

Compliance Report of Six Industries and River Neera Located in District Pune and Satara with Reference to the Order Passed by Hon'ble NGT (Principal Bench), Delhi in the Matter O.A. No. 555 / 2019

1. BACKGROUND:

Hon'ble NGT (Principle Bench, Delhi) passed an order on 13.08.2019 in the matter of Rahul Hanumant Chauhan vs. State of Maharashtra (OA No 555 / 2019). The matter was related to allegation by the applicant that pollution is being caused by M/s. Shri Ram Sugar Factory, Govind Milk & Milk Products, Maharashtra Food Limited, Malegaon Sugar Factory by discharging harmful chemicals in River Neera in Pune and Satara Districts, affecting the fields of the agriculturalists in the nearby areas in villages Sangvi, Shirvali, Khandj, Nirwagaj. In the said order, District Magistrates, Pune and Satara, Maharashtra Pollution Control Board (MPCB) and Central Pollution Control Board (CPCB) were jointly asked to furnish a factual and action taken report in the matter. Accordingly the joint team visited the industries (mentioned in the order) and carried out survey / monitoring of associated drains and River Neera in the surrounding areas. The joint committee report along with action taken report was submitted to the Hon'ble NGT by MPCB being Nodal Agency on 21.11.2019. Based on the findings and actions on the report, Hon'ble NGT asked MPCB to submit a further compliance report after taking action following due process of law. In compliance of said order MPCB has submitted a report to Hon'ble NGT on 19.03.2020 and the matter was heard on 18.08.2020 and an order was passed that the joint committee to furnish a further report on the status of water quality of River Neera and compliance status of the units in question.

In compliance of the order, following officials of MPCB, CPCB RD Vadodara and nominated officers of District Magistrate Pune and Satara jointly visited the industries (mentioned in the order) and carried out survey / monitoring of Drains and River Neera and surrounding areas on dates 10.11.2020 & 11.11.2020.

1. Dr. N. Semwal, Scientist-C, Regional Directorate (West), CPCB, Vadodara
2. Shri Pratap Jagtap, Sub-Regional Officer, MPCB, Pune-1
3. Shri Limbaji Bhad, Sub-Regional Officer, MPCB, Satara
4. Shri Vijay Patil, Tehsildar, Baramati – Representative of District Magistrate, Pune
5. Shri Ramesh Patil, Residential Naib Tehsildar, Phaltan – Representative of District Magistrate, Satara

6. Shri Mahendra Jadhav, Naib Tehsildar, Phaltan - Representative of District Magistrate, Satara

2. COMPLIANCE STATUS OF UNITS

2.1 M/S MALEGAON SSK LTD. (SUGAR & CO-GENE.), TAL. BARAMATI, DISTT. PUNE:

The unit was visited on 10.11.2020. The unit was operational during the visit. It is informed that current cane crushing season started from 25.10.2020.

M/S Malegaon SSK Ltd., Sugar and Distillery units are governed by single management board. Shri Dinesh K. Darekar, Env. Officer was present during the visit and provided necessary information related to both the units.

The CC&A issued by MPCB to the sugar unit on 28.08.2020 is valid till 31.07.2021. The present capacity of unit is 4000 TCD (ton cane crushing per day) and the unit has obtained Consent to Establish from MPCB on 19.07.2019 for further expansion of 4250 TCD, thus total capacity will go up to 8250 TCD. The unit has applied for Consent to Operate (CTO) for expanded capacity in MPCB on 25.08.2020 and same is under process with MPCB.

2.1.1 Water and wastewater management:

The fresh water source for the unit is Nira Left Canal. As per the CC&A, total water consumption is 1320 m³/ day (1310 m³/ day for industrial purpose and 10 m³/ day for domestic purpose) and permitted quantity of discharge is 718 m³/ day (710 m³/ day trade effluent and 8 m³/ day domestic effluent). Further, 378 m³/ day treated effluent shall be disposed on land for irrigation on about 20 hectares of own land / as per the bilateral agreement with farmers and rest 332 m³/ day generated from Co-gen shall be 100% recycled in process.

As per the water bill of the unit, during last crushing season, the unit utilized average 937 m³/ day of fresh water and as per record provided, discharged average 226 m³/ day treated effluent from ETP. The unit is having bi-lateral agreements with nearby farmers for 51.74 Acre (20.93 Hectare). Reportedly, the farmers belonging to Shirawali village are shareholders with the Karkhana.

The unit has provided ETP to treat the effluent. The ETP was operational during the visit. The ETP comprises of following units:

Oil & Grease Chamber → Collection Tank → Neutralization Tank → Primary Clarifier → Anaerobic Filter Media → Aeration Tanks (03 Nos.) → Secondary Clarifier → Collection Sump → Pressure Sand Filter Activated Carbon Filter → Discharge for irrigation

The unit is in process of constructing one new ETP (2000 CMD) to cater the requirement of wastewater treatment after expansion of crushing capacity from 4000 TCD to 8250 TCD. Civil construction work for the same is under progress and various machineries required to be installed in the ETP like Oil Skimmer, Filter Media for anaerobic treatment, DSM Screen, Sand & Carbon Filter, Air Blower etc. have been purchased (**Photographs showing the progress of new ETP construction are given below**).



