BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
CENTRAL ZONE BENCH, BHOPAL

OA No. 24/2025(CZ)/OA No. 38/2025(PB)

IN THE MATTER OF:

NARENDRA SINGH .....APPLICANT

VERSUS

STATE OF MP & ORS. .....RESPONDENTS

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Date: 09.07.2025

Place: Bhopal

Submitted by MPPCB:-

through Counsel

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FACTUAL REPORT

BY

JOINT COMMITTEE

IN

APPLICATION O.A. NO. 24/2025 (CZ)
(O.A. No. 38/2025-PB)

NARENDRA SINGH

V/S

GOVERRMENT OF MADHYA PRADESH & ORS.

Joint Committee visit date: 18.03.2025
Report Submission date: 08.07.2025

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Joint Committee Report

Ref: Inspection of the joint committee dated 18.03.2025 as per the orders of Hon'ble NGT in case of OA 24/2025(CZ) dated 11.02.2025 Narendra Singh V/s Government of Madhya Pradesh & Ors.

Hon'ble NGT in reference to OA 38/2025(PB) OA 24/2025 (CZ) Narendra Singh V/s Govt. of Madhya Pradesh & Ors. vide order dated 11.02.2025 has given following instructions:

"विषय:- नगर पालिका परिषद, जिला दतिया द्वारा ठोस अपशिष्ट-तरल कचरा एवं संक्रमित गंभीर बीमारी से मृत जानवरों/पशुओं के अवशेष सीवेज ट्रीटमेंट प्लांट के पास, सेवढ़ा रोड किनारे डालकर, वातावरण/भूगर्भीय जल/प्राणवायु को दूषित करने के संबंध में,

निवेदन है कि उपरोक्त विषयक ई-मेल शिकायत/आवेदन जो सेंट्रल जोन बेंच के ई-मेल ngtczbbho-mp@gov.in पर भेजा गया था जिस पर आज तक कोई कार्यवाही नहीं की गई है। ऐसी परिस्थितियों में एवं पर्यावरण/न्याय हित में माननीय न्यायाधिकरण द्वारा अग्रेषित इस ईमेल प्रार्थना पत्र को याचिका के रूप में संज्ञान लेकर शीघ्र अतिशीघ्र प्रकरण दर्ज कर दतिया-सेवढ़ा रोड किनारे, सीवेज ट्रीटमेंट प्लांट के पास, ठोस अपशिष्ट-तरल कचरा, संक्रमित कूड़ा-कचरा डालने तथा मृत जानवरों के शव एवं अवशेषों को, गीले कूड़े को डालकर भूगर्भीय जल स्त्रोत दूषित करने और वातावरण दुर्गंधित एवं प्रदूषित करने वाले दोषी एवं उत्तरदायी अधिकरियों के विरुद्ध प्रदूषक भुगतान सिद्धांत (Polluter Pays Principle) एवं राष्ट्रीय हरित प्राधिकरण अधिनियम, 2010 के तहत दंडात्मक कार्यवाही किया जाना अतिआवश्यक है। ताकि अन्य कोई ऐसा दुराचार करके सार्वजनिक विश्वास (Public Trust) को नुकसान न पहुंचाएं और कानूनी प्रणाली की निष्पक्षता (Fairness) को खतरे में डालने का प्रयास करें। "

"3. The relevant part of the above said letter petition translated in English by the Registry of this Tribunal reads as under:- "Subject:- Regarding polluting the environment/ground water/air by Nagar Palika Parishad, District Datia by dumping solid waste, liquid waste and remains of dead animals/animals which died due to serious diseases near the sewage treatment plant, on the side of Sevdha road. Sir, It is requested that the email complaint/application on the above subject which was sent to the email ngtczbbho-mp@gov.in of Central Zone Bench, on which no action has been taken till date. In such circumstances and in the interest of environment/justice, this email application forwarded by the Hon'ble Tribunal should be taken cognizance of as a petition and a case should be registered as soon as possible and punitive action should be taken under the Polluter Pays Principle and National Green Tribunal Act, 2010 against the guilty and responsible officers who pollute the ground water sources by dumping solid wasteliquid waste, infected garbage and dead animals' carcasses and remains, wet garbage near the Datia-Seondha road, near the sewage treatment plant, and make the environment

smelly and polluted. So that no one else damages public trust by doing such misconduct and tries to endanger the fairness of the legal system..”

5. In view of the averments in the application, we consider it necessary to have responses of (1) State of Madhya Pradesh through Secretary, Environment Department, Government of Madhya Pradesh, (2) Madhya Pradesh State Pollution Control Board (MPSPCB) through Member Secretary, (3) Municipal Council Datia through its Executive Officer and (4) District Magistrate, Datia who are impleaded as respondents no. 1 to 4.

6. The Registry is directed to prepare and attach memo of parties to the application and issue notices to respondents no. 1 to 4 requiring them to file their reply/response within two months.

7. In view of the averments made in the application, we also consider it appropriate that a Joint Committee be constituted to verify the factual position and suggest appropriate remedial action. Accordingly, we constitute a Joint Committee comprising of representatives of the District Magistrate, Datia, Executive Officer, Municipal Council Datia and MPPCB and direct the same to meet within two weeks, undertake visits to the sites in question, look into the grievances of the applicant, verify the factual position and suggest appropriate remedial action. The MPPCB will be the nodal agency for coordination and compliance.

8. Even though in the present case cognizance has been taken by this Bench on the basis of letter petition received by post with approval and assignment under order of Hon’ble Chairperson, but in view of the facts and circumstances of the case including the fact that the place of accrual of cause of action lies within jurisdiction of the Central Zone Bench of this Tribunal at Bhopal, we are of the considered view that it will be appropriate if the case is further heard by the Central Zone Bench of this Tribunal at Bhopal.

9. Accordingly, the Registry is directed to list the matter before the Central Zone Bench of this Tribunal at Bhopal on 03.04.2025 after obtaining orders from Hon’ble the Chairperson for transfer of the case.

10. Report by the Joint Committee and replies/responses by the respondents be filed before the Central Zone Bench of this Tribunal at Bhopal.

In compliance to the orders of Hon’ble NGT, a site visit of the Solid Waste dumping site of Datia town situated at, Village-Datia Gird, Tehsil-Datia City, District-Datia, MP was conducted on dated 18.03.2025 by the joint committee consisting of the following officials of the concerned departments:

1. Shri Akshay Temrawal, Chief Executive Officer, Jila Panchayat, Datia (Representative of District Magistrate Datia)

2. Shri R.R. Singh Sengar, Regional Officer, MPPCB, Gwalior

3. Shri Nagendra Singh Gurjar, Chief Municipal Officer, Datia

Apart from above other officials from Datia Municipal Council Shri Devendra Kaul, Assistant Engineer, Shri Ambak Parasar, Sub Engineer, Shri Anupam Pathak, Sanitary Inspector, and other officials of RO, MPPCB Gwalior Miss Ragini Yadav, Sub Engineer, Shri Shubham Sahu, Contract Engineer were present during the inspection.

OBSERVATIONS OF JOINT COMMITTEE ON VISIT

Joint committee along with Nagar Palika officials visited the solid waste dumping site situated on Datia-Sewda road. As per observation made by Joint committee at dumping site and information given by Nagar Palika officials, the status is summarized as below:

(1) Present dumping site (situated on Sewda road) land was allotted to Nagar Palika Datia by M.P. Government in year 2005 for solid waste disposal of Datia town. Total land area is 10 hectare.

(2) Solid waste reached to this trenching ground about 50 TPD.

(3) Nagar Palika Datia established MRF centres composting unit at the site but these are under capacity as compared to solid waste generation of Datia town. Mixed waste reached to trenching ground by vehicles and wet waste and dry waste are segregated manually. There partially and used in MRF and composting unit. Major part of mixed solid waste in dumped on ground in open.

(4) MRF and composting units were not found operational during joint committee visit.

(5) Huge quantity of solid waste dump seen on site. Foul smell was there and also waste burning was seen there due to which smoke was emitted and scattered in the surrounding area.

(6) No practice of fire-fighting was seen at site in-spite burning of waste was there on waste dumps.

(7) Trenching ground site is situated on Sewda road in outskirt of Datia town. Google site location map is enclosed as **Annexure C/1**. Sewage Treatment

plant of Datia town is also situated on adjoining land.

(8) This STP is operational. Nearest tial house is situated about 200 meter away from trenching ground. Pakka boundary wall along with barbed wire fencing is provided on pontial length of trenching ground towards Sewda road. Dumping site is open from other sides leading to movement of domestic animals in trenching ground.

(9) No dead animal body was seen at trenching ground during joint committee visit but it is informed by Nagar Palika officials that alternate disposal system for dead animals body is not available in the Datia town and nearby area. So as and when dead animal body found in town, it is brought to trenching ground for disposal. This practice leads to foul smelling and un-hyeiginic condition in nearby area.

(10) Lot of legacy waste is dumped along with daily fresh solid waste of the town on trending ground. No scientific treatment, bioremediation of the waste started by Nagar Palika.

(11) No authorization under Solid Waste Management Rules, 2016 and C & D Waste Management Rules, 2016 obtained by Nagar Palika datia from M.P. Pollution Control Board.

(12) No scientific Solid Waste segregation plant, processing plant, sanitary landfill site, C & D waste processing plant established by Nagar Palika at trenching ground site. Also Nagar Palika not established separate arrangement for collection of domestic Bio-medical waste from the city nor obtained membership of authorized CBWTF for destruction of BMW as per rules.

(13) Regional Office, MPPCB, Gwalior carried out periodical ambient air quality monitoring and ground water quality monitoring of this solid waste dumping site. Reports obtained from MPPCB are enclosed as **Annexure C/2** & **Annexure C/3**. As per reports of last 3 years the air quality and ground water

quality found within prescribed norms.

1. **Status with respect to issues raised by applicant in petition-**

   Petitioner raised various issues addressing misconduct committed by DMC to harm public trust. Joint committee found following status with respect to issues raised by petitioner-

Details of Issue raised

Damage to the environment and contamination of ground water source by illegal dumping of wet and dry waste, infected garbage and carcass of dead diseased animals on sides of Datia-Sewda Road, near Sewage Treatment Plant by Nagar Palika Parishad, District Datia, Madhya Pradesh in violation of environmental norms causing serious health hazard to local residents and commuters. The garbage is burnt emitting foul smell, smoke and dust which falls on nearby residential houses. Cattles are dyeing after feeding upon the garbage. Earlier Nagar Palika datia had given the contract of lifting the garbage and dumping outside district to Eco green company but they are creating heaps of garbage on the sides of Sewda road. Photographs are enclosed showing the evidence.

Status found by JMC

1. For disposal of solid waste of Datia town Datia Municipal Council (DMC) is using a piece of land situated on Datia-Sewda road at out skirt of Datia town. This site is used a dumping site. Mixed solid waste of Datia town including wet waste, dry waste, domestic hazardous waste, domestic bio-medical waste, carcass of dead animals, C & D waste etc. is being dumped at the dumping site. No scientific waste segregation plant, waste processing plant, adequate MRF facility, sanitary land fill site established by DMC at this site. DMC also not obtained membership of CBWTF for disposal of domestic bio-medical waste. So probability of environmental damage,

ground water contamination, air quality deterioration in surrounding area due to waste putrefaction smell and smoke of waste burning is always there due to handling and disposal of solid waste at dumping site in unscientific manner.

2. The present dumping site land was allotted by District Collector Datia to DMC in year 2005 for solid waste management. This land is situated on a piece of land bearing khasra no. 472/1, total area 10 hectare in Datia Gird, Sewda road, Datia. Copy of land allotment order is enclosed as **Annexure C/4**. At that time no population was there for a long distance. Now population is continuously shifted towards dumping site.
3. Considering the development the residential area on Sewda road near to dumping site DMC is planning to develop solid waste processing and disposal site at other suitable Government land situated for away from population area. For this land has been allotted to DMC by Collector Datia at Khasra No. 2471/2, area 10 hectare in Datia Gird, Datia. Land allotment order enclosed as **Annexure C/5**.
4. DMC informed that a DPR has already been prepared and approved at DMC level for development of secured landfill site (SLF) at new site on dated 04.09.2024. Approval proceeding is enclosed as **Annexure C/6**. Now approval of DPR from Government level and obtainment of Environmental Clearance is under process as informed by DMC officials to the Joint Committee.
5. DMC also sent a request letter to M/s Mars Planning and Engineering Services Private Limited, Ahamdabad (State Government approved Consultancy Firm) on dated 18.02.2025 for preparing DPR for installation of MRF and composting facility at new site. Copy of letter is enclosed as **Annexure C/7**.
6. DMC also informed that they have written a request letter to Mars Planning

and Engineering Services Private Limited, Ahamdabad (State Government approved Consultancy Firm) on dated 18.02.2025 for preparing DPR for legacy waste processing and disposal at existing dumping site. Copy of letter is enclosed as **Annexure C/8**.

7. DMC informed that MRF & Composting unit installation project of Datia town at existing dumping site was approved by Directorate Urban Administration & Development, M.P. Bhopal on dated 12.09.2024. Approval letter is enclosed as **Annexure C/9**. Thereafter MRF & composting unit are installed at existing solid waste dumping site.
8. DMC informed that M/s Eco Green Company has never done any work of solid waste management and disposal in Datia town.
9. Joint Committee asked DMC to submit their reply on issues raised in petition. DMC submitted the reply on dated 07.07.2025. Copy of reply is enclosed as **Annexure C/10**.
10. Photographs taken at existing dumping site during the visit of Joint Committee are enclosed as **Annexure C/11**.

Conclusion: On the basis of the facts Joint Committee found during visit of Solid Waste dumping site situated in Sewda road and documents received from DMC the Joint Committee concluded the matter as follows:-

1. Solid waste handling and disposal at existing dumping site at Datia town is not carried out in accordance to the provisions of Solid Waste Management Rules, 2016.
2. There is a nuisance status exist in nearby area of existing dumping site due to smell generated from putrefaction of solid waste and animal dead bodies.
3. Existing dumping site is now becoming un-suitable for disposal of solid waste since it is adjoined to Datia-Sewda main road and development of residential area in the vicinity.
4. Existing facilities of MRF, composing unit at dumping site are manual and under capacity.
5. At present ambient air quality and ground water quality at dumping site found satisfactory but may deteriorated with time.

6. A new site of 10 hectare area has been allotted to DMC by Collector Datia to develop solid waste processing and disposal facilities. But no development started there as yet.
7. Legacy waste processing & disposal facility not installed at existing dumping site for scientific remediation of solid waste dumped at dumping site.
8. Boundary wall/barbed wire fencing not provided all around the dumping site. So stray animals entry to the site could not be stopped completely.

RECOMMENDATION:-

Considering the facts and findings elaborated in the report the Joint Committee submitted their recommendation as under:-

1. DMC should provide barbed wire fencing immediately around the dumping site to stop entry of stray animals effectively.
2. DMC should provide dedicated fire-fighting arrangement at existing dumping site with sufficient staff to stop the incidents of fire whenever erupted in waste dumps immediately.
3. DMC should optimize the use of existing MRF and composting facility to minimize the waste dumping at dumping site.
4. Deal animal body should not be thrown in open at dumping site. It should buried within disposal site till alternate arrangement not made.
5. Directorate UADD Bhopal should intervene to accelerate the process of approvals of the DMC in following proposals:
    - Preparation of DPR for legacy waste processing and disposal at existing site.
    - Preparation of DPR for MRF and composting facility at new site and its approval thereafter.
    - Approval of DPR prepared by DMC regarding development of secure landfill site at new site, which is submitted to UADD on 04.09.2024.
    - Technical assistance to DMC for submitting application to SEIAA Bhopal for Environmental Clearance.
    - Preparation of project for scientific disposal of animal dead body.

This report is signed by Joint Committee members

Akshay Temrawal CEO, Jila Panchayat, Datia	
R. R. Singh Sengar Regional Officer, MPPCB, Gwalior	
Nagendra Singh Gurjar Chief Municipal Officer, Datia	

Annexure-C/1


Location of Dumping site of Datia Town
Write a description for your map.
Legend
Distance 220 Meter
Trenching Ground Datia
Cambridge school of General Nursing and...
Distance 360 Meter
LAXAKAR MARRIAGE GARDEN
Google Earth
N
300 m

Annexure-C/2

Ground Water Quality Data Sheet

Location:- Borewell Water from Trenching Ground Datia
Duration:- Last 03 years

Sr. No.	Parameter	Unit	Permissible Value (As per IS 10500:2012)	May 2025	April 2025	Dec. 2024	Aug. 2024	July 2024	Dec. 2023	July 2023	May 2023	March 2023
1	Alkalinity as $CaCO_3$	mg/l	600	120	140	130	210	205	210	350	260	290
2	Ammonical Nitrogen	mg/l	0.50	0.40	0.45	0.40	0.76	0.64	1.25	0.80	0.62	0.83
3	Calcium Hardness as $CaCO_3$	mg/l	200	80	90	90	305	300	200	250	190	210
4	Chemical Oxygen Demand	mg/l	-	14	12	10	68	62	84	20	30	42
5	Chloride	mg/l	1000	35	40	40	72	76	84	80	60	80
6	Conductivity	Micro mho/cm	-	1045	1080	860	618	610	620	1265	760	778
7	Magnesium Hardness as $CaCO_3$	mg/l	100	30	30	30	85	42	82	90	50	60
8	Nitrate	mg/l	45	1.20	1.20	1.20	0.88	0.87	1.36	0.70	1.20	0.79
9	pH	pH Unit	6.5-8.5	7.45	7.47	7.42	7.23	7.24	7.27	7.70	7.67	7.68
10	Phosphate	mg/l	-	0.14	0.14	0.12	1.29	1.76	1.50	1.10	1.30	1.10
11	Potassium	mg/l	-	1.20	1.25	1.20	1.65	1.72	1.66	1.20	1.20	1.20
12	Sodium	mg/l	-	12.50	18.50	16.70	10.36	11.5	10.48	12.40	11.20	10.60
13	Sulphate	mg/l	400	16.20	17.50	9.50	14	13.94	12	11.60	12.40	12.40
14	Suspended Solids	mg/l	-	7	7	11	80	62	62	22	28	30
15	Temperature	ºC	-	27	27	26	27	25	24	23	27	24
16	Total Dissolved Solids	mg/l	2000	521	548	515	400	400	400	80	482	490
17	Total Hardness as $CaCO_3$	mg/l	600	110	120	120	390	342	282	340	240	270
18	Total Solids	mg/l	-	528	555	526	480	462	462	822	510	520
19	Turbidity	N.T.U.	5	2	2	2	3	2	1.60	5.0	2	3

Annexure-C/3

Ambient Air Quality Data Sheet

Location:- Trenching Ground Datia
Duration:- Last 03 Years

Sr. No.	Parameter	Unit	Standard Value (As per NAAQS)	April 2025	July 2024	July 2023	March 2023
1	PM10	$\mu g/m^3$	100	57.40	58.50	88.36	72.80
2	SO_2	$\mu g/m^3$	80	7.10	8.25	10.22	12.80
3	NOx	$\mu g/m^3$	80	8.80	10.06	12.15	17.90

Annexure C/4

परिशिष्ट :-(ब)

कार्यालय नजूल अधिकारी, दतिया, म0प्र0

क्रमांक-क्यू/नजूल संदर्भ/19-15/05 दतिया, दिनांक 06-09-2005

प्रति,

मुख्य नगरपालिका अधिकारी,
नगरपालिका परिषद्,
दतिया, म0प्र0

विषय :- नगरीय ठोस अपशिष्ट प्रबंधन हेतु नगरपालिका दतिया को 10 हैक्टर भूमि का आवंटन करने बाबत ।

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एतद् विषयान्तर्गत लेख है कि नगरीय ठोस अपशिष्ट प्रबंधन हेतु दतिया गिर्द स्थित सैनढा रोड पर निधान के कुंआ के पास सर्वे नं0 472/1 रकबा 12.933 हैक्टर में से 10 हैक्टर भूमि का अग्रिम कब्जा तहसीलदार, तहसील दतिया से अभि हो प्राप्त करें ।

नजूल अधिकारी
दतिया (म0प्र0)

प्रतिलिपि :-

तहसीलदार, तहसील दतिया को इस लेख है कि आप दतिया राजस्व निरीक्षक एवं गिर्द सहायक को साथ लेकर नगरीय ठोस अपशिष्ट प्रबंधन हेतु ख0नं0 472/1 रकबा 12.933 हैक्टर में से 10 हैक्टर भूमि स्थित सैनढा रोड पर नगरपालिका अधिकारी दतिया को निधानुसार अग्रिम कब्जा दिलाकर रसीद इस कार्यालय को प्रस्तुत करें ।

नजूल अधिकारी,
दतिया (म0प्र0)

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Annexure C/5

न्यायालय कलेक्टर जिला दतिया (म.प्र.)

