Signature of inspecting officials:

S. No.	Name of Officers	Signature
1.	Sh. G.S.Chauhan, SDM Laksar	
2.	Sh. Ankit Singh, RO Muzaffarnagar, UPPCB	
3.	Ms. Reena Satavan, Sc- 'E', CPCB Delhi	
4.	Dr. A. K. Gupta, Sc- 'E', MoEF&CC Lucknow	
5.	Dr. K. Mondal, Sc- 'D', MoEF&CC Dehradun	
6.	Sh. S. P. Singh, RO Roorkee, UKPCB	
7.	Sh. Narendra Bahadur Singh, ADM Muzaffarnagar	Concurrence received by e-mail.
8.	Dr. Ishaq Ahmed, Sc- 'C', NMCG	
9.	Dr. Pankaj Kumar, Sc- 'D', CPCB Delhi	

10.	Sh. Vipin Kumar, RA-III, CPCB Delhi	
11.	Ms. Anshul Kumari, RA-III, CPCB Delhi	
12.	Dr. Vivek Rana, RA-I, CPCB Delhi	
13.	Sh. Ankit Shukla, SRF, CPCB Delhi	
14.	Sh. Muktesh Chaudhari, SRF, CPCB Delhi	

Committee meeting in matter OA No 495/2023 & 530/2023 (14.9.23)

S.No	Name of the official & mobile number	Organisation & Designation	Signature
1	S.P. Singh 9412084974	UKPCB, Roorkee Regional office	
2.	Imraan Ali Vipin Kumar	A.E.E. UPPCB M2N CPCB, Delhi	Vipin Kumar
3			
4 —	Dr A.K. Gupta, Sci-E R.O. MoEF&CC Lucknow 8004923480	Regional office MoEF&CC, Lucknow	
5.	G.S. Chauhan Scom (Laksar) Haridwar	Scom(L) 7351700710	14.09.2023
6.	Mr. ANKIT SHUKLA	SPF, CPCB, Delhi	
7	Satendra Kumar	DAO Muzaffarnagar	14/09/2023
8)	Dr. Shahid Parveen	JRF UKPCB, ROR	
9)	Reena Sataran	Sc E, CPCB - Delhi	
10.	Dr. Kanchanlata Mandal.	Sc-D, MoEFCC	
11)	Dr. Pankaj Kumar	Sc'D' CPCB	
12)	Anshul Kumari	CPCB, Delhi	
13)	Dr. Vivek Rana	CPCB, Delhi	
14)	NARENDRA BAHADUR SINGH	ADM (E) M2N	
15.	ANKIT SINGH	RO. UPPCB M2N	14/09/23 ADM(E)

क्षेत्रीय कार्यालय
उत्तराखण्ड प्रदूषण नियंत्रण बोर्ड
सिंचाई परिकल्प भवन परिसर, रुड़की -247667 हरिद्वार

पत्रांक-यूकेपीसीबी/आर0ओ0आर0/सा0-147(53)/2023/ 753 दिनांकः 13.09.2023

पंजीकृत डाक द्वारा

सेवा में,

Dr. A.K. Vidyarthi,
Director and Divisional Head WQM-II
Central Pollution Control Board, East Arjun Nagar
New Delhi.

विषयः- मा0 राष्ट्रीय हरित अधिकरण में योजित **O.A. No. 495/2023 Mohd. Amjad & Anr. Versus State of U.P. & Ors** के सम्बन्ध में पारित आदेश दिनांक 14.08.2023 के अनुपालन के सम्बन्ध में।

महोदय,

कृपया उपरोक्त विषयक मा0 राष्ट्रीय हरित अधिकरण में योजित O.A. No. 495/2023 Mohd. Amjad & Anr. Versus State of U.P. & Ors के सम्बन्ध में पारित आदेश दिनांक 14.08.2023 के अनुपालन में आपको अवगत कराना है, कि जिला- हरिद्वार के तहसील- लक्सर में स्थापित मै0 आर0बी0एन0एस0 शुगर मिल लि0, से जनित शुद्धिकृत उत्प्रवाह को लक्सर ड्रेन के अन्तर्गत निस्तारित किये जाने की अनुमति है। इसके अतिरिक्त तहसील- लक्सर में स्थापित अन्य किसी भी उद्योग द्वारा प्रत्यक्ष व अप्रत्यक्ष रूप से उत्प्रवाह निस्तारित नही किया जाता है। **(सूची संलग्न)।**

संलग्नकः- यथोपरि।

भवदीय,

13/09/2023

(एस0 पी0 सिंह)
क्षेत्रीय अधिकारी

S. No.	Name of Industry	Industry Type	Whether EC has been granted (EC No. & date	Whether CTE/CTO has been granted (CTO No. & date	Contact details of the point person with Mobile No. & e-mail
1	M/s JMV Ispat, khasra No-23-village-gangnoli, Tehsil-Laksar,	Steel and steel products using various furnaces like blast furnace /open hearth furnace/induction furnace/arc furnace/submerged arc furnace /basic oxygen furnace /hot rolling reheated furnace	NA	31.03.2022 Now Application under process	8392905163 hs.maan@dsrolling.in
2	R.B.N.S. SUGAR Mills Ltd., Laksar Haridwar.	Distillery (molasses / grain / yeast based)	IA-J-11011/618/2010-IAII(I) 27.08.2021	31.03.2023 Now Application under process	9927019571 vikasom407@gmail.com
3	SHREE CEMENT ltd, vill akbarpur urd, tehsil lakshar-vill akbarpur urd, tehsil lakshar, laksar	Cement	SCL/ENV/HARIDWAR/2009 20.02.2009	31.03.2026	8755050039 envrgu@shreecement.com
4	Yogi Industries, khasra no-472-village - akbarpur oud, near shree cement, laksar,lkr-akbarpur	Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black	NA	31.03.2024	9759839410 yogi.industries252@gmail.com
5	GREEN BIO FEEDS PVT LTD, Vill Podowali-Laksar,LKR-Podowali , Lakshar	Pharmaceutical formulation and for R & D purpose (For sustained release/ extended release of drugs only and not for commercial purpose)	NA	31.03.2024	9312286169 greenbiofeed@gmail.com
6	M\S D.S ROLLING MILLS (P) LTD, khashra no 192,195,197,190,189,188-vill-Dayalpur,LKR-LaKSAR	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H & TBM) rules, 2008 - Items namely - Used Oil – As per specifications prescribed from time to time.	EC22A008UK196830 Issue Date: 28.04.2022	31.03.2025	8392905163 hs.maan@dsrolling.in
7	Narmada Agro fertilizers and	Fertilizer (granulation /	NA	31.03.2027	9758063883 avnishgupta1979@gmail.com

	chemicals, plot no-243, Vill- Akbarpur Urd, Laksar, Haridwar	formulation / blending only)			
8	ALFA INGOT private limited, khasra no.-264 m, village gangnauli, laksar, haridwar	Steel and steel products using various furnaces like blast furnace /open hearth furnace/induction furnace/arc furnace/submerged arc furnace /basic oxygen furnace /hot rolling reheated furnace	NA	31.12.2022 Now Application under process	9917200010 yasirarafat2024@gmail.com
9	APT Packaging ltd, Khasra No.- 529- Village- Akbarpur Urd, Laksar,Haridwar,LKR-Akbarpur Urd	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Paint and ink Sludge/residues	NA	30.09.2024	9837747895 hrharidwar@aptpackaaging.in
10	Chaudhary Enterprises Company, Kh No- 61 & 64, Vill-Tugalpur (Govardhanpur), Tehsil- Laksar, Distt-Haridwar.	Tyre Pyrolysis Plant	NA	31.03.2023 Now Application under process	9416060541 dilbaguchana@yahoo.com
11	Shiv India pharmaceuticals, MIE 12-15 Pipli Laksar Road-Laksar, ROK-laksar road pipli	Ayurvedic and homeopathic medicines (without boiler)	NA	30.09.2024	9897770065 shivindiapharmaceuticals@gmail.com
12	Cavendish indiustries ltd (formely birla tyres), unit of j.k. tyres-village-khedimubarakpur,lkr-khedi mubarakpur	Tyres and tubes vulcanization/ hot retreating	NA	30.09.2024	7351002439 patni2k1@gmail.com
13	TIDC INDIA -A UNIT OF TUBE INVESTMENTS OF INDIA LIMITED, Khasra No. 230 and 231, Village-Gangnauli, Tehsil-Laksar, District-Haridwar,	Automobile Manufacturing (integrated facilities)	NA	31.03.2027	8171000703 singhk@tii.murugappa.com

S. No.	Name of Unit	Description of Manufacturing Process/Products	Consented Water requirement	Consent Discharge Quantity	Mode of Disposal of treated waste water
1	M/s JMV Ispat, khasra No-23-village-gangnoli, Tehsil-Laksar,	Steel and steel products using various furnaces like blast furnace /open hearth furnace/induction furnace/arc furnace/submerged arc furnace /basic oxygen furnace /hot rolling reheated furnace	Domestic- 1.0	Domestic-1.0	In House Septic Tank/Soakpit
3	SHREE CEMENT ltd, vill akbarpur urd, tehsil lakshar-vill akbarpur urd, tehsil lakshar, laksar	Cement	Domestic- 30	Domestic-20.0	In House STP Treated water of STP used in gardening/Green Belt
4	Yogi Industries, khasra no-472-village - akbarpur oud, near shree cement, laksar,lkr-akbarpur	Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black	Industrial- 2.0 Domestic- 1.0	Trade Effluent-1.0 Domestic-0.8	In House ETP Treated water of ETP used in gardening/Green Belt
5	GREEN BIO FEEDS PVT LTD, Vill Podowali-Laksar,LKR-Podowali , Lakshar	Pharmaceutical formulation and for R & D purpose (For sustained release/ extended release of drugs only and not for commercial purpose)	Domestic-1.0	Domestic - 0.8	In House Septic Tank/Soakpit
6	M\S D.S ROLLING MILLS (P) LTD, khashra no 192,195,197,190,189,188-vill-Dayalpur,LKR-LaKSAR	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H & TBM) rules, 2008 - Items namely - Used Oil – As per specifications prescribed from time to time.	Domestic- 10.0	Domestic-6.0	In House STP Treated water of STP used in gardening/Green Belt
7	M/s Narmada Agro fertilizers and chemicals, plot no-243, Vill- Akbarpur Urd, Laksar, Haridwar	Fertilizer (granulation / formulation / blending only)	Domestic- 5.0	_	In House Septic Tank/Soakpit
8	ALFA INGOT private limited, khasra no.-264 m, village gangnauli, laksar, haridwar	Steel and steel products using various furnaces like blast furnace /open hearth	Domestic- 2.0	Domestic - 1.5	In House Septic Tank/Soakpit

		furnace/induction furnace/arc furnace/submerged arc furnace /basic oxygen furnace /hot rolling reheated furnace			
9	APT Packaging ltd, Khasra No.- 529- Village- Akbarpur Urd, Laksar,Haridwar,LKR-Akbarpur Urd	Industries engaged in recycling / reprocessing/ recovery/reuse of Hazardous Waste under schedule iv of HW(M, H& TBM) rules, 2008 - Items namely - Paint and ink Sludge/residues	Domestic- 2.0	Domestic- 1.0	In House Septic Tank/Soakpit
11	Chaudhary Enterprises Company, Kh No- 61 & 64, Vill- Tugalpur (Govardhanpur), Tehsil- Laksar, Distt- Haridwar.	Tyre Pyrolysis Plant	Industrial- 3.0 Domestic- 2.0	Trade Effluent-2.0 Domestic- 1.0	In House ETP Treated water of ETP used in gardening/Green Belt
12	Shiv India pharmaceuticals, MIE 12-15 Pipli Laksar Road-Laksar, ROK-laksar road pipli	Ayurvedic and homeopathic medicines (without boiler)	Industrial- 1.0 Domestic- 2.0	Trade Effluent-0.5 Domestic - 1.6	In House ETP Treated water of ETP used in gardening/Green Belt
13	TIDC INDIA -A UNIT OF TUBE INVESTMENTS OF INDIA LIMITED, Khasra No. 230 and 231, Village- Gangnauli, Tehsil- Laksar, District- Haridwar,	Automobile Manufacturing (integrated facilities)	Domestic- 25.0 Industrial- 20.0	Trade Effluent-12.0 Domestic- 16.0	In House ETP & STP Treated water of ETP & STP used in gardening/Green Belt

मैं राजन कुमार S/o अशोक कुमार निवासी केदला
यह बताना चाहता हु हमारे पास डिस्टलरी लगी
हुई है जिसमे आसपास पानी काफी दूषित है
एवं उद्योग से बदबु भी आती है जिससे पानी खेतो
में जा रहा है जिससे फसले खराब हो रही है।

राजन कुमार
15-9-2023
No-9045949606

मैं विवेक कुमार S/o बलेश कुमार निवासी केदला
यह बताना चाहता हु हमारे पास डिस्टलरी लगी है
जिससे पानी काफी खराब हो चुका है एवं उद्योग से
बदबु आती है जिससे पानी खेत में जा रहा है
जिससे ~~xxxx~~ खबरे बहुत खराब हो रही है और
यह काफी वर्षो से हो रहा है।

विवेक
15/9/23
7505838939

8791286310 Ankur Kumar

4. मैं जगदीश कोहली पुत्र ओम प्रकाश कोहली निवासी केहड़ा निकट RBNS Sugarmill यह बताना चाहता हूँ कि आज के समय में हमें कोई समस्या नहीं है।

Jagdish Kohli
15-9-2023
9219738764

5. निर्दोष कुमार S/o रिछपाल सिंह निवासी ग्राम केहड़ा यह बताना चाहता हूँ कि ~~इसका~~ हमारे गाम के डिस्टलरी लगी हुई है। जिससे आसपास का पानी दूषित हो गया है एवं उद्योग से बदबू भी आती है। इसके कम्पोस्ट यार्ड से पानी खेतों में जा रहा है जिससे फसलें खराब हो रही है।

[signature]
15/09/23
मो० 9690727522

Annexure-V: Laboratory analysis results of river and drain

Lab Analysis Results of River Banganga

S. No.	Location	DO	pH	Color	BOD	COD	TSS	TDS	SO_4^{--}	Cl^-	Conductivity	NH_3-N	As	Cd	Cr	Cu	Fe	Pb	Mn	Ni	Zn	TC	FC
1.	River Banganga a/c River Pathri	4.46	8.2	BDL	2.21	10	19	372	44	21	547	-	-	-	-	-	-	-	-	-	-	4900	1300
2.	Banganga b/c Laksar Drain	6.2	8.2	BDL	1.85	10	9	344	28	20	525	BDL	0.01	BDL	BDL	BDL	2.46	BDL	0.28	BDL	0.01	2800	78
3.	Banganga a/c Laksar drain	5.8	8.2	BDL	BDL	BDL	26	304	20	20	548	BDL	0.01	BDL	BDL	BDL	2.08	BDL	0.3	BDL	0.02	2400	490
4.	Banganga b/c Sonali	7.1	8.2	BDL	1.19	8	24	334	22	16	522	BDL	0.02	BDL	BDL	BDL	1.1	BDL	0.13	BDL	BDL	1300	130
5.	Banganga a/c Sonali	6.4	8.2	BDL	2.29	9	44	276	17	17	475	BDL	0.02	BDL	BDL	BDL	2.32	BDL	0.14	BDL	0.01	1100	230

Lab Analysis Results of River Solani

S. No.	Location	DO	pH	Color	BOD	COD	TSS	TDS	SO_4^{--}	Cl^-	Conductivity	NH_3-N	As	Cd	Cr	Cu	Fe	Pb	Mn	Ni	Zn	TC	FC
1.	River Solani u/s STP Saliyar	6.2	8.5	BDL	2.51	14	41	290	13	20	441	-	-	-	-	-	-	-	-	-	-	-	-
2.	River Solani d/s Roorkee bridge	6.0	8.1	7	7	29	28	354	19	34	625	-	-	-	-	-	-	-	-	-	-	-	-
3.	River Sonali a/c River Ratmau	6.2	8.1	BDL	BDL	7	74	302	25	23	440	-	-	-	-	-	-	-	-	-	-	-	-
4.	Solani b/c to Banganga	6.1	8.1	BDL	BDL	BDL	87	258	14	17	430	BDL	0.01	BDL	BDL	BDL	5.07	BDL	0.27	BDL	0.02	1300	230

Lab Analysis Results of River Ratmau

S. No.	Location	DO	pH	Color	BOD	COD	TSS	TDS	SO_4^{--}	Cl^-	Conductivity
1.	River Ratmau on bridge	6.0	8.1	BDL	1.17	9	70	204	35	20	320

Lab Analysis Results of Laksar Drain

S. No.	Location	pH	Color	BOD	COD	TSS	TDS	SO_4^{--}	Cl^-	Conductivity	NH_3-N	As	Cd	Cr	Cu	Fe	Pb	Mn	Ni	Zn
1.	Laksar drain near railway track	7.2	BDL< 05	12	68	20	380	16	36	690	6	BDL	BDL	0.028	BDL	0.686	BDL	0.238	BDL	BDL
2.	Laksar drain u/s M/s R.B.N.S. Pvt. Ltd.	7.1	BDL< 05	14	76	27	392	24	38	697	2	BDL	BDL	0.004	BDL	2.147	BDL	0.098	BDL	0.03
3.	Laksar drain d/s M/s R.B.N.S. Pvt. Ltd.	7.1	BDL< 05	11	66	18	396	31	34	705	2	BDL	BDL	0.004	BDL	0.847	BDL	0.143	BDL	BDL
4.	Laksar drain near Akhoda Kalan village	7.3	BDL< 05	15	76	17	488	61	81	960	7	BDL	BDL	0.06	BDL	0.75	BDL	0.354	BDL	BDL
5.	Laksar drain a/c with Hadwada drain	7.2	BDL< 05	7	46	21	356	20	26	710	2	BDL	BDL	0.026	BDL	0.896	BDL	0.499	BDL	BDL
6.	Laksar drain b/c with River Banganga	7.4	BDL< 05	7	40	18	360	22	63	704	2	BDL	BDL	BDL	BDL	1.117	BDL	0.274	BDL	BDL

