

	Follow up & Status of Compliance w.r.t directions u/s 5 of E(P)A 1986		CPCB, South Zonal Office, Bangalore
	M/s Talco Pernambut Tannery Effluent Treatment Co. Ltd., Bakkalapalli, Pernambut - 635810 Tamil Nadu		
Back Ground: <p>M/s Talco Pernambut Tannery Effluent Treatment Company Ltd., was inspected by a team of officials from CPCB, zonal office Bangalore during October 05-08, 2009 and August 16-20, 2010. Based on the observations of inspections, the unit was issued the directions under section 5 of the E(P)A 1986 on June 14, 2011.</p> <p>Tamil Nadu Pollution Control Board vide their letter dated December 8, 2012 has sent the compliance status report informing that ZLD status has been achieved by M/s Talco Pernambut Tannery Effluent Treatment Company Ltd.,</p> <p>In this regard, HO informed the Zonal Office, Bangalore vide letters dated February 27, 2013 to verify the compliance status and to provide the report. A team of officials from Zonal Office (South) inspected the above mentioned CETP on June 21, 2013. During the inspection the CETP was in operation. The overall observations, details and compliance made w.r.t the directions issued u/s 5 of E(P)A 1986 are as follows:</p>			
1	Name/ address of CETP/ company:	M/s Talco Pernambut Tannery Effluent Treatment Co. Ltd., Ambur Road, Mathur Village, Bakkalapalli, Pernambut, Gudiyatham Taluk, Vellore District - 635810 Tamil Nadu	
2	Area occupied by CETP (plot area):	15.83 Acres	
3	Total no. of staff (including operational & skilled persons):	Skilled – 30 persons Non-skilled – 15 persons	
4	Contact person (Name, Designation, and Contact No, FAX, e mail):	Sh. P Monhammed Basha Managing Director Mobile: 9486174449 Email: talcopertec_pbt@yahoo.co.in Tannersassn_pbt@yahoo.co.in	

5	Status of CETP: operational or closed (if closed since when):	Operational						
6	Consent & Authorization: <ul style="list-style-type: none"> Valid up to: Applied (date of application): 	The validity of the consent under Water and Air Act is expired. The validity of Hazardous waste authorization is expired.						
7	Industrial area/estate (s) connected to CETP:							
8	Type of industries in the connected industrial areas: <table border="1" data-bbox="354 625 1471 821"> <thead> <tr> <th>Industrial area/estate</th> <th>Type of industries</th> <th>Number of industries</th> </tr> </thead> <tbody> <tr> <td>Pernambut Industrial Area</td> <td>Tanneries</td> <td>36</td> </tr> </tbody> </table>	Industrial area/estate	Type of industries	Number of industries	Pernambut Industrial Area	Tanneries	36	
Industrial area/estate	Type of industries	Number of industries						
Pernambut Industrial Area	Tanneries	36						
8.1	Number of member industries of CETP:	The CETP has 36 active member units						
9	Method of collection of effluent (pipeline/tanker): <ul style="list-style-type: none"> If collection is by tankers, average No. of tankers/day: Capacity of tankers, m³: 	The unit receives effluent through pipelines.						
10	Details of flow meters (Type, location and operational status):	The member units have installed flow meter. Flow meters are provided at inlet and outlet of UF, RO, evaporators, and distribution to the member units.						
11	Treatment capacity: MLD / Design flow of CETP: m ³ /hr	The design capacity of the CETP is 1000 kld.						
12	Wastewater treated: MLD / Average flow reaching CETP m ³ /hr	Average flow of 500 KLD						
13	Wastewater if bypassed in CETP from treatment: <ul style="list-style-type: none"> Flow/volume of wastewater bypassing treatment units in CETP: 	During inspection no bypass of effluent was noticed.						
14	Treatment units and dimensions (Attach flow chart also):	Flow chart is enclosed at Annexure -1						

15	Details of chemicals used:			
	Treatment system	Chemical dosage in ppm		
		Lime	Alum	Poly electrolyte
	Primary treatment	400	800	1.0
Lime soda process	400	-	-1.0	800
16	<p>Primary sludge management system:</p> <ul style="list-style-type: none"> • Primary sludge generation rate (m³/day or tons/day): • Number & capacity of sludge drying beds: • Details of any other methods for sludge thickening (filter press/rotary filters etc.) • Quantity of sludge stored: • Primary sludge disposal- <p>*(Secured landfill or TSDF):</p> <p>*(Co-incineration if any):</p>	<ul style="list-style-type: none"> • 2500 kg/day • 10 Nos. (15m X 7m) • Filter press • 18000 m³ for 5 years • Secured landfill of area 		
17	<p>Excess Biological Sludge Management System:</p> <ul style="list-style-type: none"> • Excess Biological Sludge generation rate: • Number and capacity of sludge drying beds: • Details of any other methods for sludge thickening (filter press/rotary filters etc.) • Quantity of sludge stored: • Excess Biological Sludge Disposal: 	<ul style="list-style-type: none"> • 20 m³/day • 8 Drying Bed • Filter Press • Primary • Sludge drying beds 		
18	Conveyance system for disposal of treated wastewater: Drains/ Pipeline	Treated effluent is conveyed through Pipelines to the member unit for reuse.		
19	Method of Treated wastewater disposal: River/ Land/ Marine/ Others (Specify)	The treated effluent i.e., RO permeate is sent to member units through pipeline and RO reject evaporated in multiple effect evaporators.		
20	Capital cost with breakup of sources of funds:	Government on India subsidy under industrial infrastructure up	Rs. 10.44 Crores	

