

Date:19/12/2018

To,
Member secretary - EAC (Ind-2)
Indira Paryavaran Bhawan,
Jor Bagh Road, Ali Ganj,
Lodi Colony, New Delhi,
Delhi - 110003

Subject: **Submission of additional details sought (ADS) by EAC for obtaining EC for our proposed capacity expansion (1715 MTPM to 3000 MTPM) for manufacturing of Surfactants & Specialty Surfactants Chemicals at Survey No. 193, Village Kherdi, Khanvel Udhva Road, Silvassa, UT of Dadara & Nagar Haveli.**

Reference:

- (1) F. No. J-11011/394/2014-IA II (I) and Proposal no. IA/DN/IND2/42175/2014.
- (2) Minutes of 16th EAC (Ind-2) meeting held on 8th-9th December-2016
- (3) Our earlier letter dtd. 28th August 2017 submitted online against ADS.

Dear Sir,

With reference to above subject matter kindly note that our proposal was considered during the 16th Expert Appraisal Committee (Industry-2) held on 8th-9th December 2016 & additional details sought by the EAC (Ind-2).

Accordingly, we had submitted the reply to the ADS mentioning the status of the application made to CGWA and a copy of the CTO (renewal) obtained from UTPCC on the online portal, on 5th September 2017. However, as per the status of the project on the portal our project was delisted on 6th September 2017.

Now, according to the latest communication, we have come to know that our project is relisted. Accordingly, we wish to submit the latest compliance to the ADS generated on 18th Dec 2018 as under:

1. Copy of a valid Consent to operate certificate from Concerned SPCB.

As desired by the committee, copy of a valid Renewal Consent to operate certificate from Concerned UTPCC is provided herewith as **Annexure-1**.

2. Permission from CGWB for withdrawal of ground water as required for the project.

Copy of the NOC for withdrawal of ground water obtained from CGWB is attached as Annexure **Annexure-2**.

www.aarti-industries.com | CIN: L24110GJ1984PLC007301

Regd. Office : Plot No. 801, 801/23, IIIrd Phase, GIDC Vapi-396195, Dist- Valsad. INDIA. T : 0260-2400366.

Factory : Surfactant Division, S. No. 193, Khanvel-Udhwa Road, Kherdi, Silvassa - 396230, UT of D & NH.

T : (0260) 2677 468, F : (0260) 2677 469

Admin. Office : 71, Udyog Kshetra, 2nd Floor, Mulund Goregaon Link Road, Mulund (W), Mumbai - 400080, INDIA.

T : 022-67976666, F : 022-2565 3234 | E : info@aarti-industries.com

3. Details of Zero Liquid Discharge system.

We request you to note that we have already proposed a ZLD scheme for our proposed project. The details of the same are provided herewith as **Annexure-3**.

We hope the submissions are in line with your requirements and request you to give due consideration to our requests and to do the needful for grant of the said EC at the earliest and oblige.

Thanking You.

Yours truly,

**For M/s Aarti Industries Limited.
(Surfactant Specialty Division)**



Authorized Signatory

Enclosures:

1. **Annexure-1:** Copy of a valid Renewal Consent to operate.
2. **Annexure-2:** Copy of NOC from CGWA for Groundwater withdrawal.
3. **Annexure-3:** Details regarding proposed 'zero liquid discharge' system.



प्रदुषण नियंत्रण समिति
Pollution Control Committee

दमण एवं दीव तथा दा.न.ह.
Daman & Diu and Dadra Nagar Haveli
1st Floor, Udyog Bhavan, Bhenstore, Nani Daman.

3855
207

CATEGORY-II (RENEWAL)

Consent order No. PCC/DDO/O-1594/WA/AA/UR/01-02/S35 Date :- 16/08/17

In exercise of the powers delegated to the Pollution Control Committee, Daman, Diu and Dadra & Nagar Haveli by the Central Pollution Control Board vide notification No.B-12015/7/92 published in the gazette of India No.746 dated 26/11/1992 and administration order No.45/1(1)/92-F&E/4700 dated 8/2/1993, the consent is hereby granted under Section 25, Sub section (1) & (2) of Water (Prevention & Control of Pollution) Amended Act, 1988 and under Section 21 of Air (Prevention & Control of Pollution) Act, 1981 and the rules and orders made there under to manufacture below mentioned products at the below mentioned address subjected to the following terms and conditions.