Lab Analysis Results of Hadwa Drain

S. No.	Location	pH	Color	BOD	COD	TSS	TDS	SO_4^{-}	Cl^{-}	Conductivity	TC	FC
1.	Hadwa Drain u/s Laksar	7.1	BDL<05	11	60	25	388	17	42	748	-	-
2.	Hadwa drain b/c of Laksar drain	7.3	BDL<05	8	46	28	384	13	26	720	7000	3300

Annexure-VI: STP Inspection report

Central Pollution Control Board
Format for monitoring of Sewage Treatment Plants (STPs/CETPs)

1.	**Name/Location of STP/CETP (full address)**		:	STP Saliyar, Roorkee
2.	**Coordinates (In decimal units e.g. 12.34567°)**	**Latitude**	:	29.418459
		Longitude		77.700320
3.	**Designed capacity of STP and Treatment Technology**		:	33 MLD, Sequential Batch Reactor (SBR)
4.	**a. Date of monitoring and starting time**		:	11.10.2023
	b. Type of sampling (Grab or Composite)		:	Grab
	c. If composite mentioned total hours and interval (eg. 12 hr composite at 2 hr interval)		:	NA
5.	Agency/organisation responsible for O&M (Name of agency & contact person, Mob., E-mail)		:	Uttarakhand Jal Sansthan Mr. Manoj (AEE), 9761212691
6.	Whether Operation through Sub contractor, if any, details thereof with contact information (Name of agency, contact person with designation, Mob., E-mail)		:	KEC international Ltd. Mr. Sushil Kumar Mishra, 9012801708 mishrasa@kecrpg.com
7.	Year of commissioning (Operational since)		:	2020
8.	a. Operational/Non-functional/Non-operational (be specific in functionality status) b. Reason, if non-functional/non-operational and time since non-functional/non-operational		: :	Operational
9.	STP designed parameter (flow, BOD, COD, TSS etc.& mentioned values of designed parameter)		:	BOD≤10, TSS≤10, Faecal coliform ≤500 MPN,
10.	Utilized Capacity as reported by operator **or** verified from log book (MLD)		:	7.89 MLD as per logbook of September, 2023
11.	Actual treatment (Inflow during visit) (m^3/hr x hrs.)		:	NA
12.	If operating under designed capacity, give reason		:	Improper sewage network connectivity
13.	Flow meter/v-notch at Inlet of STP & reading		:	Ultrasonic flow meter without totalizer
14.	Flow meter/v-notch at Outlet of STP & reading		:	Ultrasonic flow meter without totalizer
15.	Fresh water supply source (in STP premises) if any, details (source, water consumption status, logbook, meter)		:	01 Borewell, without flowmeter
16.	**Raw sewage characteristics** pH COD BOD TSS TDS (also FDS for CETPs) Total Nitrogen Total Phosphorus Sulphate Nitrate,		:	Mentioned at Sr. No. 61

	Phosphate, Ammonical Nitrogen Chloride Faecal Coliform Total Coliform Heavy metal (For Kanpur STPs)		
17.	Details of transfer sump	:	Not available
18.	Pre-treatment if any, details (screen, Equalization Tank)	:	Yes, Screen provided 2 mechanical & 1 manual
19.	Primary-treatment if any, details (Oil and Grease trap, grit, pre-settling tank)	:	02 No. grit chamber
20.	Primary Settling Tank (i) Primary Settling Tank Volume m^3 (ii) Settling Surface area m^3 (iii) Weir length m (iv) Retention Period (v) PST outlet pH, TSS, BOD, COD (mg/L) (vi) Underflow solids concentration mg/l or % (vii) Actual primary Sludge production rate (flow rate m^3/hr x hr/day) Availability of Mechanical Scrapper	:	NA
21.	No. of Biological Treatment stages	:	Single Stage
22.	**Treatment processes used in STP for sewage treatment along with order of the stage:** ASP – Activated sludge process; TF – Trickling filter; AL – Aerated lagoon; BT- Bio-tower; UASB – Up flow anaerobic sludge blanket; OP-Oxidation pond/WSP-waste stabilization ponds/ Aerated lagoon with or without lining; EA - Extended Aeration; BD –Biodigester; SBR – Sequential Batch Reactor; MBR – Membrane Bio Reactor; MBBR/FAB – Moving Bed Bio Reactor/Fluidized Aerobic Bed; SBT- Soil Biotechnology; Electrocoagulation or Any Other Treatment Technology used (describe)		
	SBR – Sequential Batch Reactor		
23.	Process parameters of Anaerobic Process for example **A. UASB& Others** (i) No. of reactors (ii) Capacity of each reactor (iii) Average flow (iv) HRT (v) UASB outlet BOD, COD, TSS (mg/l)	:	NA
24.	Process parameters of Aerobic Process for example **B. Activated Sludge Process** (i) Waste sludge generation (flow rate m^3/hr multiplied by hr/day) (ii) Waste sludge solids (TSS) concentration mg/l (iii) ASP outlet pH, TSS, COD, BOD **Aeration Tank** (i) Aeration Tank volume m^3 (ii) Retention period	:	NA

	(iii) Mixed Liquor MLSS, MLVSS&DO mg/l (iv) Aeration Capacity KW or HP (v) Related aeration capacity Kg/KW hr **Secondary Settling Tank** (i) Secondary Settling tank volume m^3 (ii) Settling Surface area m^2 (iii) Retention period (iv) Weir length m (v) Return flow rates m^3/hr or m^3/day (vi) Return flow solids (TSS) concentration		3 SBR basin having size 37 m x 37 m x 5.5 m (7530 m^3) each were provided, one found non-operational during visit NA
25.	Tertiary Treatment (Physico- Chemical) **(i) Coagulation and flocculation** **(ii) Dual Media Filter** **(iii) Adsorption** **(iv) Membrane Treatment** **(v) Any Other**	:	Not available
	Disinfection System		
26.	Disinfection Technology Installed	:	Yes
	Name of Technology used	:	Gas Chlorination
	Operational status (if Non-operational, Reasons)	:	Operational
	If chlorination based disinfection system a. Name of chemical/ form of chlorine b. Methodology (Mechanical/manual) c. Dosing Rate d. Type of chlorinator e. Chemical consumption record f. Dimension of the Chlorine contact tank g. Chlorine Contact Time/Retention time h. **Value of Residual Chlorine in treated sewage (ppm)** i. Methodology used for assessment of Residual chlorine : titrimetric method/ colorimetry (using ortho-toluidine or any other indicator)	: a. Chlorination b. Mechanical (02 Nos.) c. 05-08 kg/hr d. Gas chlorinator e. Provided f. 12 m x 26 m x 4 m (1248 m3) g. 30 min. at design decanting flow h. 0.3 ppm i. Colorimetry
	If Ozonation a. Pressure at which ozonation is performed b. Dosing rate (concentration of ozone dozed) c. Dosing tank Detail d. Contact time e. Flow rate of sewage	:	NA
	If UV Treatment a. UV Dose (mJ/cm^2) b. Dosing tank Detail c. Flow rate of sewage	:	NA
27.	**Treated sewage characteristics** Oil & Grease pH	:	Mentioned at Sr. No. 61

	BOD COD TSS TDS (also FDS for CETP) Total Nitrogen Total Phosphorous Nitrate (as N) Ammonical Nitrogen (as N) Phosphate (as P) Chloride Faecal Coliform Total Coliform **Residual Chlorine (if doing chlorination)** (Heavy metal for STPs) as per order & Other parameters (DO & MLSS/MLVSS for Aeration tank)		
28.	Sludge Thickener (i) Volume m^3 (ii) Thickening Surface m^3 (iii) Underflow solids concentration (mg/l) (iv) Actual thickened sludge production rate (Flow rate, m/hr multiplied by hr/day)	:	1 no. having size 19.3 m dia. X 3.5 m SWD
29.	Sludge Digester (i) Digester Volume m^3 (ii) Thickening sludge BOD & COD mg/l (iii) Actual digester sludge production rate(flow rate m^3/hr multiplied by hr/day)	:	NA
30.	Biogas produced, if any and its composition	:	NA
31.	Operational status of gas utilization	:	NA
32.	Power generation, if any	:	NA
33.	STP connected to sewerage network (Yes/ NO)		NA
34.	Mode of receiving raw sewage through (open drain/ sewerage network/ both)	:	NA
35.	Details of pumping stations (SPS/IPS/MPS) & area covered by each pumping station		02 Nos. of SPS, Mahigran (32.2 MLD) & Ganeshpur (12.5 MLD) provided
36.	Log book of pumping station (pump operation, breakdown, operational hours, etc.)		Not available
37.	Route of sewage reaching the STP (Area covered, SPS, MPS etc)		SPS (02 Nos.)
38.	Disposal of treated sewage (river/lake/irrigation/land/pisciculture/aquaculture/and other) Any plan for reuse of treated sewage	:	Solani River
	In case Land disposal (land & agreement details)/	:	NA
	Recycling and reuse of treated sewage	:	NA

	If reuse by Industry/organization (name of unit and contract)		
	Route of treated sewage to reach river	:	Via pipeline
39.	By Pass arrangement at STP/CETP, if any	:	No
40.	By pass observed at time of inspection (Yes/No) If yes pictures and description	:	No
41.	Method of sludge disposal description, avg. quantity of sludge generated per day and status (Satisfactory/unsatisfactory)	:	Dumping within STP premises
42.	Operation and maintenance of Sewage Treatment Plant (Satisfactory/unsatisfactory)	:	Satisfactory
43.	If unsatisfactory, details of major flaws observed	:	NA
44.	Power requirement	:	875 KVA
45.	Status of power availability for uninterrupted and continuous running of STP. Provide details of standby arrangement , if any	:	UKPCL & DG set of 1010 KVA (01 No.)
46.	Annual expenditure on O & M & STP	:	15 Lakhs/Months excluding electricity
47.	Consent Status from State Pollution Control Board/Pollution Control Committee (Water & Air)	:	Yes, Available
48.	Sewage generated (in MLD) in the area covered under STP	:	No information available
49.	Details of proposed or ongoing augmentation or upgradation of capacity or any new STP under construction	:	NA
50.	Augmentation of STPs for achieving stricter norms	:	None
51.	Volume of industrial waste being mixed in sewage, if any.	:	No information available
52.	Status of maintenance of log Books (inlet & outlet flow, pump operations, electricity, maintenance/breakdown maintenance)	:	Yes maintained
53.	Influent and Effluent quality monitoring schedule in own lab (parameter wise)	:	Yes, BOD, COD, TSS, pH, DO on daily basis
54.	Status of Skilled/trained Manpower (operation & laboratory)	:	40 Nos. (Skilled-28, Unskilled- 12) including SPS operators
55.	Status of Environmental Laboratory facility	:	Yes
56.	Status of Online Monitoring System (OCEMS) (Installed/not installed and connected to CPCB/SPCB server or not) Compliance to be verified of direction dated 10.08.2020	:	Sensor for online monitoring of BOD, COD and TSS found installed at inlet & outlet of STP but not connected with CPCB server
57.	Flow diagram of treatment (also to be attached)	:	Not available
58.	**Observations:** a. STP found operational during visit on 11.10.2023. b. STP operating agency has obtained CCA from UKPCB valid up to 31.03.2025. c. STP receive sewage via two no. of SPS namely Ganesh Nagar (12.5 MLD) and Mahigram (32 MLD). Presently STP receive only 8 MLD of sewage against design capacity of 33 MLD.		

d. Mechanical coarse screen and fine screen have been installed for the removal of floating trash.
e. Grit chambers (along with grit separators) have been installed for the removal of grit from raw sewage.
f. Ultrasonic type flow meter found installed at inlet & outlet of STP.
g. STP is operating on SBR technology with 03 nos. of SBR basins. One no. of SBR basin found non-operational during visit
h. Centrifuge (03 nos.) has been installed for the dewatering of raw sludge.
i. Complete STP operates in automation through SCADA software and flows at inlet & outlet are measured in this software.
j. Chlorination through Cl_2 gas chlorinator dosing @ 3 – 6 kg/hr is being carried out for disinfection of treated sewage.
k. Dried sludge found dumped inside premises of STP and is taken by nearby farmers for use in agricultural purposes.
l. Sensor for online monitoring of BOD, COD and TSS found installed at inlet & outlet of STP but not connected with CPCB server.
m. Onsite environmental laboratory is available inside the STP premises.
n. Analysis results of samples collected from the SBR basin the during aeration phase show MLSS – 2391 mg/l & MLVSS – 994 mg/l.
o. Grab samples were collected from the inlet, outlet and SBR basin during the visit. Analysis results of samples collected from STP outlet indicate that STP is complying for w.r.t discharge norms prescribed under Hon'ble NGT order dated 30.04.2019 in O.A. No. 1069/2018 except **Total phosphorus as 2.7** against norms of 1 mg/l and **Faecal coliform 14 x 10^4 (MPN/ 100 ml)** against norms of <230 MPN/100 ml.
p. Treated sewage is directly discharged into river Saloni via pipeline.

59. **Table: Analysis results of Inlet & Outlet samples**

S. No.	Parameter	STP Inlet	STP Outlet	Norms as per NGT order 30.04.2019	Complying Status as per NGT	Norms as per as per MoEF&CC notification dated 13.10.2017	Compliance status as per MoEF&CC dated 13.10.2017
1.	pH	7.2	6.9	5.5-9.0	Complying	**6.5-9.0**	Complying
2.	COD (mg/l)	232	69	50	Complying	-	
3.	BOD (mg/l)	73	14	10	Complying	20	Complying
4.	TSS (mg/l)	169	14	20	Complying	<50	Complying
5.	Cl- (mg/l)	63	53	-		-	
6.	NO_3-N (mg/l)	3	12.9	-		-	
7.	T. Kjeldahl Nitrogen - **TKN** (mg/l)	-	8	-		-	
8.	Phosphorus – Total (mg/l)	3.7	2.7	1mg/l (for discharge to ponds/lakes)	**Non-complying**	-	
9.	NH_3-N (mg/l)	-	7	-		-	
10.	Oil & Grease (mg/l)	-	BLD	-	Complying	-	

	11.	TC (MPN/ 100 ml)		54×10^4	-		-	
	12.	FC (MPN/ 100 ml)		14×10^4	< 230	**Non-Complying**	<1000	**Non-Complying**
	13.	**Aeration Tank-: MLSS** –2391 mg/l; **MLVSS** -994 mg/l						
60.	**Recommendations:** STP operating agency shall be directed to: a. augmentation of sewage network to ensure optimum utilization of design capacity of STP. b. install OCEMS and provide its connectivity with CPCB/SPCB server. c. ensure consistent compliance with the discharge norms prescribed under Hon'ble NGT order dated 30.04.2019 in O.A. No. 1069/2018. d. optimize disinfection system as per feed flow condition.							
61.	Pictures							

Fig 1: STP inlet screen

Fig 2: Inlet flow meter

Fig 3: SBR basin

Fig 4: Chlorine contact tank

Fig 5: Centrifuge

Fig 6: Gas chlorinator

Fig 7: Thickener

Fig 8: OCEMS

Annexure A1

118
HEAD OFFICE
Uttarakhand Pollution Control Board
"Gauradevi Paryavaran Bhawan"
46B, IT Park, Sahastradhara Road, Dehradun
E-mail : msukpcb@yahoo.com, Phone No.-0135-2607092

Letter No.: UKPCB/HO/Con-U-2/2023/920 Date: 06 .10.2023

REGD. POST

To,

M/S Rai Bahadur Narayan Singh Sugar Mills Ltd.,
(Distillery Unit)
Laksar, Distt. Haridwar
(Uttarakhand)

Subject: **Consolidated Consent to Operate and Authorisation hereinafter referred to as the CCA (Consolidated Consent & Authorization) Renewal under Section- 25 of the "Water (Prevention & Control of Pollution) Act., 1974"and under Section- 21 of the "Air (Prevention & Control of Pollution) Act, 1981"and Authorization under "Rule -6(2)"of the "Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016"notified under "Environment (Protection) Act, 1986"as applicable (to be referred hereinafter as Water Act, Air Act and HW Rules respectively).**

CAF ID: 9158	**Application No.** 2775076
CCA (Renewal)	**Date:-** 13.03.2023

Consolidated Consent and Authorization (CCA):

CCA is hereby granted to **M/S Rai Bahadur Narayan Singh Sugar Mills Ltd. (Distillery Unit)** located at Laksar, Distt. Haridwar (Uttarakhand) subject to the provisions of the **Water (Prevention and Control of Pollution) Act, 1974;** the **Air (Prevention and Control of Pollution) Act, 1981** and the **Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016** and the orders that may be made further and subject to following terms and conditions:

1. This CCA is granted for the period up to 31.03.2024, under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974, as amended.
2. This CCA is granted for the period up to 31.03.2024, under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981, as amended.
3. This CCA is granted for the period of 31.03.2024, under the Hazardous and Other Waste (Management & transboundary Movement) Rules, 2016 as amended.

