BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,

PRINCIPAL BENCH, NEW DELHI

OA No. 50/2024

Amandeep Kamboj ...Applicant

Versus

State of Haryana and others. ...Respondents

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NOTE:

(i) The main case is fixed for 02.09.2024.

Chandigarh
Dated: 30.05.2024

Ajay

(AJAY KAMBOJ)
Advocate
Enr. No.P-2705/2011
NOR PH220174
Counsel for the Applicant

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,

PRINCIPAL BENCH, NEW DELHI

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Amandeep Kamboj ...Applicant

Versus

State of Haryana and others. ...Respondents

Rejoinder to the reply of Executive Officer Municipal Council, Sirsa on behalf of applicant/Amandeep Kamboj.

RESPECTFULLY SHOWETH:

1. That the above noted original application no. 50/2024 is now fixed for 02.09.2024, before this Hon'ble Tribunal.
2. That incompliance of order dated 16.05.2024, the applicant wants to file rejoinder to the reply of Executive Officer Municipal Council, Sirsa.
3. That there are lapses and irregularities committed by the respondents in connivance with each others, especially by respondent no.6 in respect of collection, transportation, processing and disposal of municipal waste in Sirsa Cluster.
4. That there are heaps of old garbage legacy waste and the same was not processed and dumped in Sanitary Land Unit in Village Bakriyan Wali, M.C. Sirsa. The plant has garbage heaps piling up high as 120 to 150 feets. The Medical

camps conducted by the local health department around the villages near the plant have unearthed many cases of cancer, skin issues and respiratory problems among residents. However, as the municipal's waste piled up, all the trees got sub-merged amid the heaps of garbage, water sources dried up and the area surrounding the plant got engulfed by an overpowering stench. Instead of recycling the solid waste, it is often burnt, leading to severe air pollution and severe health issues among village residents.

It is pertinent to mention here that the RDF, disposal of inert, Hazardous waste, C&D waste, E-waste coming out after processing of legacy waste is settled in Brick Lining dump of the village Bhambhoor, near Salarpur Road which is clear from the photographs (Annexure P-6) and it is a clear cut violation of Solid waste management as well as Environment Protection Act.

5. That it is also pertinent to mention here that the Spot Inspection Report dated 10.01.2024, was submitted by Dr. Ruchi Urana, Scientist-B/AEE, Sirsa Region Haryana State Pollution Control Board, in which the findings of recent inspection, including the accumulation of old waste alongside the fresh one were given. During the inspection it was found that the segregation of solid waste was in process, there were two machines for waste recycling in the

plant, but only one was operational, leading to slow recycling.

6. That the tress, which were standing in the Bakriyan Wali plant are burnt by the respondent no.6, which is clear from the bare perusal of latest photographs i.e. Annexure P-6. The solid waste is not recycling by the respondent no.6, however same is burnt by fire which amounts to clear cut violations of Solid Waste Management. RDF is mixed in the fertile land and kept inside the Brick Lining plots which are clear from the bare perusal of latest Photographs.

It is therefore respectfully prayed that keeping in view the above facts and circumstances of the present case, the strictest legal and departmental action should be taken against the respondents with immediate effect and to protect the environment from pollution, in the interest of justice.

Chandigarh
Dated: 30.05.2024

(AJAY KAMBOJ)
Advocate
Enr. No.P-2705/2011
NOR PH220174
Counsel for the Applicant

ANNEXURE P-5

DEENBANDHU CHHOTU RAM UNIVERSITY OF SCIENCE & TECHNOLOGY MURTHAL (SONEPAT) – 131039

DCRUST/CED/73

Date: 10/02/2023

To

Executive Engineer,
MC, SIRSA.

Subject: Special audit report of existing legacy waste dumpsite in Municipal Council, Sirsa.

Ref:- Memo no. ME/626 dated 31/05/2022 and Memo no- Tech/NGT/DULB/2022/2927 dated 23.05.2022

Dear Sir

Please find the attached report in reference to the above memo number received from your office.

Investigator, Assistant Professor
CED, DCRUST, Murthal

Investigator, Assistant Professor
CED, DCRUST, Murthal

Dr. Sunita Kumari
Er. Saurabh Jaglan

Mail:- sunitakumari.civil@dcrustm.org
Mail:- saurabhjaglan.civil@dcrustm.org

Mob:-8708858247
Mob:- 8901279918

"Assessment Report of Special audit of sites of Bioremediation of legacy waste in Municipal Council, Sirsa"

By

Deenbandhu Chhotu Ram University of Science and Technology, Murthal

Sonipat, Haryana 131039

(Haryana Government A Grade NAAC University)

AIM: - Special audit of Bio Remediation of legacy waste site in Municipal Council, Sirsa.

Fig1:- Satellite image of Bakariyawala, M.C, Sirsa

Sirsa city is a municipal council located in Haryana. It is at a distance of 260 km NW of New Delhi and 240 km from the state capital of Chandigarh. The dumping site for the residential waste is located in the village of Bakariyawala, Sirsa. The coordinates of the location are 29°24'50" N and 74°59'28" E.

