

No: PCB/ Ramanagara/ Mother Earth/ NGT/WMC/2021-22/110 DATE: 20/9/2021

**Inspection Report of Sri Vasudeva S.K, SEO, Zonal Office, KSPCB ,Bangalore South.**

**Staff Accompanied: Smt. Meenakshi H A Deputy Environmental Officer, KSPCB, Ramanagara,**

1	Name and Address of the TSDF inspected	Mother Earth Environ Tech Pvt. Ltd Plot No.217, KIADB Industrial Area ,2 <sup>nd</sup> Phase, Harohalli, Kanakapura Taluk, Ramanagara District
3	Category and classification	Small Size Landfill site less than 5 hectares (4 Acres)- Large- Red
4	Person's Contacted	Sri Renukaradhya, Senior Manager Tech & operations & operations and Sri Sanjay Gowda – In charge
5.	Date of inspection.	20.09.2021
6.	Consent and authorization status	Having valid consent under Water and Air Acts for the period up to 30.06.2021 and also authorization under HWM Rules,2016 for the period up to 30.06.2021

**Preamble:**

Treatment, Storage and Disposal Facility of M/s Mother Earth Environ India Private Limited was inspected on 20/09/2021 as per the directions of the Board Office Memo no.2784 Dated 09.09.2021, Detailed inspection was carried out to ascertain the status of compliance made by the Operator of the said facility to CFO/EC conditions and to recommend remedial measure to be taken as per the direction of the Order of Hon'ble NGT.

In this report, criteria followed for grant of Environment Clearance for establishment of TSDF at the above said location on 28.08.2015 as well as for expansion of its capacity 95,000 MT to 1,51,000MT on 11.06.2018 and Consent for establishment (CFE), Consent for establishment (CFE expansion) and Consent for Operation (CFO), CFO (expansion) are not discussed in this report as the same is beyond the scope of this office.

During the time of inspection, alleged non-compliances indicated in the 1st Joint Committee Report submitted before Hon'ble NGT in OA NO. 104 of 2020, with respect to

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CFO/CFO expansion have been verified to suggest necessary action for remedial measures and the status of the same is as under;

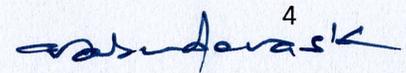
Non-compliance to the conditions of Environmental Clearance referred in the Joint Committee Report

Alleged Violations	Page No. and Para No.	Observations made during the time of inspection
Green belt of 15m shall be provided all along the periphery of the site/ 33% of the total project area.	Page No. 8 and Para No.5.2	The TSDF authorities have developed green belt area consisting of different species of saplings of width about 15 m on East, 15 m on the North, 3.5 m on the west up to cell-1 length and 17 m for cell-2 length and maintained greenery all along the boundary of the TSDF (Maintained overall 33% of the total project area).
Regular online monitoring of all the ambient air quality and water quality shall be carried out	Page No. 8 and Para No.5.2	This is small TSDF with an area of < 5 acres. For this area one Continuous Ambient Air quality station could have been installed. However, authorities have not installed Continuous Ambient Air quality monitoring station. Instead, the TSDF authorities have entrusted monitoring of Ambient Air Quality to MoEE & CC accredited laboratory and submitting the reports to the Board.
Non-compliance to the conditions of Consent for Operation referred in the Joint Committee Report		
Domestic effluent (0.4KLD) shall be treated in septic tank & soak Pit	Page No. 9 and Para No.5.3	The TSDF authorities have employed about 20 numbers and the domestic effluent generated is being treated in septic tank & soak pit. No over flow Soak pit was noticed during the time of inspection.
Leachate from cells, tyre wash water(2.0) shall be handed over to CETP M/s Govind Solvents Pvt Ltd for further treatment & disposal	Page No. 9 and Para No.5.3	The trade effluent (leachate & tyre wash effluent) was being sent to CETP after pre-treatment. They have provided new leachate pre treatment unit of capacity 15KL above ground level consisting of 2 numbers of neutralization tank followed by settling tank and final collection tank. The pre treated leachate was disposed to CETP of Govinda Solvents Pvt Ltd



		and Bangalore Eco Park Pvt Ltd and maintaining records and also submitting the monthly manifest copies to the Board. Photos of primary treatment plant are enclosed. This is inline with the Combined Consent for Operation issued by the Board.
Shall install Multiple Effect Evaporator (MEE) for disposal of Leachate generated from the waste with in 6 months	Page No. 9 and Para No.5.3	The condition stipulated in combined consent order dated: 13.04.2016 (issued through manually) & 14.06.2016(Corrigendum to CFO order) to install Multiple Effect Evaporators (MEE) has been modified by the Board vide Board Office Corrigendum Order No.6857 dated: 08.03.2017 (Copy enclosed). Due to above, the disposal method followed is in line with CFO conditions. However, the operator of the facility has not obtained amendment for enhancing the quantity of pre-treated trade effluent including leachate being handed over to CETP.
Shall install web camera at the entrance of the gate, finger print sampling station and treatment area	Page No. 9 and Para No.5.3	The authorities have installed web camera at the entrance of the gate and finger print sampling station and yet to install the camera at the treatment area (Photos enclosed). However, the same is not connected to CPCB/KSPCB server.
Shall install hood, duct& air pollution control equipmentwith chimney to the waste stabilization/processing area to control smell nuisance	Page No. 9 and Para No.5.3	The TSDF authorities have provided waste stabilization shed of size 80 m x 10 m, consisting of 3 numbers of concrete stabilization pits each of capacity 30MT along with hood, duct & blower and chimney of 15.0 m above ground level along with alkaline Scrubber as air pollution control equipment (Photographs enclosed).
Plant 3 rows of high plantation periphery and the adequate greenery.	Page No. 9 and Para No.5.3	The TSDF have provided green belt of different species of saplings of width about 15 m on East, 15 m on the North, 3.5 m on the west up to cell-1 length and 17 m for cell-2 length and maintained greenery (Photographs enclosed).
All the drums and	Page No.	During inspection, it was observed that, the