क्र./06/अ–19(1)/2021–22 दतिया,दिनांक 25.01.2022

आदेश

मुख्य नगर पालिका अधिकारी नगर पालिका परिषद दतिया ने पत्र क्रमांक/3202/स्वा0/2021 दिनांक 19.11.2021 के द्वारा ठोस अपशिष्ट प्रबंधन नियम 2016 के समुचित कियान्वयन हेतु नवीन लैण्डफिल साईट हेतु नजूल निर्वतन नीति 2020 के अनुकम में नियत प्रारूप 1 पर आवेदन प्रस्तुत कर मौजा दतिया गिर्द में 15.00 है0 शासकीय भूमि के आवटन/हस्तांतरण करने की मांग की गयी।'

2/– प्रकरण में अनुविभागीय अधिकारी दतिया ने अपने प्रकरण 122/बी–121/2021–22 में प्रतिवेदन दिनांक 05/01/2022 से तहसीलदार दतिया के प्रतिवेदन अनुसार नियत प्रारूप –2 पर मौजा दतियागिर्द में स्थित शासकीय भूमि सर्वे नं. 2471/2 रकवा 14.02 है0 में से 10.00 है0 भूमि का नजरी नक्सा अक्स में A B C D भाग द्वारा चिन्हांकित भाग को ठोस अपशिष्ठ प्रबंधन के कियान्वन हेतु नवीन लैण्डफिल साइट निर्माण हेतु प्रस्तावित किया।

3/– प्रकरण में तहसीलदार दतिया द्वारा नजूल भूमि निर्वर्तन निर्देश की कंडिका 142 में विधिवत् सार्वजनिक उद्घोषणा जारी की गई, अंदर म्याद कोई आपत्ति प्राप्त नही हुई, इसके साथ ही भूमि हस्तानांतरण के संबंध में म.प्र. नजूल भूमि निर्वर्तन निर्देश 2020 के तहत दि. 17.01.2022 को जिला नजूल निर्वर्तन समिति की बैठक आयोजित की गयी, उक्त बैठक में ठोस अपशिष्ठ प्रबंधन के कियान्वन हेतु भूमि के संबंध में विचार किया गया, विचारोपरान्त सर्वसम्मति से बांछित भूमि नगरीय प्रशासन विभाग को हस्तानान्तरित करने की सहमति दी गयी।

अतः तहसीलदार दतिया के प्रतिवेदन, अनुविभागीय अधिकारी (राजस्व) दतिया के प्रकरण कमांक 122/बी–121/2021–22 में प्रस्ताव दिनांक 05/01/2022 के आधार पर एवं म0प्र0भू0रा0सं0 1959 की धारा 237 में वर्णित प्रावधानों के अन्तर्गत मौजा दतियागिर्द में स्थित शासकीय भूमि सर्वे नं. 2471/2 रकवा 14.02 है0 में से 10.00 है0 भूमि नजरी नक्सा अक्स में A B C D भाग द्वारा चिन्हांकित भाग को ठोस अपशिष्ठ प्रबंधन के कियान्वन हेतु नवीन लैण्डफिल साइट निर्माण हेतु चिन्हांकित भाग को म0प्र0 शासन, नगरीय प्रशासन एवं विकास विभाग के पक्ष में हस्तानांतरित की जाती है।

(संजय कुमार)
कलेक्टर
जिला दतिया म.प्र.

विधानसभा अग्रवाल नस्ती तैयार कर

प्र.क्र./06/अ–19(1)/2021–22 785-4/271-22 दतिया, दिनांक 25.01.2022

प्रतिलिपि :–

1. आयुक्त, नगरीय प्रशासन एवं विकास विभाग मंत्रालय बल्लभ भवन, भोपाल
2. अनुविभागीय अधिकारी, दतिया की ओर आवश्यक कार्यवाही हेतु ।
3. तहसीलदार, तहसील दतिया आदेश के पालन में संबंधित नगरीय/स्थानीय निकाय को आवंटित भूखण्ड का आधिपत्य सौपे तथा भू अभिलेख में समुचित प्रविष्टियां अंकित कराकर अवगत कराने की व्यवस्था सुनिश्चित् करें। 1419 31-1-22
4. मुख्य नगरपालिका अधिकारी,नगर पालिका परिषद दतिया ।

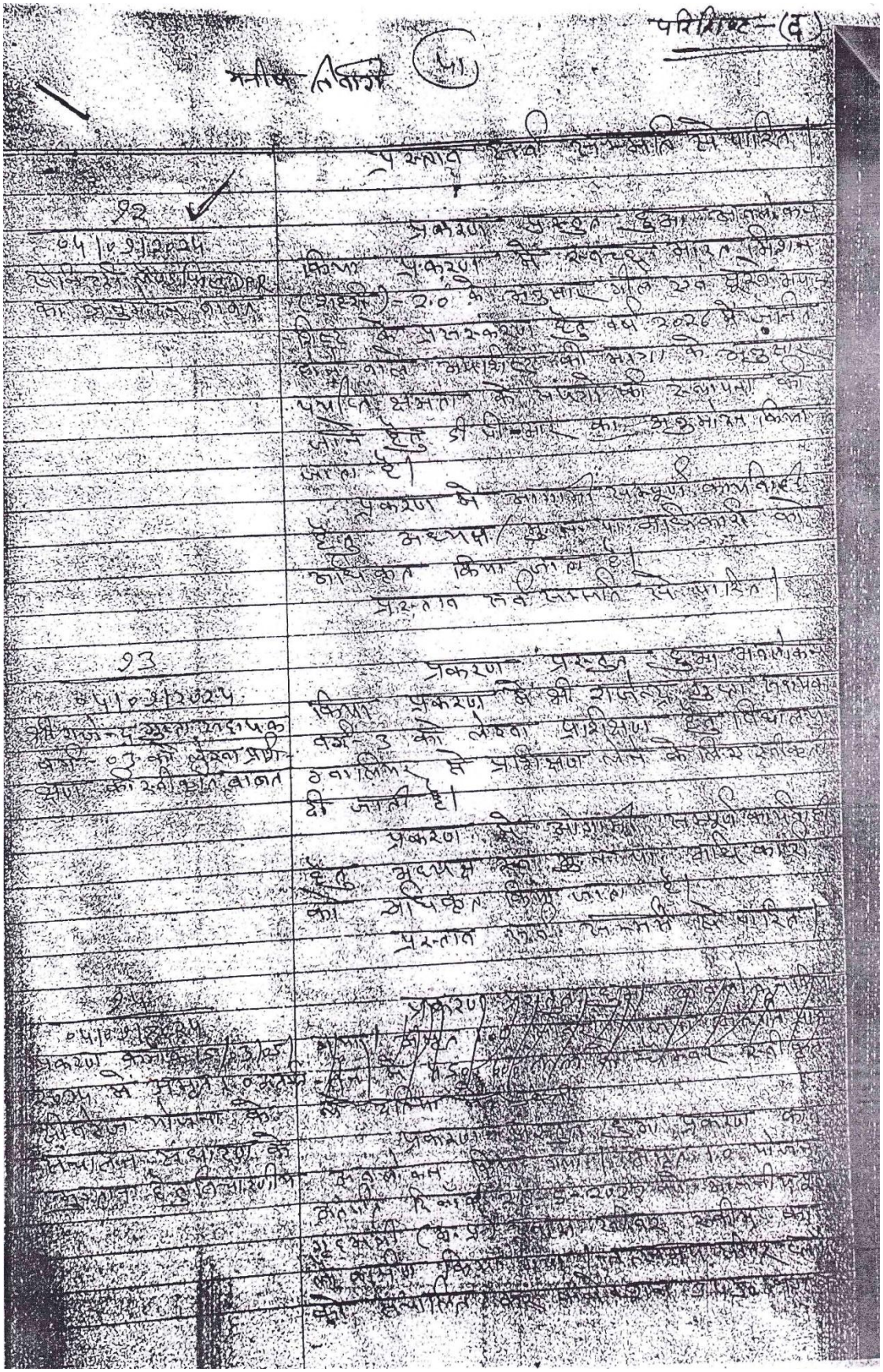
कलेक्टर
जिला दतिया म.प्र.

न्यायालय कलेक्टर जिला (म.प्र.)

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Annexure C/6



Annexure C/7

परिशिष्ट – (3)

कार्यालय नगर पालिका परिषद दतिया (म.प्र.)

क्रमांक / 2025 / 675 दतिया, दिनांक–..... 18-2-25

प्रति,

मै. मार्स प्लानिंग एण्ड इंजीनियरिंग
सर्विसेज प्रा.लि.
अहमदाबाद गुजरात–380059

विषयः– स्वच्छ भारत मिशन 2.0 के अंतर्गत MRF एवं Composting Plant की डीपीआर बनाये जाने बावत्।

—000—

उपरोक्त विषयान्तर्गत स्वच्छ भारत मिशन 2.0 के अंतर्गत निकाय में गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु वर्ष 2026 में जनित होने वाले अपशिष्ट की मात्रा के अनुसार पर्याप्त क्षमता के संयंत्रों MRF एवं Composting Plant का निर्माण कराया जाना है। इस हेतु निकाय में स्वीकृत क्षमता अनुसार MRF एवं Composting Plant की डीपीआर तैयार कराई जानी है।

अतः संचालनालय के संलग्न पत्र अनुसार MRF एवं Composting Plant की डीपीआर तैयार कर प्रस्तुत करें। जिससे MRF एवं Composting Plant के निर्माण हेतु निविदा जारी की जा सकें।

मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद दतिया (म.प्र.)

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Annexure C/8

परिशिष्ट–(अ)

कार्यालय नगर पालिका परिषद दतिया (म.प्र.)

क्रमांक / 2025 / 674 दतिया, दिनांक– 18/02/2025

प्रति,

मै. मार्स प्लानिंग एण्ड इंजीनियरिंग
सर्विसेज प्रा.लि.
अहमदाबाद गुजरात–380059

विषयः– डम्प साईट पर पड़े पुराने कचरे (लीगेसी वेस्ट) की डीपीआर बनाये जाने बावत्।

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उपरोक्त विषयान्तर्गत लेख है कि निकाय क्षेत्र में डम्प साईट पर लाखों टन लीगेसी वेस्ट पड़ा हुआ है। स्वच्छ भारत मिशन की गाईडलाइन अनुसार पुराने पड़े कचरे को समाप्त किया जाना है। इस हेतु आप दतिया निकाय में डम्प साईट का निरीक्षण कर लीगेसी वेस्ट की डीपीआर तैयार करायें। जिससे पुराने कचरे को समाप्त किया जा सकें।

मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद दतिया (म.प्र.)

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Annexure C/9

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal
Palika Bhawan, Near 6 No. Bus S
Shivaji Nagar, Bhopal – 462016
Tel. 0755-2558796, 2675337
Email:-
Website: www.mpurban.gov.in

क्र./शा–14/स्व.भा.मि./2024/ 19645 भोपाल, दिनांक 12 /09/2024

प्रति,

मुख्य नगर पालिका अधिकारी
नगर पालिका/नगर परिषद
(सूची अनुसार)

विषयः– स्वच्छ भारत मिशन (शहरी)–2.0 अंतर्गत MRF/Composting Plant के निर्माण /सुदृढीकरण के संबंध में।

स्वच्छ भारत मिशन (शहरी)–2.0 के अनुसार, समस्त नगरीय निकायों में गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु वर्ष 2026 में जनित होने वाले अपशिष्ट की मात्रा के अनुसार पर्याप्त क्षमता के संयंत्रों की स्थापना को प्राथमिकता दी गई है। इस संबंध में राज्य स्तर से स्वच्छ भारत मिशन (शहरी)–2.0 के अंतर्गत निकाय स्तर पर गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु उपलब्ध सयंत्रों की क्षमता एवं वर्ष–2026 तक अनुमानित आवश्यक क्षमता के अंतर का आंकलन करते हुए, वर्तमान में उपलब्ध संयंत्रों की क्षमता में वृद्धि करने का निर्णय लिया गया था।

उपरोक्तानुसार निकाय स्तर पर वर्ष–2026 तक जनित होने वाले गीले एवं सूखे अपशिष्ट की मात्रा के अनुसार प्रसंस्करण हेतु प्रस्तावित संयंत्रों की क्षमता के संबंध में संबंधित नगरीय निकायों से सहमति प्राप्त की गई है। उपरोक्तानुसार 347 निकायों हेतु परियोजना स्वीकृत की गयी है।

निकायों की जनसंख्या के आधार पर उत्सर्जित गीले कचरे की मात्रा के आधार पर संचालनालय द्वारा 3 टीपीडी और 5 टीपीडी प्रसंस्करण संयंत्रों के लिए चित्र और मात्रा के बिल (बीओक्यू) तैयार किया गया है। उपरोक्तानुसार नगरीय निकायों में निम्नानुसार कार्यवाही किया जाना है:–

1. निकायों को वर्तमान में संचालित प्रसंस्करण संयंत्रों के बुनियादी ढांचे का जमीनी स्तर पर मूल्यांकन करते हुये existing infrastructure में गैप का आंकलन किया जाये।

2. इस आंकलन के आधार पर नगरीय निकाय मानक ड्रॉईंग और डिजाइनों में सुझाए गए घटकों और प्रसंस्करण के लिए आवश्यक उपकरणों को शामिल करते हुए योजना तैयार कर सकती हैं।

3. निकाय द्वारा ड्रॉईंग और डिजाइनों एवं आवश्यक उपकरणों हेतु तैयार योजना की प्रशासनिक एवं तकनीकी स्वीकृति प्राप्त करते हुये PIC/MIC से अनुमोदन कराने के पश्चात निकाय स्तर से निविदा की प्रक्रिया की जाये।

उक्त परियोजना हेतु निकायवार भारत सरकार से प्राप्त स्वीकृति के आधार पर ही राशि प्रदान की जायेगी। सूची अनुसार स्वीकृत राशि के अतिरिक्त यदि निकायों द्वारा अधिक राशि की परियोजना तैयार की जाती है तो अतिरिक्त राशि का [illegible] द्वारा स्वयं किया जायेगा।

11/09

निरंतर.....

मूल प्रति से सत्यापित
कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal
Palika Bhawan, Near 6 No. Bus St
Shivaji Nagar, Bhopal – 462016
Tel. 0755-2558796, 2554083
Email:himanshu.singh@mpurban.gov.
Website: www.mpurban.gov.in

उपरोक्तानुसार निकाय शीघ्र कार्यवाही प्रारंभ करें।

संलग्नः– उपरोक्तानुसार।

11/09/2024

(अक्षय तेम्रवाल)
मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्य प्रदेश, भोपाल

पृ.क्र./शा–14/स्व.भा.मि./2024/19646 भोपाल, दिनांक 12/09/2024

प्रतिलिपि :

1. आयुक्त, नगरीय प्रशासन एवं विकास, मध्यप्रदेश की ओर सूचनार्थ।
2. समस्त संभागीय संयुक्त संचालक, नगरीय प्रशासन एवं विकास, संभाग मध्यप्रदेश की ओर आवश्यक कार्यवाही हेतु प्रेषित।
3. समस्त अधीक्षण यंत्री, संभागीय कार्यालय, नगरीय प्रशासन एवं विकास, मध्यप्रदेश की ओर आवश्यक कार्यवाही हेतु प्रेषित।

मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्य प्रदेश, भोपाल

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद प्रतिमा

ANNEXURE C/10

कार्यालय नगर पालिका परिषद दतिया (म0प्र0)

Email – cmodatia@mpurban.gov.in

क्रमांक / 2025 / 2236

दतिया,दिनांक 7-7-25

प्रति,

श्री आर.आर.सिंह सेंगर
क्षेत्रीय अधिकारी
क्षेत्रीय कार्यालय, म.प्र. प्रदूषण नियंत्रण बोर्ड
दीनदयाल नगर , हाऊसिंग बोर्ड कालौनी, ग्वालियर म.प्र.