Consent is granted to :

**M/s Aarti Industries Ltd., (M/s Suractant Specialities Division),
Sr. No. 193/1/4/5 & 6, Village Kherdi, DNH.**

1. The Consent to **Renewal** is granted for a period up to **31/05/2021**

2. The Consent is valid for the manufacture of following items:

Sr. No.	Products	Maximum Production Quantity
1.	Sodium lauryl sulfate	250 TPM
2.	Sodium lauryl ether sulfate	165 TPM
3.	Alfaoldfin sulfate	250 TPM
4.	LABSA	650 TPM
5.	Liquid detergents	250 MT/Year
6.	Household cleaners	150 MT/Year

3. Conditions under Water Act:

3.1 The daily quantity of trade effluent from the factory shall not exceed 3.1 m³/Day.

3.2 The daily quantity of sewage from the factory shall not exceed 3.0 m³/Day.

3.3 Trade Effluent: The quality of the treated effluent as per PCC norms mentioned below:

(1) pH	Between	6.5-9.0
(2) Suspended Solids	Not to exceed	100 mg/L.
(3) BOD, 3 days, 27°C	Not to exceed	100 mg/L.
(4) C.O.D.	Not to exceed	250 mg/L.
(5) Oil & Grease	Not to exceed	10 mg/L.

3.4 Trade Effluent Disposal Outlet Conditions: Industry shall not discharge treated effluent out side factory premises. The treated effluent shall be reused/recycled/Incinerated or used for plantation /gardening with in the factory premises:

3.5 Sewage Treatment. - Domestic effluent shall be disposed off through septic tank/soak pit system to conform to the following standards.

BOD (5 days at 20 ^o C)	less than 20 mg/l
Suspended solids	less than 30 mg/l
Residual Chlorine	minimum 0.5 mg/l

3.6 The So₃ gas plant shall be provided with adequate scrubber and other necessary pollution control equipment so as to meet the emission and also treated effluent quality must be capable of achieving standards prescribed below;

So₂ – 10 mg/Nm³

So₃ – 40 mg/Nm³

Acid mist – 50 mg/Nm³

PM – 50 mg/Nm³

Anionic detergents – not to exceed 0.2 mg/L

Bio Assay test – 90 % survival of fish after 96 hrs in 100 % effluent.

3.7 Automatic monitoring device in the stacks of the So₃ gas plant shall be provided to monitor the gases emissions.

3.8 Effluent Treatment Plant of adequate capacity shall be installed to treat the wastewater generated. Necessary drainage system shall be provided around the S₀₃ gas plant, sulfonation plant and other process areas so that all the spillage and floor washing be collected, treated and disposed through Effluent Treatment Plant.

3.9 Acid proof tiles lining shall be provided wherever required especially in the sulfonation plant, acid storage areas/acidic wastewater collection tanks.

3.10 All the storage tanks shall be provided with dyke wall of adequate capacity and shall be lined with acid proof tiles wherever is required.

3.11 A boundary wall around the factory with necessary lining shall be provided so as to prevent any type of seepage outside the factory premises and contamination of nearby areas.

3.12 The DG sets shall be provided with adequate acoustic enclosures so as to meet the ambient noise level standards of 75 dBA Leq at day time and 70 dBA Leq at night time.

3.13 The applicant shall provide a enclosed and isolated sulphur storage area in a scientific way.

3.14 The applicant is required to meet all the provisions of Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981 and Environment (Protection) Act, 1986 and the rules made there under.

3.15 The applicant is required to submit Safety Report and Safety Audit Report including and the identified major accidents, onsite/offsite emergency plan along with the application for Consent to Operate/Renewal.

3.16 The applicant is required to raise 10 % of the area should be covered under plantation and all the chimney height should be kept of more than 30 mtrs. And a wall of 15 mtrs height shall be constructed around the factory.

3.17 The unit shall operate effluent treatment plant efficiently so that the treated water shall meet PCC norms.

3.18 The treated water shall be used for gardening or reused or recycled within the factory premises only.

3.19 The unit shall maintain records of the energy meter and shall submit copy of the same to PCC yearly.

3.20 The unit shall operate air pollution control devices attached to the Boiler efficiently so that the emission from the stack shall confirm PCC norms.