		gradation scheme	
		Government of Tamil Nadu	Rs. 3.132 Crores
		Member/ equity contribution	Rs. 7.308 Crores
		Total	Rs. 20.88 Crores.
		Details enclosed at Annexure 2	
21	Operational cost:	Total Cost - Rs. 200 per Cu. M Fixed Cost - Rs. 35 per Cu. m Variable Cost - Rs. 165 per Cu. M	
22	Date of Inspection	June 21, 2013	
23	Inspected by (Name & Designation):	Mrs. H.D. Varalaxmi, Sc. C Ms. Sowmya D, Sc. B Ms. Anjana Kumari V, Sc. B	
24	Status of Compliance of directions issued on June 14, 2011:		
	Sl.N o.	Direction issued	Status of compliance at the time of inspection by CPCB Team
	(i)	All member units will ensure proper segregation of process effluent and chrome liquor followed by their respective treatment at the pre-treatment plants of individual member units and common chrome recovery plant to ensure compliance of the CETP inlet standards by the incoming effluent.	It was informed that all member units have installed pretreatment system to achieve prescribed limit. During inspection raw effluent received from the member units were collected and analyzed at CPCB Zonal office. The analysis results indicates that TSS concentration (3670 mg/l) in effluent received from member units was exceeding the prescribed norms (600 mg/l) which indicates that the inadequacy of pretreatment provided by the member units. (Partially Complied)

	(ii)	To introduce a mechanism of assessing the effluent quality and quantity received from its member units and subsequently intimating SPCB regularly for necessary action the information of member units sending non-complying or excess effluent against the prescribed limit of 28 m ³ per tonne at the inlet of the CETP	The representatives of the CETP informed that the flow meters are installed at the discharge point of the each member units to quantify the raw effluent disposed to the raw effluent collection tank. Average daily effluent generations from individual units are enclosed at the Annexure-3 . As per the information provided by the CETP, the average effluent generation is worked out about 17.55 m ³ per tons of hide process. (Complied)
	(iii)	All member units shall install magnetic flow meters for measurement of effluent being conveyed to CETP and also maintain its record.	It is informed that all member units have magnetic flow meter to measure effluent sent to the CETP. Documents on quantity of effluent generation from individual units are enclosed in the Annexure -3. (Complied)
	(iv)	To ensure compliance of the surface water disposal norms by the treated effluent and maintain records of operation of all the treatment units.	The CETP is treating the effluent through receiving sump, pre settler, equalization tank, clari-flocculation, aeration tanks I and II, secondary clarifier, reactor clarification feed tank, reactor clarifier, Ultra filtration, Reverse Osmosis and multiple effect evaporator. Permeate of the RO is supplied to the member units for reuse and RO reject is treated through Multiple Effect Evaporator. But on the day of inspection MEE was not in operation due to less effluent received from their member units. To handle the sludge the unit has installed 2 filter press for dewatering the sludge and dewatered sludge is being sent to SLF. The maintenance of the Secured landfill site was not satisfactory. (Partially Complied)

	(v)	To take necessary steps to prevent deterioration of ground water quality of the surrounding area and submit quarterly status report on groundwater quality of CPCB/SPCB for necessary action.	The representatives of the CETP informed that the ground water quality in the surrounding area is monitored. However a relevant document on groundwater quantity monitoring was not provided by the CETP. (Not Complied)
	(vi)	To expedite the ongoing work of zero liquid discharge system and get it commissioned.	The unit has installed RO followed by MEE for achieving ZLD. RO permeate is supplied to the member units. RO is in operation since July 31, 2012 and MEE is in operation since August 15, 2012. Around 200 tons of salt generated from MEE is stored. (Complied)
	(vii)	To implement the recommendations of CETP regarding installation of automatic monitoring instruments, deployment of well trained and qualified staff and implementation of guidelines for health and safety of workers.	Not steps are taken to install automatic monitoring instruments. The CETP was maintained by qualified and dedicated staff. (Partially Complied)
	(viii)	The CETP will be operated only with valid consents under Water (Prevention and Control of Pollution) Act 1974 and Air (Prevention and Control of Pollution) Act 1981.	The CETP was found in operation without valid consents under Water & Air Act. (Not Complied)
25	<p>OBSERVATIONS:</p> <ol style="list-style-type: none"> 1. M/s Talco Pernambut Tannery Effluent Treatment Company Ltd., has 36 active members and receiving the effluent in the range 500 KLD against the designed capacity of 1000 KLD. The unit receives effluent through the pipelines. 2. The unit was operational and the validity of consents under the Water & Air Acts was expired. 3. The CETP comprises of receiving sump, pre settler, equalization tank, clari- 		

flocculation, aeration tanks I and II, secondary clarifier, reactor clarification feed tank, reactor clarifier, Ultra filtration, Reverse Osmosis and multiple effect evaporator. Permeate of the RO is supplied to the member units for reuse and RO reject is evaporated through Multiple effect evaporator. Moisture content of the sludge generated was removed through filter press.