<p>machinery shall be placed with in the shed and the floor shall be impervious</p>	<p>9 and Para No.5.3</p>	<p>Operator of the TSDF has provided shed for storing barrels filled Hazardous waste. The shed is having impervious flooring. Presently, this shed is empty.</p>
<p>The State Level Environment Impact Assessment Authority – Karnataka has accorded Environmental Clearance for TSDF expansion i.e. enhancing the Cell 1 from 50,000 MT to 1,00,000 MT and Cell 2 from 45,000 MT to 51,000 MT, with a total capacity of 1,51,000 MT, vide order dated <b>11.06.2018</b>. Accordingly, M/s MEEPL has obtained Consent for Operation to the enhanced capacity i.e. 1,51,000 MT from KSPCB on <b>23.03.2019</b>, but the KSPCB has not mentioned / changed the operation period and kept the same i.e. 10 years</p>	<p>Page No. 10 and Para No.5.4</p>	<p>The TSDF life has been limited for just five years instead of permitted 10 years. Very reason for the same is due to the fact the, TSDF received excessive waste from industries of all over the state as the other TSDF was not operational for short period due to legal issued and refusal of consent for operation for other TSDF.</p>
<p>As per combined consent conditions, the MEEPL shall install Multiple Effect Evaporator within six months (i.e. by October 2016) for disposing of leachate generated. But the leachate generated is handed over to CETPs i.e M/s Govind Solvents and M/s Bangalore Eco Parks Pvt Ltd., whereas in the consent there was no permission to handover to M/s Bangalore Eco Park Pvt. Ltd</p>	<p>Page No. 10 and Para No.5.6</p>	<p>The condition stipulated in combined consent order dated: 13.04.2016 as that, the leachate generated and tyre wash water has to be disposed to M/s Govind Solvents, but the authorities have handed over the leachate to the M/s Bangalore Eco Park Pvt. Ltd. However the TSDF authorities have not obtained amendment of CFO for the same.</p> <p>The TSDF authorities have informed that, the TSDF is handing over the neutralized surface runoff, Tyrewash water and leachate to the M/s Govind Solvents Pvt Ltd and also to the M/s. Bangalore Eco park to avoid any discharge of leachate outside the TSDF premises and to avoid spillage and in the interest of protecting the environment.</p>

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The leachate generation is double during the year 2017 to 2020	Page No. 11 and Para No.5.6	The leachate generation was doubled due to the fact that all the waste generated thought the state was being received by this TSDF only (At that time the other TSDF was closed for short period for refusal of the consent by the Board) and hence the quantity of hazardous waste generation for land filling was collected by this TSDF,  On enquiry, the operator of the facility informed that, the leachate generation has increased due to handling of enhanced quantity in a short period.
Shall install integrated flow measuring recording devices on the effluent line and a record of daily effluent discharge shall be maintained	Page No. 29 and Para No.7.4.1	The TSDF authorities have not provided integrated flow measuring recording devices on the effluent line. However, during inspection, it was observed that, the mechanical flow meters were provided at the inlet and outlet of the pre treatment plant and also at the surface runoff collection tank outlet and the records are maintained. Photographs enclosed
Shall provide tank in tank system for leachate collection tank to identify any leakages	Page No. 29 and Para No.7.4.1	The Board has not stipulated to provide tank in tank for collection of leachate, During inspection, it was observed that the TSDF authorities have provided concrete Hume pipe with perforation. This hume pipe is inserted vertically at two locations. It was informed that, the slope is provided in such a way that, the leachate generated in the TSDF is to flow towards the hume pipe. The leachate so collected is being pumped to collection tank for pre-treatment and further storage inside the landfill cells upto bottom (above HDPE liners) for which all lateral perforated HDPE pipes are connected to concrete hume pipes. Submersible pumps are provided ensure that the generated leachate is directly pumped to the primary treatment plant & neutralized and disposed to CETP of M/s. Bangalore Eco park or Govind Solvents Pvt.Ltd.,
The pre-treated leachate is lifted	Page No. 29 and Para	The TSDF authorities have provided permanent hose and pump for lifting the leachate to vehicles and the same was observed during course of

/transferred to vehicles by providing temporary hose and pump and provided with flow meter.	No.7.4.1	inspection.
Surface water quality	Page No. 35 and Para No.7.4.4	The nearest lake is Huluvagondanahalli Kere which is about 1.5 KM from the TSDF site. Further, the TSDF site is surrounded by many industries and habitats. The run off flow through these drains into this lake. Hence, surface water quality determination as notified by the committee shall directly cannot be attributed to this TSDF only
Ground water quality outside TSDF	Page No. 33 and Para No.7.4.3	<p>In the joint Committee report, BW -3, 4 5 have been reported that there is in increase in concentration of pollutant when compared with other bore well.</p> <p>However, there is no water quality data of these borewells prior to existence of TSDF with the Board to ascertain the reason for increased concentration of pollutant.</p> <p>Also, as this EC was granted based on EMP, the water quality data in this area was not available.</p> <p>However, the Board may direct the TSDF operator to initiate a Hydrogeological studies through institute of National repute, such as National Geophysical Research Institute to ensure the ground water quality and its movement and to take preventive steps for maintaining water quality of borewells located near surrounding villages.</p>
Management of surface runoff	Page No.37 and Para No.7.5	The TSDF authorities have provided storm water drains (garland canals) on East, West & North side for collection of surface runoff and they have constructed three collection tanks of capacity 30 KL, 15 KL & 50KL for collecting the storm water from the TSDF and pumping the same to the pre treatment plant/ leachate collection tank and neutralized and disposed to CETP-M/s Bangalore Eco Park.

### Present status

1. The TSDF was not operating at the time of inspection and is not receiving any Hazardous Waste for land filling from its member industries. They have stopped receiving the waste from the member industries from 03.02.2021.
2. Now Both the Cells of TSDF (Cell-1 & cell-2) have been temporarily capped with gas liner and HDPE sheets of thickness 1.5mm and they have filled completely of quantity 1,51,000 MT of waste in the TSDF (Photographs are enclosed).

### Recommendations/Suggestions for remedial measures to be taken by the TSDF operator :

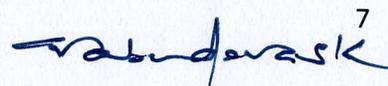
During inspection it was observed that, the Operator of the TSDF facility has covered Cell-1 with HDPE sheets and Cell -2 with Tarpaulins as temporary measures since closure of the TSDF. Presently, the TSDF Operation is being monitored by 15 to 20 personnel.

Cell -1 is covered with HDPE sheet by welding each sheet of width of 8.0 meters to cover the entire area. Cell -2 is covered with Tarpaulins with a overlap of 1feet to cover the entire area

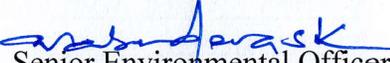
Further, the rainfall in Harohalli area is about 9769 mm (during 2020) . As cell -2 is covered with Taurpaulins, with over lap, the surface rain runoff is likely to enter thought he overlap and likely to enter cell and increase the quantity of leachate to be handled.