3.21 Hazardous waste generated shall be dispose to registered recyclers/re-refiners or to TSDF site only.

3.22 The unit also need to submit Audit Report duly certified in prescribed format.

3.23 On the expiry of every 2 years, the unit/entrepreneur has to submit authenticate certificate informing the PCC that there is no change in products/process/production capacity/any other installation etc.

3.24 If the unit desires or propose any changes during the renewal period it is mandatory to intimate the PCC for obtaining the consent for establish/operate for any change etc to be done.



प्रदुषण नियंत्रण समिति Pollution Control Committee

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Daman & Diu and Dadra Nagar Haveli
1st Floor, Udyog Bhavan, Bhenstore, Nani Daman.

4.1 The following shall be used as fuel in Boilers etc.

Sr. No.	Boiler capacity	Fuel	Quantity
1.	Boiler-4000 Kgs/Hr -1 No.	Agro based fuel such as bagasse, husk briquette	12 Tons/Day
2.	Boiler-2000 Kgs/hr-1 No.	FO	1800 Tons/Year

4.2 The flue gas emission through stack attached to Boiler etc, shall conform to the following standards:

Stack No.	Stack attached to	Stack height in Meter	Parameter	Permissible Limit
1.	Boiler-4000 Kgs/Hr.	30 meters	Particulate Matter	150 mg/NM ³
			SO ₂	40 mg/NM ³
2.	Boiler-2000 Kgs/Hr.	30 meters	NOx	25 mg/NM ³

4.3 The process emission through various stacks/vent of reactors, process, vessel shall conform to the following standards:

Stack No.	Stack attached to	Stack height in Meter	Air pollution control	Parameter	Permissible Limit
1.	Sulphonation	30 meters	Alkali scrubber	Particulate Matter SO ₂	150 mg/NM ³ 40 mg/MN ³ 25 mg/NM ³

4.4 The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder:

Parameter	Permissible Limit
Particulate Matter (size less than 10µm) or PM ₁₀ µg/m ³	100 (24 hours average)
Particulate Matter (size less than 2.5µm) or PM _{2.5} µg/m ³	60 (24 hours average)
Oxides of Nitrogen (NO ₂) µg/m ³	80 (24 hours average)
Oxides of Sulphur (SO ₂) µg/m ³	80 (24 hours average)

4.5 The applicant shall provide ports in the chimney/stack and facilities such as ladder, platform etc. as per requirements for monitoring the air emissions and the same shall be open for inspection and use by the committees staff. The chimney/stacks attached to various sources of emission shall be designated by numbers such as S-1, S-2 etc and these shall be painted/displayed to facilitate identification.

4.6 (i) There shall be no emission other than the permitted installations and the quarterly stack monitoring reports from recognized lab shall be submitted along with the renewal application.

(ii) The applicant shall provide required stack height with the Boiler/TFH using the following formula;

$H=14 Q^{0.3}$ Where H=Total stack height in meters from ground level. Q= Sulphur Dioxide (SO₂) emission rate in Kg/Hr. In no case, the stack height shall be less than 11 meters.

(iii) The applicant shall provide necessary control equipments with a minimum stack height of 11 meters to meet the SO₂ emission limit.

Daman Office Phone : (0260) - 2262524, 2260975 / Silvassa Office Phone : (0260) - 2630260
E-mail : mspcc_dmn@pccdaman.info, mspcc_ad1@pccdaman.info, www.pccdaman.info

- 4.7 Each of the D.G. Sets shall be provided with a stack whose height, should be worked out according to the formula;-

$$H = h + 0.2 \sqrt{\text{capacity of KVA}}$$

Where h= height of the building in meters where the generator set is installed.

OR

9 meters form the ground level, whichever is more, before commencing the operation.