विषयः–माननीय एन.जी.टी. में प्रचलित प्रकरण क्र.OA No.39/2025 (PB) नरेन्द्र सिंह विरूद्ध म.प्र. शासन एवं अन्य।

संदर्भः–क्षेत्रीय कार्यालय, म.प्र. प्रदूषण नियंत्रण बोर्ड का पत्र क्रमांक 586 / क्षेकाप्रनिबो / ग्वा. / 2025 ग्वालियर, दिनांक 12.03.2025

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उपरोक्त विषय एवं संदर्भ में लेख है कि नगर पालिका परिषद जिला दतिया द्वारा शासन द्वारा ठोस अपशिष्ट प्रबंधन के तहत् भू–खण्ड सेंवढ़ा रोड पर वर्ष 2005 को आवंटित किया गया था। जिसके तहत् उक्त स्थान पर कचरा एकत्रित किया जा रहा है। एवं निकाय को वर्ष 2022 को नवीनतम भू–खण्ड आवंटित किया जा चुका है। उक्त भू–खण्ड के विकास हेतु शासन स्तर प्रस्ताव तैयार किये गये हैं। प्रकरण में उल्लेखित विषयों के आधार पर प्रतिवेदन निम्नानुसार है।

क्र.	विषय का नाम	रिमार्क
1	नगर पालिका परिषद दतिया द्वारा कई वर्षों से लगातार दतिया नगर में प्रतिदिन उत्सर्जित कई टन ठोस अपशिष्ट– तरल एवं संक्रमित गंभीर बीमारी से मृत जानवरों / पशुओं के अवशेष , सीवेज, ट्रीटमेंट,प्लांट के पास, सेंवढ़ा रोड किनारे डालकर दतिया जिले के वातावरण /भूगर्भीय जल/ प्राणवायु को प्रदूषित करते हुए पर्यावरण को भारी क्षति पहुंचाई जा रही है। जो मान्नीय सुप्रीम कोर्ट, और मान्नीय एनजीटी के दिशा–निर्देशों तथा आदेशों का घोर उल्लंघन है। जिसे संलग्न फोटोग्राफ में स्पष्ट देजा जा सकता है।	नगर पालिका परिषद दतिया द्वारा शासन द्वारा वर्ष 2005 में कचरा निस्पादन हेतु उक्त भू–खण्ड आवंटित किया गया था । आवंटित भू–खण्ड पर ही कचरे का निस्पादन किया जाता है। उक्त कचरे का वैज्ञानिक विधि से निपटान हेतु लिंगेसी वेस्ट के संबंध में प्रस्ताव तैयार कर डी0पी0आर0 तैयार कराने हेतु शासन द्वारा अधिकृत मार्स प्लानिंग एजेन्सी को भेजा जा चुका है।जिसका **परिशिष्ट अ दस्तावेज संलग्न हैं।** साथ ही समय–समय पर निकाय के पास उपलब्ध संसाधनों से कचरे की मात्रा का निपटान किया जा रहा है।
2	यह कि पूर्व में नगर पालिका द्वारा ईको ग्रीन कंपनी से कचरा उठाकर जिले से बाहर ले जाने का ठेका हुआ था। इसके बावजूद नगर पालिका और ईको ग्रीन कंपनी के अधिकारियों/ कर्मचारियों द्वारा शहर का कचरा जिले के बाहर ले जाने के बजाए सेंवढ़ा रोड किनारे ही फेंककर कचरे का ढेर लगाकर सरकारी धन का बंदरबांट कर लिया गया है।	निकाय के कचरे को ईको ग्रीन कंपनी से अनुबंध निकाय स्तर पर न होकर शासन स्तर पर अनुबंधित किया गया था। उक्त कंपनी द्वारा निकाय में कचरे के निस्पादन हेतु कोई कार्य नहीं किया गया है। और न ही निकाय द्वारा किसी भी प्रकार को कोई भुगतान उक्त कंपनी को नहीं किया गया। उक्त कंपनी वर्तमान में निकाय में कार्यरत नहीं है।

3	यह कि नगर पालिका द्वारा सीवेज ट्रीटमेंट के पास , सेंवढ़ा रोड किनारे डाला जा रहा यह ठोस अपशिष्ट –तरल कचरा एवं संक्रमित गंभीर बीमारी से मृत जानवरों/पशुओं के अवशेष सेंवढ़ा रोड पर फैल रहा है तथा निकट रिहायसी बस्तियों में उड़कर जा रहा है। जिसके कारण राहगिरों निकलना और बस्तियों में लोंगों का रहना मुश्किल हो रहा है। एवं उक्त कचरे में आग लगाने के दौरान धुंआ व सड़न/दुर्गन्ध रोड और बस्तियों की तरफ जाने से लोगों को सांस लेने में हो रही परेशानी से बीमार हो रहे हैं।	वर्ष 2005 में उक्त स्थल का आवंटन किया गया था तत्समय उक्त स्थान निर्जन स्थल था। वर्तमान में उक्त स्थान पर लगभग 500 मीटर तक अभी कोई आवादी घनी बस्ती नहीं है। निकाय द्वारा उक्त समस्या को दृष्टिगत रखते हुये नवीन भू–खण्ड वर्ष 2022 में निर्जन क्षेत्र में जिला कलेक्टर दतिया के माध्यम से आवंटित कराया जा चुका है। जिसका **परिशिष्ट ब संलग्न हैं।** एवं उक्त भू–खण्ड के विकास हेतु एसएलएफ योजना की डी0पी0आर0 तैयार हो चुकी है। निकाय स्तर पर उक्त डी0पी0आर0 को स्वीकृति प्रदान की जा चुकी है। जिसका **परिशिष्ट स डी0पी0आर0 संलग्न है।** एसएलएफ की डी0पी0आर0 निकाय द्वारा अनुमोदन की जा चुकी है। जिसका संकल्प क्रमांक 92 दिनांक 04.09.2024 **परिशिष्ट द संलग्न हैं।** एवं ई.सी. के अनुमोदन एवं शासन के अनुमोदन उपरांत उक्त योजना के संबंध में निविदा जारी की जायेगी। जिसकी कार्यवाही वर्तमान में प्रचलित है एवं नवीन भू–खण्ड के विकास हेतु एम0आर0एफ0 इकाई एवं कम्पोस्ट इकाई के निर्माण के संबंध में डी0पी0आर0 तैयार किये जाने हेतु शासन स्तर पर पत्र भेजा जा चुका है। **जिसका परिशिष्ट ई संलग्न हैं।** एवं पुराने कचरे में आग हवा के संपर्क से लग जाती है जिस हेतु एक फायर ब्रिगेड निकाय द्वारा आग बुझाने हेतु तैनात की गई है जो आग लगते ही आग बुझाने का कार्य करती है। **जिसकी फोटोग्राफ संलग्न हैं।**
4	यह कि नगर पालिका द्वारा कई बर्षों से लगातार यह ठोस अपशिष्ट –तरल कचरा सीवेज ट्रीटमेंट प्लांट के पास सेंवढ़ा रोड किनारे डाला जा रहा हैं , जिसका निस्तारण न होने के कारण कचरा पहाड़ का रूप लेता जा रहा है।	उक्त लिंगेसी वेस्ट के निस्तारण हेतु डी0पी0आर0 तैयार किये जाने का प्रस्ताव शासन स्तर पर भेजा जा चुका है। **परिशिष्ट अ संलग्न हैं।** डी0पी0आर0 प्राप्त होते ही निकाय स्तर पर कचरे के निस्पादन की कार्यवाही की जावेगी।
5	यह कि नगर पालिका द्वारा डाले जा रहे इस ठोस अपशिष्ट –तरल कचरे का निस्तारण एवं प्रबंधन तथा तारबंदी व बाउण्ड्री वाल न होने के कारण यह ठोस अपशिष्ट –तरल कचरे को खाकर पशु मर रहे है।	ठोस अपशिष्ट प्रबंधन के तहत् निकाय को प्राप्त राशि के अनुसार बाउण्ड्री वाल का निर्माण कार्य कराया गया है परन्तु राशि कम आवंटित होने के कारण सम्पूर्ण क्षेत्रफल पर निर्माण नहीं कराया जा सका। वर्तमान में निकाय द्वारा अपने संसाधनों के आधार पर उक्त शेष क्षेत्रफल की तारफेंसिंग कराई जा रही है। शेष क्षेत्रफल की राशि प्राप्त होने पर शेष वाउण्ड्री वाल का निर्माण कार्य नगर पालिका द्वारा करा दिया जायेगा। **जिसके फोटोग्राफ संलग्न हैं ।**

6	यह कि प्रदूषण /जलवायु परिवर्तन के दुष्प्रभाव से वेश को बचाने हेतु केंन्द्र सरकार एवं राज्य सरकार की ओर से निरंतर पर्यावरण सरंक्षण , सुरक्षा एवं जलवायु/प्रदूषण एवं परिवर्तन की रोकथाम हेतु भारी धनराशि व्यय की जा रही है तथा दिशानिर्देश जारी किए जा रहे हैं, इसके बावजूद नगर पालिका द्वारा कई वर्षों से लगातार यह ठोस अपशिष्ट –तरल करचा सीवेज ट्रीटमेंट प्लांट के पास, सेंवढ़ा रोड किनारे डालकर वातावरण/भूगर्भीय जल/प्राणवायु को प्रदूषित करते हुए पर्यावरण को भारी क्षति पहुंचाई जा रही है।	निकाय को शासन स्तर पर जो भी धनराशि संबंधित कार्यों के विषय पर भेजी गई है। उक्त राशि के तहत् एम0आर0एफ0 , कम्पोस्ट इकाई एवं वाउण्ड्री वाल एवं उक्त स्थल की साफ–सफाई एवं मशीनरी स्थापित की गई है। **जिसके फोटोग्राफ संलग्न हैं।** इसके अतिरिक्त निकाय द्वारा उक्त स्थान पर नीम के पौधे एवं अन्य पौधे लगाकर उनकी देखरेख कर पर्यावरण की दिशा में भी कार्य किया जा रहा है।
7	यह कि सीवेज ट्रीटमेंट प्लांट के पास, सेंवढ़ा रोड किनारे नगर पालिका द्वारा ठोस अपशिष्ट – तरल कचरा संक्रमित कूड़ा डंम्प किया जा रहा है तथा मृत जानवरों के शवों एवं अवशेषों को गीले कूड़े को खुले मैदान में डम्प किए जाने से दूषितजल एवं वायुमंडल पर प्रदूषण दुष्प्रभाव पड़ रहा है।जिसके कारण आस–पास के क्षेत्र में वृक्ष एवं हरियाली नष्ट हो रही एवं भूगर्भीय जलस्रोत दूषित और वातावरण दुर्गधित एवं प्रदूषित हो रहा है।	नगर पालिका परिषद दतियाा द्वारा वर्तमान में मैनुअल तरीके से सूखे–गीले कचरे को पृथक्करण कर एफ0आर0एफ0 ईकाई एवं कम्पोस्ट इकाई में भेजा जा रहा है। **जिसके फोटोग्राफ संलग्न हैं।** निकाय मृत पशुओं के निपटान के संबंध में किसी भी प्रकार की राशि शासन स्तर पर प्राप्त नहीं हुई है। अतः इस कारण से मृत पशुओं के निपटान के संबंध में निकाय के पास कोई राशि नहीं है। शासन स्तर पर यदि राशि प्राप्त होती है तो निकाय द्वारा कार्य किया जावेगा।
8	यह कि दतिया नगर से प्रतिदिन उत्सर्जित होने वाला समस्त ठोस अपशिष्ट –तरल कचरा वैज्ञानिक पद्धति द्वारा ठोस अपशिष्ट –तरल कचरा प्रबंधन एवं निस्तारण हेतु सरकार एवं राज्य सरकार की और से निरंतर भारी धन राशि दी जा रही है। जिसका ठोस अपशिष्ट –तरल करचा प्रबंधन एवं निस्तारण करने की परियोजना स्थापित करने के बजाए नगर पालिका के अधिकारियों/कर्मचारियों द्वारा सरकार की ओर जारी धनराशि बंदरबांट कर लिया गया है।	निकाय को शासन स्तर पर जो भी धनराशि संबंधित कार्यों के विषय पर भेजी गई है। उक्त राशि के तहत् एम0आर0एफ0 , कम्पोस्ट इकाई एवं वाउण्ड्री वाल एवं उक्त स्थल की साफ–सफाई एवं मशीनरी स्थापित की गई है। **जिसके फोटोग्राफ संलग्न हैं।** निकाय के द्वारा किसी भी प्रकार की राशि का किसी भी प्रकार का कोई अप्व्यय नहीं किया जा रहा है निर्धारित कार्य हेतु आवंटित राशि निर्धारित कार्य में ही उपयोग की जाती है।

मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद दतिया

परिशिष्ट–(अ)

कार्यालय नगर पालिका परिषद दतिया (म.प्र.)

क्रमांक / 2025 / 674 दतिया, दिनांक– 18/02/2025

प्रति,

मै. मार्स प्लानिंग एण्ड इंजीनियरिंग
सर्विसेज प्रा.लि.
अहमदाबाद गुजरात–380059

विषयः– डम्प साईट पर पड़े पुराने कचरे (लीगेसी वेस्ट) की डीपीआर बनाये जाने बावत्।

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उपरोक्त विषयान्तर्गत लेख है कि निकाय क्षेत्र में डम्प साईट पर लाखों टन लीगेसी वेस्ट पड़ा हुआ है। स्वच्छ भारत मिशन की गाईडलाइन अनुसार पुराने पड़े कचरे को समाप्त किया जाना है। इस हेतु आप दतिया निकाय में डम्प साईट का निरीक्षण कर लीगेसी वेस्ट की डीपीआर तैयार करायें। जिससे पुराने कचरे को समाप्त किया जा सकें।

मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद दतिया (म.प्र.)

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

परिशिष्ट :-(ब)

कार्यालय नजूल अधिकारी, दतिया, म0प्र0

क्रमांक-क्यू/नजूल सदर्थ/19-15/05 दतिया, दिनांक 06-09-2005

प्रति,

मुख्य नगरपालिका अधिकारी,
नगरपालिका परिषद्,
दतिया, म0प्र0

विषय :- नगरीय ठोस अपशिष्ट प्रबंधन हेतु नगरपालिका दतिया को 10 हैक्टर भूमि का आवंटन करने बाबत ।

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एतद् विषयान्तर्गत लेख है कि नगरीय ठोस अपशिष्ट प्रबंधन हेतु दतिया गिर्द स्थित सेंवढ़ा रोड पर निधान के कुंआ के पास सर्वे नं0 472/1 रकबा 12.933 हैक्टर में से 10 हैक्टर भूमि का अग्रिम कब्जा तहसीलदार, तहसील दतिया से आज ही प्राप्त करें ।

नजूल अधिकारी
दतिया (म0प्र0)

प्रतिलिपि :-

तहसीलदार, तहसील दतिया को इस लेख है कि आप दतिया राजस्व निरीक्षक एवं गिर्द सहायक को साथ लेकर नगरीय ठोस अपशिष्ट प्रबंधन हेतु ख0नं0 472/1 रकबा 12.933 हैक्टर में से 10 हैक्टर भूमि स्थित सेंवढ़ा रोड पर नजूल नगरपालिका अधिकारी दतिया को नियमानुसार अग्रिम कब्जा दिलाने तथा कब्जा रसीद इस कार्यालय को प्रस्तुत करें ।

नजूल अधिकारी
दतिया

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190

कब्जा रसीद दि. 6/9/05

आज दिनांक 6/9/05 को माननीय [illegible] संलग्न [illegible] नगरपालिका दतिया की नजूल अधिकारी के आदेश क्रमांक [illegible] नजूल/तदर्थ/13-15/05 दि. 6/7/05 के पालन में [illegible] नगरपालिका अधिकारी दतिया [illegible] प्रतिनिधि श्री राजेन्द्र कुमार दुबे सहायक राजस्व निरीक्षक [illegible] को दतिया सिटी [illegible] सर्वे न. 2602/1 रकबा [illegible] हैक्टर में से 10.000 हैक्टर रकबे भूमि का [illegible] कब्जा [illegible] की उपस्थिति में सौंपा गया।

कब्जा देने वाले के हस्ताक्षर

श्री जे पी श्रीवास्तव
राजस्व निरीक्षक [illegible]
दतिया

कब्जा प्राप्त करने वाले के हस्ताक्षर

राजेन्द्र कुमार दुबे
सहायक राजस्व निरीक्षक
नगरपालिका दतिया

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तहसील ..... जिला ..... पटवारी हल्का नं. .....

1	2	3	4	रकबा जो खाते में शामिल है जिस पर साल के अन्दर हुई फसल			रकबा जो खाते में शामिल है परती या रकबा			रकबा जो खाते में शामिल है नाम जिस रकबा जो खाते में दर्ज है	तबदीलियों की वर्ष			वर्ष			वर्ष	
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मुख्य नगर पालिका अधिकारी

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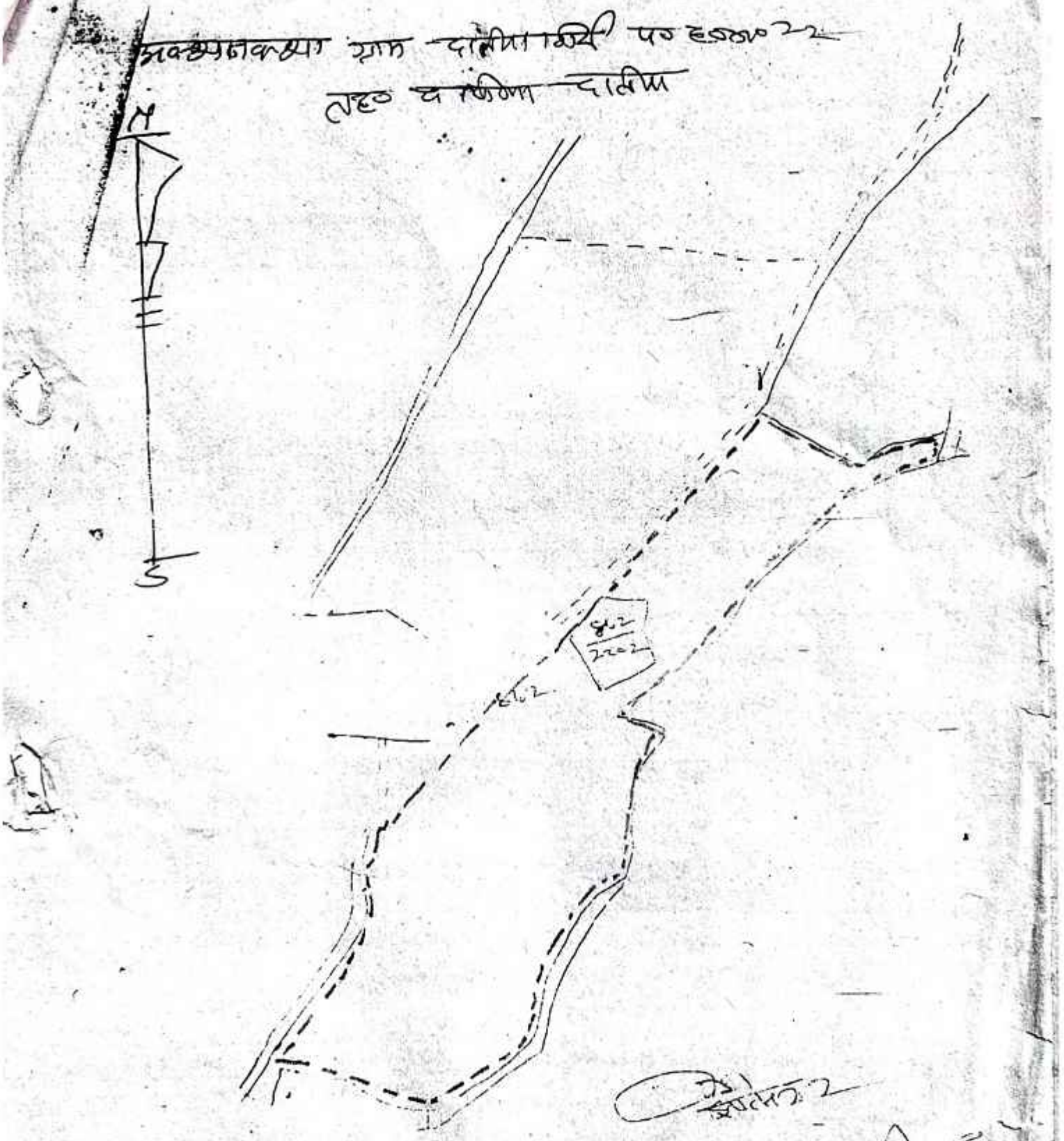