Scope of study

A special audit is conducted at the Legacy waste site, and the scopes of studies are –

1. Assessment of legacy work.
2. Density of legacy work.
3. Disposal of fractions coming out after processing of waste.
4. Management of leachate, various gases coming out the legacy waste.
5. Audit of the machineries installed at sites of legacy waste.
6. To measure the levels of air and noise pollution at legacy waste site.
7. Sampling of the compost/soil enrich coming out after processing of legacy waste.
8. Disposal of inert, RDF, Hazardous waste, C&D waste, E- waste coming out after processing of legacy waste.
9. Sampling of ground water.
10. Proper maintenance of records.

Sunita

Assistant Professor
Civil Engineering Department

1. Assessment of legacy work.

During the inspection of the site, the entire area has two types waste - fresh and legacy waste., The fresh waste collected from Sirsa city is processed daily.

While the legacy collected from 2015 to 2020 was not processed and dumped in Sanitary Land Unit, having a waste capacity of 5yrs. The site has all types of sutures required for landfill, like –Weighing Bridge, leachate holding tank, Evaporation tank, and storage room.

The legacy waste was heaped in windrows of different heights to decompose naturally

Composition of waste

10 -10 kg of legacy wastes are collected from various points below and above the individual piles. The waste is segregated manually by labour and collected on polythene sheets. The segregated waste is weighted. The average composition of legacy waste is given below –

Table 1:- Composition of Legacy waste

S.No	Types of waste	Weight of waste (10kg)
1	Cloth	0.600
2	Plastic	1.500
3	Polythene	3.200
4	Paper	1.560
5	Dirt	1.670
6	Construction & Demolition waste	1.500
7	Wood	0.460
8	Miscellaneous	0.110

It was found that all types of waste were coated with soil and dirt, which cannot be separated. Dirt is very sticky with the waste.

The following procedure is adopted to measure various parameters at the sire -

(i) **Area** – The total covered area of garbage was calculated by taking coordinates around the heap at the site and locating those points on google earth.
The upper portion of the waste was calculated by taking measurements.

Total covered area (Above the ground) = 25234.45 m^2

The whole covered area is divided in three Zones –

Zone – 1 = 5,047.0 m^2

Zone – 2 = 16,150.0 m^2

Zone – 3 = 4,037.50 m^2

Total area (Below the ground) = 23207.85 m^2

(ii) **Height** - The height of garbage above and below the ground is the average value of the measured garbage height at five points at the site. For underground depth was obtained by the JCB machine scratches the area until soil is visible.

The heights of windrows as given below –

1. Zone -1: The heights of windrows vary from 0.50 m to 3m. Average height is 2.5m.
2. Zone -2: The heights of windrows vary from 3 m to 8m. Average height is 7.4 m.
3. Zone -3: The heights of windrows vary from 8 m to 13m. Average height is 11.5m.

Underground depth varies from 0 to 6m. Average depth is 3.5m.

Table 2: - Assessment of Legacy waste at Bakariyawala, Municipal Council, Sirsa

S.No.	Area (Sqm)	Height (m)	Volume (m^3)	Density (ton/m^3)	Amount of waste (metric ton)
Below Ground	21,196.66	3.5	89,025.98	0.995	73817.37
Above Ground					
Zone - 1	5,047.0	2.5	12,617.50	0.495	6,245.66
Zone - 2	16,150.0	7.4	1,19,510.00	0.750	89,632.50
Zone - 3	4,037.5	11.5	46,430.78	0.925	42,948.47
Total	25,234.45				2,12,644.01

The total amount of legacy waste at Bakariyawala, Sirsa, was **2,12,644.01 metric ton (approx.)**.

2. Density of legacy work.

The density of legacy work was carried out at various area locations. A density test was carried out at the waste windrows' Top, Middle, and Bottom. The following procedure was adopted for density measurement as MSWM Manual (2016).

The density of the waste – Composite waste was collected from various parts of the heaps in a small box and weighted with a weighing machine. After weighing, the smaller box's content was emptied into a bigger $1m^3$ box. The process was repeated until the larger box was filled up to the top. Once the larger box was filled, the weight of the waste was noted. The waste was not compacted by pressure. Repeated the entire procedure five times; the average value of weights is the waste's density (weight per cubic meter).

The density of windrows as given below –

1. **Zone -1**: The heights of windrows vary from 0.380 ton/m^3 to 0.550 ton/m^3. The average height was taken as 0.495 ton/ m^3.
2. **Zone -2**: The heights of windrows vary from 0.650 ton/m^3 to 0.890 ton/m^3. The average height was taken as 0.750 ton/ m^3.
3. **Zone -3**: The heights of windrows vary from 0.900 ton/m^3 to 1.120 ton/m^3. The average height was taken as 0.925 ton/ m^3.