Civil work for construction of new ETP in progress



Oil skimmer



Plastic media for anaerobic treatment



Sand and carbon filter



DSM Screen



Air blowers

It is informed by the unit representative that once the new ETP become operational, the existing ETP will be converted into Condensate Polishing Unit (CPU). Presently, the condensate generated from the plant is collected in a holding tank and used in cooling towers (04 in series) make-up water.

The inspection team collected the sample of untreated and treated effluent from inlet and outlet of ETP and one sample from condensate holding tank. The samples were analyzed in the MPCB laboratory at Pune. The analysis results are given in the table below:

Date of sampling	pH	SS	TDS	COD	BOD	O&G	Cl ⁻	SO ₄
Inlet to ETP	6.2	532	794	9440	4100	14.8	160	23.7
Outlet from ETP	6.8	26	668	228	88	BDL	70	36.8
Condensate holding tank	7.8	58	560	116	44	BDL	14	9
CCA Standards for treated effluent	5.5-9	100	2100	250	100	10	600	1000

Note: The above parameters are expressed in mg/l except pH.

The analysis results for the samples collected from outlet of ETP shows that the monitored parameter are within the prescribed standards mentioned in MPC Board's Consent order. The quality of condensate wrt monitored parameters is also within the stipulated standards for treated effluent. The unit has provided OCEMS at the outlet of ETP for five parameters namely pH, BOD, COD, TSS and flow. The real time values noted during the visit are as follows;

pH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Flow (M ³ /h)
7.5	10.9	55.2	110	20

Though, the OCEMS values are within the CCA prescribed standards, however these values are not comparable with laboratory analysis results. The OCEMS values of pH, TSS, BOD and COD are lesser than the laboratory analysis results for respective parameters.

During visit, the treated effluent was being discharged in the nearby agricultural field which is under bi-lateral agreement with the unit.



Treated effluent collection tank

The unit is in process of constructing 15 days storage tank for treated effluent to take care of no demand for irrigation as per CREP condition mentioned in the CCA. Excavation work for the same is over and it is informed that the work will be completed by December 2020 **(Photographs shown below)**.



Construction work of 15 days storage tank in progress

2.1.2 Conclusion on status of water / wastewater management in M/s Malegaon SSK Ltd. (Sugar & Co-gene.):

- The unit is having valid CCA from MPCB.
- The analysis result of treated effluent sample collected from outlet of ETP is meeting the stipulated standard for monitored parameters. The treated effluent from ETP is being used for irrigation of agricultural land as per bi-lateral agreement with farmers.
- The condensate from the process is collected in a collection tank and reused in the cooling tower. The analysis result of condensate sample are compared with discharge standard for treated effluent and the monitored parameters were found within prescribed standard.
- The unit is expanding the capacity by more than two fold (4000 TCD to 8250 TCD) and accordingly in the process of providing new ETP of 2000 M³ capacity to cater requirement of effluent treatment. Further, as pointed out in the previous joint report, the unit is in the process of constructing one 15 days storage capacity impervious tank for treated effluent to take care of no demand for irrigation as per the CREP guidelines mentioned in the CCA.
- Thus it can be concluded that the unit has complied on the issue of valid CCA and is in the process of providing one new ETP of 2000 CMD capacity (in view of expansion of capacity) and 15 days storage tank for treated effluent. Further, the unit is discharging the treated effluent as per the CCA condition.

2.1.3 Recommendations:

- The unit needs to provide separate flow meters for condensate recycling and maintain the record of re-use.
- MPCB needs to monitor the progress of work of new ETP and 15 days storage tank and it should be ensured that the CCA for expansion should be granted only after successful commissioning of new ETP, 15 days storage tank and fulfillment of CTE conditions.
- The OCEMS provided at the outlet of ETP needs to be calibrated periodically to ensure reliable results all the time.

2.2 M/S MALEGAON SSK LTD. (DISTILLERY), TAL. BARAMATI, DISTT. PUNE:

The unit was visited on 10.11.2020. The unit was not operational during the visit. It is informed that unit operation will start as soon as molasses will be available from the sugar unit. The CC&A issued by MPCB on 31.10.2019 is valid till 31.08.2024.

As per CC&A, the capacity of unit is 60 KLPD. As per the record, the unit has produced 9809.05 KL alcohol during 27.11.2019 to 10.06.2020 i.e. average 50.04 KLPD.

2.2.1 Water and wastewater management:

As per the CC&A, fresh water consumption quantity is 630 M³/Day (580M³/Day for industrial purpose and 50 M³/Day for domestic purpose) and trade effluent generation quantity is 580 M³/Day and domestic effluent is 40 M³/Day. Further the trade effluent volume will be reduced to 120 M³/Day by way of Bio-methanisation followed by MEE and the reduced volume will be utilized for Bio-composting on 11 Acre land. Further, the unit should have impervious tank of 30 days holding capacity and the composting site shall be made as per guideline. In this regard the unit has provided following treatment system for treating the spent wash to achieve Zero Liquid Discharge.