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मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद,
दतिया (म० प्र०)

परिशिष्ट -(स)

Detailed Project Report
For
Regional Sanitary Landfill at Datia and its Cluster ULBs

[District Datia, Gwalior Division]

Participating Urban Local Bodies

Datia, Bhander, Indergarh, Badoni, Pichhore, Bhitarwar, Dabra, Daboh and Alampur

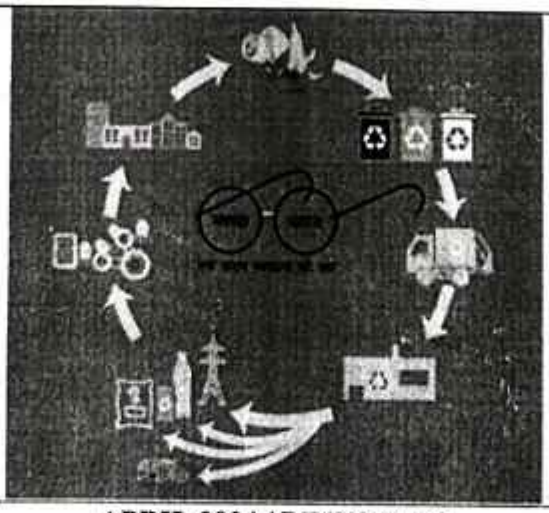
(Final DPR)

Submitted To

Municipal Council Datia and its Cluster ULBs

Submitted By

MaRS Planning & Engineering Services Pvt. Ltd. In consortium with Pivotal Planning Services
#309, "ARISTA", Sindhu Bhavan Road,
Off SG Highway, Bodakdev,
Ahmedabad - 380 059. Gujarat (INDIA)



APRIL 2024 / REVISION 2

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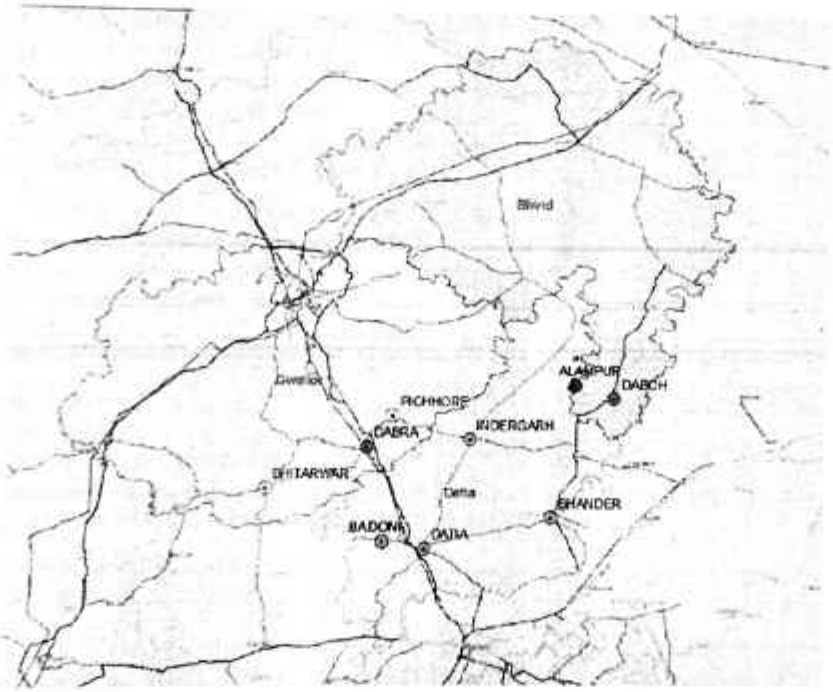
Detailed Project Report (DPR)

Name of Project	:-	**Detailed Project Report for Regional Sanitary Landfill at Datia and its Cluster ULBs** [District Datia, Gwalior Division] **Participating Urban Local Bodies** Datia, Bhander, Indergarh, Badoni, Pichhore, Bhitarwar, Dabra, Daboh and Alampur
Proposed Capacity	:-	**54,750.00 Cum**
Proposed Time of Completion	:-	**12 Months**
Proposed Project Cost	:-	**₹ 5,05,96,428.00**



Technical support

MaRS in joint venture with PIVOTAL PLANNING SERVICES

Disclaimer

This report is prepared on the basic data produced, analysed and obtained from the secondary sources like CDP, DPR, site visit and consultation with the stakeholder & ULB Officials. Every effort has been taken to check the accuracy of the data source however this cannot be construed as fully reliable. The objective of the report is to firm up the policy level decision making for the project. However, Consultants cannot be held responsible for the decision taken solely based on this report.

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A. Project Background

1. Introduction

1. The concept of landfills in urban India was initially developed as large areas of land situated far away from residential areas and the garbage disposed continuously recycled so that the landfill doesn't exhaust itself. But urban population expansion over the years has translated to landfills becoming dump yards, with little regard for their capacity or lifespan.

2. In India the meaning of landfilling process has changed to simply dumping the waste in areas outside the city without taking any kind of sanitary measures. The landfills are meant for reducing the exposure between human and environment from toxic waste but it takes a toll on the human as we are exposed to the problems associated with the waste directly i.e from the soil and the groundwater pollution.

3. The Directorate, Urban Administration and Development (UADD) has appointed MaRS Planning & Engineering Services Pvt. Ltd. in consortium with Pivotal Planning Services for Preparation of Detailed Project Report (DPR), Transaction Advisory and Provide Supervision & Monitoring Services for Implementation of Solid Waste Management Projects for ULBs in the State of Madhya Pradesh for **Gwalior Division under SBM-Urban 2.0 vide Letter of Empanelment (LoE) No. 7614 Dated 22/04/2022 for Gwalior Division.**

4. The Consultant has undertaken the field survey and data collection on 16/06/2022. This report outlines the survey data, analysis, methodology and finally gives Design requirements for Construction of SLF.

2. Project formulation Justification (need for the project)

5. Landfills in India pose numerous threats due to their unscientific design and indiscriminate disposal of waste. One of the major threats' landfills pose is the emission of methane gas due to accumulation of waste. Methane is the leading cause of fires at landfills, resulting in garbage burning which causes severe air pollution. Landfills also pose tremendous health hazards due to them being a storehouse of virus and bacteria, causing cardiovascular and lung diseases.

6. Unlike just a demarcated space for disposing waste, a scientific landfill is constructed as a sustainable space for waste disposal and treatment of municipal solid waste. The technology deployed in constructing a scientific landfill is simple and a scientific landfill ensures complete control over gas developed in the landfill and leachate (water that has infiltrated through a solid and leached out) as well as limited access of vectors such as rodents and flies to the waste.

7. Landfills in India were never constructed in a scientific manner. They were simply lands demarcated by state governments and municipal bodies to dump waste. That resulted in most landfills in India exhausting their lifespan and emitting poisonous gases such as methane.

8. Scientific landfills also act as degassing systems by reducing the production of methane. Since the layers soak most of the impurities in the waste disposed, methane generates slowly compared to the generation speed in ordinary landfills. Vertical wells installed in scientific landfills help extract methane regularly, and the gas can then be used for electricity and heat generation purposes.

9. A scientific landfill ensures that there is no risk of pollutants seeping underground or enough generation of methane to light up the garbage. This reduces the risk of environmental or health hazards tremendously. Scientific landfills can treat the waste while it is disposed, making them important in urban waste management

3. *Provision in Solid Waste Management Rules (SWM) Rules, 2016*

10. The Government of India has notified the Solid Waste Management Rules (SWM) Rules, 2016 for proper and effective management of municipal solid waste (MSW). Under the SWM Rules, 2016, following provisions have been made to manage sanitary landfill of MSW.

Clause 15: Duties and responsibilities of local authorities: -

- *stop land filling or dumping of mixed waste soon after the timeline as specified in rule 23 for setting up and operationalisation of sanitary landfill is over;*
- *allow only the non-usable, non-recyclable, non-biodegradable, non-combustible and non-reactive inert waste and pre-processing rejects and residues from waste processing facilities to go to sanitary landfill and the sanitary landfill sites shall meet the specifications as given in Schedule–I, however, every effort shall be made to recycle or reuse the rejects to achieve the desired objective of zero waste going to landfill;*

Clause 20: Criteria and actions to be taken for solid waste management in hilly areas: -

- *Construction of landfill on the hill shall be avoided. A transfer station at a suitable enclosed location shall be setup to collect residual waste from the processing facility and inert waste. A suitable land shall be identified in the plain areas down the hill within 25 kilometers for setting up sanitary landfill. The residual waste from the transfer station shall be disposed of at this sanitary landfill.*
- *In case of non-availability of such land, efforts shall be made to set up regional sanitary landfill for the inert and residual waste.*

4. *Project Objective*

11. The following are the project objectives-

- To design a district/Regional level Sanitary Landfill site covering multiple Urban local body for disposal of inert post processing of Municipal Solid Waste.

5. *Consultant Overall Scope of Work in project*

12. The following are the scope of work for the assignment-

a) Preparation of Detailed Project Report (DPR)

- To assess the quantity of waste disposal for the period of preferably for 2023 to 2027-year projections
- Land Requirement for 20 years projections.
- Ensure Landfill height restrictions based on proximity with nearby Airport.

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- Land selection based on the SWM Rules 2016, C&D Waste management, SWM CPHEEO Manual 2016, CPCB Guidelines ensuring social and environmental sensitivity and safeguards.
- Detailed SLF Layout Planning for 5 years period including Buffer Zone, Green Belt, etc.
- Detailed Design, Drawing of SLF with Bottom Liner and Capping Liner components,
- Landfill-Gas and Leachate Collection and Conveyance System, etc.
- Detailed Planning, Design, Costing for Civil, Electrical, Mechanical, Instrumentation, etc. works, all the Equipment, usable life of Equipment, machineries, etc. based on the requirements of the site.
- Detailed Design, Drawing of Allied infrastructure
- Identification of required clearances / permissions in DPR, to be received from relevant authorities (State Pollution Control Board, Airport / Airfield Authorities, Flood Control/Ground water Management Authorities etc.) for setting up SLF.
- Propose Post Closure O&M Plan for 5 years.
- Detailed Cost Estimate of Capital Expenditure

b) Tender Preparation, Evaluation and Awarding of work Contracts

- Prepare Tender Document in consultation with the official in charge.
- Prepare & assist in finalization of Bid Documents for Uploading on e-procurement portal of Government of Madhya Pradesh (GoMP) or GeM portal.
- Answering the technical queries raised by the contractors in the pre bid meeting.
- Preparing all the pre bid questionnaire and clarifications.
- Assisting in evaluation of bids received by ULB.
- Recommendation for award of work contracts.
- Issue of letter of intent, preparation and signing of contract for appointment of contractors for goods and services.

c) PMC services for Project Monitoring and Supervision during Implementation period

- Review and approve all the Contractor's design, drawings and implementation schedules.
- Visit the site of works, at intervals and as instructed, and collect information with photographs related to physical progress of implementation.
- Undertake Proof checking of designs or completed works with scrutiny of supporting documentations etc. in order to make a compliance report and grant approval on completed works.
- Prepare and submit progress report on progress of works.

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B. Technical Aspects of Sanitary Landfill Site

1. Introduction

13. The term 'landfill' is used herein to describe a unit operation for final disposal of Municipal Solid Waste on land, designed and constructed with the objective of minimum impact to the environment by incorporating essential components described in this report. This term encompasses other terms such as 'secured landfill' and 'engineered landfills' which are also sometimes applied to municipal solid waste (MSW) disposal units.

14. The term 'landfill' can be treated as synonymous to 'sanitary landfill' of Municipal Solid Waste, only if the latter is designed on the principle of waste containment and is characterised by the presence of a liner and leachate collection system to prevent ground water contamination. The term 'sanitary' landfill has been extensively used in the past to describe MSW disposal units constructed on the basis of 'dump and cover' but with no protection against ground water pollution. Such landfills do not fall under the term 'municipal solid waste landfills' as used in this chapter.

15. Landfills are typically constructed using engineered mounds of layered waste on top of an impermeable layer of clay or other waterproof material. Keeping control of the water in the landfill is paramount and landfills are often designed with leachate pipes (perforated pipes below the waste but above the waterproof layer) that collect water that has percolated down through the landfill and waste materials. This water can then be treated and released or used for other activities. The leachate pipes and pumps prevent the accumulation of water underneath the landfill and on top of the water proof layer, making leaks into groundwater or nearby waterways less likely. Other vertical pipes may be used to collect methane gas that can be used on site to generate electricity. Once a landfill is "full" or is no longer used (e.g. the urban area has grown around the landfill and residents don't want an active, smelly landfill near their homes), the landfill will be capped with an impermeable clay layer or phytocapped (using soil and plants) to prevent water infiltration into the landfill. Essentially, the landfill is sealed. Groundwater monitoring wells outside the landfill are active during the life of the landfill and after to detect contamination from the landfill if it leaks into the groundwater.

2. Types of Waste Accepted at Landfills

16. The Landfilling will be done for the following types of waste:
    (i) Comingled waste (mixed waste) not found suitable for waste processing;
    (ii) Pre-processing and post-processing rejects from waste processing sites;
    (iii) Non-hazardous waste not being processed or recycled.

17. Landfilling will usually not be done for the following waste streams in the municipal solid waste:
    (i) Biowaste/garden waste;
    (ii) Dry recyclables.

18. Landfilling of hazardous waste stream in the municipal waste will be done at a hazardous waste landfill site; such a site will be identified by the State Government and is likely to be operated

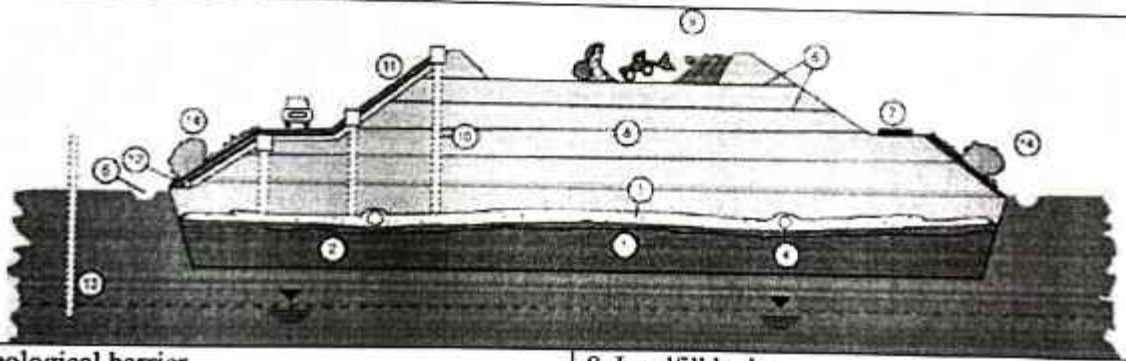
by industries of a district/state. If such a landfill is not available, municipal authorities will dispose the hazardous waste in a special hazardous waste cell in the MSW landfill. Such a cell will be designed as per Ministry of Environment and Forests (MoEF) guidelines for hazardous waste disposal.

19. Landfilling of construction and demolition waste will be done in a separate landfill where the waste can be stored and mined for future use in earthwork or road projects. If such a landfill site is not available, the waste will be stored in a special cell at a MSW landfill from where it can be mined for future use. Construction and demolition waste can be used as a daily cover at MSW landfills; however only minimum thickness of cover should be provided. All excess construction waste should be stored in the separate landfill cell.

3. *Essential Components of SLF*

20. The term sanitary landfill is used herein to describe a unit operation for final disposal of 'Municipal Solid Waste' on land, designed and constructed with the objective of minimising impact to the environment and according to the SWM Rules.

Table 1: Essential Components of SLF



1. Geological barrier	8. Landfill body
2. Impermeable base liner	9. Filling and compacting in layers
3. Drainage layer	10. Gas venting system
4. Leachate collection system	11. Protective cover system
5. Storm - water drain ditch	12. Gas collectors
6. Bordering dams	13. Groundwater control
7. Circulation roads	14. Re-planting

Source: Central Public Health and Environmental Engineering Organization (CPHEEO) Manual, GoI

21. Figure above illustrates the essential components of an MSW sanitary landfill which include:

- A liner system at the base and sides of the sanitary landfill which prevents migration of leachate or gas to the surrounding soil;
- A leachate collection and control facility which collects and extracts leachate from within and from the base of the sanitary landfill and then treats the leachate;
- A gas collection and control facility (optional for small sanitary landfills) which collects and extracts gas from within and from the top of the sanitary landfill and then treats it or uses it for energy recovery;
- A final cover system at the top of the sanitary landfill which enhances surface drainage, prevents infiltrating water, and supports surface vegetation;
- A surface water drainage system which collects and removes all surface runoff from the sanitary landfill site;

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- An environmental monitoring system which periodically collects and analyses air, surface water, soil, gas, and groundwater samples around the sanitary landfill site; and
- A closure and post-closure plan which lists the steps that must be taken to close and secure a sanitary landfill site once the filling operation has been completed and the activities for long-term monitoring and operation and maintenance (O&M) of the completed sanitary landfill are functional.

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C. Planning Approach for SLF

1. Requirements for SLF under SBM-2.0 (Urban) Funding

22. The following are the prescribed guidelines for development of Sanitary Landfills for availing funds under SBM-2.0 (Urban)-

- *Only the inert waste (mostly from street sweeping) and process rejects (in no case should this exceed 20% of total waste) which are not suitable for any of the above dry and wet waste treatment processes can be sent to sanitary landfills.*
- *It is recommended that SLFs are set up as separate business amenities levying tipping/gate fee as per the quantity and quality of waste received at the facility. Free use of SLF / LF may not be allowed, to increase the processing & recycling efficiency by the ULBs and its contractors.*
- *Sanitary landfills (SLFs) which shall be set up preferably on* ***cluster model.*** *In order to ensure economies of scale and operational efficiency, State/ UTs may encourage creation of common infrastructure to cater to a group of small ULBs and their surrounding rural areas (in convergence with SBM-Grameen), including shared O&M of the infrastructure. In this SLF matter, the* ***'One-district-One-operator'*** *approach may also be considered.*

2. Proposed ULBs to be Covered

23. A district Level SLF is proposed covering all the smaller ULBs of the District. These proposed requirements preliminary satisfy the basic requirement of SBM-2.0 guidelines which prescribes to construct SLF on cluster basis and one district one operator model.