4. **Production Capacity:**

S. No.	Declared by the industry		Permitted by Board	
	Raw Material/ Feedstock	**Finished Product (KLD)**	**Raw Material/ Feedstock (M^3/Day)**	**Finished Product (KLD)**
I.	C-Heavy/ B-Heavy Molasses- 372 M^3/Day	Ethanol/ENA/RS-60 KLD & Ethanol-60 KLD	C-Heavy/ B-Heavy Molasses- 372 M^3/Day	Ethanol/ENA/RS-60 KLD & Ethanol-60 KLD

5. **Production Process Infrastructure:** 119

S.no.	Declared by the unit				Permitted by the Board
	Number of fermenters	Capacity of fermenters (M^3	Type of fermentation technology adopted	Type of Distillation	
1.	07	6.5	Feed Batch	Molasses based	As declared by Unit.

Molasses storage infrastructures:

Declared by the unit			Permitted by SPCB
Capacity	No. of tanks	No. of lined pits*	
6000 Qtl. & 85000 Qtl.	02 Nos.	NA	6000 Qtl. & 85000 Qtl. (02 Nos.)

*The unit shall not store molasses in *Kaccha*/ unlined pits.

6. Water Conservation:

A. Fresh water Consumption

i. The unit shall obtain permission / NOC from State or Central Ground Water Authority for Groundwater abstraction and shall comply with the conditions mentioned in the NOC.

ii. Industry shall install separate sealed, calibrated Electro Magnetic Flow meters with flow totalizer at all water abstraction sources, utilization lines- process, domestic and boiler.

iii. The industry shall maintain duly signed logbook of fresh water consumption and utilization.

iv. The specific water consumption shall not exceed values mentioned below as per consented product type.

Category	Specific Water Consumption not to exceed
B-heavy / C-Heavy	8-10KL/KL of product
Cane syrup/ sugar cane juice	6-8KL/KL of product

	Declared by the Industry	Permitted by NOC issued by CGWA	CGWA conditions
No. of bore wells	01	01	To be complied.
Daily quantity of water to be abstracted (KLD)	200 KLD	500 KLD	

B. Effluent generation, treatment and disposal:

i. The quantity of maximum specific effluent generation shall be as specified below:

Category	Specific spent wash generation$, not to exceed
B-heavy / C-Heavy	6-8KL/KL of product
Cane syrup/ sugar cane juice	4-6KL/KL of product

ii. The quantity of maximum daily effluent generation & discharge should not be more than the following:

S.No.	Kind of Effluent	Maximum daily generation	Maximum daily discharge, (KLD)	Treatment Facility and Discharge point

1	Domestic	15 KLD		Septic Tank & Soak Pits.
2	Industrial (Spent wash)	720 M^3/Day	Zero Liquid Discharge (ZLD) (Through MEE & Spray Dryers).	

iii. Arrangement should be made for collection of water used in process and domestic effluent separately in closed water supply system. It should be ensured that domestic effluent should not be discharged in the storm water drain.

iv. The domestic effluent should be treated in sewage treatment plant (STP) and it should be in conformity with the norms of treated effluent as stipulated in E.P. Rules, 1986 as amended.

v. The unit shall identify recipient drains/ rivulets and their u/s & d/s locations in consultation with SPCB for monthly monitoring by industry to ensure ZLD from distilleries within 30 days. The monitoring report shall be submitted to CPCB on monthly basis.

S.No.	Name of recipient drain/rivulets	Latitude	Longitude	Name of the recipient river
1.	u/s of Laksar drain	$28^0 44' 59''$N	$78^0 01' 40''$E	Banganga
2.	d/s of Laksar drain	$29^0 44' 36''$N	$78^0 01' 53''$E	Banganga

vi. The industry shall maintain Zero Liquid Discharge (ZLD). ZLD refers to installation of facilities and system which will enable industrial effluent (all streams) for absolute recycling of or re-use in to industrial processes and converting solute (dissolved organic and in-organic compounds / salts) into residue in solid form by adopting method such as concentration/ evaporation/drying. ZLD will be recognized and certified based on two broad parameters that is, water consumption versus waste water reused or recycled (permeate) and correspondingly solids recovered (percent total dissolved / suspended solids in effluents).

C. Effluent Management Infrastructure:

Bio-digester				
S.no.	**No. of digesters**	**Designed Capacity (m3)**	**Sludge generation from digester**	**Method of disposal/ utilization of sludge**
1.	03	10000 x 02 nos. 7500 x 01 nos.	--	MEE & Spray Dryers

Multi Effect Evaporator (MEE)				
S.No.	**Nos. of MEE**	**Design Capacity (m3)**	**Type of technology of MEE (stages)**	**Mass flow meter installed at inlet and outlet of MEE**
1.	02 Nos.	5028 Sq. Meter	Multi-Effect Evaporation	Yes.

Condensate Polishing Unit (CPU):
****For treatment of MEE condensate and other low-strength effluent**

S.No.	**Design Capacity (m3)**	**Type of technology of CPU**	**Sources of effluent coming into CPU with Quantity**	**Quantity of treated effluent from CPU and its utilization**	**Quantity of CPU sludge & its disposal mechanism**
1.	1050	USAB	Condensate of MEE	485 KLD Reused in	Sludge Drying Bed.

			121	cooling and processes.	To be used as manu re.
Reverse Osmosis (RO) system					
S.No.	**Design Capacity (m3)**	**No. of stages**	**Quantity of RO permeate (m3) & purpose of utilization**	**Quantity of RO reject (m3) & disposal mechanism**	
1.	The Unit shall establish RO system of appropriate capacity by March, 2024.				

i. All process and non-process effluents such as Spent lees, Process condensates, Boiler RO reject, CT blowdown, Softener/DM plant backwash, Pump gland cooling water etc. should be treated through CPU and recycled back in the process.
ii. The unit shall install mass flowmeters with totalizers at inlet and outlet of Multi Effect Evaporator (MEE) (concentrate) and shall connect the same with CPCB and Uttarakhand Pollution Control Board's servers.
iii. The unit shall install electromagnetic flowmeters with totalizer at CPU inlet & outlet and at water recirculation points like make up water for cooling towers & in process. The unit shall have separate energy meter for ETP/CPU and maintain the duly signed logbook of the same.
iv. The unit shall maintain duly signed logbooks of spent wash generation, MEE feed, MEE condensate, MEE concentrate, CPU inlet & outlet, cooling tower make up water and treated effluent reused in process.
v. The unit shall ensure proper marking/and colour coding of all the pipelines carrying industrial effluent accordingly.

Distilleries opting for Bio-composting;

i. The final storage capacity of lagoon for storage of concentrated spent wash after M.E.E to be utilized in bio-composting shall be strictly restricted to thirty days equivalent of concentrated spent wash (40% by volume of spent wash generated and solid concentration shall be maintained 30%). The lagoon shall be impermeable and properly lined.

ii. **Details of lagoons**

Declared by unit				**Permitted By Board**
S.no.	**No of Lagoons**	**Dimensions of lagoon**	**Capacity of lagoon (m3)**	
1.	03 nos.	22 x 25 x 3.5 Meter 14 x 28 x 3.5 Meter	1925 x 02 nos. 1372 x 01 nos.	As declared by Unit.

iii. For concentrated spent wash having total solids 27 - 30 %, the filler material (press mud) to spent wash ratio prescribed is 1: 1.6 for 60 days' cycle.
iv. Impervious compost yard area based on material balance (plus ready compost storage area) should be made available. The unit shall strictly implement the Standard Operating Procedure (SOP) for Bio-composting operation for Molasses based distilleries. (Link: https://cpcb.nic.in/ngrba/Biocomposting_SOP_for_distillery-Final_10.08.2018.pdf).
v. The unit having uncovered bio-compost area, shall stop its bio-compost activities in monsoon period (July –September). The unit shall make extra land arrangements for storage for press mud and ready bio-compost.

vi. Unit must install and maintain online connectivity of PTZ web cameras at the bio-compost yard and lagoons with server of CPCB and Uttarakhand Pollution Control Board's servers.

vii. Details of Bio-composting area requirement; as permitted by the Board:

S.No.	Total area for bio-composting	Active area for bio-composting (excluding the land arrangements for storage for press mud and ready bio-compost)	Covered area (Acres)	Uncovered area (Acres)	Number of Piezometric wells available around the compost
1.	14.02 Acres	14.02	4.28	9.74	01

viii. Obtaining valid registration/certification for the production and quality of bio-enriched Organic manure (bio compost) as per Gazette Notification S.O. 2776 (E) dated 10.10.2015 under the Fertilizer (Control) Fourth Amendment Order, 2015 issued by Ministry of Agriculture and Farmers Welfare (Dept. Of Agriculture, Cooperation and Farmers Welfare) from the Ministry of Agriculture/ concerned agency – within a time period of four months.

ix. The finished bio-compost shall be packed in sealed poly bags super scribed with quality and composition of bio compost along with the name of the manufacturer industry.

x. The unit shall maintain a record of procurement/ availability of press mud, sell of compost and compost quality on monthly basis.

xi. The unit shall not be sale ready bio-compost in open tractors/trolleys.

xii. **The Unit shall use bio-composting year only up to December, 2023. Thereafter, no fresh concentrated spent wash shall be disposed through Bio-Composting yard and spend wash shall be totally disposed through spray dryers.**

Distilleries opting for Incineration;

i. Minimum Solid % in feed for slop fired incinerator shall be 55-60% in case of C-Heavy and B-Heavy molasses as feedstocks and 50-55% in case of sugar syrup/sugarcane juice as feedstock.

ii. Maximum storage of raw spent wash utilized in MEE followed by incineration shall strictly be restricted to seven days (07) equivalent of concentrated spent wash generated. Excess storage facilities beyond this shall be levelled and dismantled.

iii. The unit shall collect ash generated from Incineration boiler through screw/belt conveyor from common silo and should be disposed of as fertilizer or for any other use.

iv. Fly ash shall be stored separately as per CPCB guidelines so that it should not adversely affect the air quality, becoming air borne by wind or regime during rainy season by flowing along with storm water. Direct exposure of workers to fly ash & dust shall be avoided.

v. The unit shall sell potash rich ash to industries for potash recovery plant, Fertilizer Company or sell the ash to the farmers after meeting FCO conditions.

vi. Unit shall dispose the spent wash through MEE followed by use of concentrated spent wash (as stated in point i) fuel in the Incineration boiler of appropriateTPH.

S.no.	Type of Boiler	Capacity of Boiler (TPH)	Type of subsidiary fuel used	Quantity of subsidiary fuel consumed (MT/day)	Quantity of ash generated (MT/day)	Method of Ash Disposal
--NA--						

Distilleries opting for dryer; 123

i. Minimum Solid % in feed for dryer shall be 40-45%.
ii. Maximum storage of Bio-methanated spent wash utilized in dryer shall strictly be restricted to seven days (07) equivalent of concentrated Bio-methanated spent wash generated. Excess storage facilities beyond this shall be levelled and dismantled.
iii. The unit shall collect powder produced from dryer in common silo and should be disposed of as fertilizer.
iv. Unit shall dispose the spent wash through Bio-methanation followed by Bio-methanated spent wash MEE followed by use of concentrated bio-methanated.

D. Domestic sewage

i. The domestic effluent should be treated separately in sewage treatment plant/ soak pit so that it should be in conformity with the following norms.

Trade effluent and domestic sewage shall be treated separately and also to be monitored for compliance w.r.t. notified norms separately. However, Single outlet can be provided after mixing for outside disposal.

ii. Industry shall install the flow meter at STP inlet and outlet and maintain the daily logbook.
iii. Industry shall explore the possibility to recycle the treated used water shall be utilised in gardening, irrigation, industrial utility and toilet flushing to minimise the fresh water consumption up to 20 % per year.

7. Air pollution mitigation:

i. The industry shall use following fuel and install air pollution control devices (APCD) of adequate capacity to comply with the following;

S. No.	Equipment	Fuel used	Stack height (m)	Air Pollution Control Device (APCD)	Stack Emission standards
I.	Spray Dryer (45 TPD)	***Bagasse-168 TPD***	***40***	Wet Scrubber	PM-150 mg/N M^3
II.	Spray Dryer (45 TPD)	***Biogas-1500 M^3/day***			

ii. The industry shall operate in a manner so that all emissions be emitted through designated chimney/stack only. Porthole, platform and stairs shall be provided as per prescribed guidelines for stack emission monitoring.
iii. The APCS will be maintained and operated in such a manner that emissions always conform to the standard laid down under the E.P Act 1986 as amended. The ash generated from the Boiler shall be disposed of properly in such a manner that not affect the environment adversely.
iv. The unit shall install Online Stack Emission Monitoring System (OEMS) for PM and ensure with its connectivity (24x7) to CPCB server and Uttarakhand Pollution Control Board's dashboard.
v. The unit shall submit manual stack emission monitoring report and ambient air quality report on quarterly basis during operation of the plant.
vi. Water shall be sprinkled on the roads and premises for suppression of road dust.
vii. The solid waste namely boiler ash shall be disposed of properly and ensure that there is no fugitive emission from their transportation, storage and handling.
viii. The industry shall provide ports in the chimney/stack and facilities such as ladder, platform etc. as per requirement for monitoring the air emissions and the same shall be open for inspection and use at all time) by the Board's staff, the chimney/stack attached

to various sources of emission shall be designated by number such as S-1, S-2 etc. and these shall be painted/ displayed to facilitate identification.

8. Noise Pollution Mitigation:

i. Noise from the D.G. Set and other source(s) should be controlled by providing an acoustic enclosure as is required for meeting the ambient noise standards for night and day time as prescribed for respective areas/zones (Industrial and Commercial) which are as follows: -

Standards for Noise level in db.(A) L_{eq}			
Industrial Area		**Commercial Area**	
Day	Night	Day	Night
75	70	65	55

Day time: from 6.00 a.m. to 10.00 p.m., **Night time:** from 10.00 p.m. to 6.00 a.m.

ii. The industry shall take adequate measures to control of noise from its own source so as to comply with the standards as may be applicable.

iii. The industry shall provide acoustics enclosure on DG sets as per Environment (Protection) Rules, 1986.

9. Conditions under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016: -

Hazardous Waste Management:

i. Number of authorization and date of issue: As above.

ii. Reference of application (No. and date) : As above.

iii. The **Factory Manager** of **M/S Rai Bahadur Narayan Singh Sugar Mills Ltd**. is hereby granted an authorization for generation, collection, reception, storage, transport, reuse, recycling, recovery, pre-processing, co-processing, utilization, treatment, disposal or any other use of hazardous or other wastes or both on the premises situated at Laksar, District Haridwar (Uttarakhand).

Details of Authorization

Sl. No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity (ton/annum)
--NA--			

iv. The authorization shall be valid for a period of .....NA.....

v. The authorization is subject to the following general and specific conditions (Please specify any conditions that need to be imposed over and above general conditions, if any):

A. General conditions of authorization:

1. The authorized person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the State Pollution Control Board.
3. The person authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorization.
4. Any unauthorized change in personnel, equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorization.

5. The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site-specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;
6. The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty"
7. It is the duty of the authorized person to take prior permission of the State Pollution Control Board to close down the facility.
8. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorization.
11. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
12. An application for the renewal of an authorization shall be made as laid down under these Rules.
13. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
14. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

General Conditions

1. Environmental management system:
   i. Industry shall setup the environmental management cell including unit head, purchase/store manager, process operation head, ETP in charge to effectively monitoring of environmental compliance
   ii. Industry shall setup the environmental laboratory for testing of minimum wastewater quality parameters like pH, TSS, BOD, COD, MLSS and DO to effectively monitoring of ETP control parameters and ETP discharge norms.
2. The applicant shall get analyses the samples of effluent/emission/hazardous wastes at least once in a three month from the laboratory recognized by the MoEF&CC and shall report to the SPCB.
3. The applicant shall however, not without the prior consent of the Board bring into use any new or altered outlet for the discharge of effluent or gases emission or sewage waste from the unit.
4. Treated waste water and domestic waste water shall be disposed jointly at one disposal point. The applicant shall provide discharge measurement equipment at final disposal point.
5. The applicant shall strictly comply with conditions of this CCA and submit compliance report of stipulated conditions with 30 days of receipt of this CCA. If, at any point of time, it is found that the industry is not complying with stipulated conditions or any further direction/instruction issued by the **Board**, legal action shall be initiated against the applicant.
6. The applicant shall maintain good housekeeping. All valves/pipes/sewer/drains etc. must be leak-proof.
7. The industry shall provide uninterrupted entry to this STP's/ETP's inlet and outlet points, Air Pollution Control equipment and stack for smooth sampling/monitoring of efficiency of pollution control measures.
8. The industry shall provide "Inspection Book" at the time of inspection to the Board's officials. Whenever due to any accident or other unforeseen act or event, such emission occurs or is apprehended to occur in excess of standards laid down, such information shall

be reported to the Board's offices and to other concerned offices. In case of failure of pollution control equipment, the production process connected to it shall be stopped with immediate effect

9. In case of any damage to the agriculture productivity, human habitation etc. by the operation of industry, it shall be imperative to stop production in the industry with immediate effect and such information shall be reported to Board's offices. The industry shall be liable to pay compensation also in such cases as decided by the Competent Authority.
10. The applicant shall apply before the 60 days of expiry of CCA or any change in production types/production capacity/manufacturing process/capacity enhancement etc. or any change in effluent discharge point or emission point.
11. The **Board** reserves the right to revoke/add/modify any stipulated conditions issued along with CCA, as may be necessary.
12. Any unauthorized change in personnel, equipment as working condition as mentioned in the application by the person authorized shall constitute a breach of his authorization.
13. It is the duty of the authorized person to take prior permission of the **Board** to close down the facility.
14. The authorization is valid for temporary storage of Hazardous Waste within premises only.
15. It is duty of the authorized person to take prior permission of this Board to close and clean up the facility for treatment, storage and disposal of hazardous waste.
16. Industry shall submit the latest copy of Audit Balance sheet/C.A. Certificate (Fixed Assets + Current Assets-Current Liabilities) so that the Consent fee payable by the industry may be verified.
17. Generated hazardous waste shall be stored temporarily in the factory premises and disposed of through authorized TSDF after obtaining the authorization from the Board
18. Unit shall develop green belt as per the protocol of Central Pollution Control Board.
19. The industry shall comply with the provisions of Environment (Protection) Amendment, Rules 2018 notified by MoEF&CC by Notification no 49 Dt. 25.01.2018, Environment (Protection) Act 1986, Water (Prevention and Control of Pollution) Act, 1974 as amended, Air (Prevention and Control of Pollution) Act, 1981 as amended, Plastic Waste Management Rule 2016, E-Waste (Management and Transboundary Movement) Rules 2016 (whichever is applicable).
20. If closure order is issued by CPCB or SPCB against the unit then CCA will remain suspended during the closure period. After ensuring the compliance and after revocation of the closure order, the CCA will automatically be effective from the date of issuance of the closure revocation/modification order with additional conditions mentioned in the closure revocation/modification order.