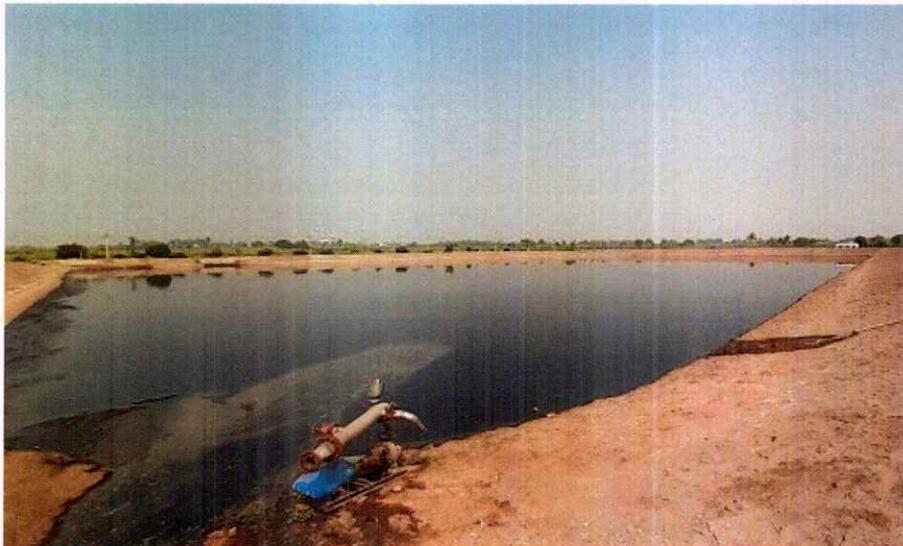
A bio-gas reactor (Bio-methanation) followed by Multiple Effect Evaporator (MEE). The concentrate from the MEE is stored in a storage lagoon (21000 M³ capacity) and further used for composting in the compost yard (11 acre land). The compost yard is fully concreted with leachate collection facility. The condensate from MEE is further treated in condensate polishing unit (CPU). It is informed that spentleese and other utility effluent is also treated in the CPU. Two online cameras with 180^o rotation are provided, one at storage lagoon and other at compost yard. Two online flow meters are provided, one at Bio-digester feed line and other between MEE and lagoon.

The CPU comprises of following units:

Cooling Tower → Neutralization Tank → Equalization Tank → UASBR Digester → Aeration Tanks → Clarifier → Filter Feed Tank → Sand Filter & Carbon Filter → UF Filter → Used in Fermenter and other process utility.

As per record of last season i.e. 2019-20, average spent wash generation was 424.8 M³/Day i.e. per KL alcohol production spent wash generation was 8.48 M³, Bio-digester feed was 346.2 M³/Day, MEE feed was 353.4 M³/Day, Concentrate generation was 137.6 M³/Day, Condensate generation was 215.7 M³/Day and average 62 M³/Day spent wash was directly used for composting. The unit has produced bio-gas to the tune of 3536388 M³ and reportedly the gas is used as fuel in the boiler. The unit has produced 26316 MT compost during the same period.

The storage lagoon was observed filled with the wastewater and sludge (**Photograph given below**). One natural drain carrying stream of wastewater (mostly sewage) is flowing adjacent to the storage lagoon which is reportedly coming from Malegaon Gram Panchayat. It was observed during visit that the unit is collecting the wastewater of the natural drain in a sump and pumping it to the storage lagoon. The unit representative informed that though the wastewater flowing in the natural drain does not belongs to their industrial activity, however as a part of corporate responsibility they are managing its treatment. It is to mention that the unit is in the process of providing the new ETP of sugar unit near to this point. The unit has informed that once the new ETP becomes operational, they will divert this wastewater stream to the ETP for treatment along with effluent generated from sugar unit.



Storage lagoon filled with effluent and sludge

2.2.2 Conclusion on status of water / wastewater management in M/s Malegaon SSK Ltd. (Distillery)

- The unit is having valid CCA from MPCB.
- The unit was not in operation during visit due to non-availability of molasses from the sister concern sugar unit and hence the operational status of wastewater management could not be verified.
- In order to achieve zero liquid discharge (ZLD), the unit has provided a Bio-gas Reactor (Bio-methanation) followed by Multiple Effect Evaporator (MEE). The concentrate from the MEE is stored in a storage lagoon (21000 M³ capacity) and further used for composting in the compost yard (11 acre land). The compost yard is fully concreted with leachate collection facility. The condensate from MEE is further treated in condensate polishing unit (CPU). Two online cameras with 180° rotation are provided, one at storage lagoon and other at compost yard. Two online flow meters are provided, one at Bio-digester feed line and other between MEE and lagoon.
- As per record of last season i.e. 2019-20, it can be inferred that the unit has operated the ZLD system satisfactorily.
- The storage lagoon was observed filled with the wastewater and sludge. It is informed that the effluent from last season could not be utilized for composting due to non-availability of filler material i.e. press mud from the sister concern sugar unit and it will be utilized for composting as soon as press mud is received from the sugar unit which has started operation from 25.10.2020.