Underground -The heights of windrows vary from 0.970 ton/m^3 to 1.410 ton/m^3. The average height was taken as 0.995 ton/ m^3.

3. Disposal of fractions coming out after processing of waste.

The waste was not processed.

Sunita
Assistant Professor
Civil Engineering Department
Deenbandhu Chhotu Ram University
of Science and Technology
Murthal (Sonepat)

4. **Management of leachate, various gases coming out of the legacy waste.**

leachate holding tank of 3m diameter is available at site. No leachate was found in it.

5. **Audit of the machinery installed at sites of legacy waste.**

No machinery was installed for legacy waste because it was not processed. The machinery is installed for fresh waste only.

6. **To measure the levels of air and noise pollution at the legacy waste site.**

During the measurement of density, the noise level was 55.7dB. Open farms are present there; therefore, its process would not affect the surrounding.

7. **Sampling of the compost/soil enrich coming out after processing of legacy waste.**

The composting pits were available.

8. **Disposal of inert, RDF, Hazardous waste, C&D waste, E-waste coming out after processing of legacy waste.**

Legacy waste was not processed. Storage building is present for Plastic waste, Paper, Clothes, E-waste, and C&D waste.

9. **Sampling of groundwater.**

The only source of groundwater, Tubewell was not in working condition at the time of visit.

10. **Proper maintenance of records.**

The records were correctly maintained for assessment of legacy waste. Proper records of Bio – remediation and Bio-mining of 44,530.75 M.Tonnes were available and copy of documents are attached with it.

Sunita

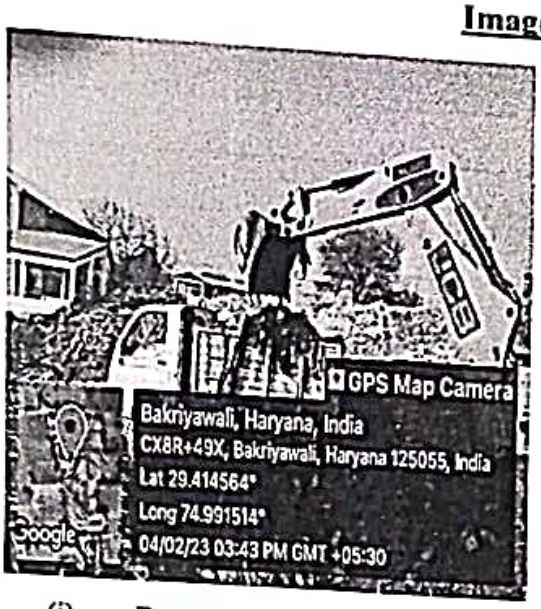
Assistant Professor
Civil Engineering Department
DCRUST, Murthal

Disclaimer

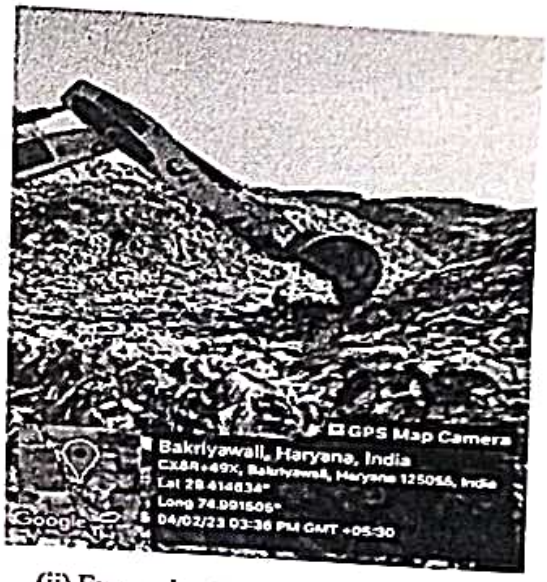
This report has been prepared by the investigation team of Deenbandhu Chhotu Ram University of Science and Technology, Murthal, Sonipat. The information contained in this report is based on data collected during a legacy waste audit conducted through site visits. Reasonable measures have been taken to ensure the accuracy and completeness of the information presented in this report. However, the university makes no express or implied warranty as to the 100% accuracy of the information contained herein. The

findings and recommendations in this report are based on the conditions and circumstances prevailing at the time of the audit and may be subject to change on-site with time. The university assumes no responsibility for any loss or damage resulting from complete reliance on the information contained in this report