- 4.8 Adequate mufflers shall be provided to the D.G.Set/s, so that the ambient noise level shall not exceed the limits prescribed below;

- | | | | |
|------|------------|--------------|---------------|
| (a). | Day time | (6AM- 9PM)- | 75 dB(A) Leq. |
| (b). | Night time | (9PM- 6 AN)- | 70 dB(A) Leq. |

5. **GENERAL CONDITIONS: -**

- 5.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to the Pollution Control Committee.
- 5.2 If at any time, it is observed that effluent fails to conform to the limits prescribed, consent will be withdrawn prohibiting the industry to manufacture either existing or new products.
- 5.3 The applicant shall submit separate application for obtaining Consent for Operation/ Renewal under Water (Prevention and Control of Pollution) Act, 1974, and Air (Prevention and Control of Pollution) Act, 1981 before 30 days of expiry of validity period of Consent.
- 5.4 This consent is further subject to green up the surrounding area inside and outside the unit/factory.
- 5.5 In case of change process/installation, which is likely to have discharge/an emission a separate application shall be made.
- 5.6 In case of failure to comply with any of the consent conditions, the consent order issue to you stands automatically revoked without any notice on this behalf.
- 5.7 This consent is granted to establish and operate DG Set as a standby arrangement only and not as a captive power generation unit.
- 5.8 For establishment of the units in galas, the applicant must follow the general conditions and guidelines issued by the Administration of Daman and Diu vide Gazette notification no.DMN/DIC/96-97/368 dated 17/6/1996 as amended from time to time. Non compliance shall make the application liable for rejection.
- 5.09 If all the machineries listed in the project report are not installed operational consent shall not be granted.
- 5.10 Establishment of unit in a leased shed/gala /building where already another unit is permitted/ existing, shall not be allowed without prior written consent of GM, DIC, Daman/Silvassa.
- 6.0 The industry shall comply with Water (Prevention and Control of Pollution) Cess Act, 1977, and submit monthly Cess returns as contemplated in the Act, in the prescribed form.
- 7.0 The applicant shall comply with the notified standards under Environment (Protection) Act, 1986.
- 8.0 The applicant shall comply with any and all the rules of Plastic Waste (Management and Handling) Rules, 2011 dated 4.2.2011.
- 9.0 The applicant shall not manufacture any products which attracts EIA notification dated 14.9.2006.



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Daman & Diu and Dadra Nagar Haveli
1st Floor, Udyog Bhavan, Bhenslore, Nani Daman.

10.0 Applicant shall also comply with the general conditions given in annexure I & II.


Member Secretary
Pollution Control Committee
Daman, Diu and Dadra & Nagar Haveli
Daman

The Consent is valid for the manufacture of following items:

Sr. No.	Products	Maximum Production Quantity
1.	Sodium layrul sulfate	250 TPM
2.	Sodium laurul ether sulfate	165 TPM
3.	Alfaoldfin sulfate	250 TPM
4.	LABSA	650 TPM
5.	Liquid detergents	250 MT/Year
6.	Household cleaners	150 MT/Year

Copy to.

1. SWIFT, Silvassa.
2. Guard file.
3. M/s Aarti Industries Ltd., (M/s Suractant Specialities Division),
Sr. No. 193/1/4/5 & 6, Village Kherdi, DNH.

CONSENT TO RENEWAL

Member Secretary



भारत सरकार
केन्द्रीय भूमि जल प्राधिकरण
जल संसाधन, नदी विकास
और गंगा संरक्षण मंत्रालय

Government of India
Central Ground Water Authority
Ministry of Water Resources,
River Development & Ganga Rejuvenation

File No: - 21-4/67/DN/IND/2017 - 839

NOC No: - CGWA/NOC/IND/ORIG/2018/3410

Date:- 02 MAY 2018

To

M/s Aarti Industries Ltd. (SSD)
Survey No. 193, Village Kherdi, Udhva-Khanvel Road,
Silvassa, Block & District Dadra and Nagar Haveli,
Dadra and Nagar Haveli - 396230

Sub:- NOC for ground water withdrawal to M/s Aarti Industries Ltd. (SSD) in respect of their existing Chemical manufacturing unit located at Survey No. 193, Village Kherdi, Udhva-Khanvel Road, Silvassa, Block & District Dadra And Nagar Haveli, Dadra And Nagar Haveli – reg.