2.2.3 Recommendations:

- The unit should remove the sludge from the storage lagoon and utilize it for Bio-composting before taking fresh effluent into it so that full capacity of lagoon can be utilized.
- MPCB needs to monitor the unit regularly during its operational period for ensuring compliance of ZLD condition.

2.3 M/S SHRIRAM JAWAHAR SSK UDYOG (SUGAR UNIT), TAL. PHALTAN, DISTT. SATARA:

The unit was visited on 11.11.2020. The unit was operational during the visit. It is informed that current crushing season started from 29.10.2020. Shri Amit Disale, Environment Officer was present during the visit and provided necessary information about the unit.

The CC&A issued by MPCB to the sugar unit on 26/11/2020 is valid till 31/07/2021. As per CC&A, the capacity of unit is 2000 TCD (ton cane crushing per day).

2.3.1 Water and wastewater management:

The fresh water source for the unit is Neera Canal. As per the CC&A, total water consumption is 530 m³/ day (510 m³/ day for industrial purpose and 20 m³/ day for domestic purpose). As per the water bills provided, during peak operational period of last crushing season i.e. February and March 2020, average water consumption was 509 m³/ day. The inspection team has randomly checked the flow record of flow meter installed at the outlet of ETP for the peak season month of January 2020 to March 2020 and it was observed that average ETP outlet flow during January, February and March 2020 was 108 M³/day, 101 M³/day and 120 M³/day respectively.

As per CC&A condition, permitted effluent quantity is 265 M³/day which shall be recycled in the process to the maximum extent and rest shall be used for irrigation / gardening. The unit is discharging the treated effluent for irrigation in the agricultural field. The unit has submitted copy of bi-lateral agreements with nearby farmers for 23 Acres land.

The unit has provided ETP to treat the wastewater generated from the plant. The ETP comprises of following units:

Oil & Grease Chamber → Holding Tank → Equalization Tank → Anaerobic Tank → Aeration Tanks (03 Nos.) → Clarifier → Sand and Carbon Filter → Treated Effluent Sump → Discharge for irrigation

The inspection team collected the sample of untreated and treated effluent from inlet and outlet of ETP. The samples were analyzed in the MPCB laboratory at Pune. The analysis results are given in the table below:

Date of sampling	pH	SS	TDS	COD	BOD	O&G	Chlorides	Sulphate
Inlet to ETP	6.6	204	688	492	185	4.4	9.0	162
Outlet from ETP	7.5	52	572	216	76	BDL	28.5	101.1
CCA Standards for treated effluent	5.5-9	100	2100	250	100	10	600	1000

Note: The above parameters are expressed in mg/l except pH.

The analysis results for the samples collected from outlet of ETP shows that the monitored parameter are within the prescribed standards mentioned in MPC Board's Consent order. The unit has provided OCEMS at the outlet of ETP for five parameters namely pH, BOD, COD, TSS and flow. The real time values noted during the visit are as follows;

pH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Flow (M ³ /h)
7.45	38	60	178	5.24

Though, the OCEMS values are within the CCA prescribed standards, however the OCEMS values of TSS, BOD and COD are lesser than the laboratory analysis results for respective parameters.

The CCA also mentioned about providing 15 days storage tank for treated effluent to take care of no demand for irrigation as per CREP condition. The unit is storing the effluent in a kachha lagoon behind the unit premises. It is understood that the unit is storing the excess treated effluent into this kachha lagoon. The same observations were recorded by the joint team during previous visit also. The inspection team collected the sample of wastewater from storage lagoon and the analysis was carried out at MPCB laboratory Pune. The analysis results are given in the table below.

pH	SS	TDS	COD	BOD	Chlorides	Sulphate
6.9	22	702	236	82	74	144

Though the analysis results are within the CCA prescribed discharge standard, however, the unit needs to provide impervious lagoon for intermediate storage of treated effluent.



Treated effluent stored in a kachha lagoon

2.3.2 Conclusion on status of water / wastewater management in M/s Shriram Jawahar SSK Udyog (Sugar Unit):

- The unit is having valid CCA from MPCB.
- The analysis result of treated effluent sample collected from outlet of ETP is meeting the stipulated standard for monitored parameters. Treated effluent from ETP is being used for irrigation of agricultural land and excess treated effluent is stored in a kachha lagoon. Observing the huge volume of treated effluent stored in the lagoon in the starting days of unit operation, it can be inferred that the unit is not having adequate agricultural land for irrigation and/or not recycling the treated effluent.

- Thus it can be concluded that the unit has complied on the issue of validity of CC&A and treatment of effluent in ETP, however the unit has still not complied on the issue of providing 15 days storage capacity impervious tank for treated effluent to take care of no demand for irrigation.

2.3.3 Recommendations:

- The unit needs to provide impervious tank for storage of treated effluent.
- The unit should recycle the treated effluent in the process to the maximum extent as per the condition stipulated in CC&A and discharge only the excess treated effluent for irrigation purpose.
- MPCB needs to monitor the above condition and ensure that no treated / untreated effluent is stored in kachha lagoon.
- The OCEMS provided at the outlet of ETP needs to be calibrated periodically to ensure reliable results all the time.