Images at site



(i) Excavation process at the site

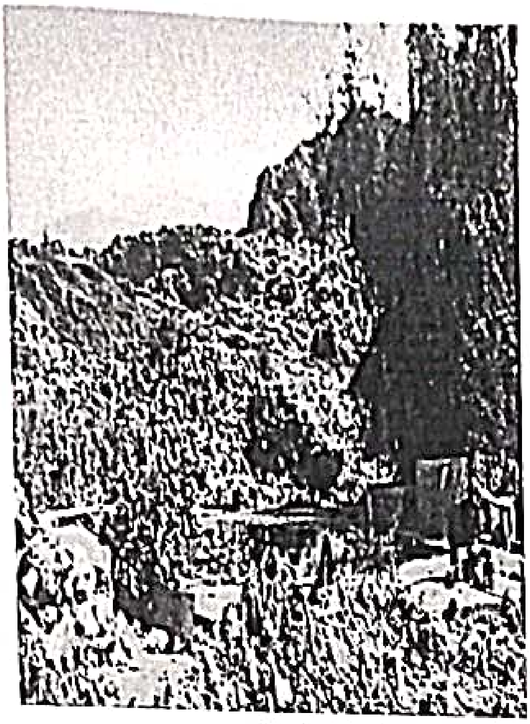


(ii) Excavation process at the site

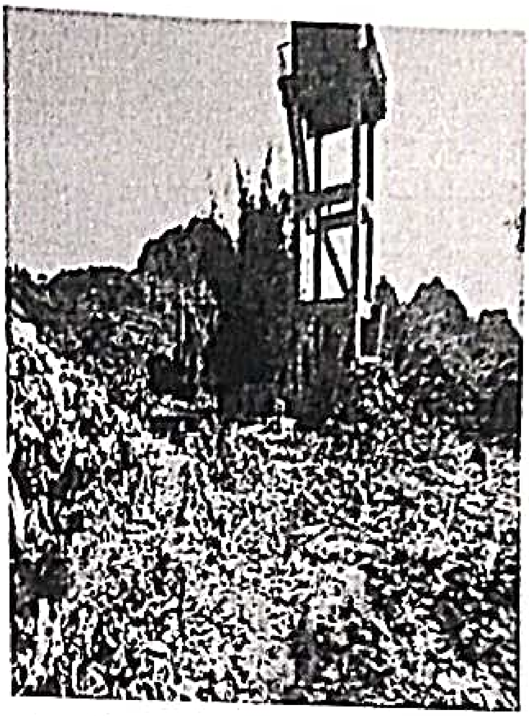
(ii) Excavation process at the site

(iv) Sample of reading taken

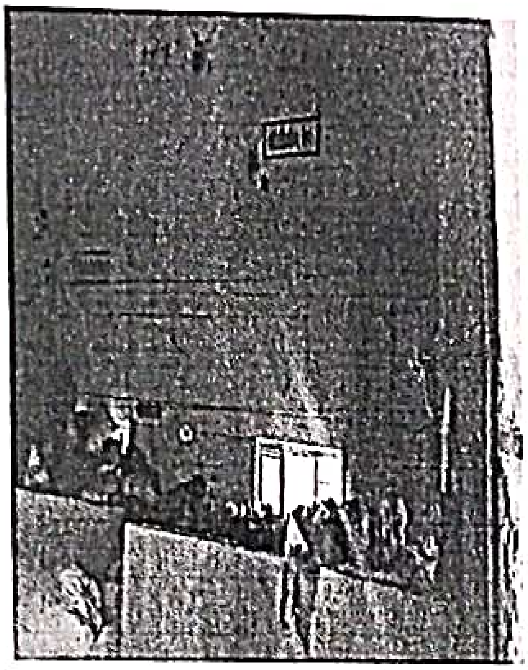
Assistant Professor
Civil Engineering Department
Deenbandhu Chhotu Ram University
of Science & Technology
Murthal (Haryana)



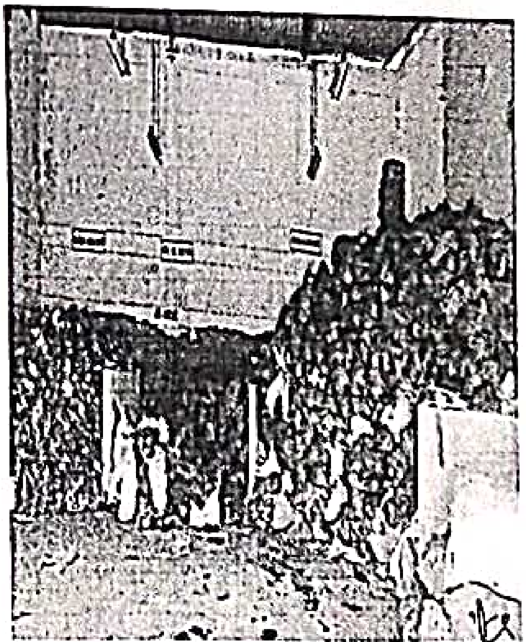
(v) Site



(vi) Site



(vii) Storage for segregated waste



(viii) Storage for segregated waste

Assistant Professor
Civil Engineering Department

From

Executive Engineer
Municipal Council,Sirsa

To

Principal Investigator
CED,DCRUST,Murthal

Memo No. 383 Date:- 23/1/23

Subject:-Supportive documents required for legacy waste audit report,Sirsa

With reference to your office vide letter no. DCRUST/CED/386 dated 5/12/2022 the report is as follows:-

Previous Quantity of Legacy Waste=44530 MT

Quantity of by- products recovered during treatment of legacy waste (MT).	As per below details
a) Soil enriched material	24648
b) RDF recovered	11310
c) C&D material recovered	4672
d) Inert material produced	4100

02, Trommel Machines were used during the processing of above quantity. The capacity of trommel was 700 Ton/ Per day/Per Trommel. Other details are enclosed with this.