Refer to your application for grant of NOC for ground water withdrawal dated 28/06/2017. Based on recommendations of Regional Director, Central Ground Water Board, Central Region, Nagpur vide his letter dated 12/01/2018 and further deliberations on the subject, the NOC of Central Ground Water Authority for ground water withdrawal is hereby accorded to M/s Aarti Industries Ltd. (SSD) in respect of their existing Chemical manufacturing unit located at Survey No. 193, Village Kherdi, Udhva-Khanvel Road, Silvassa, Block & District Dadra And Nagar Haveli, Dadra And Nagar Haveli. The NOC is valid from 26/03/2018 to 25/03/2020 and is subject to the following conditions:-

1. The firm may abstract 232 cu.m/day of ground water (and not exceeding 69,600 cu.m/year), through one (1) existing & one (1) proposed bore wells only. No additional ground water abstraction structures shall be constructed for this purpose without prior approval of the CGWA. The bore wells shall be modified as per guidelines enclosed in Annexure.
2. Both the wells shall be fitted with digital water meter by the firm at its own cost and monthly ground water abstraction data shall be recorded in a log book. Compliance to this condition shall be reported within one month from the date of issue of this letter.
3. M/s Aarti Industries Ltd. (SSD), in consultation with the Regional Director, Central Ground Water Board, Central Region, Nagpur shall implement ground water recharge measures atleast to the tune of 33,810 cu.m/year as proposed, for augmenting the ground water resources of the areas away from industry premises where post monsoon water level is more than 5 meter below ground level. Recharge measures shall be taken up by the firm outside the plant premises. Firm shall report the compliance within six months from the date of issuance of this letter. Firm shall also undertake periodic maintenance of recharge structures at its own cost.

18/11, Jamnagar House, Mansingh Road, New Delhi-110011

Phone : (011) 23383561 Fax : 23382051, 23386743

Website: www.cgwa.noc.gov.in

स्वच्छ सुरक्षित जल - सुन्दर खुशहाल कल

4. The photographs of the recharge structures after completion of construction of the same shall be furnished immediately to the Regional Director, Central Ground Water Board, Central Region, Nagpur for verification under intimation to this office.
5. The firm, at its own cost, shall construct one (1) observation well (piezometer) at suitable location and install digital water level recorder for monthly ground water level monitoring in consultation with the Regional Director, Central Ground Water Board, Central Region, Nagpur.
6. The ground water quality shall be monitored once in a year (during pre monsoon period).
7. The monitoring data in respect of S. No. 2, 5 & 6 shall be submitted to the Regional Director, Central Ground Water Board, Central Region, Nagpur on regular basis at least once in a year.
8. The firm shall ensure proper recycling and reuse of waste water after adequate treatment.
9. Action taken report in respect of S. No. 1 to 8 shall be submitted to CGWA within one year period.
10. This NOC is liable to be cancelled in case of non-compliance of any of the conditions as mentioned in S. No. 1 to 9.
11. This NOC is subject to prevailing Central/State Government rules/laws or Court orders related to construction of tubewell/ground water withdrawal/construction of recharge or conservation structure/discharge of effluents or any such matter as applicable.
12. The firm shall report self compliance online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.
13. This NOC does not absolve the applicant / proponent of this obligation / requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
14. The NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and be taking decisions independently of the NOC.



Member Secretary

Copy to:

1. Member Secretary, Pollution Control Committee, Daman & Diu & Dadra & Nagar Haveli, Rua Martim Afonso, Fort Area, Moti Daman, Daman, Daman and Diu - 396220 **with a request to ensure that the conditions mentioned in the NOC are complied by the firm in consultation with the District Collector, Dadra & Nagar Haveli.**
2. The District Collector, Dadra & Nagar Haveli for necessary action.
3. The Regional Director, Central Ground Water Board, Central Region, Nagpur. This has reference to your recommendation dated 12/01/2018.
4. Guard File 2017-18.


Member Secretary

WATER BALANCE CHARTS

Figure: Water Balance Diagram for Existing Scenario (in KLD)