In view of the above, it is desirable to permit the Operator of the facility for taking up permanent capping as per the procedure laid down by CPCB. IN view of the above, it is recommended to permit the operator of the facility to takeup capping of both the cells and post closure operator as per the procedure laid down by CPCB with following conditions;

1. The TSDF is required to follow the protocol and post closure procedure as per CPCB guidelines.
2. The Operator of the facility shall submit post closure and capping plan indicating design and specification of materials used for capping and agencies authorized to test the materials used for capping
3. It is recommended to form a Technical experts committee for the supervision of the post closure procedure of TSDF to oversee the same and followed during laying of each layer of capping till the final layer is completed.
4. Under the guidance and supervision of Technical experts committee, the TSDF authorities have to provide permanent capping as per the CPCB protocol to control future damages to the environment by the TSDF.
5. The TSDF authorities is required to continue to collect the leachate and surface runoff generated regularly and has to dispose in a scientific manner without any adverse affect to the environment.
6. The TSDF authorities are required to monitor the ground water regularly with in the TSDF site and also in the surrounding area in radius of 500m and shall submit



- the monitoring reports to the Board once in 6 months.
7. The TSDF authorities are required to clean the site regularly and has to maintain good housekeeping at all the times and has to make provisions for proper approach to TSDF for monitoring purpose from all the sides of the TSDF.
  8. The TSDF is presently stopped its operation and temporarily covered with tarpaulins until permanent capping is envisaged.
  9. The TSDF is located adjacent to existing industries, nearby villages and also habitats and hence it is required to provide capping of TSDF under the guidance of experts committee and has to submit reports of monitoring every month w.r.t, volatile organic compounds and other gases.
  10. The operator of the facility may be directed to take up hydrogeological studies on the TSDF area through National Geophysical Research Institute, Hyderabad to know the movement of ground water and water quality and for recommendation or additional measure to be taken by the facility.

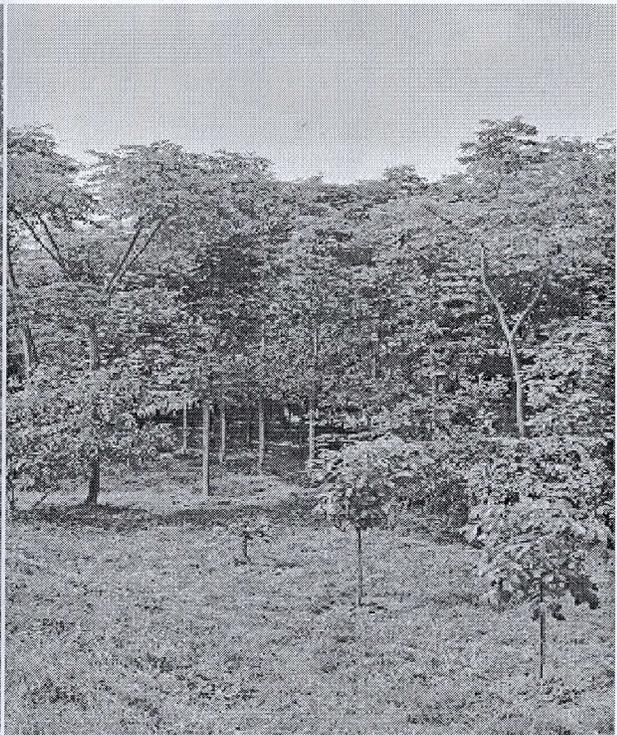
  
Senior Environmental Officer  
Bangalore South

(This document contains 8 pages of report with photographs)



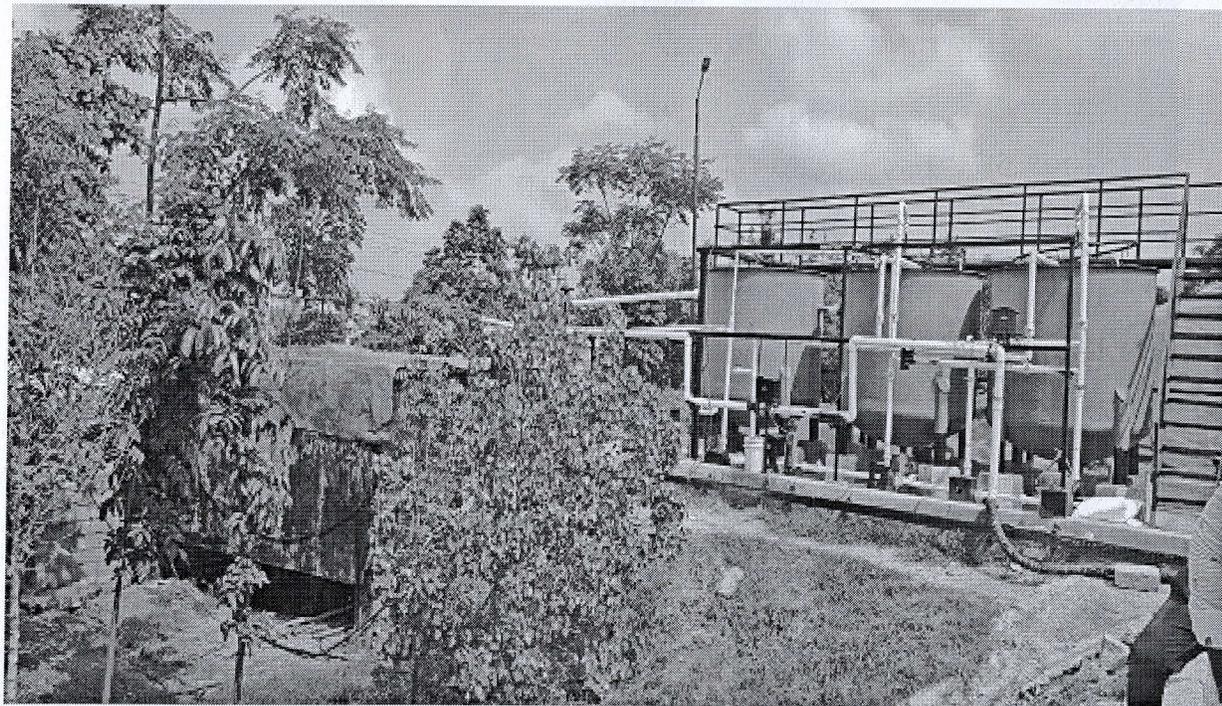
**The TSDF have provided green belt of different species of saplings**