24. The following are the distance of the ULBs to Proposed SLF-

Table 2: Distance of ULBs to Proposed SLF

ULB Name	District	Distance from DHQ SLF (in KM)
Datia	Datia	0
Alampur	Bhind	68
Daboh	Bhind	67
Badoni	Datia	11
Bhander	Datia	31
Indergarh	Datia	31
Bhitarwar	Gwalior	55
Dabra	Gwalior	30
Pichhore	Gwalior	43

Source: Consultant

25. The following are the proposed ULB to be covered under the project which will sent the inerts post processing the SLF.

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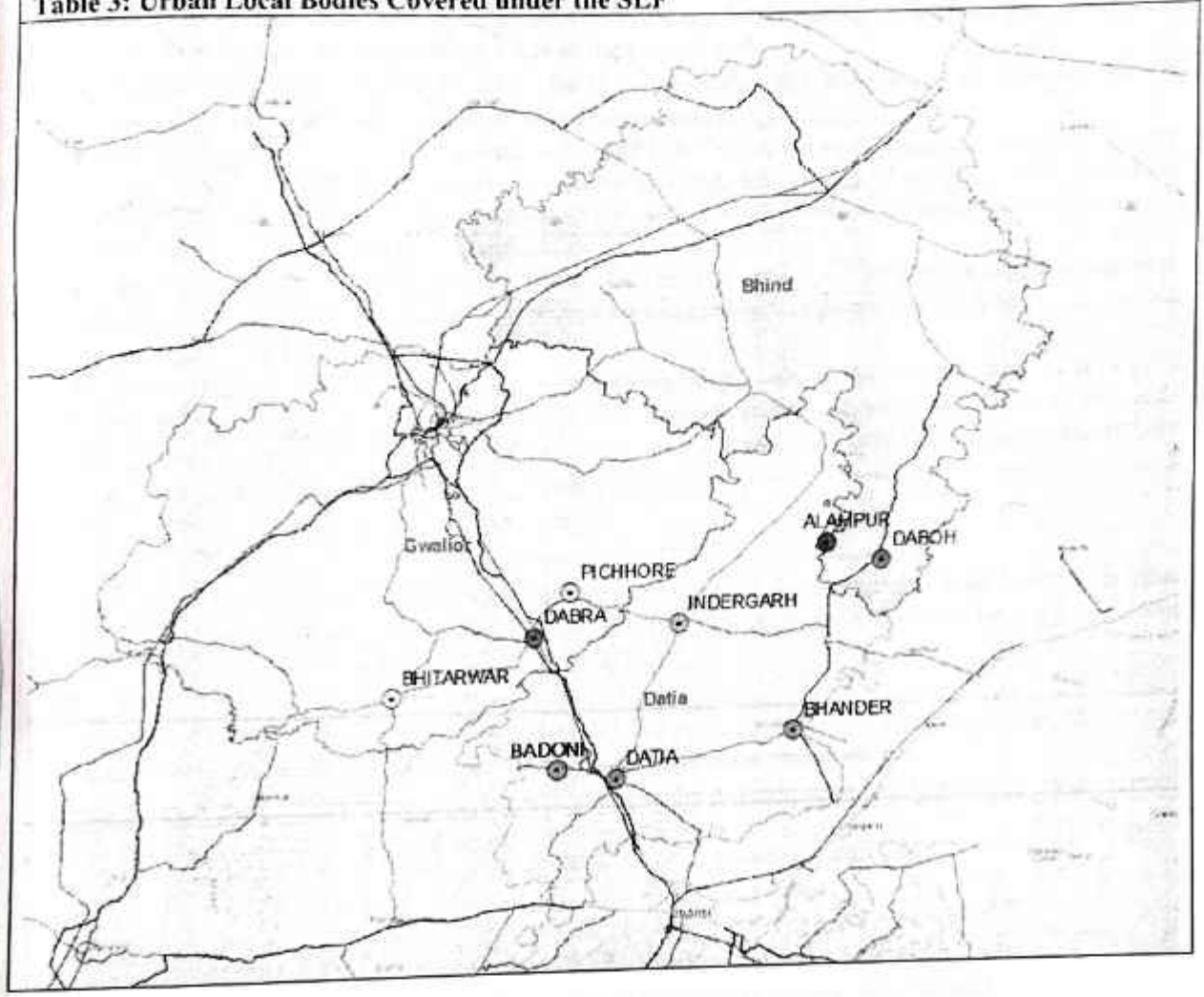
Table 3: Urban Local Bodies Covered under the SLF



3. *Approach & Methodology*

26. The following is the approach and methodology adopted for designing the project.

a) Guiding Principles for Design

27. The following are the key guiding principles to be kept in mind for designing the proposed Landfill site-

- Protect public health and safety;
- Maximize the protection of the environment and minimize any adverse environmental impacts caused by the old landfill including as may be required, recommended or advisable pursuant to any environmental management plan and EIA reporting conducted on, at or near the Site;
- Design the landfill facility to be functionally effective, enable economic operations, and require minimum maintenance;

- Integrate the engineering design for the new cell, with the current infrastructure and facilities in Gwalior landfill site and address the accumulation of on-site excavated soil, optimize the drainage and collection of leachates, and optimize leachate management;
- Design the landfill facility to receive non-hazardous MSW mainly residential and commercial streams from Gwalior, and other ULB in the project area;
- Design the landfill facility to allow for the progressive development of all systems and site development works in a number of phases corresponding to cell.
- Prepare the design prepared according to established international experience and best practice and shall comply with applicable standards and regulations. The Consultant shall consultant with client for review of intermediate and final design deliverables and collect comments for incorporation in the design, if applicable;
- Provide collection, and discharge systems for leachate so as to meet discharge requirements to support the water quality needs of the receiving water body, bottom lined lagoons or any down gradient receiving valleys;
- Design the civil, electro-mechanical and lining materials works so that they will have a minimum life of 5 years and be able to with stand foreseeable seismic and climatic events; and
- Design the auxiliary facilities and developments so that all construction tasks are clearly explained, to-be-built facilities are drawn with adequate details, and quality control measures are fully identified.

28. The design shall include the following facilities and systems without being limited to them subject to the outcome of initial consultations with the counterparts and site investigations and guidelines of SWM Rules, 2016 (Govt. of India)-

- Site preliminaries and preparatory works prior to sanitary landfill cell construction (surveying, access roads, ramps, location for stockpiling of excavated materials, etc)
- Construction works including general excavation/embankments with grading, compaction, contour, and subgrade treatment to reach the required levels,
- Construction of the cell bases and sides and the cell geometry formation.
- Construction of temporary roads, tracks, and drainage networks
- Lateral side slope, berms, and embankment constructions- cut fill works
- Construction of passive and active barrier systems, sealing on cell bases and sides
- Geo-synthetic materials supply and placement (liner barrier protection system)
- Construction of storm water (runoff water) collection and drainage systems
- Construction of the leachate drainage layers, chambers, networks, piping, manholes and sump/reservoir works
- Construction of the sanitary cell bottom/details around the slotted pipes
- Construction of the leachate storage reservoir and transfer system (pumping, piping, earthworks) and lined leachate storage pond.
- Earthworks, anchor trenches, dikes, civil, and electromechanical works
- Other auxiliary works, ancillaries, peripheral equipment, and site final developments.

b) Task to be undertaken for designing

Task 1: Data Collection and Records Documentation

- Review the baseline and all project related information including the following:
  - Maps for project area relevant locations.
  - Technical confirmations of the proposed site selection, stability and landfill cell sitting criteria.
  - Site plans for the construction site.

- Relevant data, info, brochures, leaflets, etc. for the envisaged project supplies.
- Walkover survey and site investigation
- All relevant sites specific information including geography, topography, soil conditions and permeability, site boundaries, etc.
- Existing underground utilities.
- Areas architectural setup.
- Locally available construction materials.

Task 2: Consultations

- In order to ensure a coherent approach, launch a series of extensive meetings with UBs and the counterparts with a view of defining the overall requirements in all aspects including:
  - Architectural setup and general layout
  - Surface areas
  - Occupancy requirements
  - Space requirements and capacity
  - Space allocation
  - Utilities' requirements
  - Minimum acceptable standards and requirements
  - Design standards and performance criteria
  - Others

Task 3: Surveying Works

- In this task, it is necessary to carry out the required detailed leveling surveys and contour topography for the landfill cell site. The site survey shall include all boundaries, benchmarks, coordinate, networks, general location, angels, lengths, surrounding facilities, levels in 5 meters intervals, etc. to prepare a detailed site layout, alignment, roads profiles, extent of embankment and cut slopes profiles, cross sections, general ground layouts and facilitate cut and fill calculations and other downstream work.

Task 4: Geotechnical/Soil Investigations and Analysis

- Field investigations and laboratory subsurface soil exploration tests will be critical to the success of the siting and design of the landfill and shall be carried out to ensure the viability and cost estimates of the project, of the different facilities in accordance with approved national codes of practice. The results shall define the soil bearing capacity and other physical, as well as, mechanical properties of the soils encountered.

  - ***Field Work:*** *Subsurface explanation or borings shall be executed by rotary drilling rigs at the selected sites and to appropriate depths to confirm assumptions made in the conceptual design on quantity of soil material available within the site for cover purposes, permeability of the base of the landfill cell and of the material to be used for final cover, bearing capacity of the base of the landfill cell, stability of any slopes to be cut, groundwater regime, and baseline quality of ground and surface water.*

  - ***Laboratory Tests:*** *Mechanical, physical and chemical laboratory tests shall be performed in accordance with the approved standards by an independent and governmental recognized institute. The minimum test frequency for each testing will be determined as per standard.*

Task 6: Engineering Design for the Facilities

- Prepare all required preliminary architectural and general engineering designs, drawings, calculations, plans, cost estimates, etc. for all site development works with appropriate coordinates and topography including-

- The location of the sanitary cell in the landfill site (coordinates and topography)-general layout
- Site layout plans including preparation works, internal roads, access roads, auxiliary facilities, connection to external facilities and utilities, etc.
- General architectural designs and drawings for the site facilities under the scope of work.
- General site preparatory works (i.e. excavation, clearing, draining, filling, grading and consolidation, as needed) design, profiles and cross sections
- General access roads design, profiles and cross sections.
- General Earthworks plans of the sanitary cell, profiles and cross sections
- General excavation works layouts, reference points and slope construction profiles
- General storm water collection and drainage sections and layouts
- General leachate collection system, leachate zone sections, pumping, sump/ reservoir, conveyance Network, storage pond, drainage and pumping, layouts, sections, and profiles
- General Lining (geo-membrane and geo-synthetic materials) bottom, manholes, reservoir and slopes of the sanitary cell sections and layouts
- General geo-membrane contour and Leachate bottom drainage System sections, profiles, and layouts. All recommended lining materials should be in accordance with the specifications.
- General active barrier layouts, embankment cross section, and anchor trench layouts for geo-synthetics
- General bottom and lateral side containment barrier systems sections, and layouts.
- Municipal utilities at the landfill site (power supply and water supply requirements & layouts).
- General layouts for the landfill cell closure works, final reshaping and plateau construction, final side slope development, final capping cover.
- General Layout of the recommended gas collection system.
- Electro-mechanical work design: perform engineering and undertake design of the following electro-mechanical work, in accordance with the findings and mitigative measures recommended by the environmental assessment and public participation studies if available:
  - Electrical power and distribution system; and
  - Pumping unit for leachate to the assigned leachate storage pond.

Task 7: Specifications, Bill of Quantities and Final Cost Estimates

- Prepare all required technical specifications and bidding documentation in accordance with national standards for all works components designed. Furthermore, detailed BOQ's shall also be prepared of all items of works and for each component and subcomponent on separate basis. The BOQ's shall be developed to such a level of details as to allow easy estimation of construction costs, which would allow receipt of responsive contractor bids for the works under consideration.

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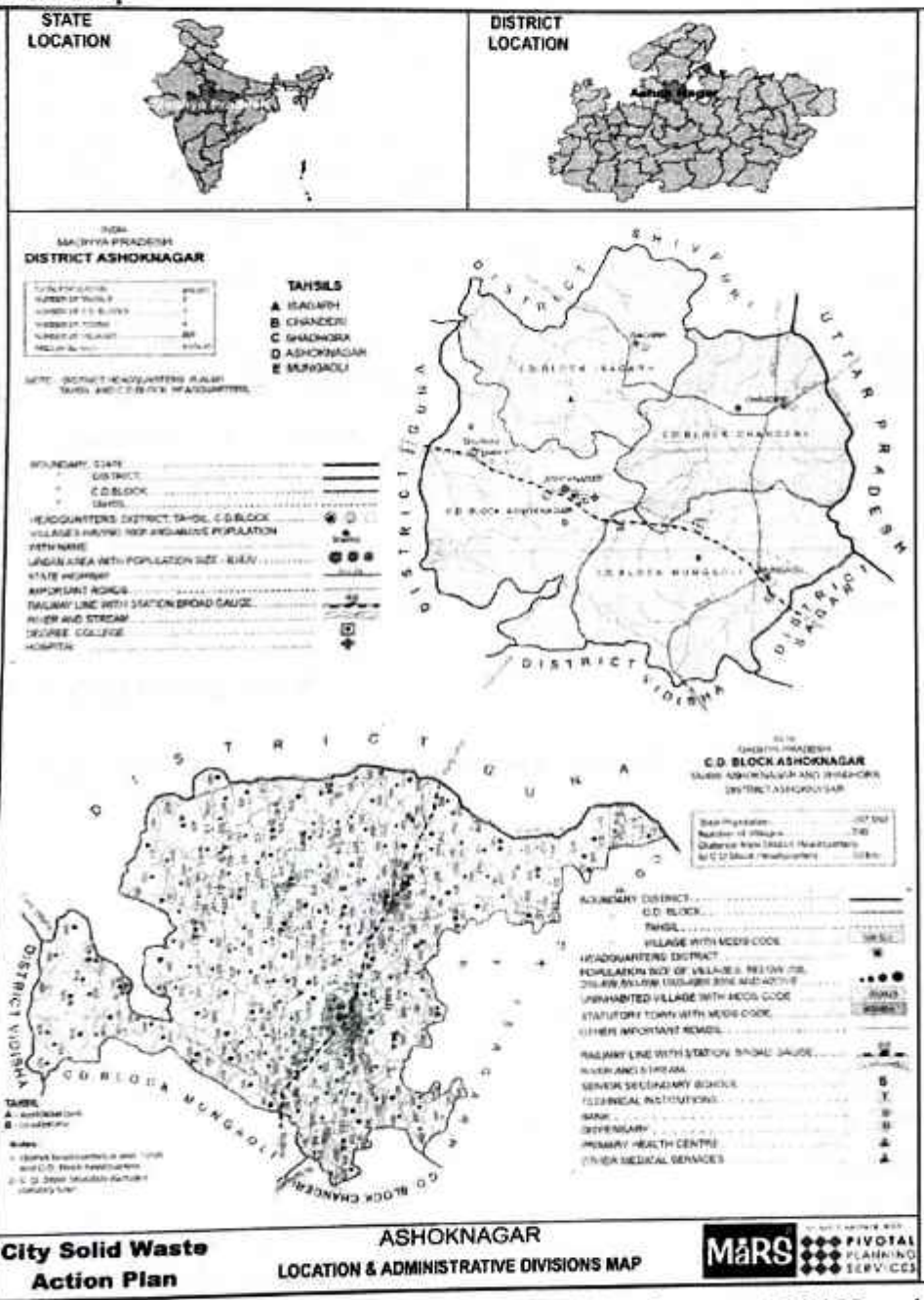
D. Details of Proposed Site and its surroundings

I. City Brief

29. Datia is the district headquarter of the Datia District in north central Madhya Pradesh,a state of Central India. It is an ancient town, mentioned in the Mahabharata ruled by King Dantavakra

30. Datia is located at 25.67°N 78.47°E. It has an average elevation of 302 metres (990 feet).

Table 4: Location Map



31. Datia had population of 786754 of which male and female were 4,20,157 and 3,66,597 respectively as per Census 2011.

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2. *Land availability of Proposed SLF*

32. The following is the location details of the Proposed SLF Site –

Table 5: Location of Proposed SLF Site

Site Name	Location	Area	Revenue Details	Ownership	Current Dumping
Datia Landfill site	25°40'21.76"N 78°29'27.28"E	10 Ha*	Khasra Number: 2471/2	Datia Nagarpalika	No

Source: ULB

Land record given by ULB has no fixed boundary.

3. *Land Records of Proposed SLF*

33. The following are the details Land records available with the ULB.

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Table 6: Details of Land Records available with ULB

न्यायालय कलेक्टर जिला दतिया (म.प्र.)

[illegible] दतिया दिनांक [illegible] 2022

आदेश

मुख्य नगर पालिका अधिकारी नगर पालिका परिषद दतिया [illegible] /2021 दिनांक [illegible] के द्वारा ठोस अपशिष्ट प्रबंधन नियम 2016 के क्रियान्वयन हेतु नवीन लेण्डफिल साइट हेतु मध्यप्रदेश नजूल निर्वतन नीति 2020 के अनुसार [illegible] पर आवेदन प्रस्तुत कर मौजा [illegible] में 15.00 हे. शासकीय भूमि का हस्तान्तरण करने की मांग की गई।

प्रकरण में अनुविभागीय अधिकारी दतिया ने अपने प्रकरण 122/बी-121/2021-22 प्रतिवेदन दिनांक 05/01/2022 में तहसीलदार दतिया के प्रतिवेदन अनुसार [illegible] मौजा [illegible] में स्थित शासकीय भूमि सर्वे नं. 2471/2 रकबा 14.02 हे. में से 10.00 हे. [illegible] नक्शा अक्स में A B C D भाग द्वारा चिन्हांकित भाग को ठोस अपशिष्ट प्रबंधन के [illegible] हेतु नवीन लेण्डफिल साइट निर्माण हेतु प्रस्तावित किया।

प्रकरण में तहसीलदार दतिया द्वारा नजूल भूमि निर्वतन निर्देश की कंडिका 142 में [illegible] सार्वजनिक उद्घोषणा जारी की गई, अवधि म्याद कोई आपत्ति प्राप्त नहीं हुई। उक्त [illegible] भूमि हस्तान्तरण के संबंध में म.प्र. नजूल भूमि निर्वतन निर्देश 2020 के [illegible] दि. 17.01.2022 को [illegible] नजूल निर्वतन समिति की बैठक आयोजित की गई। उक्त बैठक में ठोस अपशिष्ट प्रबंधन [illegible] हेतु भूमि के संबंध में विचार किया गया, विचारोपरान्त सर्वसम्मति से [illegible] भूमि नगरीय [illegible] विभाग को हस्तान्तरित करने की सहमति दी गयी।

अतः तहसीलदार दतिया के प्रतिवेदन, अनुविभागीय अधिकारी (राजस्व) दतिया के [illegible] क्रमांक 122/बी-121/2021-22 में प्रस्ताव दिनांक 05/01/2022 के आधार पर [illegible] भू-राजस्व संहिता 1959 की धारा 237 में वर्णित प्रावधानों के अन्तर्गत मौजा [illegible] में स्थित शासकीय भूमि सर्वे नं. 2471/2 रकबा 14.02 हे. में से 10.00 हे. भूमि [illegible] अक्स में A B C [illegible] द्वारा चिन्हांकित भाग को ठोस अपशिष्ट प्रबंधन के क्रियान्वयन हेतु नवीन लेण्डफिल साइट [illegible] हेतु चिन्हांकित भाग को [illegible] नगरीय प्रशासन एवं विकास विभाग के पक्ष में हस्तान्तरित की जाती है।

(संजय कुमार)
कलेक्टर
जिला दतिया म.प्र.