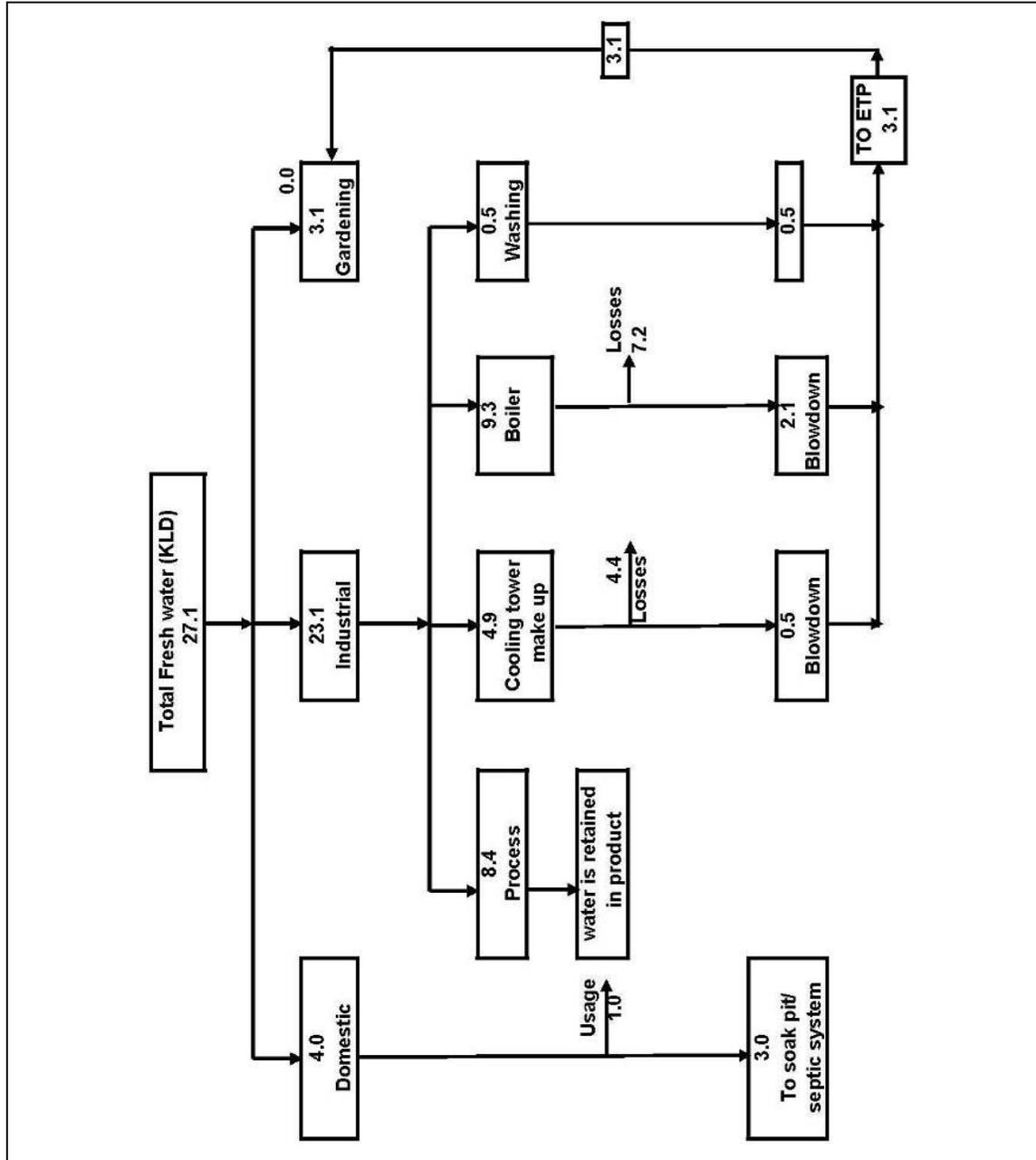
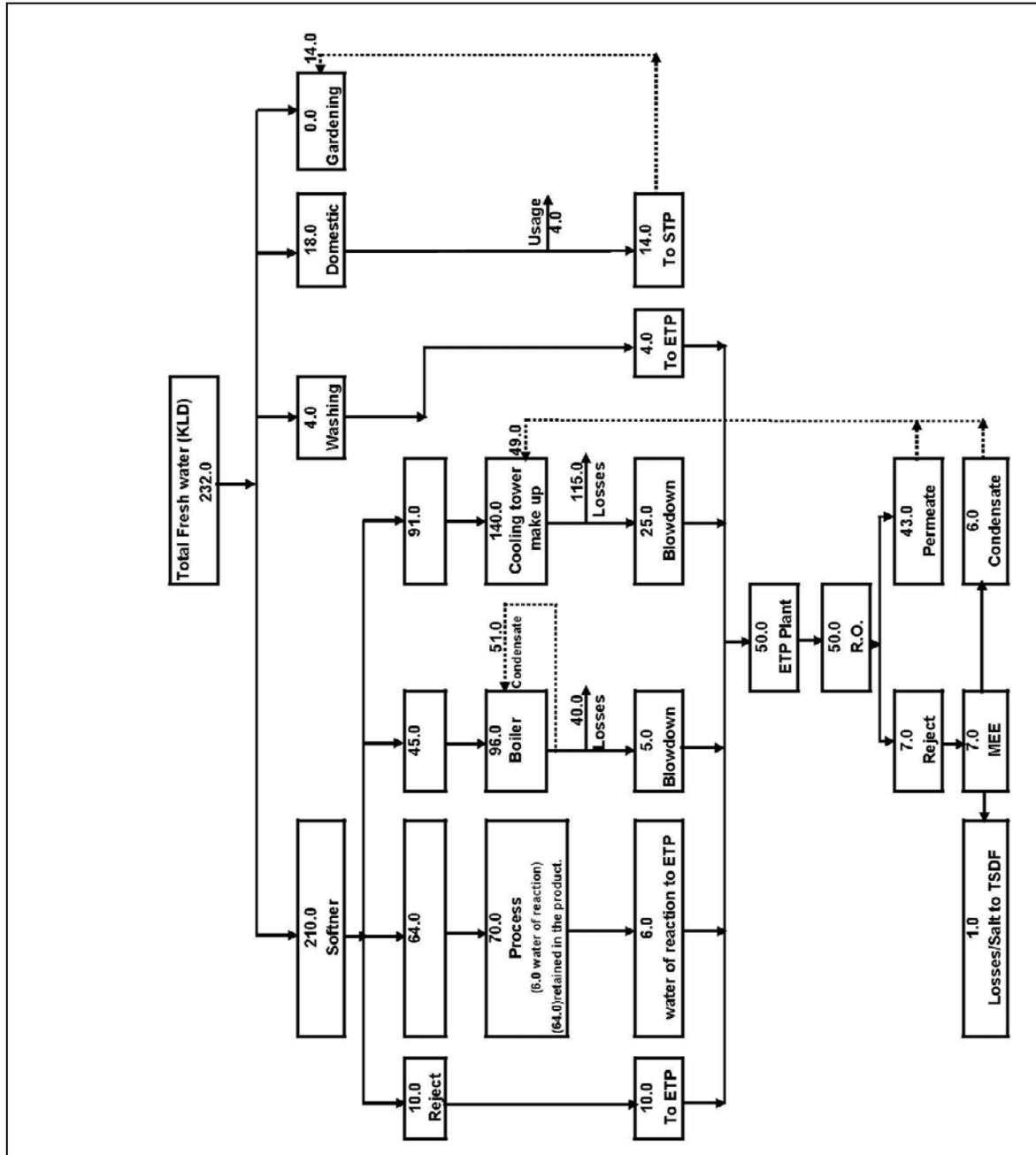