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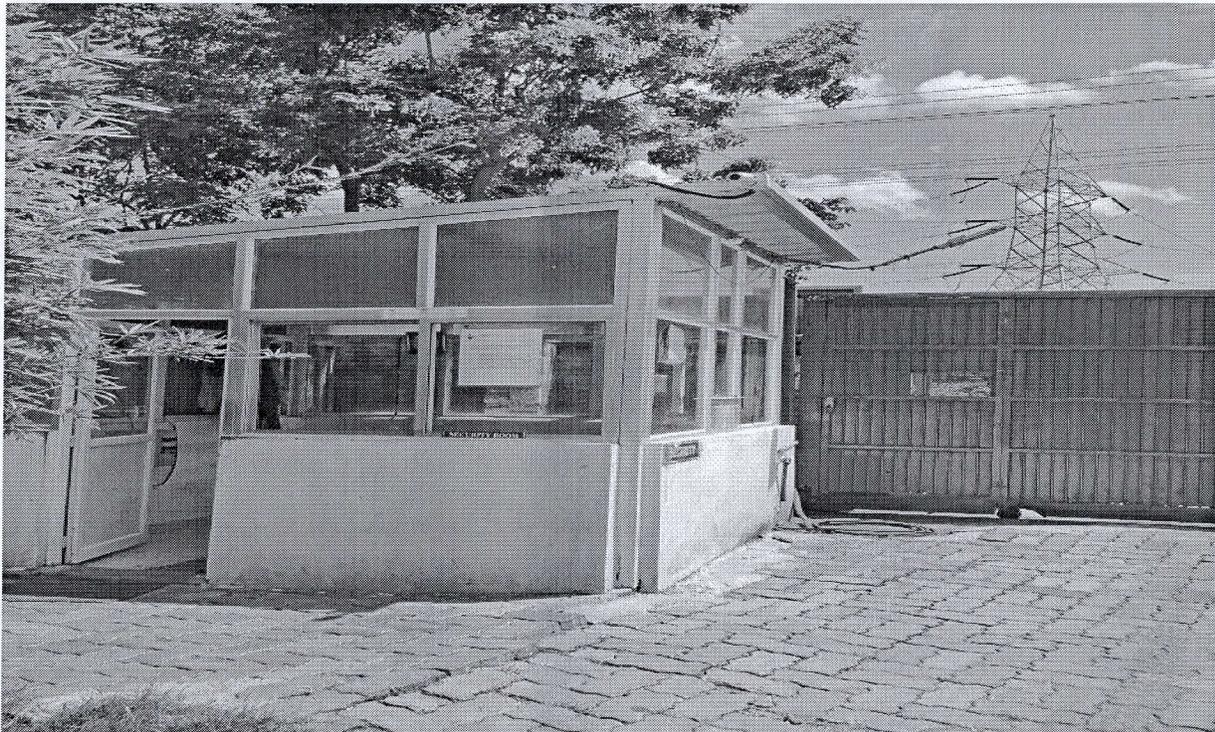
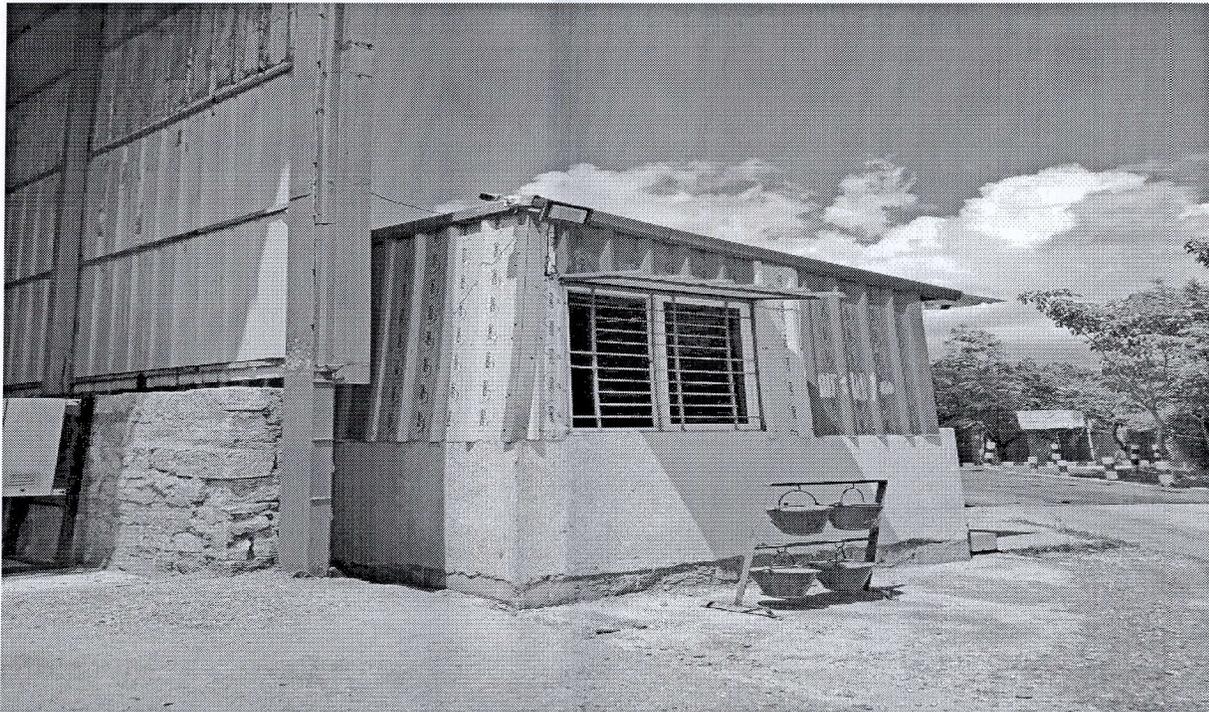
The TSDF have provided green belt of different species of saplings