(S.K. Pattnaik)
Member Secretary

Copy to:

Regional Officer, Uttarakhand Pollution Control Board, Regional Office, Roorkee (Haridwar) for information and compliance.

Member Secretary

Item No. 02 Court No. 2

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 495/2023

Mohd. Amjad & Anr. Applicant(s)

Versus

State of U.P. & Ors. Respondent(s)

Date of hearing: 14.08.2023

CORAM: HON'BLE MR. JUSTICE ARUN KUMAR TYAGI, JUDICIAL MEMBER
HON'BLE DR. A. SENTHIL VEL, EXPERT MEMBER

Appellant: Mr. Rahul Khurana & Mr. Hasil Jain, Advocates

Application has been filed under Sections 14 and 15 of the National Green Tribunal Act, 2010

ORDER

1. The grievance in the present application is regarding severe water pollution at the Shukratal Ganga Ghat in Muzaffar Nagar, Uttar Pradesh.

2. The applicants have submitted that Shukratal Ganga Ghat in Muzaffar Nagar, Uttar Pradesh is a religious place where the local people, devotees, saints and sadhus come for taking holy dip. Respondent No. 7 - M/s R.B.N.S. Sugar Mill Pvt. Ltd., Shekhpuri, Laksar, Uttarakhand and Respondent No. 8 - M/s R.B.N.S. Distillery Pvt. Ltd., Shekhpuri, Laksar, Uttarakhand are located at upstream of Banganga River at Laksar Industrial area in District Haridwar, Uttarakhand. Respondents No. 7 and 8 are discharging highly polluting industrial effluents in drain which merges in Banganga river. Respondents No. 7 and 8 are flouting environmental norms under the Water (Prevention and Control of

Pollution) Act, 1974 and the Environment (Protection) Act, 1986. Respondents No. 7 and 8 are in the habit of releasing of toxic spent wash stored in their lagoon whenever they find opportunity. The process of illegal discharge has been going on for the last many years. The waste water is released in bulk quantity at Idrishpur drain which damages the entire ecosystem river of Banganga till the Shukratal ghat downstream. The Shukratal ghat is a stagnated water area where the river water stagnates and the effect of pollution in water is clearly visible. Due to pollution caused, the dissolved oxygen of water at Shukratal ghat has reduced significantly and has resulted in death of fish in the area. The spent wash changes colour of water to brown and also results in foul odour in the area. FIR No. 76 dated 16.03.2023 and FIR No. 198 dated 08.07.2023 were registered under Sections 277 of IPC and 51 of Wildlife Protection Act, 1972 at Police Station Bhopa, District Muzaffarnagar.

3. *Prima facie*, the averments made in the application raise questions relating to environment arising out of the implementation of the enactments specified in Schedule I to the National Green Tribunal Act, 2010.

4. In view of the averments made in the application, we consider it appropriate that a Joint Committee be constituted to verify the factual position. Accordingly, we constitute a Joint Committee comprising of Central Pollution Control Board (CPCB), Regional Office, Ministry of Environment, Forest and Climate Change (MoEF&CC), National Mission for Clean Ganga (NMCG), Uttarakhand Environment Protection and Pollution Control Board (UEPPCB), Uttar Pradesh Pollution Control Board (UPPCB) and District Magistrates (DMs) of Haridwar and Muzaffarnagar and direct the same to meet within one week, undertake visits to the site, look into the grievances of the applicant, associate the applicant and

representatives of the concerned project proponents, verify the factual position which shall include (i) details of industries located in Laksar Industrial area and Muzaffarnagar Industrial area which are discharging effluents in the drain connecting to the River Banganga; (ii) details of industries which are functioning without consent/EC; (iii) functioning of STP/ETP and other waste water treatment mechanism and (iv) mechanism for utilization of waste water for agriculture and other land use purposes rather than discharging in the drain and take appropriate remedial action by following due course of law and giving opportunity of being heard to the concerned project proponents. The CPCB will be the nodal agency for coordination and compliance.

5. Factual and Action taken Report may be submitted within three months by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Supported PDF and not in the form of Image PDF.

6. List for further consideration on 22.11.2023.

7. A copy of this order, along with a copy of the application and documents attached with the same, be forwarded to the CPCB, MoEF&CC, NMCG, UEPPCB, UPPCB and DMs of Haridwar and Muzaffarnagar by e-mail for requisite compliance.

Arun Kumar Tyagi, JM

Dr. A. Senthil Vel, EM

August 14, 2023
Original Application No. 495/2023
DV

Item No. 04 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(BY VIDEO CONFERENCING)

Original Application No. 530/2023

Anuj Kumar Applicant

Versus

State of Uttarakhand & Ors. Respondent(s)

Date of hearing: 23.08.2023

CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER
HON'BLE MR. JUSTICE ARUN KUMAR TYAGI, JUDICIAL MEMBER
HON'BLE DR. A. SENTHIL VEL, EXPERT MEMBER

Applicant: Mr. Prakash Pandey, Advocate

ORDER

1. In this Original Application, applicant has made several allegations against respondent no. 7, M/s Rai Bahadur Narayan Singh Sugar Mills Limited in respect of non-compliance and violation of the directions issued by the Pollution Control Board. The prayer in the OA is to issue a direction to the said respondent to install incineration boiler to protect ground water from pollution and also to construct concrete nallah from industry premises to Hadwada drain. There is a further prayer to issue a direction to the said respondent to develop green area in 10 acres and to compensate for the loss caused to the environment by assessing the damage.

2. We have been informed that another Original Application being *O.A. No. 495/2023, Mohd. Amjad & Anr. vs. State of U.P. & Ors.* alleging various violations in respect of the same respondent no. 7 is already

pending and this Tribunal by order dated 14.08.2023, considering the allegations, with a view to verify the factual position, has constituted a joint Committee comprising of Central Pollution Control Board (CPCB), Regional Office, Ministry of Environment, Forest and Climate Change (MoEF&CC), National Mission for Clean Ganga (NMCG), Uttarakhand Environment Protection and Pollution Control Board (UEPPCB), Uttar Pradesh Pollution Control Board (UPPCB) and District Magistrates (DMs) of Haridwar and Muzaffarnagar. This Tribunal has directed the Committee to meet within one week and undertake visits to the site and look into the grievance raised therein and verify the factual position.

3. Since the Committee has already been constituted, therefore, we direct the said Committee to look into and consider the grievance of the present application also and submit the report in respect thereof along with the report in terms of the earlier directions.

4. List this matter along with O.A. No. 495/2023 for further consideration on 22.11.2023.

Prakash Shrivastava, CP

Sheo Kumar Singh, JM

Arun Kumar Tyagi, JM

Dr. A. Senthil Vel, EM

August 23, 2023
Original Application No. 530/2023
SN

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 530 of 2023

IN THE MATTER OF:

Anuj Kumar — Applicant

Vs.

State of Uttarakhand & Ors. — Respondent(s)

WITH

ORIGINAL APPLICATION NO. 495 of 2023

IN THE MATTER OF:

Mohd. Amjad & Anr. — Applicant(s)

Vs.

State of Uttarakhand & Ors. — Respondent(s)

Index

	by Central Ground Water Authority (CGWA) having validity upto 25.11.2024 to the unit, M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Distillery section), Laksar, Haridwar, Uttarakhand.	
5.	**Annexure-4:** Details of Green Belt.	
6.	**Annexure-5:** A copy of the Consolidated Consent & Authorization issued by UKPCB to the unit, M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Sugar section), Laksar, Haridwar, Uttarakhand having validity upto 31.03.2024.	
7.	**Annexure-6:** A copy of the No Objection Certificate issued by Central Ground Water Authority having validity upto 28.12.2024 to the unit, M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Sugar section), Laksar, Haridwar, Uttarakhand.	
8.	**Annexure-7:** A copy of the SRS Layout of the unit, M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Sugar section), Laksar, Haridwar, Uttarakhand.	
9.	**Annexure-8:** A copy of the Process Flow chart of the unit, M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Sugar section), Laksar, Haridwar, Uttarakhand.	

Ajit kumar Vidyarthi

(A. K. Vidyarthi)

Scientist F

Central Pollution Control Board

Delhi-110032

Dated: 24.01.2024

Place: Delhi

JOINT INSPECTION REPORT

OF

M/S R.B.N.S LTD.

IN COMPLIANCE TO

HON'BLE NGT ORDER DATED 22.11.2023

IN THE MATTER OF

MOHD. AMZAD & ANR.

Vs

STATE OF UP & ORS.[OA No. 495/2023]

DATE OF INSPECTION: 13th & 14th Dec, 2023

PREPARED BY JOINT COMMITTEE OF
CENTRAL POLLUTION CONTROL BOARD, DELHI (CPCB),
REGIONAL OFFICE, ROORKEE, NMCG, UKPCB, MoEF&CC
& DISTRICT ADMINISTRATION, ROORKEE

1 Table of Contents

List of Tables

1. SUBJECT MATTER

1.1 Matter:

OA no. 495 of 2023, Mohd. Amzad & Anr. Vs State of U.P. & Ors.

1.2 Subject:

Detailed factual report in compliance to Hon'ble NGT order dated 22.11.2023 in O.A. No. 495/2023 in the matter of Mohd. Amzad & Anr. Vs State of U.P. & Ors. in reference to complaint against M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Distillery & Sugar unit), Village- Laksar, Dist.-Haridwar, Uttarakhand.

1.3 Background:

In response to the water pollution issue at Shukratal Ganga Ghat in Muzaffarnagar, Uttar Pradesh, the Hon'ble National Green Tribunal (NGT), vide its order dated 14/08/2023, in O.A. No. 495/2023 (Mohd. Amzad & Anr. Vs State of U.P. & Ors.), directed the formation of a Joint Committee to verify the factual position. The NGT stated, *"In view of the averments made in the application, we consider it appropriate that a Joint Committee be constituted to verify the factual position. Accordingly, we constitute a Joint Committee comprising of Central Pollution Control Board (CPCB), Regional Office, Ministry of Environment, Forest and Climate Change (MoEF&CC), National Mission for Clean Ganga (NMCG), Uttarakhand Environment Protection and Pollution Control Board (UEPPCB), Uttar Pradesh Pollution Control Board (UPPCB) and District Magistrates (DMs) of Haridwar and Muzaffarnagar and direct the same to meet within one week, undertake visits to the site, look into the grievances of the applicant, associate the applicant and representatives of the concerned project proponents, verify the factual position which shall include (i) details of industries located in Laksar Industrial area and Muzaffarnagar Industrial area which are discharging effluents in the drain connecting to the River Banganga; (ii) details of industries which are functioning without consent/EC; (iii) functioning of STP/ETP and other waste water treatment mechanism and (iv) mechanism for utilization of waste water for agriculture and other land use purposes rather than discharging in the drain and take appropriate remedial action by following due course of law and giving opportunity of being heard to the concerned project proponents. The CPCB will be the nodal agency for coordination and compliance."*

The Hon'ble NGT vide order dated 23/08/2023, in O.A. No. 530/2023 (Anuj Kumar Vs State of U.P. & Ors.), directed that, "*Since the Committee has already been constituted, therefore, we direct the said Committee to look into and consider the grievance of the*

present application also and submit the report in respect thereof along with the report in terms of the earlier directions."

In this regards, two visits by the committee was carried out, the details of the same are as follows;

I. Site visit on 14th -15th, September, 2023

a) Interaction with complainant Md. Amjad in OA 495/2023 and Mr. Anuj Kumar in O.A. No. 530/2023.
b) Interaction with project proponent of M/s RBNS Sugar & Distillery and Cavendish India Ltd.
c) Industrial inspection of M/s RBNS Sugar & Distillery, Laksar and M/s Cavendish India ltd, Laksar.

II. Post -monsoon committee visit on 11th -12th, October, 2023

a) Mapping and monitoring of River Banganga
b) Mapping and monitoring of River Solani
c) Mapping and monitoring of Laksar drain
d) Mapping and monitoring of Hadwa drain

The detailed report of the Joint Committee was filed on 21.11.23 before Hon'ble Tribunal in compliance to orders dated 14.8.23. and 23.08.23.

Further, vide order dated 22/11/2023 **(Annexure – 1).** Hon'ble NGT directed the following:

"17. ..... We direct that the Secretary, UKPCB as also Secretary, CPCB will remain personally present before the Tribunal by virtual mode on the next date to appraise the Tribunal about the correct factual position as also the details of contents of the report. 18. The fresh report in terms of the directions of the Tribunal dated 23.08.2023 be submitted by the joint Committee after carrying out the inspection of M/s Rai Bhadur Narayan Singh Sugar Mills Limited (Distillery and Sugar unit). Let the report be submitted within six weeks. A copy thereof be dully supplied at the time of filling of the report to the Counsel for the respondent nos. 7 and 8 in O.A. No. 495/2023. Objection, if any, to the report will be filed by the concerned respondents within two weeks thereafter.

In compliance of Hon'ble NGT order dated 22.11.23, the Committee inspected the following two units during operational period on 13th –14th, December, 2023

a) M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Distillery Unit)

b) M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Sugar Unit)

c) Sampling from upstream & downstream of unit from Laksar drain

2. INSPECTION CARRIED OUT BY JOINT TEAM ON 13th – 14th, DECEMBER, 2023

2.1 Site visit to industrial complex of M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Distillery and Sugar Unit)

As observed by the joint committee, both industrial units i.e. Molasses based distillery plant (120 KLPD) and Sugar plant (10,000 TCD) of M/s Rai Bahadur Narayan Singh Sugar Mills Ltd., Laksar, Haridwar, Uttarakhand were found operational. Also, a Bottling plant was found operating within the industrial complex of M/s Rai Bahadur Narayan Singh Sugar Mills Ltd., Laksar, Haridwar, Uttarakhand. All three units have separate Consent to Operate (CTO) having validity upto 31/03/2024 for Molasses based distillery & Sugar plant and 30/09/2024 for Bottling plant. All the units were found operational on the day of inspection.

The joint team carried out detailed inspection of these units w.r.t. Spent wash & Effluent management, solid waste management, verification of Zero Liquid Discharge (ZLD) system, analysis of ground water quality as well as availability of valid Consents to Operate/Consolidated Consent & Authorization (CCA) under Water & Air Act and No ObjectionCertificates (NOC) for ground water withdrawal.

Joint team also collected samples from various ZLD units for performance evaluation of ZLD system and groundwater samples from the industrial complex to assess the ground water quality. Wastewater and groundwater samples were analyzed in laboratory of CPCB at Head Office-Delhi.

Also, the joint team verified the flowmeters installed at various locations and collected relevant documents, copy of CTO/CCA under Air, Water and Hazardous Acts issued by UPPCB, copy of NOC issued by Uttar Pradesh Ground Water Department (UPGWD). Copies of logbook for spent wash generation, alcohol production, freshwater consumption etc. from both Distillery and Sugar plants were also collected by the team.

Ambient air monitoring and stack emission monitoring was carried out by official from Regional office, Roorkee, UKPCB. UKPCB has engaged officials from PCRI, Haridwar for stack and ambient air monitoring. Analysis results of ambient air quality and stack air monitoring are mentioned in sugar section 2.1.2 (Table 16 and 17).

The detailed reports of Distillery unit of M/s Rai Bahadur Narayan Singh Sugar Mills Ltd., Laksar, Haridwar, Uttarakhand is presented in subsequent section 2.1.1 and Sugar unit of M/s Rai Bahadur Narayan Singh Sugar Mills Ltd., Laksar, Haridwar, Uttarakhand is presented in section 2.1.2.

2.1.1 Compliance report of Molasses based Distillery plant

A. Consents & Authorization

I. The unit has obtained Consolidated Consent & Authorization issued by UKPCB dated 06/10/2023 under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974, under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981and under Rule – 6 (2) of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 having validity upto 31/03/2024 **(Refer Annexure – 2).**

II. The salient conditions of the Consolidated Consent to Operate are as follow:

i. The unit shall carry out production of Rectified Spirit (RS)/ ExtraNeural Alcohol (ENA)/Ethanol @ 120 KLPD using C–Heavy/ B–Heavy molasses @ 372 KLPD.

ii. Unit shall comply with the conditions of NOC issued by Ground Water Department Govt. for abstraction of ground water.

iii. Unit shall maintain Zero Liquid Discharge, and no effluent is allowed to discharge outside the premises.

iv. The final storage capacity of lagoon for storage of concentrated spent wash after MEE to be utilized in bio-composting shall be strictly restricted to thirty days equivalent of Concentrated spent wash.

v. The unit having uncovered bio-compost area shall stop its bio-compost activities in monsoon period. The Unit shall make extra land arrangement for storage of press mud and ready bio-compost.

vi. The unit shall use bio-composting only up to December 2023, thereafter no fresh concentrated spent wash shall be disposed through bio-composting yard and spent

wash shall be totally disposed through spray dryer.

vii. Flow meter to be installed in all water abstraction points and usage of fresh water to be minimized.

viii. Industry shall maintain Online Continuous Effluent and emission Monitoring System (OCEMS) on ETP and stack & connect it with SPCB and CPCB server, before start of production as per the direction of CPCB.

ix. The industry should ensure the operation of the air pollution control system (APCS) in such a manner that the air emission confirms with the standards prescribed under the E.(P) Act 1986 as amended.