Figure: Water Balance Diagram for Proposed Scenario (in KLD)



WASTEWATER GENERATION

The category wise bifurcation of the waste water generation is given in Table below.

Table: Category-Wise Wastewater Generation (in KLD)

Details	Existing Scenario	Proposed Scenario
Domestic	3.0	14.0
Industrial		
Softener reject	--	10.0
Process	0.0	6.0
Washing	0.5	4.0
Boiler	2.1	5.0
Cooling	0.5	25.0
Sub-Total: Industrial	3.1	50.0
Grand Total	6.1	64.0

WASTEWATER CHARACTERISTICS (STAGEWISE)

The expected characteristics of effluent to be diverted to ETP, before treatment & after treatment are given in below table.

Table: Expected Characteristics of Wastewater

Sr. No.	1. Parameter	Expected Characteristics of Effluent	
		Untreated effluent	Treated effluent
1.	pH	9 – 11	< 6.5 to 8.5
2.	Suspended Solids (SS)	650-850	< 100
3.	Total Dissolved Solids	2000-2500	< 2100
4.	Chemical Oxygen Demand (COD)	4500-5000	< 250
5.	Biochemical Oxygen Demand (BOD)	1800-2000	< 100
6.	Oil & Grease	160-180	< 10

Note: All above values in mg/ lit except pH or where specified.