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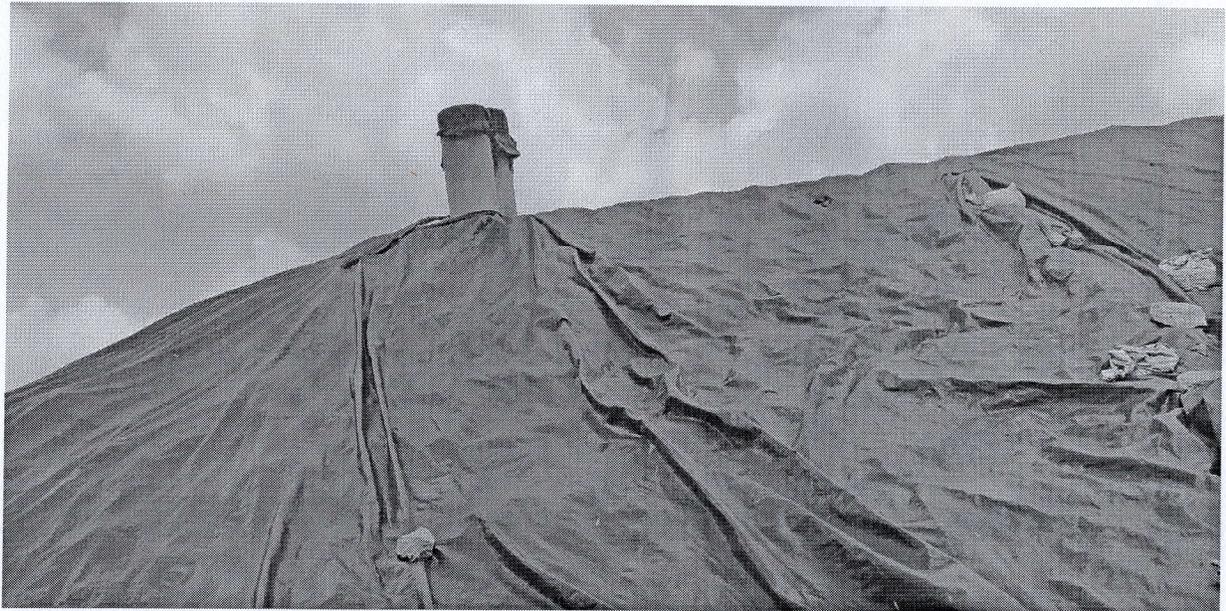
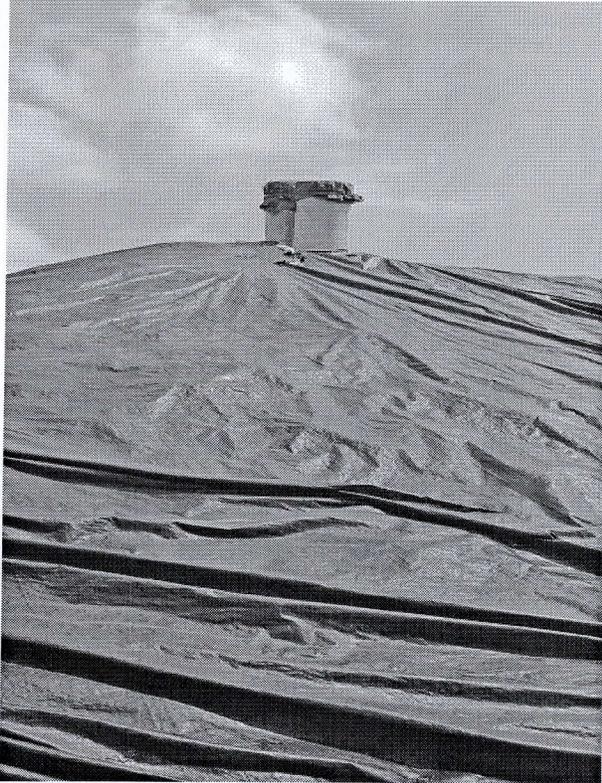
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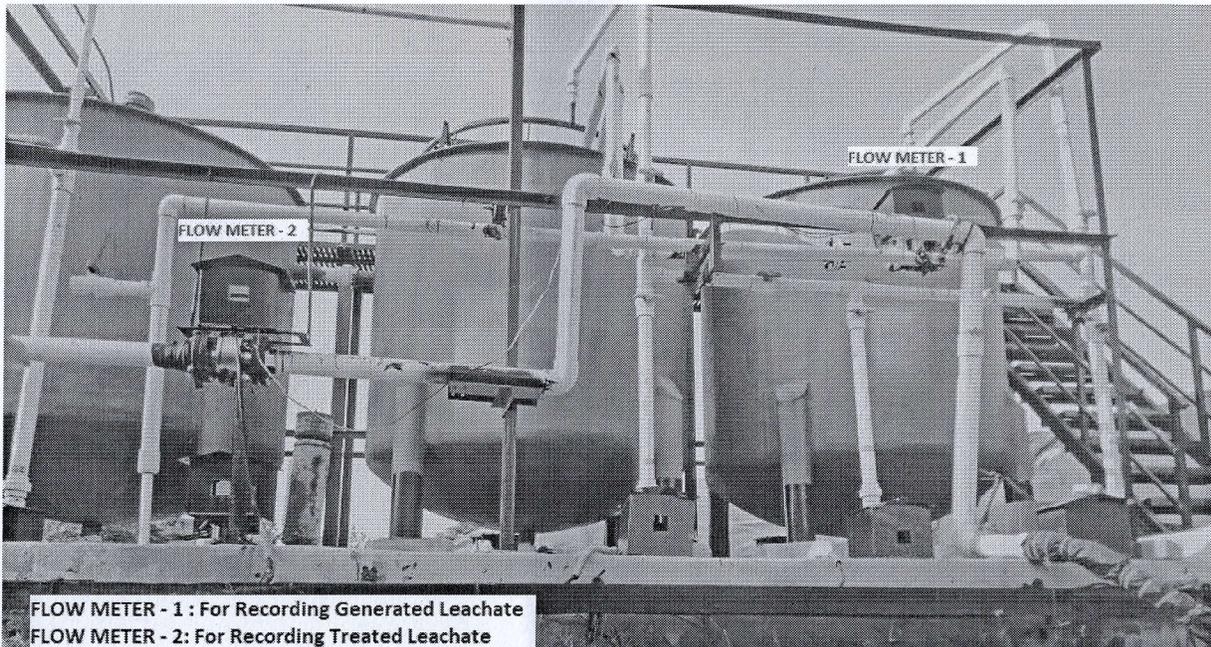
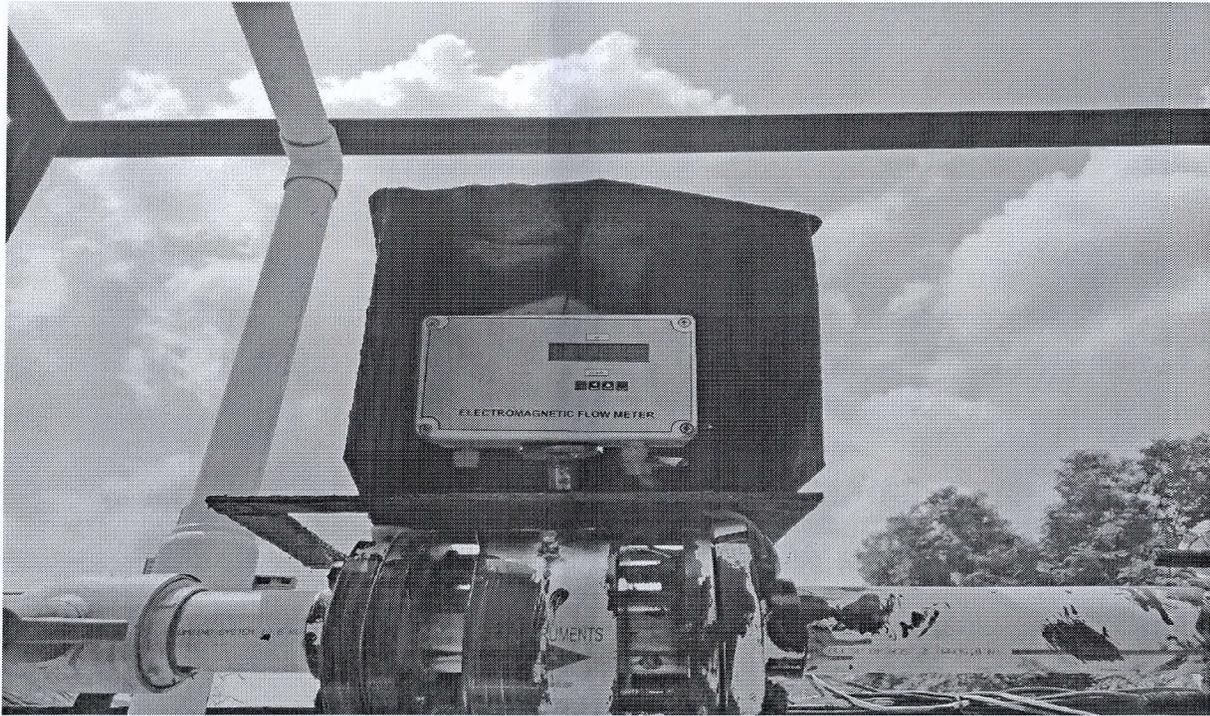
The TSDF authorities were installed web camera at the entrance of the gate and finger print sampling station