B. Compliance status of conditions stipulated in Consolidated Consent and Authorization:

I. Production Capacity:

i. During visit the joint committee observed that the distillery unit has 02 nos. of distillation plants each having 60 KLPD production capacity (120 KLD Total). The unit representative informed that the old distillation plant was commissioned in 2014 and the new distillation plant was commissioned in 2022.

ii. On the day of visit, both the distillation plants were found operational at total production capacity of 100 KLPD against the consented production capacity of 120 KLPD using B – heavy molasses as raw material.

iii. As informed by the unit representative, the unit has resumed its manufacturing operations from. 23/11/2023.

iv. The joint team collected/obtained the data for alcohol production certified by Excise Department for duration 23/11/2023 to 12/12/2023. Average production is mentioned in Table 1 below:

Table 1: Month wise Alcohol production

Month	No. of operational Days	Alcohol Production (KL)	Alcohol Production (KLPD)
Nov 2023	07	666.29	95.18
Dec, 2023	12	1224.92	102.07
Total operational days: 19 **Total Alcohol production: 1891.21 KL** **Average alcohol production: 99.53 KLPD**			

v. As per the data provided by unit for duration 23/11/2023 to 12/12/2023, the average production of alcohol is 99.53 KLPD against the permitted capacity of 120 KLPD using B – heavy molasses as raw material, which is in compliance with consent condition.

II. Groundwater abstraction and groundwater quality:

i. The Central Ground Water Authority (CGWA) granted No Objection Certificate (NOC) to the unit for groundwater abstraction from 01 no. of borewell, having validity upto 25/11/2024. As per the conditions of NOC, the unit can abstract groundwater at a maximum rate of 500 KL/day. (**Refer Annexure – 3**)

ii. On the day of the visit, the joint team observed that the unit has installed 01 Borewell within distillery premises and 01 Borewell in sugar premises.

iii. The joint team observed that to meet the fresh water requirement in distillery and sugar unit, the unit has made provisions for consuming freshwater from both the borewells whenever required.

iv. The unit has not installed flow meters at any of these two borewells, however the unit has installed flowmeters at freshwater consumption points in Distillery plant and Sugar plant.

v. Readings shown in flow meter during visit are mentioned in Table 2 below:

Table 2: Readings of flow meter installed at line carrying freshwater to distillery plant

Parameter	Value
Instantaneous flow rate (m^3/hr)	119.02
Totalizer (m^3)	240590.22

vi. The joint team obtained the logbooks for freshwater consumption in distillery plant for duration 23/11/2023 – 12/12/2023, the average fresh water consumption is shown in Table 3 below:

Table 3: Month wise groundwater/fresh water abstraction from Borewell located within premises of molasses based distillery plant

Month	Total Fresh water Consumption (KL)	No. of days	Average fresh water consumption (KLD)
Nov, 2023	1127	07	161
Dec, 2023	2071	12	172.59
Total fresh water consumption: 3198 KL No. of days: 19			

Average fresh water consumption: 168.3 KLD
Specific fresh water consumption
= total freshwater consumption / total alcohol production
= 3198 KL / 1891.21 KL
= 1.69 KL/KL of alcohol

vii. Specific fresh water consumption by distillery plant is 1.69KL/KL of product. However, overall specific water requirement is 6KL/KL of product. As per the logbook data, the unit is reusing the condensate after CPU into molasses dilution hence, out of specific water requirement of 6KL/KL of product unit is using treated water @4.5KL/KL of product. Also, the CPU is processing the excess condensate from Sugar mill along with MEE condensate.

viii. As per the logbook provided for freshwater consumption, the unit has consumed groundwater @ 168.3 KL/day.

ix. Samples were collected from borewell and piezo well located within premises of distillery plant to assess the ground water quality. Analysis results of the ground water are mentioned in Table 4 below:

Table 4: Analysis results of groundwater samples collected from Borewell and Piezo well within premises of molasses based distillery plant

Parameters	Borewell	Piezo well	Handpump located outside the unit	BIS IS 10500:2012 (Permissible limit in absence of alternative source)
pH	7.9	7.5	7.5	**6.5-8.5**
Conductivity (µmho/cm)	485	505	857	-
TDS	264	254	456	**2000**
COD	BDL	**33**	**6**	-
Total Hardness	223	179	285	**600**
Chloride	15	42	48	**1000**
Phosphate	BDL	BDL	BDL	-
Fluoride	0.28	BDL	BDL	**1.5**
Colour (Hazen)	BDL	09	BDL	**15**
Sulphate	11	25	42	**400**
Nitrate	0.11	0.51	0.10	**45**
Total Alkalinity	414	207	416	**600**

Note: All values are in mg/l except pH, colour, and conductivity

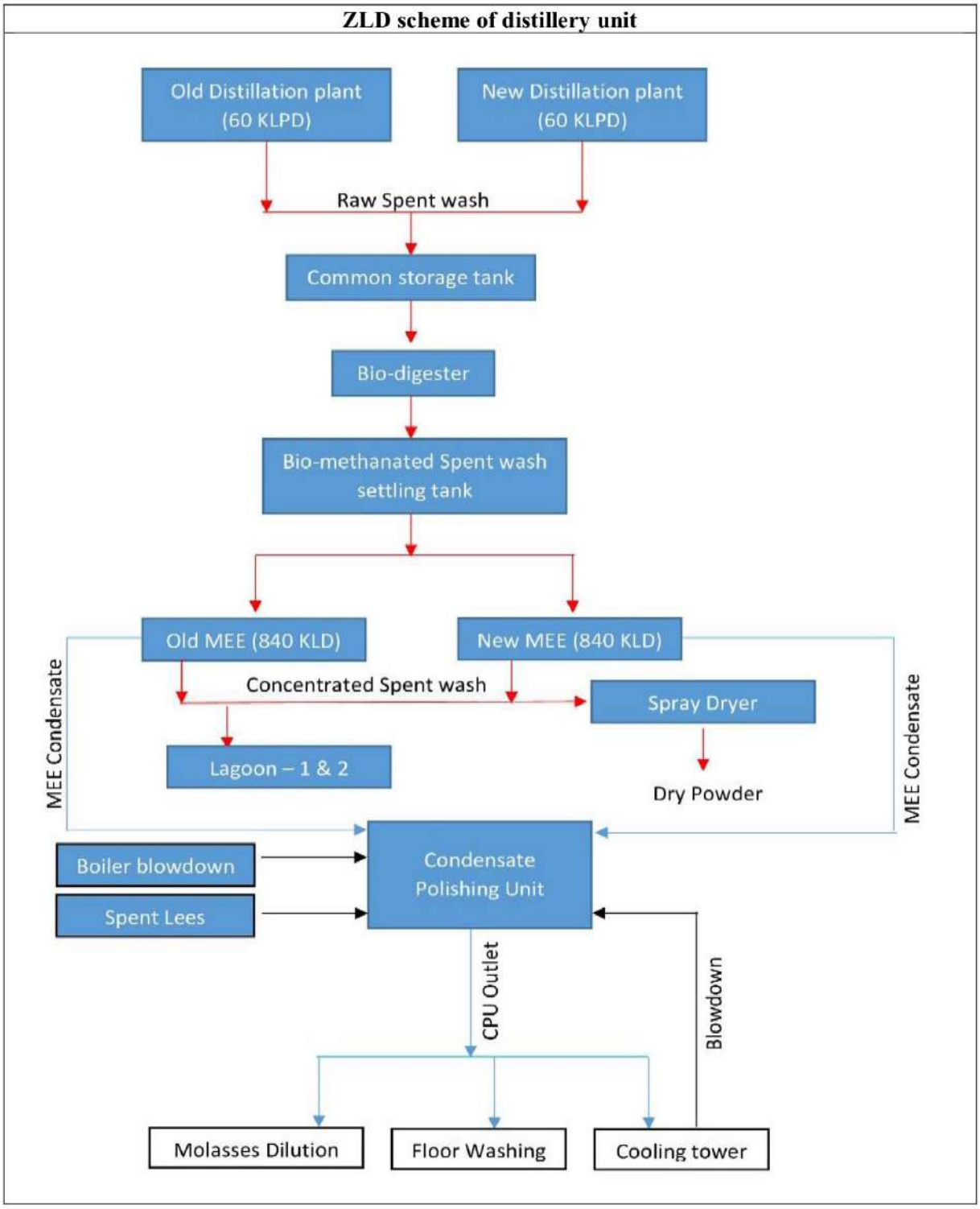
x. Analysis results of samples collected from Borewell and piezo well located within

molasses based distillery plant were found within the permissible limit as per BIS IS 10500:2012. However, **COD (33 mg/l)** was found in the sample collected from Piezo well near lagoon area of distillery.

xi. Analysis results of samples collected from handpump located outside of the unit shows COD- **6 mg/l.**

C. Verification of Zero Liquid Discharge (ZLD) as stipulated in Consolidated Consent and Authorization issued by UKPCB on 06/10/2023:

ZLD scheme of distillery unit



I. Effluent management scheme of old and new distillation plant:

i. For management of spent wash, the unit is currently following below mentioned scheme:

Raw Spent Wash (old plant)→ Bio-methanation→Standalone MEE →lagoon→Bio composting

Raw Spent Wash (new plant)→ Bio-methanation→Integrated MEE→Standalone MEE→Dryer (Dry powder sold to M/s Peptech Bio-sciences Ltd, M/s Jaipur bio-fertilizers, & M/s CMC Organics)

ii. Details of spent wash management scheme are mentioned in Table 5 below:

Table 5: Details of spent wash management scheme

S.No.	Particulars	Nos.	Old Plant Size /capacity / feed rate	New Plant Size /capacity / feed rate
1.	IMEE (for new plant)	01	NA	3 falling film
2.	Bio-digesters	04	1000 m^3 (2 no.) & 7500 m^3 (in use) 7500 m^3 (standby)	
3.	Settling tank (for storage of BMSW)	01	1925 m^3 (common for both the plants)	
4.	Evaporator (6 stage)	01	4 falling film & 2 forced circulation	2 falling film & 2 forced circulation
5.	Capacity of MEE	01	840 m^3	840 m^3
6.	Lagoon for storage of concentrated spent wash	02	01 Lagoon of Capacity 1375 m^3 01 Lagoon of Capacity 1975 m^3 Total capacity = 3297 m^3	
7.	Status of lagoons	-	One lagoon of capacity 137 5m^3 found filled with approx. 800 m^3 of spent wash Another lagoon of capacity 1925m^3 was found filled with 5-10% of spent wash	
8.	Lagoon for storage of sugar water	01	3500 m^3	Used to store sugar treated water

iii. The raw spent wash generated from both the molasses based distillation plants is first subjected to bio-digesters of capacity 10000 m^3 (2 nos.) and 7500 m^3 for bio-methanation.

iv. Bio-methanated spent (BMSW) from all the bio-digesters is sent to a settling tank of capacity 1925 m^3. Bio-methanated spent wash is fed parallely into 02 nos. of Multi Effect Evaporator (MEE) of capacity 840 KLD each.

v. For concentration of bio-methanated spent wash, the unit has installed 02 Multi Effect Evaporator (MEE) of capacity 840 KLD each.

vi. The concentrated spent wash generated from both the MEE is stored in lagoons of capacity 137m^3 & 1975 m^3 and then used in bio-composting as well as in spray dryers whereas condensate generated from MEEs is fed into Condensate Polishing Unit (CPU) of capacity 1050 KLD for further treatment.

vii. Both MEE and one dryer were found operational at the time of visit.

viii. The unit has installed mass flow meters with totalizer at inlet and outlet of both the MEE. All mass flow meters are connected to CPCB server.

ix. Reading of mass flow meters installed at different locations in distillery plant were also noted by the joint team during visit and are mentioned in Table 6 below:

Table 6: Reading of mass flow meters installed at different locations in distillery plant

S. No.	Location of flow meter	Instantaneous reading (kg/hr)	Totalizer reading (kg)
1.	Raw spent wash (old distillation plant)	27613	458902910
2.	Old MEE Inlet	15462.99	467906323.38
3.	Old MEE outlet	3997.89	153144017.4
4.	New MEE Inlet	15856.17	70134333.84
5.	New MEE outlet	4636.26	20911052.59

x. The joint team obtained the logbooks for raw spent wash generation for duration 24/11/2023 – 12/12/2023. Details of raw spent wash generation are mentioned in Table 7 below:

Table 7: Month wise raw spent wash generation and specific spent wash generation from molasses based distillery

Month	No. of Operational days	Total RawSpent wash generation (KL)	Avg. Raw Spentwash generation (KLD)
Nov, 2023	07	3826.27	546.61
Dec, 2023	12	7034.49	586.21
Total raw spent wash generation: 10860.76 KL **No. of days: 19** **Average raw spent wash generation: 571.62 KLD** **Specific raw spent wash generation** **= total raw spent wash generation / total alcohol production** **= 10860.76 KL / 1891.12 KL** **= 5.74 KL/KL of alcohol**			

xi. The joint team obtained the logbooks for feed to both MEE, concentrate and condensate generation for duration 24/11/2023 – 12/12/2023. Details of the same are mentioned in Table 8 below:

Table 8: Month wise raw spent wash generation, feed to MEE, Condensate and concentrate generation from MEE

Month	Raw spentwash generation(MT)	Feed to MEE (MT)	Concentrated spent wash generation (MT)	Condensate generation (MT)
Nov, 2023	3982.92	3982.56	1201.33	2781.23
Dec 2023	7322.48	7045.24	2184.31	4860.93
Total	11305.40	11027.81	3385.65	7642.16

xii. The joint team in its previous inspection recommended to concentrate all the spent wash stored in lagoons through MEE before use in Bio-composting or spray dryer. On the day of the visit, the joint committee observed that the lagoon of capacity 1925m^3 was almost 90% empty and another lagoon of 1375m^3 capacity was approx. 50% empty.

xiii. As per the logbook regarding MEE operation verified by the committee through flowmeter readings, it has been observed that the unit has started operating its old MEE from 21st November 2023 (i.e. 03 before starting of manufacturing operations) and the data indicates that the unit has consumed 1676.75 MT of legacy spent wash from the lagoon.

xiv. The unit has installed two MEEs of capacity 840KL each i.e. total 1680 KL. As calculated, the specific spent wash generation rate is 5.74 KL/ KL of product, therefore at full production capacity of 120 KLPD, the unit will generate 688.8 KL/day of raw spent wash approximately. This indicates that the unit is having adequate MEE to handle the spent wash generated by the unit when operating at full capacity.

xv. The team collected samples of raw spent wash, feed to MEE, Bio-methanated spent wash, feed to dryer and spent wash consumed in bio-composting. The analysis results are mentioned below in Table 9:

Table 9: Analysis results of spent wash samples collected from unit

S.No.	Sample Location	pH	COD (mg/l)	BOD (mg/l)	TS (mg/l)	(% Total Solids)
1.	Raw spent wash (new plant)	4.6	132599	48000	112960	11.29
2.	Raw spent wash (old plant)	4.5	134602	59600	101788	10.17
3.	BMSW (settling tank)	5.1	144617	66000	173628	17.36
4.	MEE Concentrate (new plant)	5.3	443865	186000	376176	37.16
5.	MEE Concentrate (old plant)	5.2	477515	218667	392164	39.21
6.	Conc. Spent wash used in Bio-	5.4	459088	148667	467156	46.71

	Composting					
7.	Conc. Spent wash feed to dryer	5.7	460690	194667	402568	40.25

xvi. Analysis results of the samples collected the analyzer column of new and old plant from shows pH- 4.6, & 4.5, COD – 132599 mg/l, & 134602, BOD – 48000 mg/l & 59600, Total Solids 112960 mg/l & 101788mg/l respectively.

xvii. Analysis results of the samples collected from the settling tank contains BMSW shows pH- 5.1, & 4.9, COD – 144617 mg/l, BOD – 66000 mg/l, and Total Solid % is 17.36.

xviii. Analysis results of the samples collected the outlet of MEE from new and old plant shows pH- 5.3, & 5.2, COD – 443865 mg/l, & 477515, BOD – 186000 mg/l & 218667, Total Solid % 37.16 & 39.21 mg/l respectively.

xix. Analysis results of the samples collected the tank located at backside of bio-compost yard, which contains conc. spent wash and is used for bio-composting show pH- 5.4, COD – 459088mg/l, BOD – 148667 mg/l, Total Solid -46% respectively.

xx. Analysis results of the samples collected the feed to dryer show pH- 5.7, COD – 460690 mg/l, BOD – 194667 mg/l, Total Solid 40% respectively.