2.6.4 Wastewater Treatment & Disposal

In existing operations domestic wastewater is being disposed through septic tank/ soaks pit system. After proposed expansion domestic wastewater will be treated in the proposed 20 KLD Sewage Treatment Plant and treated water from STP will be used for gardening purpose.

For the industrial effluent from the proposed production activities, necessary maintenance and modifications will be made in the existing ETP, further more RO and evaporator will be provided for polishing treatment of ETP treated water.

Effluent stream generated from the process, Utility, cooling and washing section will be treated in proposed Full-fledged ETP, R.O. and MEE.

Proposed ETP details & scheme is given below:

Oil and Grease Removal

The effluent will enter into oil & grease removal pit. Oily masses will separate out and float on the surface. Floating matter (mainly oily mass) will be removed properly. The effluent will be free of oil and grease at the outlet of this pit.

Collection Tank

The effluent from oil & grease trap will be collected into the Collection Tank. The incoming effluent will be alkaline in nature having higher values of COD, BOD, Suspended Solids and Colors.

Neutralization

Here, the effluent will be neutralized by using lime and then will react with Alum Solution. Neutralization will be done continuously in tank. These tanks will be provided with efficient agitator. The effluent leaving neutralization tank will be of pH value between 6.5- 8.5.

Flocculation

The suspended solids will be removed by settling them. Colloidal solids hinder the settling process and they cannot be removed by simple settling to overcome these difficulties, flocculants will be added in an appropriate quantity.

Primary Settling

Effluent from neutralization tank will be pumped to primary settling tank for solids removal. The solids settled at the bottom of the tank will be diverted to sludge drying beds, while the clear effluent will overflow to the aeration tank.

Biological Treatment

The clear effluent of primary settling tank will be fed to the aeration tank by gravity flow. The oxygen required for the metabolic activity of the microorganisms will be supplied by means of surface aerator. In the aeration tank, the wastewater will be degraded by activated sludge to reduce the BOD and COD concentrations. Urea and DAP will be added in the aeration tank in calculated amount daily for proper bacterial growth. A constant feed rate will be maintained in the aeration tank. A sludge percentage of around 25 to 30 % by volume will be maintained in the aeration tank. Also MLSS and MLVSS ratio will be maintained to ensure active microorganism growth. The dissolved oxygen content in the aeration tank will be maintained in between 0.5 to 2.0 mg/lit. The overflow of the aeration tank will be discharged into the Secondary settling tank for biomass separation.

Secondary Settling

The overflow from the aeration tank will enter into the secondary settling tank, where the bio mass sludge will be settled at the bottom of the secondary settling tank. The function of

secondary settling tank is to reduce the amount of suspended solids. An appropriate retention time will be given to the effluent to ensure proper settling. The settled sludge will be continuously recycled back to the aeration tank to maintain the desired concentration of mixed liquor suspended solids and the excess sludge will be diverted to the sludge drying beds. The clear overflow from the top of the secondary clarifier will be collected into the clarified water tank.

Sand Filter & Carbon Filter

The clear water from clarified water tank will be pumped to pressure sand filter and activated carbon filter respectively for removal of suspended solids and COD, BOD & color. The effluent will enter into the sand filter from the top and clear treated effluent will be fed to the activated carbon filter. A back wash facility will be provided to the sand filter and activated carbon filter to wash out suspended solids. The backwash will be given periodically to remove the suspended solids, which are deposited at the top of the filter media. The outlet of the activated carbon filter will be diverted to the holding tank. Backwash of the filters will be taken to Collection tank.

RO & MEE

Treated water from ETP will be diverted to the R.O. Reject water from R.O will be diverted to the MEE. Permeate water from R.O. and condensate water from MEE will be reused as cooling tower make up water. Salt generated from the MEE will be sent to TSDF site for disposal.

Sludge drying beds

Sludge from primary settling tank and the excess sludge from the secondary settling tank will be taken to Sludge Drying Beds. Sludge Drying Beds will be used alternatively. Leachate of the sludge will be collected in to collection cum neutralization tank and cake will be collected and packed in plastic bags and stored in sludge storage area.

Figure: Schematic Diagram of ETP