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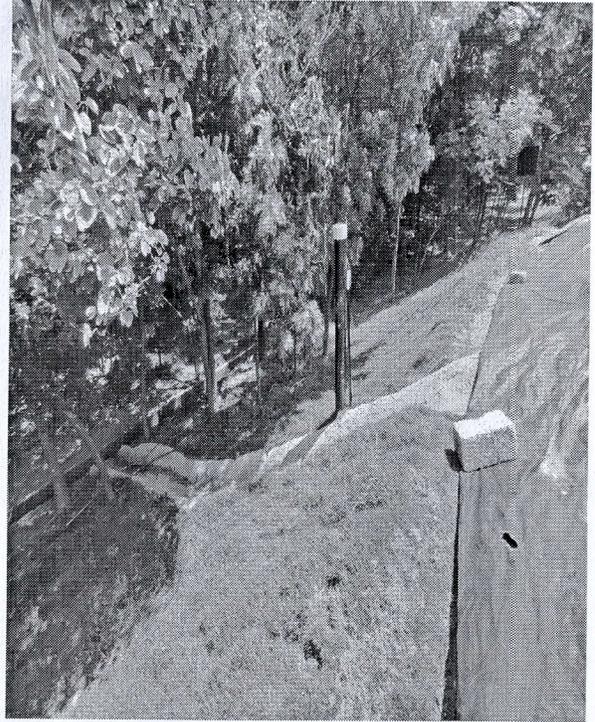
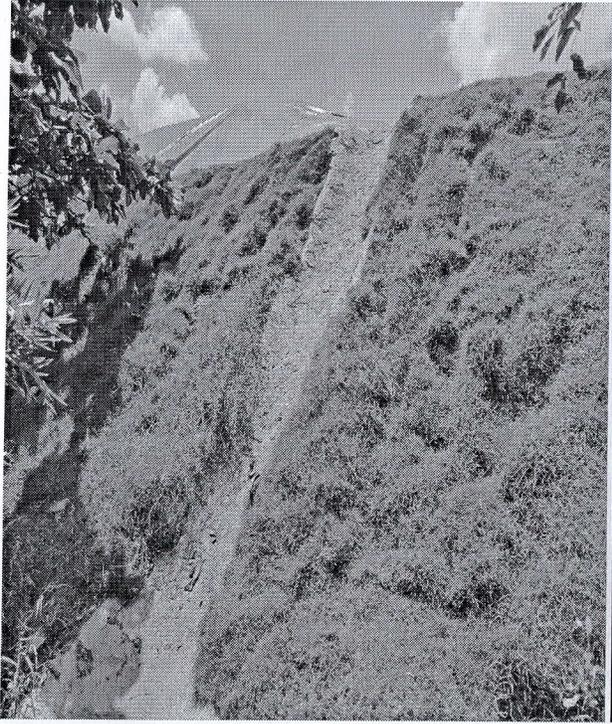
**Hume pipes inserted vertically at two locations**

*W. J. Wask*

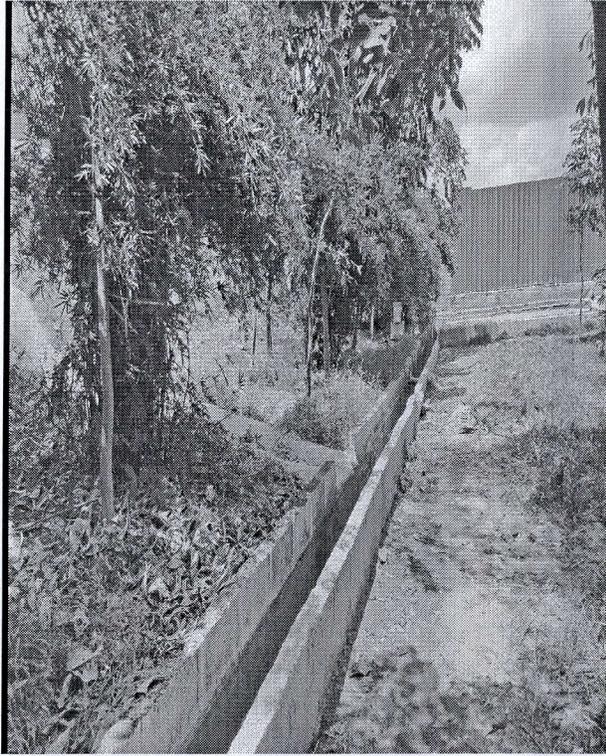


The mechanical flow meters provided at the inlet and outlet of the leachate pre treatment plant and also at the surface runoff collection tank outlet