II. Condensate Polishing Unit (CPU)

i. For treatment of MEE condensate, and other low strength effluents, the unit has installed common Condensate Polishing Unit (CPU) of capacity 1050 KLD (for sugar and distillery unit). The treatment scheme of CPU is as below:

Inlet – Equalization tank → UASB reactor →Aeration tank → Secondary clarifier → Chemical dosing tank → Lamella clarifier → Dual Media filter → Activated Carbon Filter → Outlet to cooling tower makeup and for molasses dilution in fermenters.

ii. Samples were collected from the inlet and outlet of CPU and analysis results are shown below in Table 10:

Table 10: Analysis results of samples collected from CPU

S. No.	Sample Location	pH	COD (mg/l)	BOD (mg/l)	Sulphate (mg/l)	TDS (mg/l)
1.	CPU inlet	4.0	6117	3930	114	2456
2.	CPU outlet	7.8	128	42	38	1768

iii. Analysis result of sample collected from the outlet of CPU shows pH- 7.8, COD – 128 mg/l, BOD – 42 mg/l, Sulphate-38 mg/l and Total Dissolved Solid – 1768 mg/l. The unit is using the CPU outlet as make up water for cooling tower and for molasses dilution in the process.

III. Lagoons:

i. For storage of concentrated spent wash, unit has 02 lagoons of capacity 1925 m^3, and 1372 m^3 (total capacity 3297 m^3).

ii. The joint team observed that out of these 02 lagoons, one lagoon of capacity 1925m^3 was found filled with approx. 10% of spent wash and another lagoon of capacity 1372 m^3 was found filled with approx. 50% spent wash.

iii. Also, a settling tank of capacity 1925m^3 was observed besides above mentioned two lagoons. The same is used for storing Bio-methanated spent (BMSW) from all the bio-digesters. The characteristics of the sample collected from this settling tank are tabulated in Table 9 above.

iv. The team also observed that the unit has two more lagoons of capacity 3500 m3 and 2800 m^3. Out of which one lagoon of capacity 2800 m^3 was found filled with mud/ boiler ash and the another lagoon of capacity 3500 m^3 was found filled with rain water. The unit claims that this lagoon is used to store treated effluent from ETP of sugar plant. Sample was collected from this lagoon and the details of the same are mentioned in the compliance report of sugar unit at section 2.1.2.

v. Samples were collected from the lagoons and analysis results are shown below in table 11:

Table 11: Analysis results of spent wash samples collected from lagoons

S. No.	Sample Location	pH	COD (mg/l)	BOD (mg/l)	TS (mg/l)	(% Total Solids)
1.	Lagoon-1	5.3	446268	216667	412960	41.29%
2.	Lagoon-2	4.9	377365	132500	363552	36.35%

vi. Analysis result of sample collected from lagoon-1 and lagoon-2 shows pH- 5.3, & 4.9, COD – 44628 mg/l, and 377365 mg/l, BOD – 216667 mg/l, and 412960 mg/l and Total Solid % of spent wash is 41.29 and 36.35% respectively.

vii. Analysis results indicate that the unit is storing conc. spent wash in lagoons-1 & lagoon -2. This indicates that unit is operating its and MEE properly.

IV. Dryer

i. To achieve Zero Liquid Discharge, the unit has installed two spray dryers of capacity 45 TPH each for both the distillation plants (60 KLD each), however only one dryer (old plant) was found operational on the day of visit.

ii. The feed rate of one dryer is 180TPD and of another is 230.4 TPD i.e. total feed rate is 410TPD. Average concentrated spent wash generation is 178.18TPD. Currently the unit was operating dryer having feed rate of 180TPD which is adequate to handle the current spent wash generation. However, the unit is having approx. 1000KL of legacy concentrated spent wash stored in lagoon 1 & 2 hence, to consume the concentrated spent wash generated from MEE and stored in lagoons unit shall operate its both dryers.

iii. The unit is making dry powder by using conc. spent wash, which is further sold to third party agencies i.e. M/s Peptech bio-sciences Ltd., M/s Jaipur bio-fertilizers and M/s CMS Organics etc.

iv. Unit is using bagasse and bio-gas as fuel for meeting energy requirements in Dryer.

v. The details of dryer are mentioned in Table 12 below:

Table 12: Details of dryer installed for spent wash management

S. No.	Equipment	Fuel used	Air Pollution Control Device (APCD)	Stack Height
1.	Spray dryer (45 TPD)	Bagasse	Wet scrubber	40 m
2.	Spray dryer (45 TPF)	Biogas		

vi. Unit has installed volumetric based flow meters at feed to both spray dryers and readings noted by joint team during visit are mentioned below in Table 13:

Table 13: Reading of flow meters at feed to both spray dryers

S. No.	Location of flow meter	Instantaneous reading (m^3/hr)	Totalizer reading (m^3)
1.	Feed to old dryer	3.5	47903
2.	Feed to new dryer	0.0	18758

vii. The joint team obtained the logbooks for concentrated spent wash feed to dryer and used in bio-composting for duration Nov. to Dec, 2023. Details of the same are mentioned in Table 14 below:

Table 14: Month wise conc. spent wash feed to dryer/ consumed in bio-composting

Month	Concentrated spent wash generation (MT)	Conc. Spent wash feed to dryer (MT)	Conc. Spent feed to lagoon (MT)	Conc. Spent wash send from lagoon to Bio-compost yard (MT)	Dry powder generation (MT)
Nov, 2023	1201.33	516.69	684.64	653	193.62
Dec 2023	2184.31	1739.95	444.37	262	683.62
Total	3385.65	2256.64	1129.01	915	877.24

V. Bio-composting

i. As per the consent, the unit is allowed to carry out bio-composting only up to December 2023, thereafter no fresh concentrated spent wash shall be disposed through bio-composting yard and spent wash shall be totally disposed through spray dryers.

ii. The joint team observed that the unit is having total 14.02 acres of Bio-composting area. Out of 14 acres, 4.28 acres of land is covered and the remaining 9.74 acres of land is open/uncovered where four cycles of bio-compost per annum can be carried out. The unit has extra 4 acre of area for storage of press mud.

iii. On the day of the visit no spray of concentrated spent wash in bio-compost yard was observed however, five windrows were observed. The unit representative has informed that windrows dressing and laying started from 18.11.2023 and consumption of press mud and spent wash started from 21.11.2023. As per the logbook data the concentrated spent wash from MEE outlet was sent to lagoon in Bio-compost yard till 7.12.23 thereafter, the entire spent wash is either being consumed in dryer. The unit has consumed total of 1260 MT of press mud in five windrows.

iv. Ready bio-compost was found stored in the covered shed. Bio-compost yard, leachate collection drain and pits were not observed around the periphery of bio-compost yard for leachate management. Leachate was found filled in the bio-compost yard.

v. A tank of capacity 300 KL was observed in the bio-compost yard which is used for storing concentrated spent wash for bio-composting purpose.

D. Green belt Area

I. The unit has developed green belt inside the unit premises, outside the unit's main

gate, in the ETP area, outside the boundary wall of industry premises. The unit has provided the details of green belt area developed by them.

II. As per the documents provided by the unit regarding land and green area, the unit is having total 50 hectare of land, out of which 8-hectare is used as agricultural land area, 27 hectares is covered area and cane yard area and the remaining 15hectare land is used for green belt which is approximately 35.71% of total land area. As per the information provided, the unit has approx. 5000 nos. of big trees and approx. 18000 nos. of small trees inside the premises. The description of area along with the green belt developed is annexed at **Annexure-4**.

E. Other Observations:

I. As recommended by the committee in its previous inspection report regarding preparing adequacy and performance assessment report of ZLD scheme for molasses based distillery as unit has expanded its production capacity from 60 KLPD to 120 KLPD and has installed spray dryers as ZLD system. In this context, the unit submitted a letter dated 30/11/2023 to CPCB wherein the unit has requested NSI, Kanpur carry out the adequacy at the earliest. The unit has submitted a fees of Rs. One Lakh Twenty-Nine Thousand & Eight hundred to NSI.

II. As informed by the unit representative, the Laksar drain which is flowing within the industrial premises of M/s RBNS has made concreted drain upto a stretch of 1100 mtr.

III. The unit has installed dryer of capacity 45 TPH in both the plant to dry the concentrated spent wash into powder, hence installation of incineration boiler is not required.

IV. The unit has installed one CO_2 recovery plant of 24 Ton within the premises. The unit is recovering approx. 20 Ton of CO_2 daily. The recovered CO_2 is sold to third party.

V. The unit has separate Consolidated Consent & Authorization for bottling issued by UKPCB dated 06/10/2023 under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974, under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981and under Rule – 6 (2) of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 having validity upto 30/09/2024.

VI. The consent is granted for the production Country liquor (Dabang) 3000 Cases/day and IMFL 1000 Cases/day. This CCA is valid for bottling, formulation and Packaging process only.

F. Conclusion

I. The unit has obtained Consolidated Consent & Authorization issued by UKPCB dated

06/10/2023 under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974, under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981and under Rule – 6 (2) of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 having validity upto 31/03/2024.

II. The unit has obtained No Objection Certificate (NOC) for groundwater abstraction from Central Ground Water Authority (CGWA) for 01 no. of borewell, having validity up to 25/11/2024. As per the conditions of NOC, the unit can abstract groundwater at a maximum rate of 500 KL/day. As per the log book data the unit is abstracting 168 KLD of average fresh water from Borewell-1.

III. Analysis results of samples collected piezo well located within molasses based distillery plant shows **COD (33 mg/l)** in the sample collected from Piezowell, which indicates posing potential threat to ground water and need urgent attention towards improvement of housekeeping, prevention of seepage, spillage etc.

IV. Analysis results of samples collected from handpump located outside of the unit shows **COD- 6 mg/l**.

V. All the plant machineries were found operational on the day of inspection.

VI. Analysis result of sample collected from the outlet of CPU shows pH- 7.8, COD – 128 mg/l, BOD – 42 mg/l, Sulphate-38 mg/l and Total Dissolved Solid 1768 mg/l. This indicates that CPU treated water is not suitable to use in cooling tower makeup.

VII. Analysis result of sample collected from lagoon-1 and lagoon-2 indicates that the unit is storing conc. spent wash in lagoons-1 & lagoon -2 with 41.25% and 36.35% Total solids.

VIII. The feed rate of one dryer is 180TPD and of another is 230.4 TPD i.e total feed rate is 410TPD. Average concentrated spent wash generation is 178.18TPD. Currently the unit was operating dryer having feed rate of 180TPD which is adequate to handle the current spent wash generation. However, the unit is having approx. 1000KL of legacy concentrated spent wash stored in lagoon 1 & 2 hence, to consume the concentrated spent wash generated from MEE and stored in lagoons unit shall operate its both dryers.

IX. To achieve ZLD in distillery, the unit has installed dryers for making dry powder from conc. spent wash which is further provided to third party for potash granulation, hence installation of incineration boiler is not required.

X. The unit is having total 50 hectare of land, out of which 8-hectare is used as agricultural land area, 27 hectares is covered area and cane yard area and the remaining 15-hectare

land is used for green belt which is approximately 35.71% of total land area.

G. Recommendations

I. The unit shall install flow meters at the abstraction points on both the bore wells of sugar and distillery unit.

II. The unit shall comply with the consent conditions issued by UKPCB and shall ensure that no fresh concentrated spent wash shall be disposed through bio-composting and entire spent wash shall be totally disposed through spray dryer.

III. The unit shall consume the concentrate spent wash stored spent stored in lagoons of capacity 1925m3 and 1375 m3 in dryer in environmentally sound manner thereafter, unit shall dismantle all the 02 lagoons in compliance to the recommendations of the joint committee report dated 21/11/2023.

IV. After completion of the bio-composting cycle, the unit shall sell all the bio-compost and after that the unit shall clean the bio-compost area and shall submit photographic evidence to UKPCB.

2.1.2 Compliance report of M/s Rai Bahadur Narayan Singh Sugar Mills Ltd. (Sugar Unit), Laksar, Haridwar, Uttarakhand

A. GENERAL INFORMATION

1.	**Name of Contact person**	**Designation**	**Contact No. & E- mail**
	Mr. S.P. Singh	Unit Head	Contact No.-7830778880 E-mail- edprbns@yahoo.com
2.	**Spatial Co-ordinates Latitude and longitude (in Decimal format only)**	**Latitude:** 29.74451230 **Longitude:** 78.02722760	
3.	**Type of Sugar Mill**	**Integrated Complex (Sugar with Distillery Plant) with cogeneration**	
4.	**Co-generation capacity, MW**	30.0 MW/Hr. (12-13 MW surplus power supply to national grid))	
5.	**Type of Turbine (Condensing Turbine/Back Pressure Turbine)**	Back pressure turbine	
6.	**Capacity of Boilers & Numbers (kg/cm^2 steam pressure)**	Tot. 03 nos. (Capacity: 90 Tonne/Hr, 70 Tonne/Hr, 30 Tonne/Hr- used in off season) (operate on 67 kg/cm^2 steam pressure)	
7.	**Condensate Polishing Unit Adopted by the Sugar Mill**	Installed in attached distillery plant (Excess condensate after utilizing in sugar mill sent to CPU of distillery, which is being used in process in distillery plant)	
8.	**License capacity of sugar Mill (TCD)**	Cane crushing capacity- 10,000 TCD (Sugar Production- 30,000 MT per day)	

9.	**Average actual crush rate (TCD)**	6843.23 TCD- (including stoppages) (Sugar Production- 618.06 MT per day as per DMR dated 13th Dec, 2023)
10.	**Attached Distillery capacity, KLPD**	120 KLPD
11.	**Quantity of Juice/Syrup/BH diversion to distillery, MT/day**	B- Heavy Diversion (400 MT/day)
12.	**Consent status& its Validity with date** (Expired/Applied for renewal/First time applied/Never applied) Air Consent Water consent Hazardous Waste Authorization	Consolidated Consent to Operate (CTO) and Authorization valid up to 31/03/2024
13.	**NOC from CGWA & its Validity with date** (Expired/Applied for renewal/First time applied/Never applied)	Valid up to 28/12/2023 (CGWA)

B. OPERATIONAL STATUS

14.	**Start period of crushing season**	16/11/2023
15.	**No. of operational days at the time of inspection**	31 days
16.	**Operational status during visit (operational/ closed/ temporary closed/ permanent closed)**	Operational
17.	**Sources of fresh water**	
	a. Bore well/Tube well/ Any other & its No's	Bore well (01 nos.)
	b. Flow meter Installation at wells	Yes
	c. Reading of Flow Meter during visit	Flow (during visit): 50.378 m^3/hr. Totalizer: 938620.91 m^3
	d. Any Logbook maintained (Yes/No), if yes, attach.	Yes, enclosed
	e. Quantity of water withdrawal (KLD)	336.71 KLD- Average 388 KL- (Previous day)
18.	**Fresh water consumption (KLD)- Average**	
19.	i. Sugar plant: (Process plant) ii. machinery cooling make-up iii. Spray pond/PCT make-up iv. Any other, such as Cleaning and human requirements including lab requirements v. Co-generation/Boiler section: vi. Cooling tower make-up vii. Wet Scrubber make-up	336.71 KLD
20.	Total fresh water Consumption (KLD)	336.71 KLD
21.	Log book maintained (Yes/ No) If any, details to be collected	Yes
22.	**Specific water consumption, L/t of cane**	**49.20 L/t of cane**

23.	**Details of Hot & Cold-water recycling system (Yes/No.)**	**Number**	**Capacity**
	a. Details of Hot water UGR.	03	Hot water UGR No.1: ~800 m^3 Hot water UGR No.2: ~800 m^3 Hot water UGR No.3: ~350 m^3
	b. Cold water UGR	02	Cold water UGR N0.1: ~910 m^3 Cold water UGR N0.1: ~500 m^3
	c. Other UGR	02	ETP outlet UGR N0.1: 600 m^3 ETP outlet UGR N0.1: 115 m^3
24.	**Hot water**- Location of flow meter & its Installation **(Yes/No)-**	**Flow meter reading**	**Quantity of water (KLD)**
	1. Imbibition water at mills (Yes)	Flow: 116.5 m^3/hr Totalizer: 15341.5 m^3	1369.90 KLD
	2. Filter cake wash water at rotary vacuum filter (Yes/No)	Flow meter not approachable	300.23 KLD
	3. Sugar melting, pan boiling, molasses conditioning (Yes)	Flow: 00.00 m^3/hr Totalizer: 27153 m^3	319.23 KLD
	4. Wash water at Centrifugal (Yes)	Flow meter readings not visible	209.42 KLD
	5. Wet Scrubber make-up (No)	From blow down and excess condensate	
25.	Cold water -Location of flow meter & its Installation.	**Flow meter reading**	**Quantity of water (KLD)**
	Power turbine cooling	No flow meter installed	
	1. Mills, fibrizer bearing, pumps cooling	No flow meter installed	
	2. Cooling tower of co-generation make-up	No flow meter installed	
	3. SO_2 gas cooling (Yes)	Totalizer: 242811 m^3	195.55 KLD
	4. B and C massecuite cooling	No flow meter installed	
	5. Final molasses cooling	No flow meter installed	
26.	**Waste water (Influent) generation (KLD)**	**Flow meter reading**	**Quantity of water (KLD)**
	a. Process cooling tower /spray pond over flow (for double sulphitation) (SRS Outlet)	**ETP inlet flow meter:** Flow: 29.32 m^3/hr Totalizer: 28978 m^3	879.87 KLD
	b. Mills, boiling house, D.M./ R.O. Plant boilers etc.	**RO Outlet:** Flow: 29.68 m^3/hr Totalizer: 147671.2 m^3 **RO reject flow meter:** Flow: 13.3 m^3/hr Totalizer: 177270.632 m^3	1. RO (outlet) treated water→Ion Exchange Resin→DM Plant→Boiler steam (Log book not maintained) 2. RO reject→cold water UGR (Log book not maintained)
	c. Soda/Acid boiling water (Hazardous)	Not Applicable (no chemical cleaning of evaporator tubes take place)	
	d. Co-generation	No flow meter installed (Recycled water)	
	e. Brine solution reject after regeneration. (For refine sugar)	Not Applicable	