4. The representatives of the CETP informed that the flow meters are installed at the discharge point of the each member units to quantify the raw effluent disposed to the raw effluent collection tank. Documents on quantity of effluent generation from individual units are enclosed in the annexure.
5. It was informed that MEE is being operated for 10 days once because of under capacity operation. The RO reject being stored in dedicated storage lagoon till accumulation of reject and the same being treated through MEE to achieve ZLD.
6. Around 200 tons of recovered salt from the Multiple Effect Evaporator was stored.
7. The SDBs were filled with wet sludge.
8. Scum and foul odour was noticed at the raw effluent collection tank and secondary collection tank.
9. Large volume of foam was noticed at the aeration tank.
10. Overall maintenance of the CETP was not satisfactory.
11. The effluent from different points of treatment system was collected and analyzed at the CPCB Zonal Office Laboratory. The analysis results are depicted below:

S.No.	Parameter (All parameters are in mg/l except pH)	Raw Effluent (from collection tank)	Secondary clarifier	RO Feed	RO Permeate	RO Reject
1	pH	8.0	7.1	6.8	6.5	6.4
2	TSS	3670	302	96	-	554
3	TDS	24090	20800	19608	636	58434
4	BOD	2650	114	-	1	-
5	COD	4720	608	216	24	80
6	Chloride	9373	11655	-	-	-
7	Sulphate	-	3177	2512	8	7396
8	NH ₃ - N	169.7	253.1	-	-	-
9	H. Cr	BDL	BDL	-	-	-
10	Sulphide	16.9	0.1	-	-	-
11	Copper	0.05	0.03	-	BDL	-
12	Cadmium	BDL	BDL	-	BDL	-

13	Total Chromium	5.96	BDL	-	BDL	-
14	Iron	0.50	BDL	-	BDL	-
15	Manganese	0.80	BDL	-	BDL	-
16	Nickel	BDL	BDL	-	BDL	-
17	Lead	BDL	BDL	-	BDL	-
18	Zinc	BDL	BDL	-	BDL	-
19	Cobalt	BDL	BDL	-	BDL	-
		Parameter	Aeration tank- I	Aeration tank - II		
		MLSS (mg/l)	1720	2828		
		SVI	47	45		
<p>11. The Tamil Nadu State Pollution Control Board has prescribed norms for Total Suspended solids as < 600 mg/l for receiving effluent from member units. The above result shows that the raw effluent received from the member units are exceeding (TSS of 3670 mg/l) the permissible limits. Hexavalent Chromium in the receiving effluent is Below Detectable Level.</p> <p>12. Based on the TSS and TDS concentration of RO permeate and RO reject, the efficiency of RO is worked about 66% and generate 34% of RO reject which requires to be treated through MEE for achieving ZLD.</p> <p>13. Out of 8 directions, 3 directions are completely complied, 3 directions are partially complied and 2 directions are not complied.</p>						
30	Recommendations w.r.t specific observations made during follow up inspection:					
<p>The CETP shall be directed to implement the following in a time bound manner :</p> <ol style="list-style-type: none"> 1. To obtain consent under the Water and Air Acts. 2. To instruct the member units to pre-treat the effluent to the prescribed norms before conveying to the CETP. 3. To introduce a mechanism of assessing the effluent quality and quantity received from its member units and subsequently intimating TNPCB regularly. 4. To maintain proper records of effluent received from individual unit, RO permeate sent to member units and quantity of fresh water used for processing by their member units. And to made available all records to the officers of SPCB/CPCB during inspection. 5. To improve the operation and maintenance of the CETP to treat the effluent 						

	efficiently. 6. To operate MEE regularly and to stop storage of RO reject in open lagoon to avoid dilution of rain water which results into more energy consumption. 7. To improve the housekeeping. 8. To maintain records of energy consumption for treating effluents viz. physico chemical, biological, tertiary and advanced treatment systems to achieve zero discharge.	
Signature of Team Leader/Officer:		
Sowmya D. Scientist 'B'	Anjana Kumari Scientist 'B'	H.D. Varalaxmi Scientist 'C'
<i>Action Suggested by Zonal Officer:</i> Based on the observations made during inspection of M/s Talco Pernambut Tannery Effluent Treatment Company Ltd., it is observed that the CETP is not complying with all directions of CPCB. Hence modified directions may be issued for compliance and implementation of recommendations of inspection team for further improvement.		
Name, Designation and signature	Sh. S. Suresh Sci. 'D'	

Photographs of M/s Talco Pernambut Tannery Effluent Treatment Company Ltd.



Fig 1: Effluent Receiving tank



Fig 2: Equalization Tank



Fig 3: Aeration tank



Fig 4: Secondary clarifier



Fig 5: Filter Press



Fig 6: R.O. system



Fig 7: Multi Effective Evaporator



Fig 8: Secured Landfill