2.4 M/S SHRIRAM SSK LTD. (DISTILLERY), TAL. PHALTAN, DISTT. SATARA

The unit was visited on 11.11.2020. The unit was not operational during visit, reportedly due to less availability of molasses and breakdown in Bio-gas holding tank. Mr. A.S. Vare, Manager of the unit was present during the visit to provide necessary information. The CC&A issued by MPCB on 14.01.2020 is valid up to 31.08.2022. As per CC&A, the capacity of the unit is 30 KLPD.

2.4.1 Water and wastewater management:

As per the CC&A, permitted fresh water consumption quantity is 363 M³/Day (333 M³/Day for industrial purpose and 30 M³/Day for domestic purpose) and permitted quantity of discharge is 290 M³/Day (265 M³/Day trade effluent and 25 M³/Day domestic effluent).

As per the record provided, the unit has produced average 33.7 KLD alcohol and generated average 262 KLD of spent wash during April 2019 to March 2020.

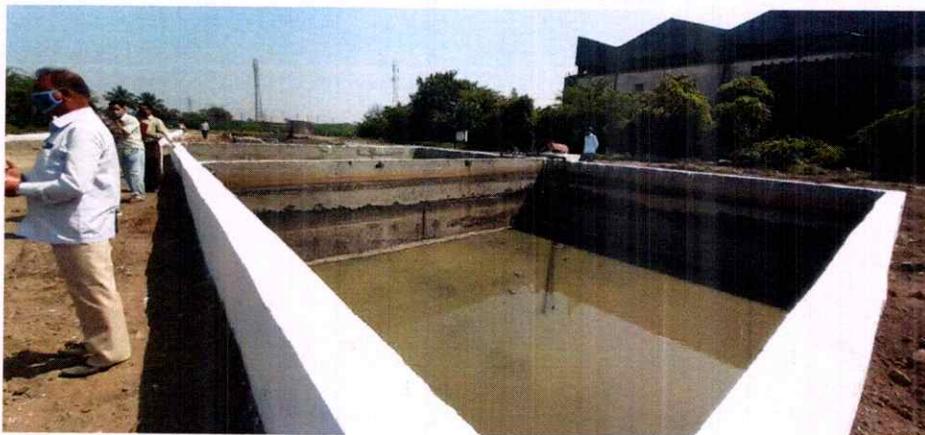
As per the CCA condition, the unit should have impervious storage tank of 30 days holding capacity and the composting site shall be made leak proof by proper lining. The unit has provided Bio-digester (Bio-methanation) followed by storage lagoon and bio-composting yard on 6.5 acres land (as per CCA) for achieving ZLD. Online camera facility is provided at storage lagoon and compost yard. As per the record provided, the unit has produced 2475200 Nm³ of gas (reportedly used as fuel in boiler) and 20750 MT of compost during 01.04.2019 to 31.03.2020.

The storage lagoon was observed filled with the spent wash and sludge. It is informed that the spent wash stored in the lagoon could not be utilized in the compost yard due to non-availability of filler materials (press mud and other agricultural waste) from the sugar unit. The compost yard is fully concreted with leachate collection facility.



Storage lagoon

As pointed out in the previous joint committee report, the unit has now provided ETP for treatment of spentleese, utility effluent and evaporator condensate. The ETP comprises of two tanks, one tank with diffuse aeration system and other one is settling tank. MPCB needs to monitor the performance of the ETP and ensure that the treated effluent is recycled back in the process.



New ETP

The unit has provided 02 new solar evaporation pit for drying the sludge generated from bio-digester.



Solar evaporation pit

2.4.2 Conclusion on status of water / wastewater management:

- The units is having valid CCA from MPCB.
- The unit was not in operation during visit due to due to less availability of molasses and breakdown in Bio-gas holding tank and hence the operational status of wastewater management could not be verified.
- In order to achieve zero liquid discharge (ZLD), the unit has provided a Bio-gas Reactor (Bio-methanation) followed by storage lagoon and compost yard. The compost yard is fully concreted with leachate collection facility. Two online cameras with 180° rotation are provided, one at storage lagoon and other at compost yard. Two online flow meters are provided, one at discharge line of Analyzer column (from where spent wash is discharged) and other between lagoon and compost yard.
- As per record of last season i.e. 2019-20, it can be inferred that the unit has operated the ZLD system satisfactorily.
- The storage lagoon was observed filled with the wastewater and sludge. It is informed that the effluent from last season could not be utilized for composting due to non-availability of filler material i.e. press mud from the sugar unit during last season and it will be utilized for composting as soon as press mud is received from the sugar unit.

2.4.3 Recommendations:

- The unit should remove the sludge from the storage lagoon and utilize it for Bio-composting before taking fresh effluent into it so that full capacity of lagoon can be utilized.