Executive Engineer
Municipal Council,Sirsa

Assistant Professor
Civil Engineering Department
Deenbandhu Chhotu Ram University
of Science & Technology
Murthal (Sonepat)

Rough Cost Estimate for Bio-remediation of Old Municipal Solid Waste Abstract of Qty.

Total Area of the dumping site	= 16191 Sq Mtr
Waste on dumping site dumped height of the legacy waste	= 5.00 Mtr apx.
Hence, as per above total qty. of the old Municipal Solid Waste	= 80965 Cum
Weight of Legacy Waste (Per Cum) (Weight is calculated on the average basis on the weighing of tractor-trolleys from the dumped site)	= 550.00 Kg per cum
Now, the total legacy waste	= 80965 x 550/1000 = 44530.75 M.Tonnes

Abstract of cost as per CPCB Guidelines

O&M Cost for Bio-remediation meter and Bio-mining	We assume Rs. 950/- per M.Tonnes for Bio-remediation and Bio-mining.
Now, the total legacy waste is	= 44530.75 M.Tonnes
Rate for Bio-remediation and Bio-mining	= 950/- per M.Tonnes
Hence, the total cost	= 4,23,04,213/-
	Say Rs. 4.23 Crore

Secretary,
Municipal Council, Sirsa

Executive Engineer,
Municipal Council, Sirsa

Municipal Engineer,
Municipal Council, Sirsa

CERTIFIED TO BE TRUE PHOTOCOPY

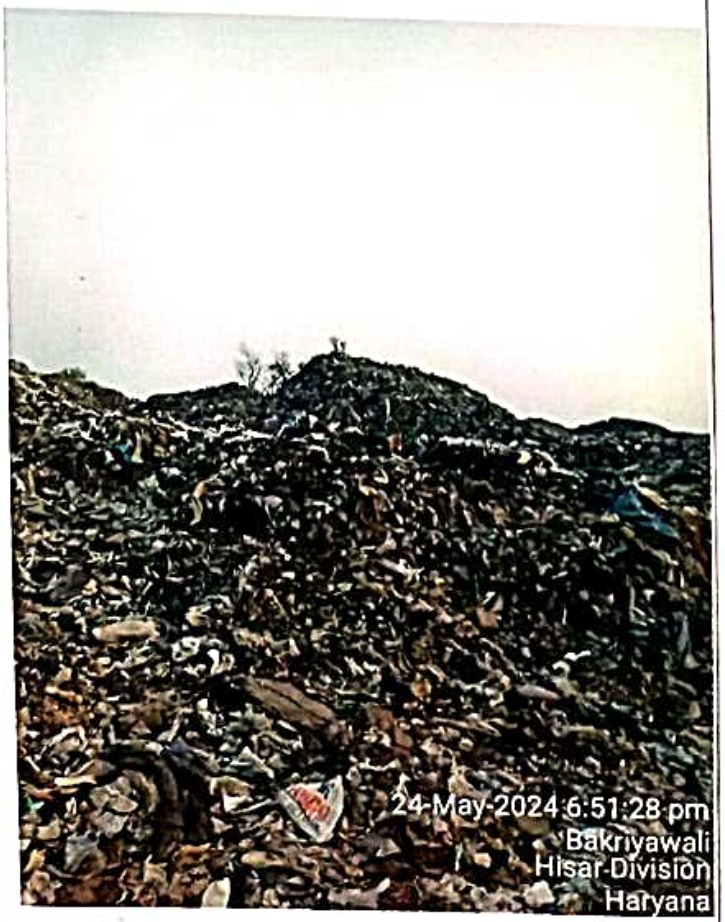
AJAY KAMBOJ ADVOCATE

ANNEXURE P-6

Salarpur Rd, Haryana
125055, India
23 May 2024 03:42 PM
clear sky
46.0 °C
Google

23 May 2024 03:41 PM
clear sky
46.0 °C
Google


24-May-2024 6:50:04 pm
Bakriyawali
Hisar Division
Haryana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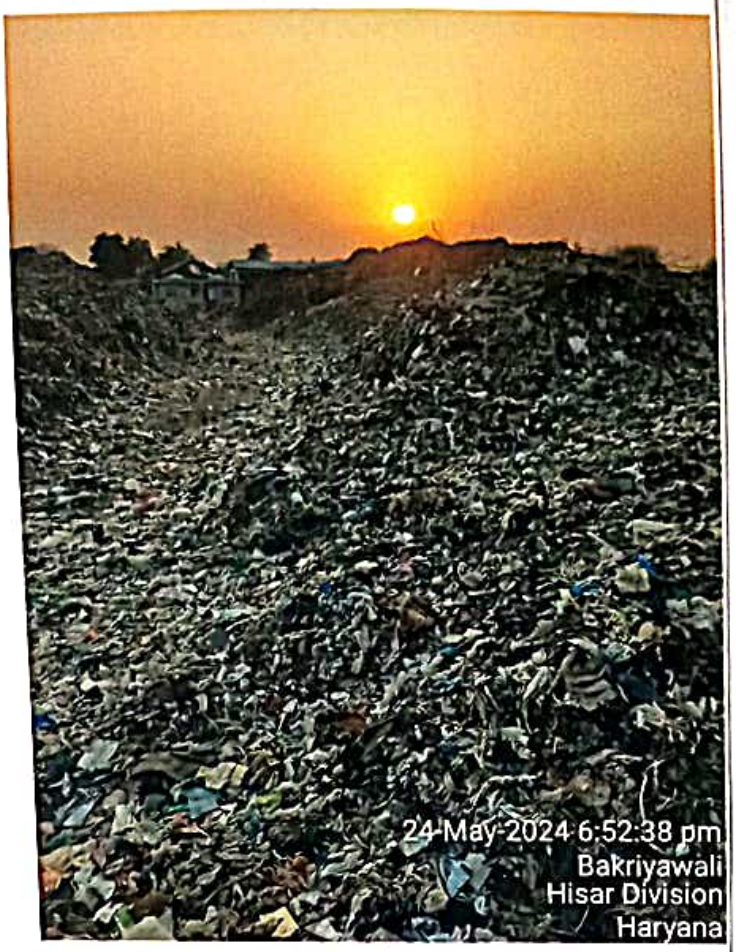
Bakriyawali
Hisar Division
Haryana


24-May-2024 6:47:51 pm
Bakriyawali
Hisar Division
Haryana


24-May-2024 6:52:44 pm
Bakriyawali
Hisar Division
Haryana


24-May-2024 6:55:10 pm


24-May-2024 6:52:40 pm
Bakriyawali
Hisar Division
Haryana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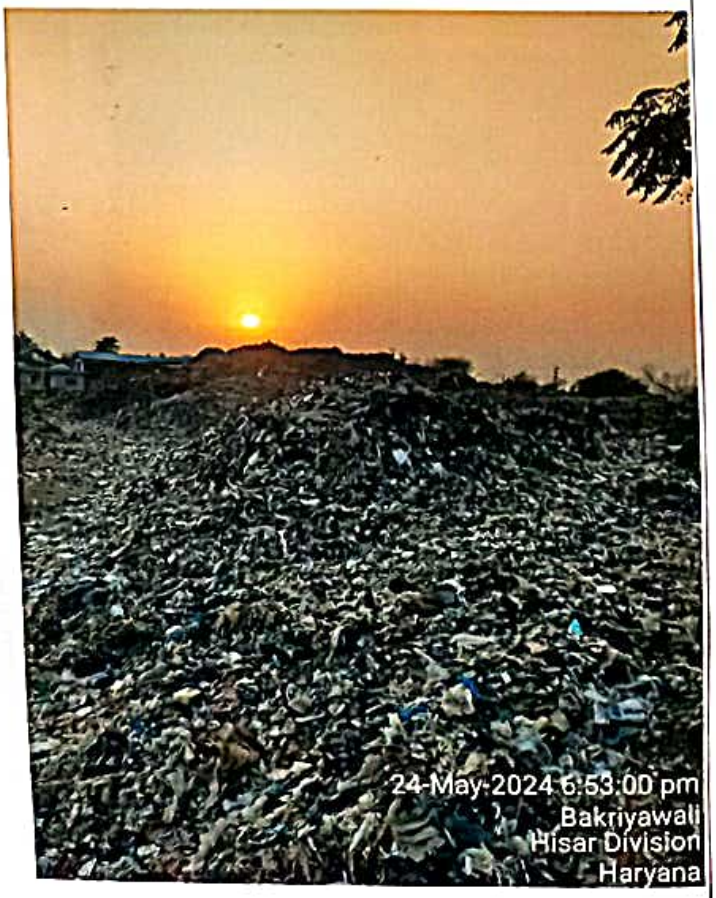
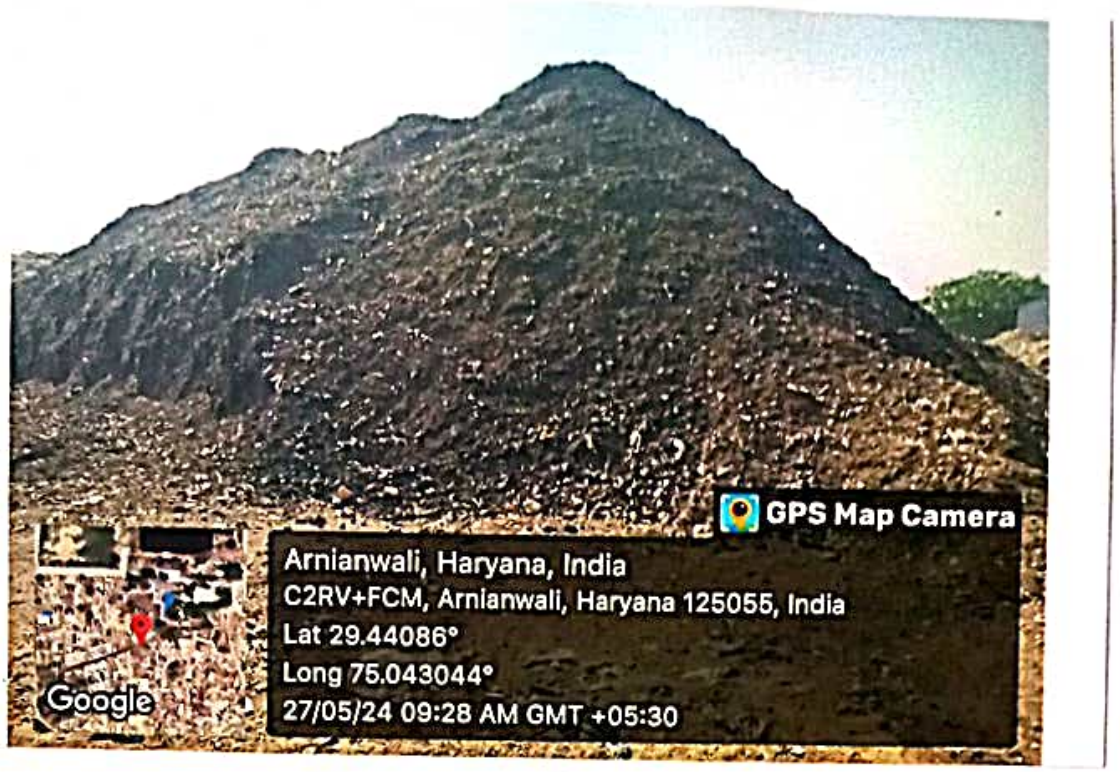
Hisar Division
Haryana