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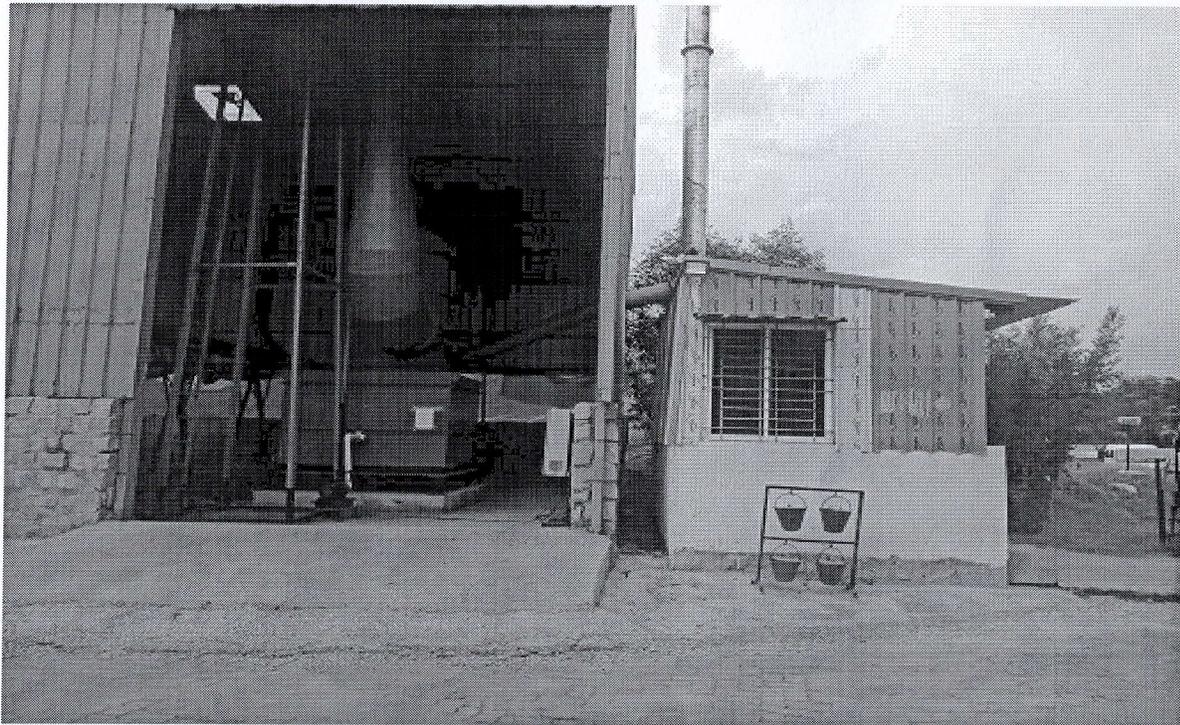
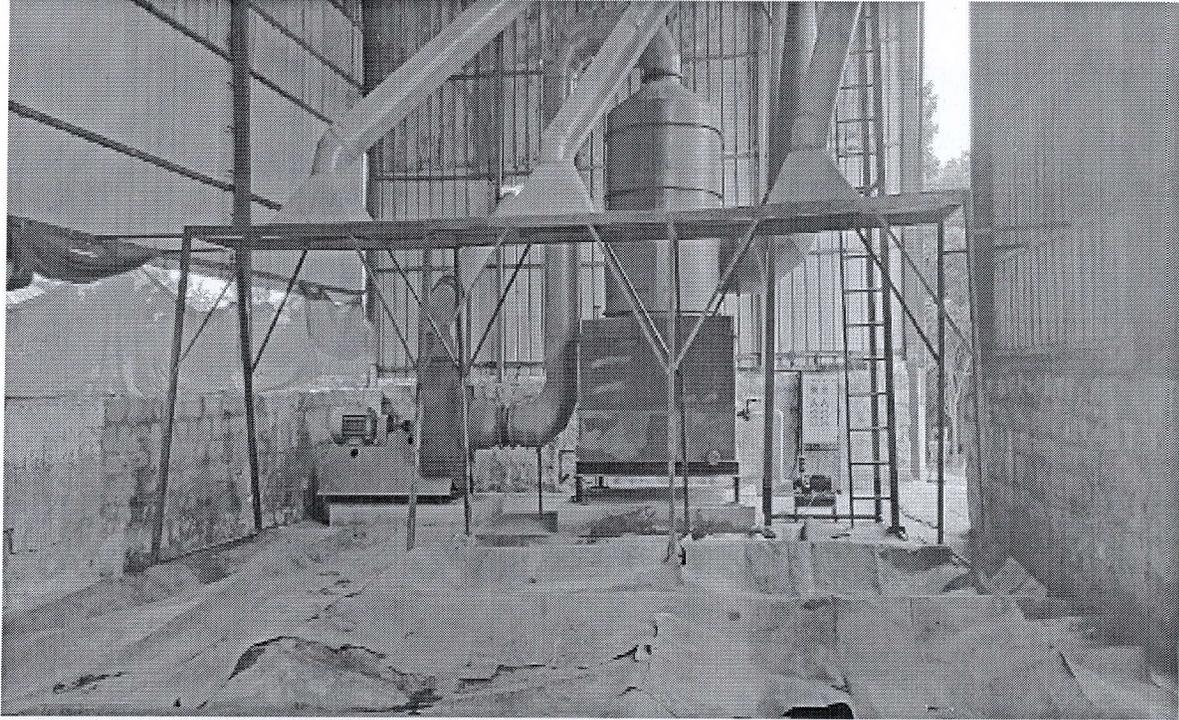


Waldenpark



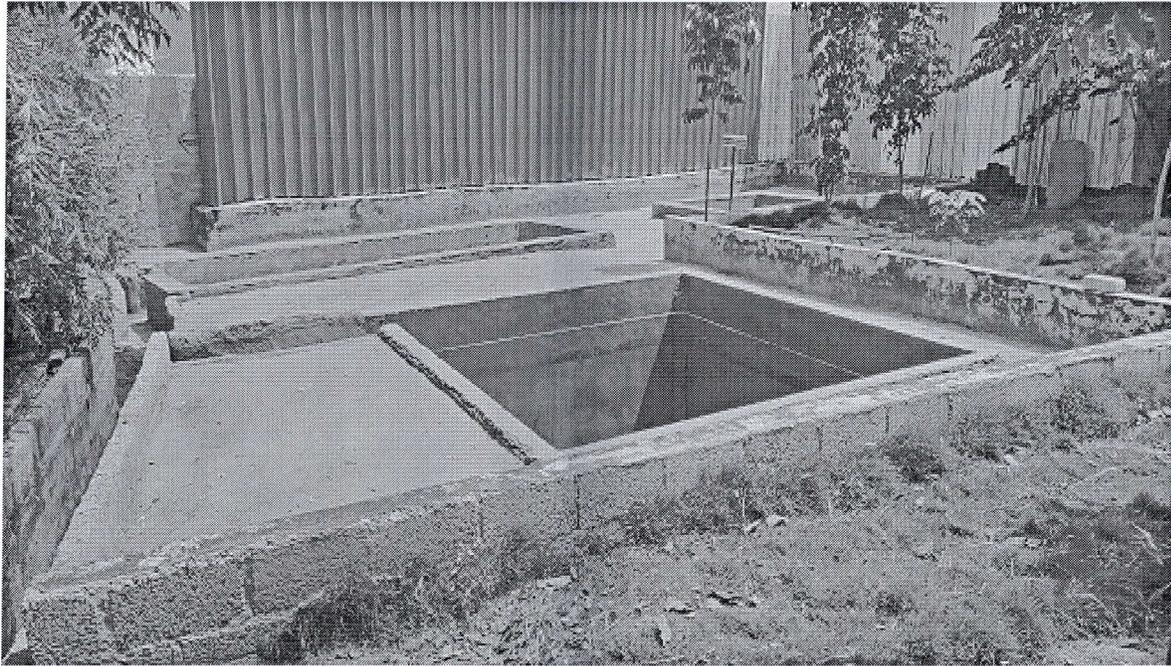
The TSDF authorities have provided storm water drains (garland canals) for collection of surface runoff