क्र./56/[illegible]/2021-22 785-4 [illegible]

दतिया, दिनांक 25.01.2022

प्रतिलिपि:-

1. आयुक्त, नगरीय प्रशासन एवं विकास विभाग [illegible]
2. अनुविभागीय अधिकारी, दतिया [illegible] आवश्यक कार्यवाही हेतु।
3. तहसीलदार, तहसील दतिया [illegible]
4. [illegible]
5. [illegible] आवश्यक कार्यवाही [illegible]
6. मुख्य नगरपालिका अधिकारी [illegible]

कलेक्टर
जिला दतिया म.प्र.

Source: ULB

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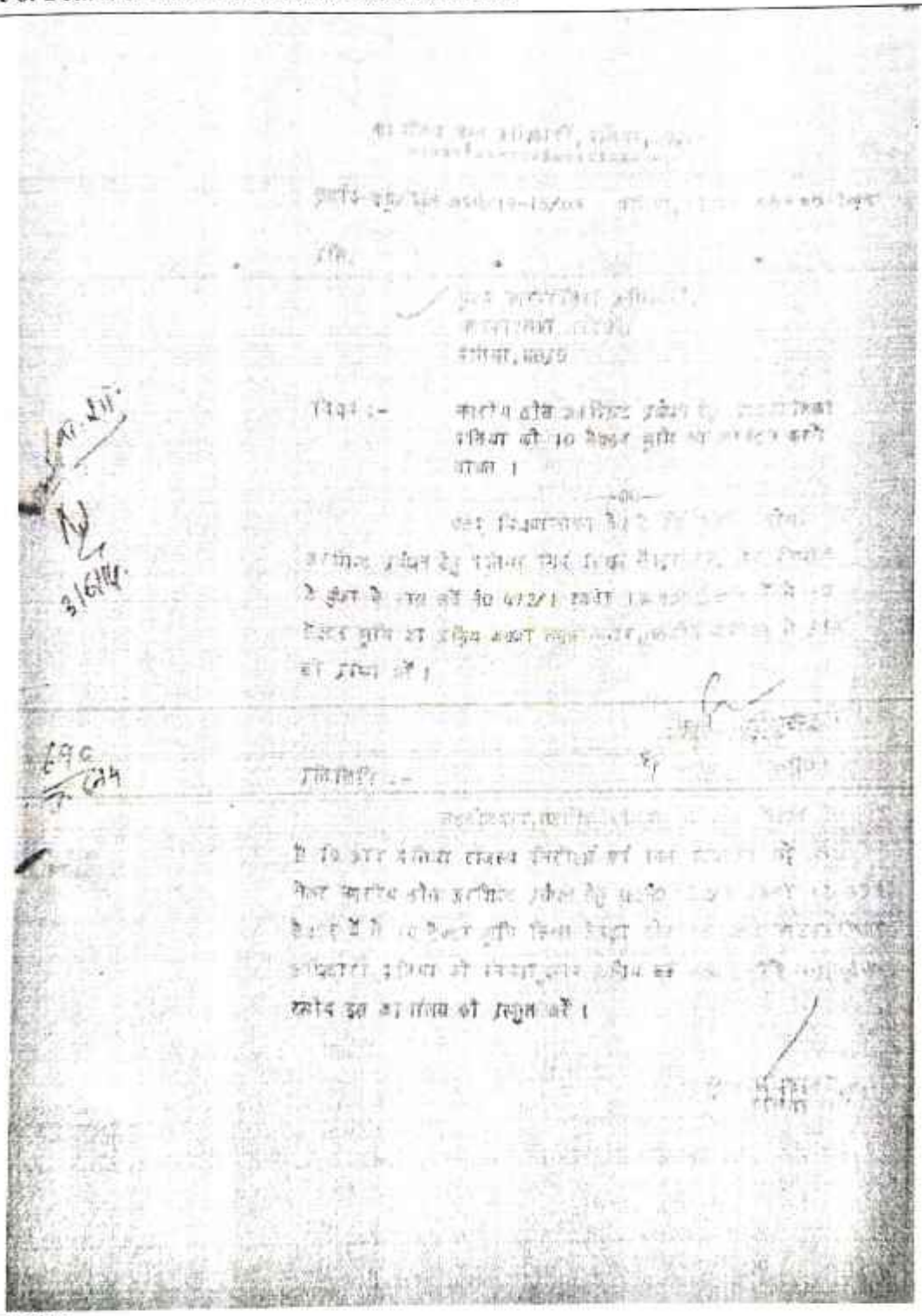
MaRS in joint venture with PIVOTAL PLANNING SERVICES

Table 6: Details of Land Records available with ULB



Source : ULB

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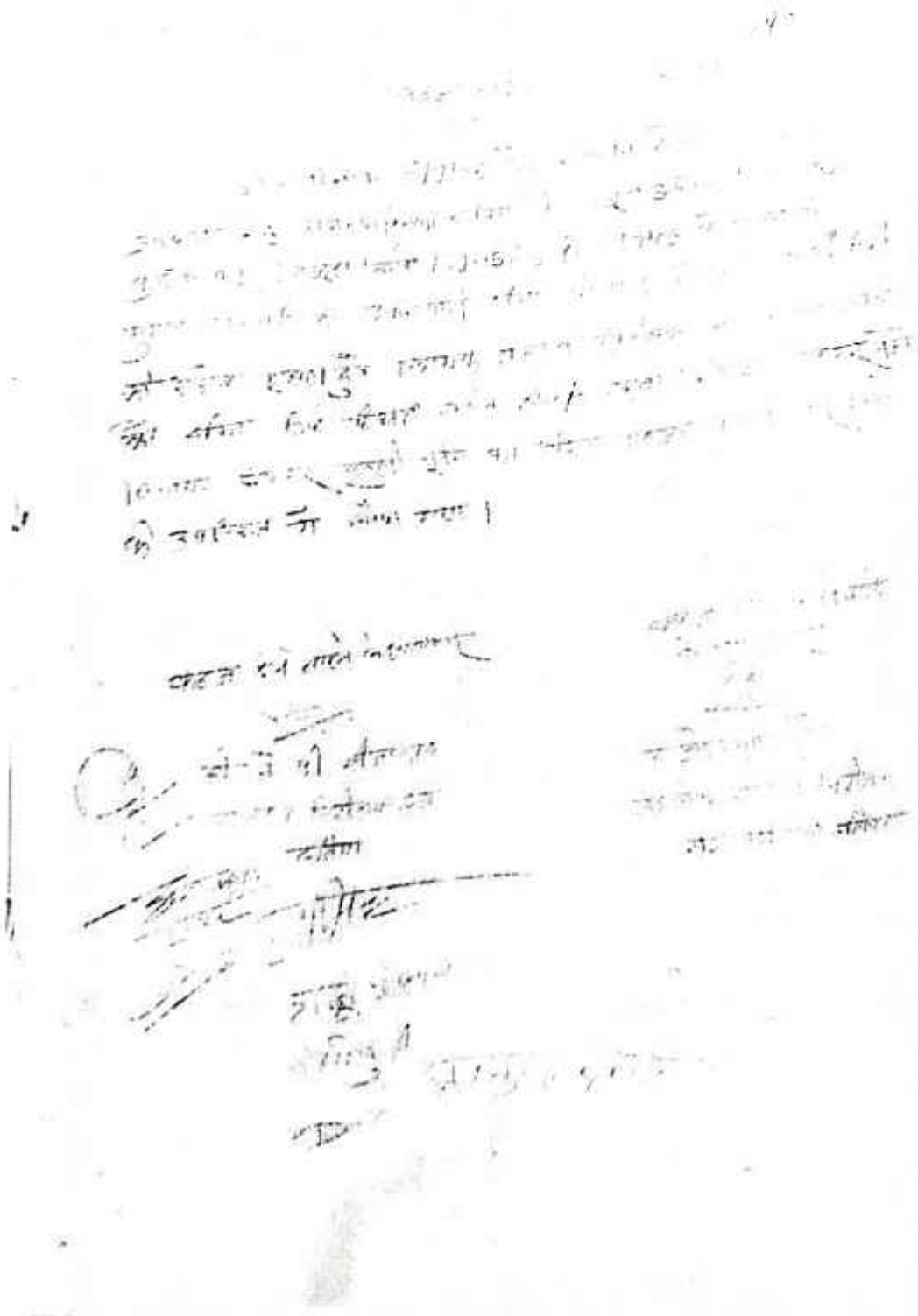
Table 6: Details of Land Records available with ULB



Source : ULB

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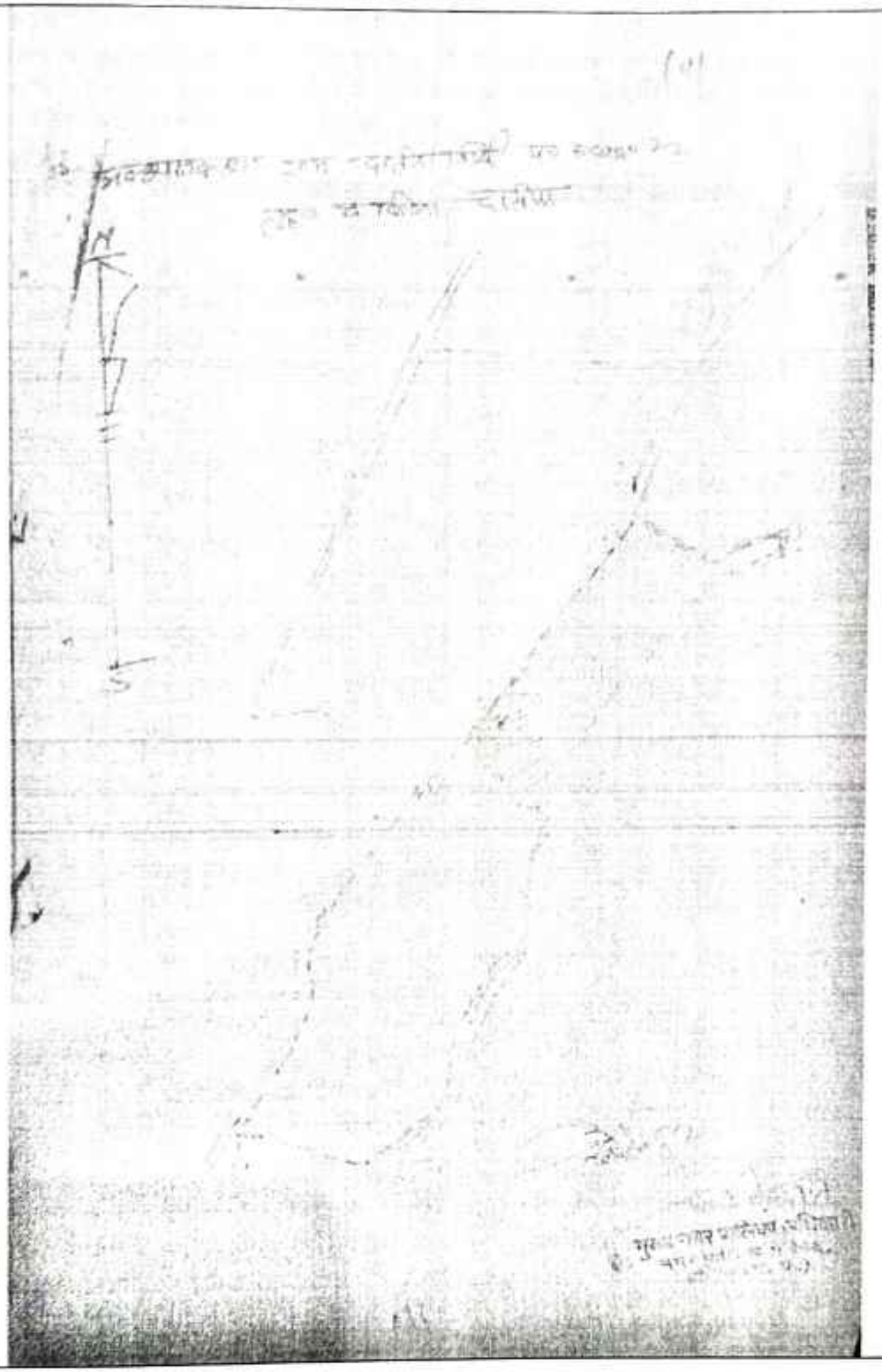

Source: ULB

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4. *Site suitability Analysis for Proposed site*

34. Pursuant to guidance in the SWM Rules, 2016 and based on good practices, the following criteria in Table 4.2 are suggested. Construction of sanitary landfills for municipal waste within restricted zones should be avoided at all costs.

Table 7: Landfill site suitability analysis

No.	Place	Minimum siting distance	Datia SLF site Data	Site suitability
1	Coastal regulation, wetland, critical habitat areas, sensitive eco-fragile areas, and flood plains as recorded for the last 100 years	Sanitary landfill site not permitted within these identified areas	No such area	Permissible
2	Rivers	100 Meter away from the flood plain	>600 m (Branch of Pahuj river)	Permissible
3	Ponds, Lakes, water bodies	200 Meter	>1500 m	Permissible
4	Non-meandering water channel (canal, drainage, etc.)	30 Meter	>300 m	Permissible
5	Highway or	500 Meter	> 2 Km	Permissible
	railway line,		> 4 Km	Permissible
	Water supply wells		No water supply well	Permissible
6	Habitation	500 Meter	> 1500 m	Permissible
7	Earthquake zone	500 Meter from faulty line fracture*	Not applicable due to site zone 3	Permissible
8	Flood prone area	Sanitary landfill site not permitted	No such area	Permissible
9	Water table (highest level)	The bottom liner of the landfill should be above 2 m from the highest water table	below 30.90 m	Permissible
10	Airport	20 Km**	70 km (Gwalior Airport, Gwalior)	Permissible

* The urban local bodies (ULBs) located in seismic zone 4 and 5 should consult the seismic fault map before finalizing the site for the sanitary landfill. They should also ensure that when the sanitary landfill is designed, the seismic factors are taken into consideration in determining the stability of the landfill structure.

** In a special case, a landfill site may be setup within 10-20 km away from the airport or airbase if there is no objection certificate from the civil aviation authority or air force as the case may be.

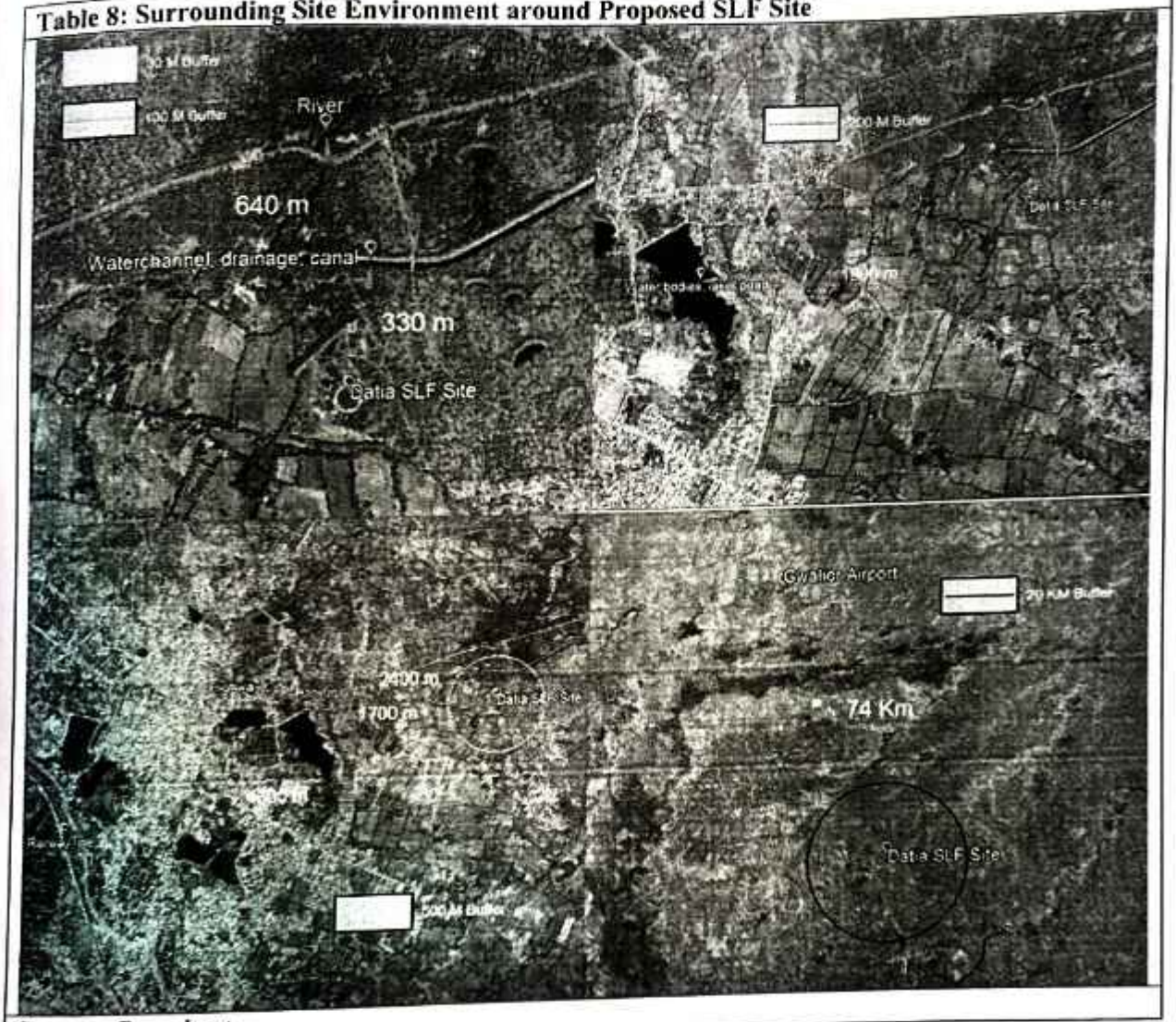
Source:-CPHEEO Manual 2016 and analysis by consultant

35. During field visit it was observed that no forest area and wildlife century present at site. Proposed site has barren Land also no state boundary passes through the proposed area.

5. *Surrounding Site Environment around Proposed SLF Site*

36. The following are the details of site surrounding and its distances to the Proposed SLF Site.

Table 8: Surrounding Site Environment around Proposed SLF Site



Source:- Consultant

37. With reference to the above stated Site suitability (spatial and attributional) analysis the site is considered as Permissible for the Sanitary Landfilling activities with no harm to the surrounding flora and fauna, water bodies and human settlements having considerable distance from the site as per SWM Rules 2016. The site will be called "Proposed Site" or "Proposed SLF Site". Further Baseline historical data and the available physical and social infrastructure for the Proposed SLF Site is being scrutinized for the gap analysis.