	f. IER wash water generation.	Not Applicable	
	g. Brine reject from brine recovery system	Not Applicable	
	h. Reject acid after regeneration of IER column.	Not Applicable	
	i. Common / total influent generation.	879.87 KLD (including SRS treated effluent)	
27.	**Waste water (Effluent) discharge, KLD**	865.97 KLD	
28.	**Specific effluent discharge, L/t of cane**	**126.54 L/t of cane**	
29.	**Treated effluent used from lagoon for irrigation, KLD**	Irrigation of treated effluent not observed	
30.	**Spray pond /PCT overflow**	**Flow meter reading**	**Quantity of water (KLD)**
	a. Flow meter Installation	No flow meter installed	
	b. Provision of separate spray pond overflow treatment **(Yes)**	**SRS inlet:** Flow: 19.2 m^3/hr Totalizer: 42586.078 m^3	207.55 KLD
31.	**Details of tube cleaning method adopted (chemical/ hydrojet/ any other appropriate method if any), provide details**	Hydrojet	
32.	**Availability of Hazardous tank to collect wash water generated during chemical/Mechanical cleaning of evaporator tubes. (Yes/No), if Yes give Details.**	Yes, Capacity: 75.84 m^3 (However, no generation of chemical wash due to the adoption of hydro-jet cleaning)	
33.	Condensate polishing system adopted by the factory (for boilers >45 kg/cm^2 steam pressure) (Yes/No)	Yes, however, CPU installed in distillery premise, which receives condensate from sugar plant and condensate used in molasses dilution, cooling tower make-up etc.	
34.	If yes, then provide the details of condensate polishing system		
35.	Quantity of excess condensate used as fresh water, KLD	No flow meter installed	
36.	**Construction of small pits with smooth inner surface with ceramic tiles in the centrifugal section. (Yes/No), give details**	RCC flooring and pits available	
37.	**Mixing arrangement in equalization tank**	No	
38.	**Type of aeration in aeration tank Diffused/ surface/ any other**	Surface aeration (06 nos. of surface aerators were found installed in aeration tank)	
39.	**Tertiary treatment (Yes/No), give Details**	Yes, Secondary treated effluent filtered through ACF, MGF followed by chlorination	
40.	**Schematic diagram of ETP (flow chart to be collected)**	ETP flow chart enclosed	
41.	**Rain water harvesting system**	Adoption of rain water harvesting system not	

	adopted	applicable	
42.	**Treatment Capacity of ETP (KLD)**	1000 KLD	
43.	**Treatment capacity of ETP (KLD)**	**Retention Time/Contact Time (Mentioned in CPCB charter)**	**As per Industry**
	1. Bar screen Chamber, LxWxH = ------m^3	30 minutes	NA
	2. Oil & grease tank, LxWxH = ------ m^3	45 minutes	37.5 minutes
	3. Equalization tank with aeration, LxWxH = ------m^3	6 hrs	10.2 hrs.
	4. Primary Clarifier, -----m dia. x --m ht=-------- m^3	5-6 hrs	9 hrs.
	5. Aeration tank- LxWxH = ------m^3	24-28 hrs	31 hrs.
	6. Secondary Clarifier- ---m dia. x ---m ht=--------- m^3	7-8 hrs	16.31 hrs.
	7. Sand/multi grade filter, ------m dia. x -----m ht Design basis: Surface loading rate-12 m3/m2/Hr	-	13 minutes
	8. Activated carbon filter, -------m dia. x -----m ht Design basis: Surface loading rate-12 m^3/m^2/Hr	-	13 minutes
	9. Sludge drying bed	-	-
	10. Centrifuge	No centrifuge installed	
	11. **Any further treatment after ETP**	No further treatment of effluent take place after ETP	
44.	**Brief processing details (flow chart)**	Sugar process manufacturing flow chart enclosed	
45.	**Number of Piezometric wells available in the unit premises**	Yes, 01 nos.	
46.	**Storage of treated Effluent**		
	a. No. & size of lagoons	01 nos. Size: 1289.90 m^3	
	b. Retention time	Approx. 8 Days	
	c. Lagoon type-permeable/impermeable	Impermeable	
47.	**Sludge Handling Process (Yes/No), gives details.**		
	a. Sludge Digestion Method	Not applicable	
	b. Sludge Drying Process	Sun drying	
	c. Final Disposal of Sludge	Utilized in own agriculture land	
	d. Whether mechanical sludge handling system installed	No (manual handling)	
48.	**Any Hazardous Substances (Yes/No), if yes, give details. (Quantity & way of Disposal)**	Yes, Used Oil as per Schedule-I (Category 5.1) Quantity: Log book not maintained. Disposal: Mixed with bagasse and used as	

		supporting fuel in boilers.
49.	**Manpower employed for ETP operation & maintenance.**	Environment Manager- 01 Lab Chemist- 02 Operator- 04 Helper- 04
50.	**Details of irrigation system & treated effluent used quantity**	
	1. Own land area for irrigation	Yes, ~23 hectare
	2. Farmer land area and their agreement.	Not available
	3. Net effluent generation left for Irrigation (KLD)	Log book not maintained (however it is approximately 9 KLD as per unit representative)
	4. Flow meter to measure amount of water used for irrigation.	Flow meter not installed
	5. Distance of land Area from the Unit (Km)	Land area attached with unit unit's boundary wall
	6. Total Available Area (Hectare)	~23 hectare
	7. Soil Texture of land (Sandy, Sandy loam, Loam, Clay loam, Clay)	Sandy loam
	Crop area under effluent application	Sugarcane and Wheat
	Cleaning mechanism at Mills and factory floor	Wet cleaning
51.	**Color coding of pipelines for water distribution network**	No
52.	**Mode of disposal (route to reach Ganga)**	As informed by the unit representative, treated effluent is being recycled and balance effluent and balance effluent discharge in to Laksar drain. Use of treated effluent in irrigation was not observed.
53.	Emission control system or Air Pollution Control Device (APCD) installed	Yes
	Name of installed Emission control system/APCD	Wet scrubber
	Stack height	60 meter
	Stack monitored	Yes
	SPM level mg/Nm^3	Refer Table 16 and 17
	On-line emission (stack) monitoring system installed	Yes
54.	**Ash Details:**	
	Quantity of ash generated, MT/day	0.8 T/hr. x 24 hrs.= 19.2 TPD (As per unit representative)
	Method of disposal of Ash	160 T/hr.- Low lying area 80 T/hr.- Bio-composting
55.	**Sewage management section**	
	Quantity of sewage generated (KLD)	Unit has placed purchase order for the installation of 03 STP with MBBR design. **Specification:** Design parameter: flow-15 m^3/day, COD- 700 to 150 mg/l, BOD- 350 to 20 mg/l, pH- 6.5 to 7.5
	Quantity of treated sewage discharged	40 KLD

C. OBSERVATIONS

1. The unit is engaged in production of Sugar with consented capacity of 30,000 MT/day (10,000 TCD) using Sugarcane as raw material. On the day of inspection, unit was found operational & reportedly crushing @ 9000 TCD. The unit started its crushing season 2023-24 on November 16th, 2023.
2. As per Daily Manufacturing Reports (DMRs) provided by the unit, average cane crushing from 16/11/2023 to 13/12/2023 is found to be 6843.23 TCD (Sugar production 618.06 MTD), which is under the consented capacity of 10,000 TCD.
3. The unit has also provided RT-8(C) for the crushing season 2022-23, wherein 8,497 TCD of cane crushing was reported.
4. UPPCB issued Consolidated Consent to Operate and Authorization (CCA) under Section -25 of the "Water (Prevention & Control of Pollution) Act, 1974" and under Section -21 of the "Air (Prevention & Control of Pollution) Act, 1981" and Authorization under "Rule-6(2)" of the "Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016" notified under "Environment (Protection) Act, 1986" to the unit, which is granted up to 31/03/2024 (**Annexure-5**).
5. The CCA is valid for production of crushing, milling, juice heating, clarification, evaporation, sulphitation, crystallization, separation and drying process only.
6. No bypass of untreated or partially treated effluent was observed by the joint team during the inspection.
7. The unit has 30 MW cogeneration plant in which 18 MW is consumed in captive plant and surplus power i.e. 12 MW exported to national grid. The unit is having boilers with capacity of 90 TPH and 70 TPH facilitated with air pollution control device i.e. Wet Scrubber.

Table 15: Details of boilers.

S. No.	Air Pollution Source	Capacity of Boiler	Type of Fuel	Stack No.	Air Pollution Control System (APCS)	Stack Height
1.	Boiler-I	90 TPH	Agro Waste	Stack-I	Wet Scrubber	60 meter from ground level
2.	Boiler-II	70 TPH	Agro Waste	Stack-II	Wet Scrubber	60 meter from ground level

8. Bagasse (Agro Waste) is being used in boiler as fuel with waste oil and grease by the unit.

9. Stack monitoring of both the boilers (I & II) (both stack have-60 meter of height from ground level) and ambient air monitoring were carried out by the PCRI, B.H.E.L., Ranipur, Haridwar, Uttarakhand at the time of inspection.

Table 16: Analysis result of stack emission for Particulate Matter (PM)

S. No.	Boiler stack	Parameter	Unit	Result	Standards
1.	Stack-I (90 TPH)	Particulate Matter (PM)	mg/Nm^3	137	150.0
2.	Stack-II (70 TPH)			74	150

10. Monitoring result of both the stack for Particulate Matter (PM) shows value 137 mg/Nm^3 and 74 mg/Nm^3 against 150.0 mg/Nm^3 which are complying as per the notified standard mentioned in MoEF&CC Notification G.S.R. (E) dated 14th January, 2016.

Table 17: Analysis result of ambient air monitoring for Particulate Matter (PM).

S.No.	Location of Sampling	Parameter	Unit	Results	NAAQ Standards
	Near ETP	PM 10	$\mu g/m^3$	**118**	100
		PM 2.5		36	60
		SO_2		BDL	80
		NO_2		7	80
	Near guest house	PM 10		**127**	100
		PM 2.5		54	60
		SO_2		0.5	80
		NO_2		12	80

11. Analysis results of air samples collected from two locations i.e. near ETP and near guest house are complying for PM 2.5 (36 $\mu g/m^3$ & 54 $\mu g/m^3$), SO_2 (BDL & 0.5 $\mu g/m^3$), NO^2 (7 $\mu g/m^3$ & 12 $\mu g/m^3$) w.r.t. the National Ambient Air Quality Standards (NAAQS) PM 2.5-60 $\mu g/m^3$, SO_2- 80 $\mu g/m^3$ and NO2-80 $\mu g/m^3$ published vide Gazette Notification No. B-29016/20/90/PCI-L dated 18th November, 2009. **However, analysis results of samples for Particulate Matter (PM 10) at near ETP and near guest house shows 118 $\mu g/m^3$ and 127 $\mu g/m^3$ respectively, which are non-complying against NAAQ standard of 100 $\mu g/m^3$.**
12. The unit has installed Air Pre Heater (APH), which converts cold air to hot air used in boiler to air the fuel.
13. Ash generated (quantity-5774.45 MT- 10% of Bagasse as per DMR) and disposal details not provided from boiler and APH was observed to be dumped in the low lying areas within the mill premises.

14. The joint team has observed that the unit has not maintained the proper record of ash disposal in low lying area.
15. During visit, fugitive emission of bagasse particles observed in and around the boiler and near bagasse storage area.
16. The unit has three DG sets of 625 KVA × 01 nos., 1010 KVA × 01 nos. & 320 KVA × 01 nos. with acoustic enclosure & proper stack height.
17. Used/waste oil is being mixed with bagasse and used as fuel in boiler by the unit. The unit has not maintained the record for the disposal of used oil.
18. The unit has provided the covered and RCC floor for hazardous waste storage viz. used oil drums and containers, however, hazardous waste generation & disposal display Board at the entry gate were not observed.
19. It was also observed that the unit has also provide covered/shaded structure to the storage of salt/caustic bags/lime, Sulphur, bacterial growth inhibitor, color reducer, enzyme etc.

Effluent Management:

20. The unit has ETP with treatment capacity of 1000 KLD for effluent treatment generated from sugar mill and separate Sulphate Removal System (SRS) (capacity-25 m^3/hr x24hrs=600 m3/day) for spray pond overflow treatment. Both the plant was found operational on the day of inspection.
21. The ETP is comprised of Bar screen → Oil skimmer → Equalization tank → pH correction tank (Lime dosing) →Primary Clarifier → Aeration tank → Secondary Clarifier → Multigrade Filter → Activated Carbon Filter.
22. Defunct condition of primary clarifier was observed by the joint team.
23. Flowmeter has installed at main inlet channel of ETP, wherein SRS treated effluent also added to ETP inlet. Flow meter has also installed at outlet of ETP to measure the treated effluent quantity. However, Flow at ETP inlet 29.26 m^3/hr (Totalizer-27844 m^3) and ETP outlet 37.79 m^3/hr (Totalizer-276018 Liter) were observed during visit.
24. The unit has installed Online Continuous Effluent Monitoring System (OCEMS). OCEMS reading w.r.t. flow- 29.26 m^3/hr, pH- 7.29, Temperature- 19.2 °C, COD- 61.5 mg/l, BOD- 14.5 mg/l and TSS- 10.88 mg/l were recorded during joint inspection. OCEMS is connected with CPCB and SPCB server.
25. The unit is complying w.r.t. final treated effluent discharge norms which is measured as 126.54 liter per ton of cane crushed against 200 L/T of cane crushed.

26. The team has collected effluent samples from mill ETP inlet & ETP outlet and various subunits of ETP and treated effluent storage lagoon. The analysis result is placed in Table below.

Table 18: Analysis results of samples, collected from, ETP inlet, outlet and various subunits of ETP and treated effluent storage lagoon.

Sample Analysis	Effluent flow rate (m^3/hr)	Sulphate	Color	SAR	pH	COD	BOD	TSS	TDS	Oil & Grease	MLSS/MLVSS
SRS Inlet	19.2	**188**	BDL	-	6.8	796	447	242	3864	-	-
SRS Outlet	No flow meter	**249**	BDL	-	9.7	719	391	308	3584	-	-
ETP Inlet	29.26	170	BDL	-	7.0	1002	446	184	3236	-	-
Equalization Tank	-	181	BDL		5.9	2283	1113	696	3352	-	-
Primary clarifier outlet	-	341	BDL	-	5.8	1721	643	174	3392	-	-
Aeration tank	-	-	-	-	-	-	-	-	-	-	2389/1480
Secondary clarifier outlet	-	99	BDL	-	7.6	118	39	48	4620	-	-
ETP Outlet	37.79	25	BDL	0.7	7.4	108	**33**	29	**3840**	**53**	-
OCEMS Reading during visit	37.79	-	-	-	7.29	61.5	14.5	10.88	-	-	-
Treated effluent storage lagoon	-	35	BDL	0.6	7.5	127	**46**	**32**	1732	-	-
Notified standards for land disposal	-	-			**5.5 to 8.5**	-	**100- on land/ 30-on surface body**	**100- on land/ 30-on surface body**	**2100**	**10**	-
NOTE: All *Parameters are in mg/l except pH, Color in Hazen.*											

27. The analysis of sample collected from aeration tank shows ration of MLVSS/MLSS 0.61, which need to be maintained as per the desired ratio of 0.70 to 0.80.
28. The analysis results of sample collected from the ETP outlet (pH- 7.4, COD- 108 mg/l, **BOD- 33 mg/l**, TSS- 29 mg/l, **TDS- 3840 mg/l, Oil & Grease- 53 mg/l**) indicates that the treated effluent from the ETP is not complying w.r.t. the notified standards for surface water discharge i.e. pH- 5.5-8.5, BOD- 30 mg/l, TSS- 30 mg/l, TDS- 2100 mg/l).
29. It was observed that the unit has facility to trap Oil & Grease, however, the location of oil and skimmer belt was not appropriate to collect the entire Oil & Grease content of the effluent.
30. Lime dosing and mixing system was not operating properly.

31. The unit has provided equalization tank in the ETP, however no arrangement for air mixing was provided.
32. It was observed that ETP outlet has 03 provisions: 1. To use treated effluent as makeup the spray pond loses, 2. To use treated effluent in irrigation, 3. To discharge the treated effluent in the drain. On the day of inspection, it was observed that the treated effluent was used in spray pond as makeup of loses.
33. It was observed that the treated effluent was being discharged into nearby Laksar Drain during visit.
34. The unit has not submitted the irrigation management plan.
35. The unit has setup environmental laboratory for the analysis of daily parameters.
36. The unit has 16 nos. of sludge drying bed having capacity of 680 m^3. ETP sludge is reported to be used as manure for horticulture within unit premises only. However, the unit has not maintained the sludge disposal record.
37. The unit is reportedly using the entire press mud/filter cake generated in its own distillery for making bio-compost with spent wash. However, press mud also provided to the brick kiln units to use as fuel if remains after bio-composting. The press mud generated (quantity-148.49 MT- 0.07% of total cane crushed up to 13th Dec., 2023).
38. The unit has installed one bore well (Lat. 29.747854, Long. 78.029738) to meet the requirement of fresh water. However, distillery unit also share the ground water from the same bore well as stated by the unit representative. As per log book records average ground water abstraction from bore well is measured as 336.71 KLD (permitted withdrawal 594 KLD), which is under the permitted quantity of ground water.
39. The unit has obtained No Objection Certificate (NOC) from Central Ground Water Authority for one bore well, which is valid up to 28/12/2023 (**Annexure-6**) and having permission to abstract 594 KLD or 77220 m^3/year as per NOC.
40. The unit has not installed flow meter at main bore well, only consumption point is facilitated with flow meter. This has not full filled the condition of CGWA, hence quantity of ground water abstraction is doubtful.
41. The unit has one piezometer well in the unit premises (latitude – 29.745695, Longitude – 78.032221, water level reading – 2.37 m).
42. As per the logbook provided for freshwater consumption, the unit has consumed groundwater @ 336.71 KL/day and specific fresh water consumption is measured as 49.20 Liter/Ton and of cane crushed.