24 May 2024 6:53:00 pm
Bakriyawali
Hisar Division
Haryana


24-May-2024 6:45:50 pm
Bakriyawali
Hisar Division
Haryana


24-May-2024 6:47:34 pm
Bakriyawali
Hisar Division
Haryana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C2RV+FCM, Arnianwali, Haryana 125055, India
Lat 29.44086°
Long 75.043044°
27/05/24 09:28 AM GMT +05:30
Google


GPS Map Camera
Bakriyawali, Haryana, India
CX8R+49X, Bakriyawali, Haryana 125055, India
Lat 29.414479°
Long 74.991408°
27/05/24 09:33 AM GMT +05:30
Google

21


GPS Map Camera
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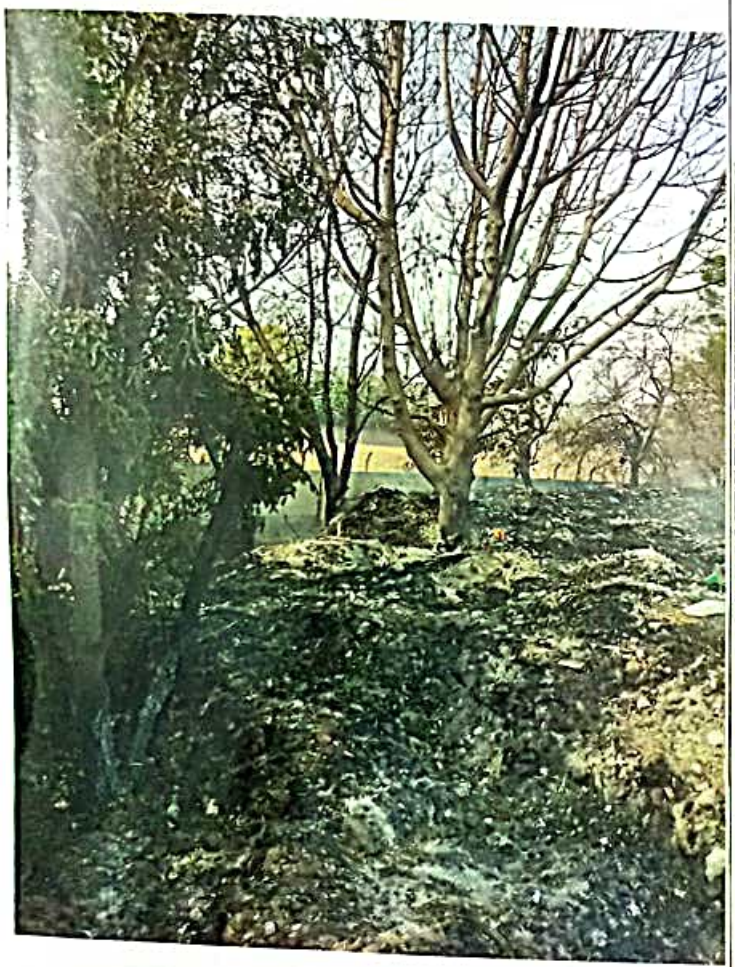
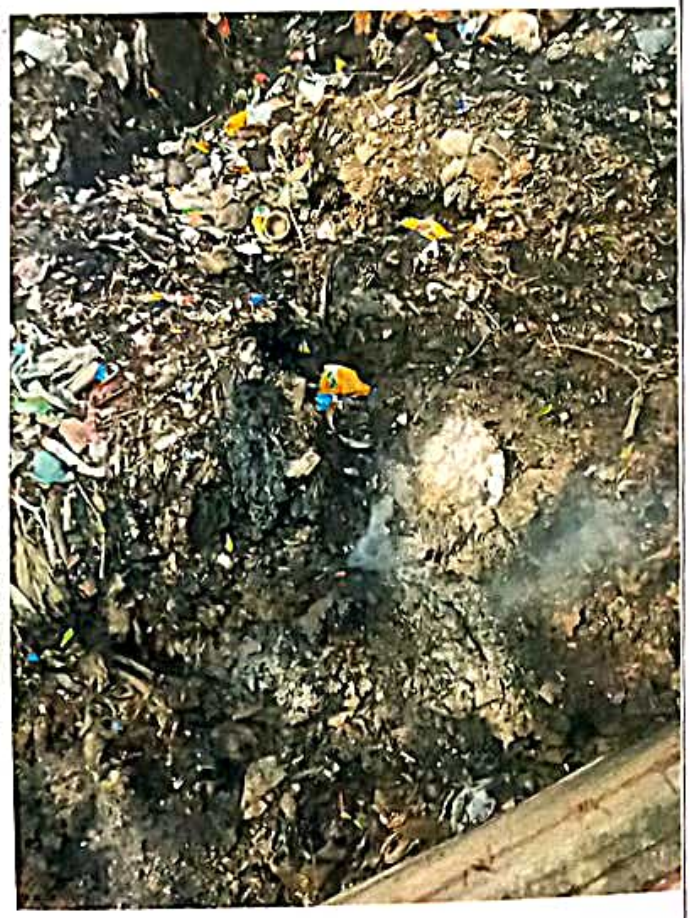
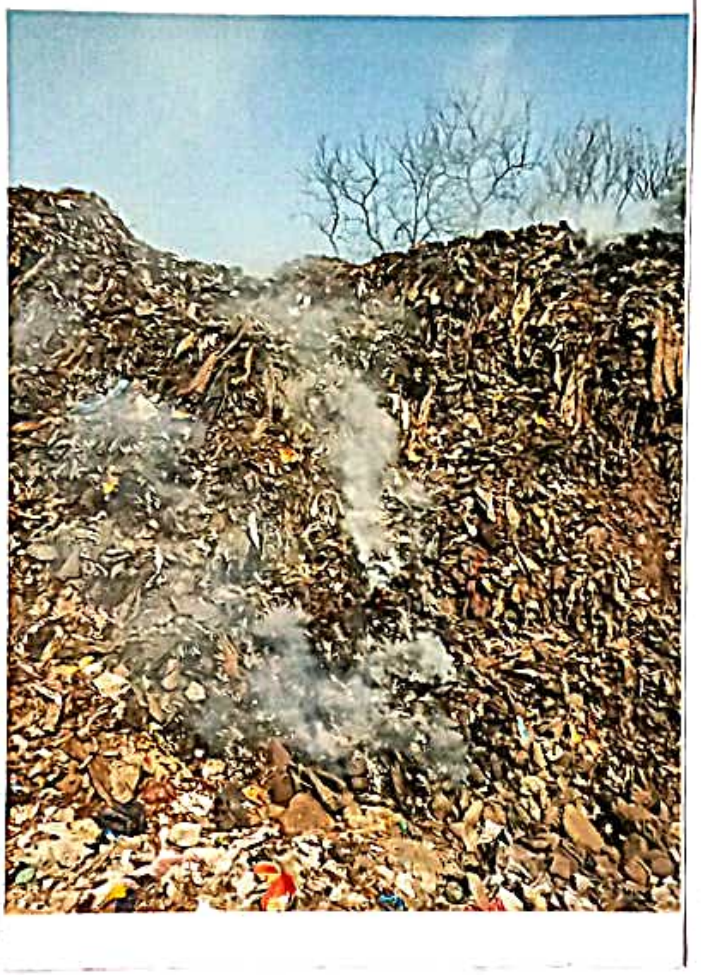



JCB





CERTIFIED TO BE TRUE PHOTOGRAPHS

AJAY KAMBOJ ADVOCATE