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6. *Historical Imagery of Proposed SLF Site*

38. The following are the details of site surrounding and its distances to the Proposed SLF Site.

Table 9: Historical imagery of the Proposed SLF Site

Year 2010 	**Year 2011** 
Year 2013 	**Year 2014** 
Year 2016 	**Year 2018** 
Year 2019 	**Year 2020** 
Year 2022 	

Source: Consultant

7. *Existing Situation of Proposed SLF Site and its surrounding*

39. The general field observations made during the site visit are as under

- Proposed site does not have basic facilities like water, electricity connection and security gate.
- No construction was found on site during field visit.
- Proposed site has open barren land and does not have clear boundary.

40. The following is the status of infrastructure available at the Proposed SLF Site -

Table 10: Status of Infrastructure at the Proposed SLF Site

No.	Details	Available	Functional	Remarks
1	Electricity Connections	No	No	
2	Water Connection	No	No	
3	Processing Infrastructure	No	No	
4	Boundary Wall	No	No	
5	Office cum Security Cabin	No	No	
6	Gate	No	No	
7	Faecal Sludge Treatment Plant	No	No	
8	Composting Pit	No	No	

Source: Field Survey by Consultant

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E. Design Requirements for Sanitary Landfill Site

I. Population Projections for Urban Local Body

Table 11: Proposed Population for Urban Local Body

EXISTING DETAILS OF POPULATION FOR	Datia					
YEAR	Average Annual Growth Rate	Population	Average Increase	Incremental Increase	Decadel Growth Rate	Percentage Increase / Decade
1971	[illegible]	[illegible]				31.92%
1981	[illegible]	[illegible]	11960	0	28.09%	30.56%
1991	[illegible]	[illegible]	15091	3141	27.02%	28.35%
2001	[illegible]	[illegible]	18278	3187	25.27%	21.18%
2011	[illegible]	[illegible]	17529	-749	19.40%	112.01%
			62848	5579	99.78%	4
Value of "N"		5	4	3	4	28.00% (Geo. rate) r_g (Negative Excluded)
		Average	15712 (Mean) X	1860 (Inc. mean) Y	24.95% (Dec. rate) r_d	
Reference Population P_1		100284				
**As per the past population growth trend the actual population growth rate is found as 24.95% but based upon MoHUA instruction it has been taken as 23%.					23% (Dec. rate) r_d	

METHODS USED FOR POPULATION PROJECTIONS

Formula

1. Arithmetical Increase Method $P_n = P_1 + nX$
2. Incremental Increase Method $P_n = P_1 + nX + n(n+1)Y/2$
3. Geometrical Growth Method $P_n = P_1 \cdot (1 + r_g/100)^n$
4. Decadal Growth Method $P_n = P_1 \cdot (1 + r_d/100)^n$

Where

P_1 is a reference population

n is a number of decade from reference year

N is a no. of decades whose data has been taken in calculation

X is a arithmetical mean

Y is a incremental increase mean

r_d is a decadal average growth ratio

r_g is a geometrical average growth ratio

YEARWISE POPULATION PROJECTIONS BY DIFFERENT METHODS FOR Datia

Year	Value of 'n'	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E1)	**Decadel Growth Considering 27% as per MoHUA (E2)
2012	0.1	101855	102041	102791	102229	102542	102382
2013	0.2	103426	103798	105360	104195	104852	104523
2014	0.3	104998	105556	107993	106182	107213	106710
2015	0.4	106569	107313	110693	108192	109628	108942
2016	0.5	108140	109070	113459	110223	112097	111220
2017	0.6	109711	110827	116295	112278	114621	113547
2018	0.7	111282	112584	119202	114356	117202	115922
2019	0.8	112854	114341	122181	116459	119842	118347
2020	0.9	114425	116099	125235	118586	122541	120822
2021	1.0	115996	117856	128366	120739	125301	123349
2022	1.1	117567	119613	131574	122918	128122	125929
2023	1.2	119138	121370	134863	125124	131008	128564
2024	1.3	120710	123127	138234	127357	133958	131253
2025	1.4	122281	124884	141689	129618	136975	133998
2026	1.5	123852	126642	145230	131908	140060	136801
2027	1.6	125423	128399	148860	134227	143214	139663
2028	1.7	126994	130156	152581	136577	146440	142584
2029	1.8	128566	131913	156395	138958	149737	145566
2030	1.9	130137	133670	160304	141370	153110	148611
2031	2.0	131708	135427	164311	143815	156558	151720
2032	2.1	133279	137185	168418	146294	160084	154893
2033	2.2	134850	138942	172627	148806	163689	158133
2034	2.3	136422	140699	176942	151354	167375	161441
2035	2.4	137993	143456	181365	153938	171145	164818
2036	2.5	139564	144213	185898	156558	174999	168265
2037	2.6	141135	145970	190544	159216	178940	171785
2038	2.7	142706	147728	195307	161914	182970	175376
2039	2.8	144278	149485	200189	164651	187091	179047
2040	2.9	145849	151242	205192	167428	191304	182792
2041	3.0	147420	152999	210321	170247	195612	186615
2042	3.1	148991	154756	215578	173108	200018	190519
2043	3.2	150562	156513	220966	176014	204522	194504
2044	3.3	152134	158271	226489	178965	209128	198572
2045	3.4	153705	160028	232150	181961	213838	202736
2046	3.5	155276	161785	237953	185005	218654	206066
2047	3.6	156847	163542	243901	188097	223578	211295

ADOPTED POPULATION FOR DESIGN FOR Datia

Year	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) (Average of A,B,C)	Actual Decadel Growth Method (E1)	**Decadel Growth Considering 23% as per MoHUA (E2)	Adopted Population for Design (F)
2023	119138	121370	134863	125124	131008	128564	128564
2027	125423	128399	148860	134227	143214	139663	139663
2032	133279	137185	168418	146294	160084	154893	154893
2037	141135	145970	190544	159216	178940	171785	171785
2042	148991	154756	215578	173108	200018	190519	190519
2047	156847	163542	243901	188097	223578	211295	211295

Source: Analysis by the consultant

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

EXISTING DETAILS OF POPULATION FOR		Bhander			
YEAR	Average Annual Growth Rate	Population	Average Increase	Incremental Increase	Decadel Growth Rate	Percentage Increase / Decade
[illegible]			3471		32.93%	35.26%
[illegible]			3857	386	27.17%	30.75%
[illegible]			4272	415	23.42%	26.05%
[illegible]			4532	260	20.02%	21.92%
			16132	1061	103.54%	116.98%
Value of 'N'			4	3	4	4
		Average	4033 (Mean) X	354 (Inc. mean) Y	25.89% (Dec. rate) r_d	29.25% (Geo. rate) r_g (Negative Excluded)
Reference Population P_0		25204				
**As per the past population growth trend the actual population growth rate is found as 25.89% but based upon MoHUA instruction it has been taken as 23%.					23% (Dec. rate) r_d	

METHODS USED FOR POPULATION PROJECTIONS

Formula

1. Arithmetical Increase Method $P_n = P_0 + nX$
2. Incremental Increase Method $P_n = P_0 + nX + n(n+1)Y/2$
3. Geometrical Growth Method $P_n = P_0 (1 + r_g/100)^n$
4. Decadal Growth Method $P_n = P_0 (1 + r_d/100)^n$

Where

P_0 is a reference population
n is a number of decade from reference year
N is a no. of decades whose data has been taken in calculation
X is a arithmetical mean
Y is a incremental increase mean
r_d is a decadal average growth ratio
r_g is a geometrical average growth ratio

YEARWISE POPULATION PROJECTIONS BY DIFFERENT METHODS FOR Bhander

Year	Value of 'n'	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E1)	Decadel Growth (-23%) (E2)
2012	0.1	25607	25643	25859	25703	25791	25731
2013	0.2	26011	26081	26531	26208	26392	26269
2014	0.3	26414	26520	27220	26718	27006	26819
2015	0.4	26817	26959	27928	27235	27635	27369
2016	0.5	27221	27397	28653	27757	28279	27953
2017	0.6	27624	27836	29398	28286	28937	28537
2018	0.7	28027	28275	30162	28821	29611	29134
2019	0.8	28430	28713	30946	29363	30301	29744
2020	0.9	28834	29152	31750	29912	31006	30366
2021	1.0	29237	29591	32575	30468	31728	31001
2022	1.1	29640	30029	33422	31030	32467	31649
2023	1.2	30044	30468	34290	31601	33223	32311
2024	1.3	30447	30907	35181	32178	33997	32987
2025	1.4	30850	31345	36095	32763	34788	33677
2026	1.5	31254	31784	37033	33357	35599	34382
2027	1.6	31657	32223	37996	33959	36428	35101
2028	1.7	32060	32661	38983	34568	37276	35835
2029	1.8	32463	33100	39996	35186	38144	36585
2030	1.9	32867	33539	41036	35814	39032	37350
2031	2.0	33270	33977	42102	36450	39941	38131
2032	2.1	33673	34416	43196	37095	40871	38929
2033	2.2	34077	34855	44319	37750	41823	39743
2034	2.3	34480	35293	45470	38414	42797	40574
2035	2.4	34883	35732	46652	39089	43794	41423
2036	2.5	35287	36171	47864	39774	44813	42289
2037	2.6	35690	36609	49108	40469	45857	43174
2038	2.7	36093	37048	50384	41175	46925	44077
2039	2.8	36496	37487	51693	41892	48018	44999
2040	2.9	36900	37925	53037	42621	49136	45940
2041	3.0	37303	38364	54415	43361	50280	46901
2042	3.1	37706	38803	55829	44113	51451	47882
2043	3.2	38110	39241	57280	44877	52649	48884
2044	3.3	38513	39680	58768	45654	53875	49906
2045	3.4	38916	40119	60295	46443	55130	50950
2046	3.5	39320	40557	61862	47246	56414	52016
2047	3.6	39723	40996	63470	48063	57727	53104

ADOPTED POPULATION FOR DESIGN FOR Bhander

Year	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E)	**Decadel Growth Considering 23% as per MoHUA (E2)	Adopted Population for Design (F)
2023	30044	30468	34290	31601	33223	32311	32311
2027	31657	32223	37996	33959	36428	35101	35101
2032	33673	34416	43196	37095	40871	38929	38929
2037	35690	36609	49108	40469	45857	43174	43174
2042	37706	38803	55829	44113	51451	47882	47882
2047	39723	40996	63470	48063	57727	53104	53104

Source: Analysis by the consultant

EXISTING DETAILS OF POPULATION FOR Indergarh

YEAR	Average Annual Growth Rate	Population	Average Increase	Incremental Increase	Decadel Growth Rate	Percentage Increase / Decade
NA	0	0				
NA	NA	0	0	0	NA	NA
1991	NA	0	0	0	NA	NA
2001	2.91%	5482	5482	0	18.22%	60.18%
2011	4.34%	8448	8448	2966	46.72%	57.87%
			13930	2966	94.94%	118.02%
Value of 'N'		1	2	1	2	2
		Average	6965 (Mean) X	2966 (Inc. mean) Y	47.47% (Dec. rate) r_a	59.01% (Geo. rate) r_g (Negative Excluded)
Reference Population P_0		23045				
					23% (Dec. rate)	
					r_a	

**As per the past population growth trend the actual population growth rate is found as 47.47% but based upon MoHUA Instruction it has been taken as 23%.

METHODS USED FOR POPULATION PROJECTIONS

Formula

1. Arithmetical Increase Method $P_n = P_0 + nX$
2. Incremental Increase Method $P_n = P_0 + nX + n(n+1)Y/2$
3. Geometrical Growth Method $P_n = P_0 \cdot (1 + r_g/100)^n$
4. Decadal Growth Method $P_n = P_0 \cdot (1 + r_a/100)^n$

Where

P_0 is a reference population
n is a number of decade from reference year
N is a no. of decades whose data has been taken in calculation
X is a arithmetical mean
Y is a incremental increase mean
r_a is a decadal average growth ratio
r_g is a geometrical average growth ratio

YEARWISE POPULATION PROJECTIONS BY DIFFERENT METHODS FOR Indergarh

Year	Value of 'n'	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E1)	Decadel Growth (-23%) (E2)
2012	0.1	23742	24038	24139	23973	23958	23527
2013	0.2	24438	25031	25285	24918	24907	24019
2014	0.3	25135	26024	26485	25881	25893	24522
2015	0.4	25831	27017	27742	26863	26919	25034
2016	0.5	26528	28011	29059	27866	27985	25558
2017	0.6	27224	29004	30439	28889	29094	26093
2018	0.7	27921	29997	31884	29934	30246	26639
2019	0.8	28617	30990	33397	31001	31444	27196
2020	0.9	29314	31983	34983	32093	32689	27765
2021	1.0	30010	32976	36644	33210	33984	28345
2022	1.1	30707	33969	38383	34353	35330	28938
2023	1.2	31403	34962	40205	35523	36730	29544
2024	1.3	32100	35955	42114	36723	38184	30162
2025	1.4	32796	36948	44113	37952	39697	30792
2026	1.5	33493	37942	46207	39214	41269	31437
2027	1.6	34189	38935	48401	40508	42904	32094
2028	1.7	34886	39928	50698	41837	44603	32765
2029	1.8	35582	40921	53105	43203	46370	33451
2030	1.9	36279	41914	55626	44606	48207	34150
2031	2.0	36975	42907	58266	46049	50116	34865
2032	2.1	37672	43900	61032	47535	52101	35594
2033	2.2	38368	44893	63930	49064	54165	36339
2034	2.3	39065	45886	66965	50639	56310	37099
2035	2.4	39761	46879	70143	52261	58541	37875
2036	2.5	40458	47873	73473	53935	60859	38667
2037	2.6	41154	48866	76961	55660	63270	39476
2038	2.7	41851	49859	80615	57442	65776	40301
2039	2.8	42547	50852	84441	59280	68381	41144
2040	2.9	43244	51845	88450	61180	71090	42005
2041	3.0	43940	52838	92649	63142	73906	42884
2042	3.1	44637	53831	97047	65172	76833	43781
2043	3.2	45333	54824	101654	67270	79876	44696
2044	3.3	46030	55817	106480	69442	83040	45631
2045	3.4	46726	56810	111534	71690	86329	46586
2046	3.5	47423	57804	116829	74019	89749	47560
2047	3.6	48119	58797	122375	76430	93303	48555

ADOPTED POPULATION FOR DESIGN FOR Indergarh

Year	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E)	**Decadel Growth Considering 23% as per MoHUA (E2)	Adopted Population for Design (F)
2023	31403	34962	40205	35523	36730	29544	29544
2027	34189	38935	48401	40508	42904	32094	32094
2032	37672	43900	61032	47535	52101	35594	35594
2037	41154	48866	76961	55660	63270	39476	39476
2042	44637	53831	97047	65172	76833	43781	43781
2047	48119	58797	122375	76430	93303	48555	48555

Source: Analysis by the consultant

MaRS in joint venture with PIVOTAL PLANNING SERVICES

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कार्यालय अधीक्षक
नगर पालिका परिषद

EXISTING DETAILS OF POPULATION FOR		Badoni			
YEAR	Average Annual Growth Rate	Population	Average Increase	Incremental Increase	Decadel Growth Rate	Percentage Increase / Decade
NA	0	0				
NA	NA	0	0	0	NA	NA
1991	NA	0	0	0	NA	NA
2001	1.96%	13574	1335	0	22.58%	25.02%
2011	1.47%	15213	1639	-96	17.47%	18.90%
			3374	-96	40.05%	43.92%
Value of 'N'		3	2	1	2	2
		Average	1687 (Mean) X	-96 (Inc. mean) Y	20.02% (Dec. rate) r_d	21.96% (Geo. rate) r_g (Negative Excluded)
Reference Population P_1		10309				
					23% (Dec. rate) r_d	

** As per the past population growth trend the actual population growth rate is found as 20.02% but based upon MoHUA instruction it has been taken as 23%.

METHODS USED FOR POPULATION PROJECTIONS

Formula

1. Arithmetical Increase Method $P_n = P_1 + nX$
2. Incremental Increase Method $P_n = P_1 + nX + n(n+1)Y/2$
3. Geometrical Growth Method $P_n = P_1 \cdot (1+ r_g/100)^n$
4. Decadal Growth Method $P_n = P_1 \cdot (1+ r_d/100)^n$

Where

P_1 is a reference population

n is a number of decade from reference year

N is a no. of decades whose data has been taken in calculation

X is a arithmetical mean

Y is a incremental increase mean

r_d is a decadal average growth ratio

r_g is a geometrical average growth ratio

YEARWISE POPULATION PROJECTIONS BY DIFFERENT METHODS FOR Badoni

Year	Value of 'n'	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E1)	Decadel Growth (-23%) (E2)
2012	0.1	10478	10468	10516	10487	10499	10525
2013	0.2	10646	10627	10727	10667	10692	10745
2014	0.3	10815	10786	10942	10848	10889	10970
2015	0.4	10984	10945	11161	11030	11090	11199
2016	0.5	11153	11105	11385	11214	11294	11433
2017	0.6	11321	11264	11613	11399	11502	11672
2018	0.7	11490	11423	11846	11586	11714	11917
2019	0.8	11659	11582	12084	11775	11930	12166
2020	0.9	11827	11741	12326	11965	12149	12420
2021	1.0	11996	11900	12573	12156	12373	12680
2022	1.1	12165	12059	12825	12350	12601	12945
2023	1.2	12333	12218	13082	12544	12833	13216
2024	1.3	12502	12377	13345	12741	13070	13493
2025	1.4	12671	12536	13612	12940	13310	13775
2026	1.5	12840	12696	13885	13140	13555	14063
2027	1.6	13008	12855	14164	13342	13805	14357
2028	1.7	13177	13014	14448	13546	14059	14657
2029	1.8	13346	13173	14737	13752	14318	14964
2030	1.9	13514	13332	15033	13960	14582	15277
2031	2.0	13683	13491	15334	14169	14851	15596
2032	2.1	13852	13650	15642	14381	15124	15923
2033	2.2	14020	13809	15955	14595	15403	16256
2034	2.3	14189	13968	16275	14811	15686	16596
2035	2.4	14358	14127	16602	15029	15975	16943
2036	2.5	14527	14287	16934	15249	16270	17297
2037	2.6	14695	14446	17274	15472	16569	17659
2038	2.7	14864	14605	17620	15696	16874	18029
2039	2.8	15033	14764	17974	15924	17185	18406
2040	2.9	15201	14923	18334	16153	17502	18791
2041	3.0	15370	15082	18702	16385	17824	19184
2042	3.1	15539	15241	19077	16619	18152	19585
2043	3.2	15707	15400	19459	16855	18487	19995
2044	3.3	15876	15559	19849	17095	18827	20413
2045	3.4	16045	15718	20247	17337	19174	20840
2046	3.5	16214	15878	20653	17582	19527	21276
2047	3.6	16382	16037	21068	17829	19887	21721

ADOPTED POPULATION FOR DESIGN FOR Badoni

Year	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E)	**Decadel Growth Considering 23% as per MoHUA (E2)	Adopted Population for Design (F)
2023	12333	12218	13082	12544	12833	13216	13216
2027	13008	12855	14164	13342	13805	14357	14357
2032	13852	13650	15642	14381	15124	15923	15923
2037	14695	14446	17274	15472	16569	17659	17659
2042	15539	15241	19077	16619	18152	19585	19585
2047	16382	16037	21068	17829	19887	21721	21721

Source: Analysis by the consultant

EXISTING DETAILS OF POPULATION FOR		Pichhore			
YEAR	Average Annual Growth Rate	Population	Average Increase	Incremental Increase	Decadel Growth Rate	Percentage Increase / Decade
			2498		41.06%	49.53%
			3921	1423	42.76%	52.08%
			3429	-492	26.52%	29.92%
			3236	-193	19.86%	21.75%
			13084	738	130.19%	153.15%
Value of 'N'		4	3	3	4	4
		Average	3271 (Mean) X	246 (Inc. mean) Y	32.55% (Dec. rate) r_d	38.29% (Geo. rate) r_g (Negative Excluded)
Reference Population P_1		18127				
					23% (Dec. rate) r_d	

**As per the past population growth trend the actual population growth rate is found as 32.55% but based upon MoHUA instruction it has been taken as 23%.