- MPCB needs to monitor the unit regularly during its operational period for ensuring compliance of ZLD condition.
- MPCB needs to monitor the performance of the new ETP and ensure that the treated effluent is recycled back in the process.

2.5 M/S GOVIND MILK & MILK PRODUCTS, TAL. PHALTAN, DISTT. SATARA

The unit was visited on 11.11.2020. The unit was operational during the visit. Miss Reshma Jadhav, Asstt. Manger WTP & ETP was present during the visit and provided necessary information about the unit.

The unit is engaged in production of various processed milk products. The CC&A issued on 07.07.2020 is valid up to 30.04.2021.

2.5.1 Water and wastewater management

As per CC&A, total water consumption of the unit is 660.5 M³/Day (650 M³/Day for industrial purpose and 10.5 M³/Day for domestic purpose) and permitted effluent generation is 473.5 M³/Day (465 M³/Day trade effluent and 8.5 M³/Day domestic effluent).

Wastewater generated in the plant is collected in chamber and pumped for treatment through two different pipe lines (one old and one new line). The unit has provided flow meter on both the lines. Similarly flow meter is also provided for measurement of treated effluent quantity at the outlet of sand & carbon filter. On-line connectivity of flow meters is not provided, however, the daily flow record is maintained in a register. As per flow record of November 2020 (1st to 10th November 2020), fresh water consumption ranged between 472 M³/Day to 620 M³/Day and treated water discharge ranged between 472 M³/Day to 565 M³/Day.

The unit has provided ETP (1000 M³/Day capacity as per design details provided) which comprises following units:

Oil & Grease Chamber → Equalization Tank → Dissolved Air Flootation (DAF) → UASB Feed Tank → UASB → Aeration Tanks → Clarifier → Sand Filter → Carbon Filter → Treated Water Storage Tank → Re-used for internal cleaning purpose and excess is discharged for Irrigation.

The gas generated from UASB is used for in-house purpose. During visit the gas was being utilized in canteen for cooking purpose and excess gas was being flared through a vent. Sludge generated from the ETP is managed through 03 sludge drying beds (SDBs). It is informed that sludge is mixed with cow dung and used as compost in unit's own agricultural land. The unit is not maintaining the record of sludge generation and its disposal.

During visit, the ETP was operational. The team has collected grab sample from treated water storage tank and analysis results are given in the table below.

Location	pH	TSS	TDS	COD	BOD	SO ₄ ⁻²	Cl ⁻	O&G
Inlet to ETP	6.5	800	1290	596	210	27.1	199.9	5.2
Outlet of ETP	7.3	16	1298	88	28	44.6	146	BDL
CC&A prescribed standards	5.5 - 8.5	100	2100	250	30	1000	600	10

Note: All values are expressed in mg/l except pH.

The analysis result of treated wastewater sample collected from outlet of ETP shows that the monitored parameters are within the CCA prescribed norms.

As per CC&A condition, the treated effluent shall be recycled, reused to the maximum extent and excess if any shall be disposed on land for irrigation. The unit has provided two overhead tanks (one 1 KL capacity near garden and other 10 KL on the terrace of main building) for storing the treated wastewater and from these tanks treated wastewater is reused in-house for cooling tower make-up, wash rooms, floor washing etc. and rest excess water is discharged for irrigation purpose. The unit has submitted copy of bi-lateral agreement for 33.55 acres land with farmers of Kolki and Vidani for discharging treated effluent for irrigation purpose.

2.5.2 Conclusion:

- The unit has complied on the issue of CCA validity and proper ETP operation.
- The sample collected from outlet of ETP is meeting the prescribed discharge standard.
- The unit is having provision for re-use of treated effluent and land available for discharge of excess treated wastewater.
- Khadakhira drain is flowing adjacent to the boundary of unit premises which finally converge in River Neera. There was no visible discharges from the unit in the Khadakhira drain. During visit, the treated effluent was being stored in the treated storage tank and being reused in the premises for irrigating the lawns / gardens.

2.5.3 Recommendations:

- The unit needs to provide flow meter for the re-use of treated effluent and maintain the record of same.
- MPCB may prescribe condition in CC&A for online connectivity of flow meters installed by the unit in ETP to MPCB server. Further, MPCB may also prescribe condition for providing OCEMS in ETP.

- The unit should provide intermediate storage tank (at least 15 days capacity) for storing the treated wastewater during rainy season and no demand for irrigation.
- The unit should maintain the record of sludge generation and its disposal.
- MPCB should monitor the unit randomly to observe that no treated / untreated effluent is discharged in the Khadakhira Nala flowing near the premises of the unit.

2.6 M/S MAHARASHTRA FOODS PROCESSING & COLD STORAGE, TAL. PHALTAN, DISTT. SATARA

The unit was visited on 10.11.2020. The unit was operational during the visit. Shri Deepak Jadhav, owner of the unit was present during the visit and provided necessary information about the unit.

The unit is engaged in slaughtering of Buffalos for meat and other related products. The CC&A issued on 10.12.2019 is valid up to 31.10.2024.