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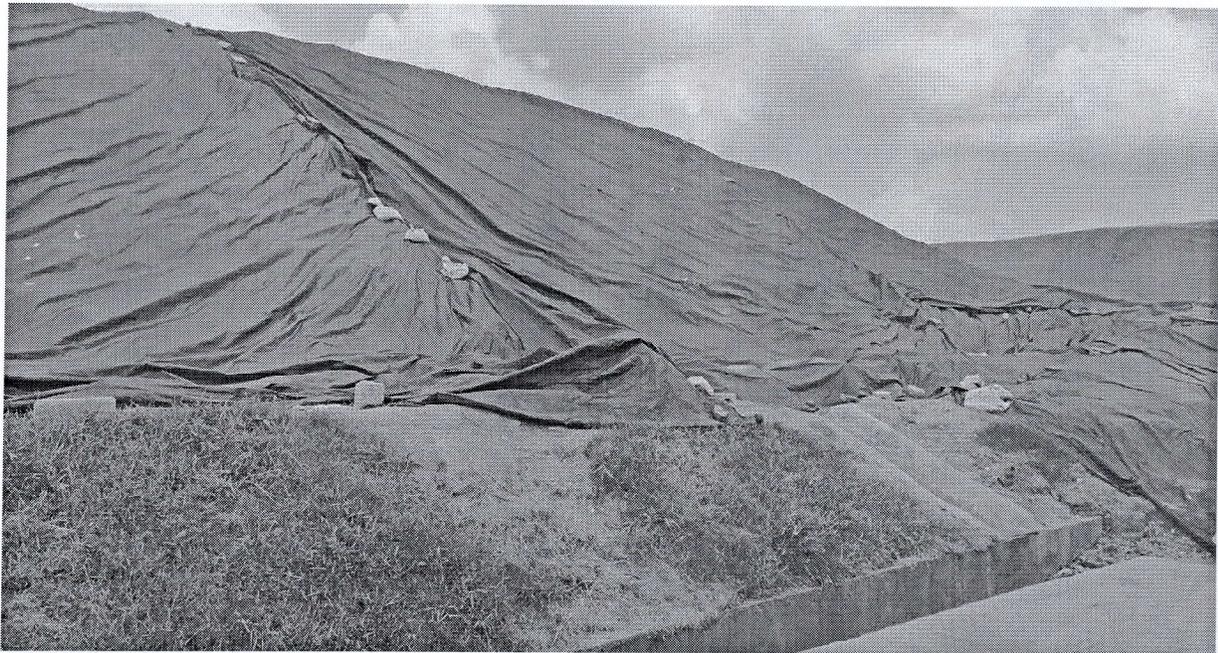
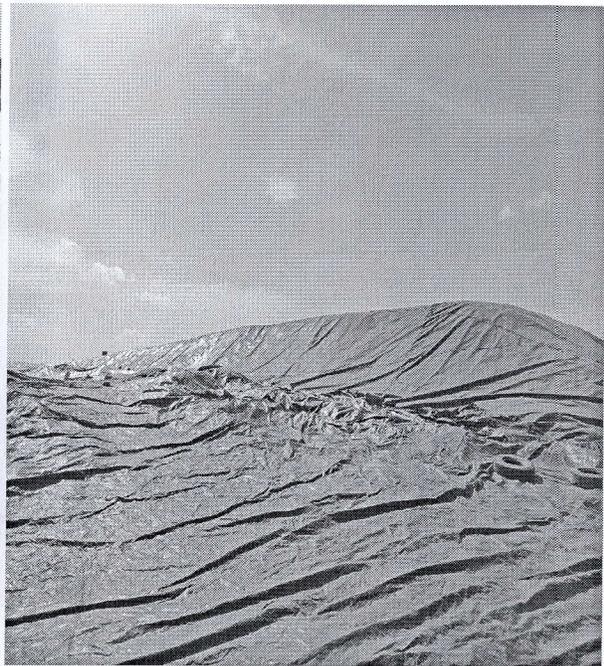
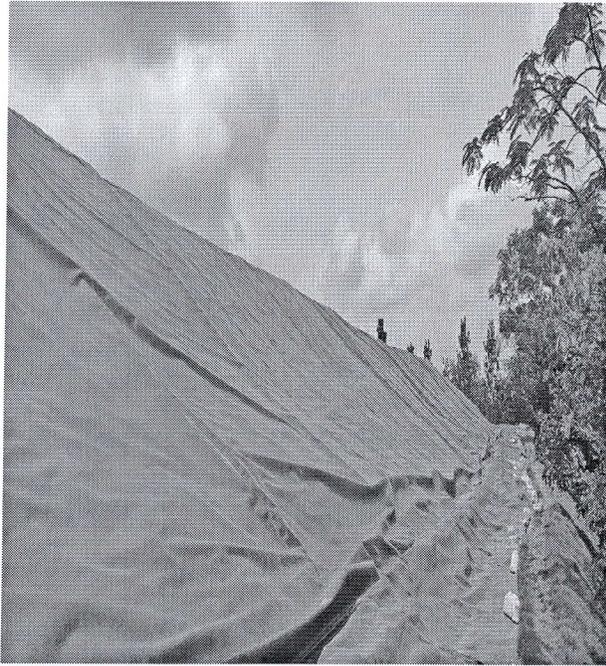
**Concrete stabilization pits along with hood, duct & blower and chimney of 15.0 m above ground level along with alkaline Scrubber as air pollution control equipment.**

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The TSDF authorities have constructed three collection tanks of capacity 30 KL, 15 KL & 50KL for collecting the storm water from the TSDF

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**Now Both Cell-1 & cell-2 had been temporarily capped with gas liner and HDPE sheets of thickness 1.5mm**

*Aravind Jaisankar*