43. Samples were collected from borewell, used for sugar mill to assess the ground water quality. Analysis results of the ground water are mentioned in Table below.

Table 19. Analysis results of groundwater samples collected from Borewell used for sugar manufacturing process.

Parameters	Borewell (Sugar Unit)	BIS IS 10500:2012 (Permissiblelimit in absence of alternative source)
pH	7.5	**6.5-8.5**
Conductivity (µmho/cm)	970	**-**
TDS	506	**2000**
COD	**12**	**-**
Total Hardness	454	**600**
Chloride	39	**1000**
Phosphate	BDL	**-**
Fluoride	BDL	**1.5**
Colour (Hazen)	BDL	**15**
Sulphate	60	**400**
Nitrate	0.07	**45**
Total Alkalinity	255	**600**
Note: All values are in mg/l except pH, colour, and conductivity		

44. Analysis results of samples collected from Borewell located in unit premise was found within the permissible limit as per BIS IS 10500:2012 except **COD (12 mg/l)** in the sample, which indicates posing potential threat to ground water and need urgent attention towards improvement of housekeeping, prevention of seepage, spillage etc.
45. The unit is having separate facility of Sulphate Recovery System (SRS) installed for treatment of spray pond overflow/cooling tower overflow. Flow meter was installed at inlet of SRS (19.2 m^3/hr, Totalizer-42586.078 m^3), however separate flow meter at outlet of SRS was not installed to estimate the treated effluent generation from SRS.
46. The SRS comprises of Collection tank → Reaction tank→ pH correction tank (Lime, Poly Electrolyte, Poly Aluminum Chloride) → Clarifier tank → Outlet to ETP inlet line (**Annexure-7**).
47. The team has collected sample from inlet and outlet of SRS for physico-chemical analysis. The analysis results of SRS outlet shows pH- 9.7, COD- 719 mg/l, BOD- 391 mg/l, TSS-308 mg/l, TDS- 3584 mg/l, Sulphate- 249 mg/l.
48. Analysis results of sample collected from SRS outlet showing reduction of ~12.53% in BOD, ~9.68% in COD and ~7.25% in TDS. However, Sulphate was increased by 24.5%

from inlet to outlet, **which indicate inefficient operation and maintenance of SRS system**.

49. The unit has not yet prepared a comprehensive irrigation management plan validated by SPCB/Agricultural Universities for utilizing the treated effluent in irrigation as per notified treated irrigation protocol for sugar industries.
50. The unit has installed energy meter for ETP and the log book record of the energy consumption was found maintained by the unit.
51. The unit has 03 separate cooling tower, 01 for turbine cooling and 02 for condensate cooling.
52. The unit has installed RO system for treatment of ground water, which was used in boiler, having capacity of 35m^3/hr (35 m^3/hr x 24 hrs= 840 m^3/day).
53. As per the information provided by the unit representative, the RO reject is being transferred to cold water UGR and RO outlet/permeate to ion exchange resin column, which treated in DM plant and used in boiler for steam preparation.
54. Unit has submitted documents regarding purchase order for the installation of 03 nos. of STP based on MBBR technology.
55. The overall housekeeping of the sugar mill was found poor.
56. It was observed by the joint team that the no any safety equipment like helmet, mask in sugar packaging section etc. provided to the mill employees. Further, few iron platforms need repair and maintenance to avoid serious accidents. The unit has not submitted any periodic assessment of health and safety by the competent authority.
57. A leaked fresh water line/pipe in the mill was observed during the visit (Pic. - 20.)
58. The unit has provision to discharge treated effluent to lagoon and to Laksar drain via an open channel after tertiary treatment system.

D. Conclusion:

1. The unit has valid Consolidated Consent to Operate and Authorization (CCA) issued by the UPPCB.
2. Based on the DMRs, the average sugar production of the unit is under the consented capacity as per CCA.
3. The unit has two boilers with capacity of 90 TPH and 70 TPH facilitated with air pollution control device i.e. Wet Scrubber.
4. Monitoring result of both the stack for Particulate Matter (PM) shows **complying** results i.e. 137 mg/Nm^3 and 74 mg/Nm^3 as per the notified standard (against 150.0 mg/Nm^3) mentioned in MoEF&CC Notification G.S.R. (E) dated 14th January, 2016

5. Ash generated from boiler and APH is being dumped in low lying area within the mill premises, however, concerned log books were not maintained.
6. Fugitive emission of bagasse particles observed in and around the boiler and near bagasse storage area.
7. Defunct condition of primary clarifier was observed by the joint team.
8. The unit is complying w.r.t. final treated effluent discharge norms which is measured as 126.54 liter per ton of cane crushed against 200 L/T of cane crushed.
9. The analysis results of sample collected from the ETP outlet (Sugar unit) (pH- 7.4, COD- 108 mg/l, **BOD- 33 mg/l**, TSS- 29 mg/l, **TDS- 3840 mg/l**, **Oil & Grease- 53 mg/l**) indicates that the treated effluent from the ETP is not complying w.r.t. the notified standards for surface water discharge i.e. pH- 5.5-8.5, BOD- 30 mg/l, TSS- 30 mg/l, TDS- 2100 mg/l).
10. The oil and skimmer belt was not placed at appropriate place to collect the entire Oil & Grease content of the coming effluent in the ETP.
11. Lime dosing and mixing system was not operating properly.
12. The ETP sludge is utilized as green manure for horticulture within unit premises only. However, the unit has not maintained the sludge disposal record.
13. Press mud is being used in horticulture purpose and also provided to the brick kiln unit to use as fuel. The concerned record for press mud generation from sugar mill has not maintained.
14. The unit has not installed flow meter at main bore well, only consumption point is facilitated with flow meter.
15. Analysis results of samples collected from Borewell located within Sugar Mill was found within the permissible limit as per BIS IS 10500:2012 except **COD (12 mg/l)** in the sample.
16. Analysis results of sample collected from SRS outlet (Sugar unit) showing increase in Sulphate content by 24.5% from inlet to outlet, which indicate **inefficient operation and maintenance of SRS system**.
17. The unit has not yet prepared a comprehensive irrigation management plan validated by SPCB/agricultural universities for utilizing the treated effluent in irrigation as per notified treated irrigation protocol for sugar industries.
18. Unit has submitted documents of purchase order for the installation of 03 nos. of STP based on MBBR technology.

19. No any safety equipment like helmet, mask in sugar packaging section etc. provided to the mill employees as well as, few iron platforms need repair and maintenance to avoid serious accidents.

E. Recommendations

1. The unit shall maintain the proper record of ash disposal in low lying area.
2. Unit must ensure regular water sprinkling in and around the boiler and near bagasse storage area of the unit to minimize the dust dispersion in the ambient environment.
3. The unit shall display board for Hazardous waste storage at the hazardous waste storage area.
4. The unit shall relocate the oil and skimmer belt at appropriate place to collect the entire Oil & Grease content of the effluent.
5. The unit shall install air mixing system in Equalization Tank for proper hominization of effluent.
6. The unit shall operate Primary Clarifier properly to avoid anaerobic condition in the tank.
7. The unit shall ensure proper functioning of lime dosing system.
8. The unit should get evaluation of its ETP for its performance from Expert Institute of Repute/Experts in the field.
9. The unit shall ensure to maintain the discharge norms as notified in the Gazette Notification G.S.R. 35(E) dated 14th January, 2016.
10. The unit shall calibrate its OCEMS regularly.
11. The unit shall install flowmeter at Borewell, SRS outlet and effluent generation point in the mill.
12. The unit shall install flow meters to quantify the excess condensate utilizing in distillery unit through CPU.
13. It is recommended that the unit shall prepare comprehensive irrigation management plan through reputed government institute/ university.
14. The unit shall maintain the proper record of sludge as well as press mud generation and disposal.
15. The unit shall ensure proper functioning of SRS unit, so that sulphate may be efficiently removed from the effluent.
16. The unit shall maintain Environment, Health & Safety protocols/rules/guidelines to avoid unwanted accidents and organized concerned periodic assessment by the competent authority.
17. The unit shall maintain water line/pipelines to avoid water leakages.

18. The unit shall maintain good housekeeping in the unit premises.
19. The unit shall maintain the record of used/waste oil properly.

2.2 Visit to nearby drain (Laksar):

To verify the allegation of the petitioner regarding the discharge of substantial portion of waste water/effluent in the nearby nala (Drain), the joint team collected the wastewater samples from upstream and downstream of Laksar drain which flows adjacent to the unit.

Characteristics of waste water samples collected from Laksar drain

In compliance to Hon'ble NGT order, the joint tram has collected samples of Laksar drain from 03 locations, which are as follows:

1. Laksar drain upstream of M/s R.B.N.S. Private Limited Haridwar
2. Laksar drain, downstream R.B.N.S. Private Limited Haridwar
3. Laksar drain near Akhoda Kalan village (1.68 Kms*), Downstream of Unit to before confluence with Hadwa drain

Wastewater samples from Laksar drain were collected from the above mentioned locations, which were submitted in the laboratory for analysis.

Table 20. Analysis results of samples collected from Laksar drain

S. no.	Sample Location	pH	NO_3	COD (mg/l)	BOD (mg/l)	TDS (mg/l)	TSS (mg/l)	SO_4^-
1.	Laksar drain upstream of M/s R.B.N.S. Private Limited Haridwar	7.4	0.5	112	35	1404	53	47
2.	Laksar drain, downstream R.B.N.S. Private Limited Haridwar	7.0	1.0	232	108	1804	60	98
3.	Laksar drain near Akhoda Kalan village (1.68 Kms*), Downstream of Unit to before confluence with Hadwa drain	5.4	0.7	**1638**	**626**	1808	158	88

Analysis result of sample collected from upstream of the Laksar drain shows pH- 7.4, COD – 112 mg/l, BOD – 35 mg/l, and Total Dissolved Solid-1404mg/l, Total suspended solids-53mg/l, SO_4^- -47 mg/l and NO_3- 0.5 mg/l.

Analysis result of sample collected from downstream of the Laksar drain shows pH- 7.0, COD – 232 mg/l, BOD – 108 mg/l, and Total Dissolved Solid-1804, Total suspended solids- 60 mg/l, SO_4^- - 98 mg/l and NO_3- 1.0 mg/l.

Analysis result of sample collected from downstream of the Laksar drain near Akhoda Kalan village shows pH- 5.4, COD – 1638 mg/l, BOD – 626 mg/l, Total Dissolved Solid-1808 and Total suspended solids- 158 mg/l SO_4^- - 88 mg/l and NO_3- 0.7 mg/l.

The above analysis results of the drain samples collected from upstream and downstream locations depict the following:

- The analysis result of sample collected from drain at U/s and D/s locations indicate the characteristics of domestic sewage.
- However, quality of Laksar drain near Akhoda Kalan village (1.68 Kms*) shows **Deteriorated condition** of drain, which indicate the possibility of effluent mixing with sewage in drain however, no bypass of industrial effluent (sugar/distillery) was observed from the unit during inspection.

3 Conclusion:

1. In compliance to Hon'ble NGT vide order dated 23/08/2023, in OA No. 530/2023 (Anuj Kumar Vs State of U.P. & Ors.), the joint team has carried out the inspection on 14-15.09.2023, which includes the following:

a) Interaction with complainant Md. Amjad in OA 495/2023 and Mr. Anuj Kumar in OA 530/2023
b) Interaction with project proponent of M/s RBNS Sugar & Distillery and Cavendish India Ltd.
c) Industrial inspection of M/s RBNS Sugar & Distillery, Laksar and M/s Cavendish India ltd, Laksar

Further, in continuation to the above order, a post monsoon visits by the joint team (committee) has conducted, wherein, a pollution source mapping study for the Rivers Banganga and Solani, as well as drains Laksar and Hadwa. on 11-12.10.2023, which includes the following:

a) Mapping and monitoring of River Banganga
b) Mapping and monitoring of River Solani
c) Mapping and monitoring of Laksar
d) Mapping and monitoring of Hadwa drain

The report of the Joint Committee was filed on 21.11.23 before Hon'ble Tribunal in compliance to orders dated 14.8.23. and 23.08.23.

2. In compliance to Hon'ble NGT vide order dated 22/11/2023,

a) The joint team has carried out the inspection on Sugar and Distillery unit on 13th -14th December, 2023, and the details are mentioned in section 2.1.1 and 2.1.2.

b) The Consent conditions of Sugar and Distillery units were verified and compliance status w.r.t. the CTO conditions are mentioned in the Section 2.1.1-A. and 2.1.2 –C.

3. In respect to the grievance made by the applicant/petitioner in O.A. No. 530 of 2023 following are submitted:

a) To achieve Zero Liquid Discharge (ZLD), the unit has installed Dryers, which is the part of ZLD system and the details of Dryers are mentioned in Section 2.1.1-C-IV.

b) As observed by the joint committee, the unit has constructed concreted drain up to a stretch of 1100 meter along the unit premise.

c) The unit has developed total 15 hectare of land as green belt (35.71%) within the complex, which is approximately 35.71% of total land area. The unit has approx. 5000 nos. of big trees and approx. 18000 nos. of small trees inside the premises.

4. Based on the analysis results, the quality of Laksar drain near Akhoda Kalan village (1.68 Kms*) shows **Deteriorated Condition**, therefore, the possibility of effluent mixing with sewage in drain cannot be ruled out. However, no bypass of industrial effluent (sugar/distillery) was observed from the unit during inspection.

5. Analysis results of air samples collected from two locations i.e. near ETP and near guest house (Sugar unit) are complying for PM 10 shows **118 µg/m^3** and **127 µg/m^3** respectively, which are **non-complying** against NAAQ standard of 100 µg/m^3.

6. The analysis results of sample collected from the ETP outlet (Sugar unit) (pH- 7.4, COD- 108 mg/l, **BOD- 33 mg/l**, TSS- 29 mg/l, **TDS- 3840 mg/l**, **Oil & Grease- 53 mg/l**) indicates that the treated effluent from the ETP is not complying w.r.t. the notified standards for surface water discharge i.e. pH- 5.5-8.5, BOD- 30 mg/l, TSS- 30 mg/l, TDS- 2100 mg/l).

7. Analysis results of sample collected from SRS outlet (Sugar unit) showing increase in Sulphate content by 24.5% from inlet to outlet, **which indicate inefficient operation and maintenance of SRS system**.

8. Analysis result of sample collected from lagoon-1 and lagoon-2 indicates that the unit is storing conc. spent wash in lagoons-1 & lagoon -2 with 41.25% and 36.35% Total solids.

9. To achieve ZLD in distillery, the unit has installed dryers for making dry powder from conc. spent wash which is further provided to third party for potash granulation, hence installation of incineration boiler shall not be required.

10. Analysis results of samples collected from Borewell (sugar unit), piezo well located within molasses based distillery plant and handpump located outside of the unit showed high value of COD in the range of 6 to 33 mg/l, which indicate posing potential threat to ground water and need urgent attention towards improvement of housekeeping, prevention of seepage, spillage etc.

11. Other sector specific conclusion and recommendations are mentioned in section 2.1.1 (Distillery) and section 2.1.2 (Sugar).

F. Photographs taken during visit (Distillery Unit)

Photo 1: Entrance gate of unit

Photo 2: Lagoon filled with rain water

Photo 3: Piezo well with telemetry

Photo 4: Laksar drain adjacent to boundary wall of Lagoon - 2

Photo 5: Settling tank for bio-methanated spent wash

Photo 6: No wastewater in storm water drain near CPU

Photo 7: Feed to CPU

Photo 8: CPU inlet flow meter

Photo 9: CPU outlet flow meter

Photo 10: UASB reactor in CPU

Photo 11: Aeration tank in CPU

Photo 12: Secondary clarifier in CPU

Photo 13: Alum dosing and tube settler

Photo 14: Spray dryer and dry powder

Photo 15: Borewell in distillery plant

Photo 16: Spent wash storage in bio-compost yard

Photo 17: Damaged shed in bio-compost yard

Photo 18: No windrows in bio-composting

Photo 19: Laksar drain passing from the premises

Photo 20: Lagoon for storage of conc. spent wash

	
Photo 21: Dryer	**Photo 22: Ready Dry powder from conc. spent wash**
	
Photo 23: Conc. spent wash stored in 300 KL tank for bio-composting	**Photo 24: Bio-composting yard**

F. Photographs taken during visit (Sugar Unit)

Pic.-01. Main gate of the sugar mill	**Pic.-02.Operational view of the sugar mill**
	
Pic.-03.Main inlet of ETP	**Pic.-04.Bar screen installed at main inlet channel**
	
Pic.-05.Oil & Grease tank	**Pic.-06.Lime dosing tank**

Pic.-07.Equalization tank without air mixing arrangement

Pic.-08.Primary clarifier

Pic.-09.Aeration tank

Pic.-10.Secondary clarifier

Pic.-11.MGF and ACF

Pic.-12.Lagoon

Pic.-13.Sludge drying bed

Pic.-14.Spray pond overflow treatment unit

Pic.-15.SRS outlet discharge to ETP inlet channel

Pic.-16.Flow meter at main inlet channel of ETP

Pic.-17.Flow meter at inlet of SRS

Pic.-18.Imbibition water flow meter

Pic.-19.Flow meter at centrifugal wash water

Pic.-20.Leakages in fresh water pipeline

Pic.-21.Sugarcane unloading area

Pic.-22.Clear juice heater on computer system