2.6.1 Water and wastewater management:

Fresh water source for the unit is ground water. The unit is having two open wells within their premises for abstraction of ground water. As pointed out in the previous joint committee report, the unit has now applied in Central Ground Water Board (CGWB) for permission to abstract ground water and as per document provided the application is under process with CGWA.

As per CC&A, permitted water consumption of the unit is 398.7 M³/Day (381 M³/Day for industrial purpose and 17.7 M³/Day for domestic purpose) and permitted effluent generation is 318 M³/Day (306 M³/Day trade effluent and 6 M³/Day domestic effluent). The unit has not provided any flow measurement device for water consumption and ETP and therefore no record is available for fresh water consumption as well as wastewater generation.

Wastewater is generated mainly from cleaning and washing of slaughter area and other related process area. The unit has provided ETP of 500 M³/Day capacity (as per design details provided) which comprises following units:

Screen Chamber → Collection Sump → Equalization Tank → Dissolved Air Flootation (DAF) → Aeration Tank → Clarifier-1 → Aeration Tank -2 → Clarifier-2 → Sand Filter → Carbon Filter → Treated Water Storage Tank with hypo dosing for disinfection → discharged for internal gardening and irrigation on land

One anaerobic digester is also provided in the ETP after equalization tank but the digester was not in operation during the visit. The sludge generated from the ETP is treated in a Decanter (25 KL/hr. capacity) and dried sludge is given to the farmers as manure. The unit is not maintaining the record of manure generation.

The inspection team has collected grab sample from inlet and outlet of ETP. The analysis results are given in the table below.

Sampling location	pH	TSS	TDS	COD	BOD	SO ₄ ⁻²	Cl ⁻	O&G
ETP Inlet	6.2	328	2790	936	410	206	549.8	7.8
ETP Outlet	7.3	44	960	76	23	157	126	BDL
CCA prescribed standards	5.5 to 9.0	100	2100	250	30	1000	600	10

Note: All values are expressed in mg/l except pH.

The analysis results shows that the monitored parameters in the treated effluent are within the CCA prescribed standards.

As per CCA, the treated effluent shall be recycled / reused to the maximum extent and remaining shall be used on land for gardening / irrigation within factory premises only.

It is observed that the unit is discharging the treated effluent in the nearby agricultural fields. In this regard, the unit has provided copy of bi-lateral land agreement with 09 farmers from Algulewadi and Somwar Peth, Tal. Phaltan for discharging the treated effluent. The team visited nearby agricultural field where the treated wastewater from ETP is being discharged for irrigation. Cane crop is growing in the land being irrigated by the treated effluent.

2.6.2 Conclusion:

- The treated effluent sample from ETP is within prescribed standards for monitored parameters.
- The unit is abstracting the ground water without obtaining permission from CGWB.
- The unit is discharging the treated effluent for irrigation in the nearby agricultural fields and the unit having bi-lateral agreement with the farmers for discharging the treated wastewater, moreover as informed the unit is having 24.7 Acre own land for utilizing the treated wastewater.
- In CCA, MPCB permitted for reuse / discharge of treated effluent on land for gardening / irrigation within factory premises only. Considering the quantity of permitted discharge 398.7

M³/Day and bi-lateral agreement of the unit with nearby farmers MPCB may amend the discharge condition appropriately.

- The unit has not provided flow measurement devices to quantify the actual water consumption, wastewater generation and reuse of treated wastewater for inhouse purpose as well as discharge for irrigation.
- Khadakhira drain is flowing adjacent to the boundary of unit premises which finally converge in River Neera. During visit the treated effluent was being utilized for irrigation and there was no visible discharges from the unit premises in Khadakhira drain.

2.6.3 Recommendations:

- The CGWA should dispose-of the application for permission of the unit on priority.
- The unit needs to provide online flow meter at the outlet of the ETP and also for the re-use of treated effluent in the plant and maintain the record of same.
- MPCB may prescribe condition in CC&A for online connectivity of flow meters installed by the unit in ETP to MPCB server. Further, MPCB may also prescribe condition for providing OCEMS in ETP.
- The unit should provide interim storage tank (at least 15 days capacity) for storing the treated wastewater during rainy season and no demand for irrigation.
- The unit should maintain the record of sludge generation and its disposal.
- MPCB should monitor the unit randomly to observe that no treated / untreated effluent is discharged in the Khadakhira Nala flowing near the premises of the unit.

3.0 WATER QUALITY STATUS OF RIVER NEERA AND ASSOCIATED DRAINS

3.1 Observation on Kalaodha drain flowing near the units:

- Kalaodha drain is flowing near the premises of M/s Malegaon SSK Ltd. (Sugar and Distillery) units which finally converge in River Neera. The drain was having flow of clear water in it on the visit day. No visible effluent discharge in Kalaodha drain was observed during the visit.



Clear water flowing in the Kalaodha drain on the day of visit

- The visiting team has collected a sample of Kalaodha drain just before confluence to River Neera and analysis was carried out in MPCB laboratory at Pune. The analysis results are given in the table below;

pH	TSS	TDS	COD	BOD	O&G	Cl ⁻	SO ₄ ⁻²
7.8	14	780	24	8.8	BDL	215.9	26.1

- The analysis results shows that there is no contamination from industrial effluent (sugar and distillery), however concentration of TDS and COD is slightly higher which may be attributed to runoff from nearby agricultural fields.

3.1.1 Recommendation:

- MPCB needs to monitor Kalaodha drain regularly (preferably on fortnightly) during the operational period of Malegaon Sugar and Distillery units to assess the actual status of drain during that period.

3.2 Observation on Khadakhira Nala

- Khadakhira Nala is flowing near to the unit premises of M/S Shriram Jawahar SSK Udyog (Sugar and Distillery units), M/S Govind Milk & Milk Products and M/s Maharashtra Foods Processing and Cold Storage and the Nala finally converge in River Neera. The Nala was having substantial flow with appearance of black-grey colour and smell of sewage. Sewage from Phaltan city is coming in to this Nala.



Khadakhira drain

- The team has collected a sample of Khadakhira Nala before confluence to River Neera. Analysis results are given in the table below.

Sampling location	pH	TSS	TDS	COD	BOD	Turbidity	NO ₃ ⁻ N	SO ₄ ⁻²	Cl ⁻
Khadakhira Nala B/F confluence to River Neera	7.3	37	1025	288	135	8.0	2.2	10.3	469.9

- The analysis results shows that the Nala is carrying wastewater with organic and dissolved salt contamination. There was no visible industrial discharge in the Nala and the contamination is due to municipal sewage from Phaltan city.
- It is gathered from SRO MPCB Satara that Phaltan Municipal Corporation is in the process of laying underground drainage system and providing a STP for treatment of sewage generated from Phaltan Municipal Corporation area. It can be presumed that once the STP becomes operational and sewage discharge to Khadakhira Nala is stopped completely, water quality of the Nala will improve to satisfactory level.

3.2.1 Recommendation:

- MPCB needs to monitor Khadakhira Nala regularly (preferably on fortnightly), especially during the operational period of sugar and distillery units of M/s Shriram Jawahar SSK to assess the actual status during that period.
- MPCB to co-ordinate with Phaltan Municipal Corporation for expeditious completion of work related to sewage treatment.

3.3 Observation on water quality of Neera river:

The inspection team observed the water quality of river Neera in about 10 KM stretch and collected samples of the river from following 03 locations in the upstream and downstream of local drains;

- (i) Somanthali Bandhara U/s of Khadakhira Nala
- (ii) Sangavi Bridge D/s of Kahdakhira Nala and U/S of Kalaodha Nala
- (iii) Wagaj Village, Bhandara downstream of Kalaodha Nala

There was substantial flow in the river and water quality appears clean in the observed stretches. Fishing and cloth washing activity was observed in the river and on some places abstraction of river water through flexible pipes for irrigation was also observed. Sugar cane and other local crops were growing along the bank of the river (some photographs taken

during the visit are given below). The analysis results of samples taken during the visit are given in the table below.

Location	BOD	COD	Turb.	pH	TSS	Cl ⁻	SO ₄ ⁻²	TDS	NO ₃ -N	T. Alk.
Somanthali U/s of Khadakhira Nala	3.4	16	1.3	7.9	4.0	130	38.5	810	5.0	192
Sangavi Bridge D/s of Kahdakhira Nala and U/s of Kalaodha Nala	4.8	24	1.3	7.3	3.0	143	31.2	890	5.8	206
Nira River, Wagaj Village D/S of Kalaodha Nala	5.2	20	--	7.8	12	131	22.6	966	--	--

Note: All values are expressed in mg/l except pH

The analysis results for analyzed parameters shows slight contamination in water quality. The COD, BOD and NO₃-N parameters have increased slightly in the downstream of Khadakhira Nala indicating influence of sewage discharge from Khadakhira Nala in the river.

3.3.1 Conclusion about River Neera:

Based on the physical observations during visit and analysis of water quality on selected locations, it can be concluded that the water quality of River Neera is not showing any significant contamination during the period of visit, except in the downstream of Khadakhira Nala where slight impact of untreated sewage discharge from the Nala is noticed.

Photographs of River Neera taken during the visit



View of River Neera and agriculture fields along the bank at Waghaj



View of other bank of River at Waghaj



River Neera at Somanthali Barrage



3.3.2 Recommendations:

MPCB needs to monitor the above three locations on regular intervals (preferably fortnightly) during operational phase of sugar and distillery units to assess the status of water quality during that period. Further, MPCB needs to coordinate with Phaltan Municipal Council for completion of STP and sewer work expeditiously so that discharge of untreated sewage is stopped in the river through Khadak hira Nala.

(Pratap Jagtap)
Sub-Regional Officer, MPCB,
Pune-1

(Limbaji Bhad)
Sub-Regional Officer, MPCB,
Satara

(Dr. N. Semwal)
Scientist-C
CPCB RD (W), Vadodara

(Ramesh Patil)
Residential Naib Tehsildar,
Phaltan

(M.P. Jadhav)
Naib Tehsildar, Phaltan

(Vijay Patil)
Tahsildar, Baramati