METHODS USED FOR POPULATION PROJECTIONS

Formula

1. Arithmetical Increase Method $P_n = P_1 + nX$
2. Incremental Increase Method $P_n = P_1 + nX + n(n+1)Y/2$
3. Geometrical Growth Method $P_n = P_1 \cdot (1 + r_g/100)^n$
4. Decadal Growth Method $P_n = P_1 \cdot (1 + r_d/100)^n$

Where

P_1 is a reference population
n is a number of decade from reference year
N is a no. of decades whose data has been taken in calculation
X is a arithmetical mean
Y is a incremental increase mean
r_d is a decadal average growth ratio
r_g is a geometrical average growth ratio

YEARWISE POPULATION PROJECTIONS BY DIFFERENT METHODS FOR Pichhore

Year	Value of 'n'	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E1)	Decadel Growth (-23%) (E2)
2012	0.1	18454	18479	18724	18552	18645	18506
2013	0.2	18781	18830	19341	18984	19178	18893
2014	0.3	19108	19182	19979	19423	19726	19288
2015	0.4	19435	19534	20637	19869	20290	19692
2016	0.5	19763	19886	21317	20322	20869	20104
2017	0.6	20090	20237	22020	20782	21466	20524
2018	0.7	20417	20589	22745	21250	22079	20954
2019	0.8	20744	20941	23495	21727	22710	21392
2020	0.9	21071	21292	24269	22211	23359	21839
2021	1.0	21398	21644	25069	22704	24027	22296
2022	1.1	21725	21996	25895	23205	24713	22763
2023	1.2	22052	22347	26748	23716	25420	23239
2024	1.3	22379	22699	27629	24236	26146	23725
2025	1.4	22706	23051	28540	24766	26893	24221
2026	1.5	23034	23403	29480	25306	27662	24728
2027	1.6	23361	23754	30452	25856	28452	25245
2028	1.7	23688	24106	31455	26416	29266	25773
2029	1.8	24015	24458	32492	26988	30102	26312
2030	1.9	24342	24809	33562	27571	30962	26862
2031	2.0	24669	25161	34668	28166	31847	27424
2032	2.1	24996	25513	35811	28773	32757	27998
2033	2.2	25323	25864	36991	29393	33693	28584
2034	2.3	25650	26216	38210	30025	34656	29182
2035	2.4	25977	26568	39469	30671	35646	29792
2036	2.5	26305	26920	40770	31332	36665	30415
2037	2.6	26632	27271	42113	32005	37713	31051
2038	2.7	26959	27623	43501	32694	38791	31701
2039	2.8	27286	27975	44934	33398	39899	32364
2040	2.9	27613	28326	46415	34118	41040	33041
2041	3.0	27940	28678	47945	34854	42212	33732
2042	3.1	28267	29030	49524	35607	43419	34438
2043	3.2	28594	29381	51156	36377	44659	35158
2044	3.3	28921	29733	52842	37165	45936	35893
2045	3.4	29248	30085	54583	37972	47248	36644
2046	3.5	29576	30437	56382	38798	48599	37411
2047	3.6	29903	30788	58240	39644	49988	38193

ADOPTED POPULATION FOR DESIGN FOR Pichhore

Year	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E)	**Decadel Growth Considering 23% as per MoHUA (E2)	Adopted Population for Design (E)
2023	22052	22347	26748	23716	25420	23239	23239
2027	23361	23754	30452	25856	28452	25245	25245
2032	24996	25513	35811	28773	32757	27998	27998
2037	26632	27271	42113	32005	37713	31051	31051
2042	28267	29030	49524	35607	43419	34438	34438
2047	29903	30788	58240	39644	49988	38193	38193

Source: Analysis by the consultant

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कार्यालय अधीक्षक
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EXISTING DETAILS OF POPULATION FOR		Bhitarwar			
YEAR	Average Annual Growth Rate	Population	Average Increase	Incremental Increase	Decadel Growth Rate	Percentage Increase / Decade
NA	0	0				
NA	NA	0	0	0	NA	NA
1991	NA	0	0	0	NA	NA
2001	[illegible]	[illegible]	5016	0	40.65%	48.95%
2011	[illegible]	[illegible]	3832	-1184	22.65%	25.10%
			8848	-1184	63.30%	74.05%
Value of 'N'		1	2	1	2	2
		Average	4424 (Mean) X	-1184 (Inc. mean) Y	31.65% (Dec. rate) r_d	37.03% (Geo. rate) r_g (Negative Excluded)
Reference Population P_1		19096				
					23%	
					(Dec. rate)	
					r_d	

**As per the past population growth trend the actual population growth rate is found as 31.65% but based upon MoHUA instruction it has been taken as 23%.

METHODS USED FOR POPULATION PROJECTIONS

Formula

1. Arithmetical Increase Method $P_n = P_1 + nX$
2. Incremental Increase Method $P_n = P_1 + nX + n(n+1)Y/2$
3. Geometrical Growth Method $P_n = P_1 \cdot (1 + r_g/100)^n$
4. Decadal Growth Method $P_n = P_1 \cdot (1 + r_d/100)^n$

Where

P_1 is a reference population
n is a number of decade from reference year
N is a no. of decades whose data has been taken in calculation
X is a arithmetical mean
Y is a incremental increase mean
r_d is a decadal average growth ratio
r_g is a geometrical average growth ratio

YEARWISE POPULATION PROJECTIONS BY DIFFERENT METHODS FOR Bhitarwar

Year	Value of 'n'	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E1)	Decadel Growth (-23%) (E2)
2012	0.1	19538	19420	19707	19555	19628	19495
2013	0.2	19981	19744	20338	20021	20176	19903
2014	0.3	20423	20068	20989	20493	20738	20329
2015	0.4	20866	20392	21660	20973	21316	20745
2016	0.5	21308	20716	22353	21459	21910	21178
2017	0.6	21750	21040	23069	21953	22521	21621
2018	0.7	22193	21364	23807	22455	23149	22074
2019	0.8	22635	21688	24569	22964	23794	22535
2020	0.9	23078	22012	25355	23482	24458	23007
2021	1.0	23520	22336	26166	24007	25140	23488
2022	1.1	23962	22660	27004	24542	25840	23979
2023	1.2	24405	22984	27868	25086	26561	24481
2024	1.3	24847	23308	28760	25638	27301	24993
2025	1.4	25290	23632	29680	26201	28062	25516
2026	1.5	25732	23956	30630	26773	28845	26050
2027	1.6	26174	24280	31610	27355	29649	26594
2028	1.7	26617	24604	32622	27948	30475	27151
2029	1.8	27059	24928	33665	28551	31325	27719
2030	1.9	27502	25252	34743	29166	32198	28298
2031	2.0	27944	25576	35855	29792	33096	28890
2032	2.1	28386	25900	37002	30429	34018	29495
2033	2.2	28829	26224	38186	31080	34967	30112
2034	2.3	29271	26548	39408	31742	35942	30741
2035	2.4	29714	26872	40669	32418	36944	31384
2036	2.5	30156	27196	41971	33108	37974	32041
2037	2.6	30598	27520	43314	33811	39032	32711
2038	2.7	31041	27844	44700	34528	40120	33395
2039	2.8	31483	28168	46130	35260	41239	34094
2040	2.9	31926	28492	47607	36008	42388	34807
2041	3.0	32368	28816	49130	36771	43570	35535
2042	3.1	32810	29140	50702	37551	44785	36278
2043	3.2	33253	29464	52325	38347	46033	37037
2044	3.3	33695	29788	53999	39161	47317	37812
2045	3.4	34138	30112	55727	39992	48636	38603
2046	3.5	34580	30436	57510	40842	49992	39410
2047	3.6	35022	30760	59351	41711	51385	40235

ADOPTED POPULATION FOR DESIGN FOR Bhitarwar

Year	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E)	**Decadel Growth Considering 23% as per MoHUA (E2)	Adopted value for Design (F)
2023	24405	22984	27868	25086	26561	24481	24481
2027	26174	24280	31610	27355	29649	26594	26594
2032	28386	25900	37002	30429	34018	29495	29495
2037	30598	27520	43314	33811	39032	32711	32711
2042	32810	29140	50702	37551	44785	36278	36278
2047	35022	30760	59351	41711	51385	40235	40235

Source: Analysis by the consultant

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EXISTING DETAILS OF POPULATION FOR			Dabra		
YEAR	Average Annual Growth Rate	Population	Average Increase	Incremental Increase	Decadel Growth Rate	Percentage Increase / Decade
1971	-	-				
1981	-	-	11991	0	45.44%	55.95%
1991	-	-	13167	1176	33.77%	39.40%
2001	-	-	10081	-3083	19.79%	21.65%
2011	-	-	4605	-5479	7.84%	8.13%
			39847	-7386	106.85%	125.12%
Value of 'N'		5	4	3	4	4
		Average	9962 (Mean) X	-2462 (Inc. mean) Y	26.71% (Dec. rate) r_d	31.28% (Geo. rate) r_g (Negative Excluded)
Reference Population P_1		61277				
**As per the past population growth trend the actual population growth rate is found as 26.71% but based upon MoHUA instruction it has been taken as 23%.					23% (Dec. rate) r_d	

METHODS USED FOR POPULATION PROJECTIONS

Formula

1. Arithmetical Increase Method $P_n = P_1 + nX$
2. Incremental Increase Method $P_n = P_1 + nX + n(n+1)Y/2$
3. Geometrical Growth Method $P_n = P_1 \cdot (1 + r_g/100)^n$
4. Decadal Growth Method $P_n = P_1 \cdot (1 + r_d/100)^n$

Where

P_1 is a reference population
n is a number of decade from reference year
N is a no. of decades whose data has been taken in calculation
X is a arithmetical mean
Y is a incremental increase mean
r_d is a decadal average growth ratio
r_g is a geometrical average growth ratio

YEARWISE POPULATION PROJECTIONS BY DIFFERENT METHODS FOR Dabra

Year	Value of 'n'	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E1)	Decadel Growth (-23%) (E2)
2012	0.1	62273	62027	62968	62423	62745	62559
2013	0.2	63269	62777	64705	63584	64248	63867
2014	0.3	64266	63527	66490	64761	65787	65203
2015	0.4	65262	64277	68325	65955	67363	66567
2016	0.5	66258	65027	70210	67165	68977	67959
2017	0.6	67254	65777	72147	68393	70630	69381
2018	0.7	68250	66527	74137	69638	72322	70832
2019	0.8	69246	67277	76183	70902	74054	72314
2020	0.9	70243	68027	78285	72185	75828	73826
2021	1.0	71239	68777	80445	73487	77645	75371
2022	1.1	72235	69527	82664	74809	79505	76947
2023	1.2	73231	70277	84945	76151	81410	78557
2024	1.3	74227	71027	87289	77514	83360	80200
2025	1.4	75223	71777	89697	78899	85357	81878
2026	1.5	76220	72527	92172	80306	87402	83590
2027	1.6	77216	73277	94715	81736	89496	85339
2028	1.7	78212	74027	97328	83189	91640	87124
2029	1.8	79208	74777	100013	84666	93835	88946
2030	1.9	80204	75527	102773	86168	96083	90807
2031	2.0	81201	76277	105608	87695	98385	92706
2032	2.1	82197	77026	108522	89248	100742	94645
2033	2.2	83193	77776	111516	90828	103155	96625
2034	2.3	84189	78526	114593	92436	105626	98646
2035	2.4	85185	79276	117755	94072	108157	100709
2036	2.5	86181	80026	121004	95737	110748	102816
2037	2.6	87178	80776	124342	97432	113401	104967
2038	2.7	88174	81526	127773	99158	116118	107162
2039	2.8	89170	82276	131298	100915	118900	109404
2040	2.9	90166	83026	134921	102704	121748	111692
2041	3.0	91162	83776	138643	104527	124665	114028
2042	3.1	92158	84526	142469	106384	127651	116413
2043	3.2	93155	85276	146399	108277	130709	118849
2044	3.3	94151	86026	150439	110205	133841	121335
2045	3.4	95147	86776	154589	112171	137047	123872
2046	3.5	96143	87526	158854	114174	140330	126464
2047	3.6	97139	88276	163237	116217	143692	129109

ADOPTED POPULATION FOR DESIGN FOR Dabra

Year	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E)	**Decadel Growth Considering 23% as per MoHUA (E2)	Adopted Population for Design (F)
2023	73231	70277	84945	76151	81410	78557	78553
2027	77216	73277	94715	81736	89496	85339	85339
2032	82197	77026	108522	89248	100742	94645	94645
2037	87178	80776	124342	97432	113401	104967	104967
2042	92158	84526	142469	106384	127651	116413	116413
2047	97139	88276	163237	116217	143692	129109	129109

Source: Analysis by the consultant

EXISTING DETAILS OF POPULATION FOR			Daboh		
YEAR	Average Annual Growth Rate	Population	Average Increase	Incremental Increase	Decadel Growth Rate	Percentage Increase / Decade
NA	0	0				
1981	NA		0	0	NA	NA
1991			4220	0	50.50%	63.67%
2001			5049	829	38.95%	46.54%
2011			2200	-2849	13.05%	13.84%
			11469	-2020	102.50%	124.05%
Value of 'N'		3	3	2	3	3
		Average	3823 (Mean) X	-1010 (Inc. mean) Y	34.17% (Dec. rate) r_d	41.35% (Geo. rate) r_c (Negative Excluded)
Reference Population P_1		18097				
**As per the past population growth trend the actual population growth rate is found as 34.17% but based upon MoHUA instruction it has been taken as 23%.					23% (Dec. rate) r_d	

METHODS USED FOR POPULATION PROJECTIONS

Formula

1. Arithmetical Increase Method $P_n = P_1 + nX$
2. Incremental Increase Method $P_n = P_1 + nX + n(n+1)Y/2$
3. Geometrical Growth Method $P_n = P_1 . (1+ r_c/100)^n$
4. Decadal Growth Method $P_n = P_1 . (1+ r_d/100)^n$

Where

P_1 is a reference population
n is a number of decade from reference year
N is a no. of decades whose data has been taken in calculation
X is a arithmetical mean
Y is a incremental increase mean
r_d is a decadal average growth ratio
r_c is a geometrical average growth ratio

YEARWISE POPULATION PROJECTIONS BY DIFFERENT METHODS FOR Dabok

Year	Value of 'n'	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E1)	Decadel Growth (-23%) (E2)
2012	0.1	18479	18378	18734	18530	18637	18476
2013	0.2	18862	18660	19394	18972	19193	18862
2014	0.3	19244	18941	20077	19421	19765	19257
2015	0.4	19626	19222	20784	19877	20355	19659
2016	0.5	20009	19504	21516	20343	20963	20071
2017	0.6	20391	19785	22273	20816	21587	20490
2018	0.7	20773	20066	23058	21299	22231	20919
2019	0.8	21155	20347	23870	21791	22894	21357
2020	0.9	21538	20629	24710	22292	23577	21803
2021	1.0	21920	20910	25580	22803	24280	22259
2022	1.1	22302	21191	26481	23325	25004	22725
2023	1.2	22685	21473	27413	23857	25750	23200
2024	1.3	23067	21754	28379	24400	26518	23686
2025	1.4	23449	22035	29378	24954	27309	24181
2026	1.5	23832	22317	30413	25521	28124	24687
2027	1.6	24214	22598	31483	26098	28963	25203
2028	1.7	24596	22879	32592	26689	29827	25730
2029	1.8	24978	23160	33740	27293	30716	26269
2030	1.9	25361	23442	34928	27910	31633	26818
2031	2.0	25743	23723	36158	28541	32576	27379
2032	2.1	26125	24004	37431	29187	33548	27952
2033	2.2	26508	24286	38749	29848	34549	28536
2034	2.3	26890	24567	40113	30523	35579	29133
2035	2.4	27272	24848	41526	31215	36640	29741
2036	2.5	27655	25130	42988	31924	37733	30365
2037	2.6	28037	25411	44502	32650	38859	31000
2038	2.7	28419	25692	46069	33393	40018	31648
2039	2.8	28801	25973	47691	34155	41211	32310
2040	2.9	29184	26255	49371	34937	42441	32986
2041	3.0	29566	26536	51109	35737	43707	33676
2042	3.1	29948	26817	52909	36558	45010	34381
2043	3.2	30331	27099	54772	37401	46353	35100
2044	3.3	30713	27380	56701	38265	47735	35834
2045	3.4	31095	27661	58697	39151	49159	36583
2046	3.5	31478	27943	60764	40062	50626	37349
2047	3.6	31860	28224	62904	40996	52136	38130

ADOPTED POPULATION FOR DESIGN FOR Dabok

Year	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E)	**Decadel Growth Considering 23% as per MoHUA (E2)	Adopted Population for Design (F)
2023	22685	21473	27413	23857	25750	23200	23200
2027	24214	22598	31483	26098	28963	25203	25203
2032	26125	24004	37431	29187	33548	27952	27952
2037	28037	25411	44502	32650	38859	31000	31000
2042	29948	26817	52909	36558	45010	34381	34381
2047	31860	28224	62904	40996	52136	38130	38130

Source: Analysis by the consultant

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कार्यालय अधीक्षक
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EXISTING DETAILS OF POPULATION FOR		Alampur			
YEAR	Average Annual Growth Rate	Population	Average Increase	Incremental Increase	Decadel Growth Rate	Percentage Increase / Decade
NA	0	0				
1981	NA	7171	0	0	NA	NA
1991	3.42%	8688	1517	0	22.09%	24.42%
2001	3.13%	10310	1622	105	19.24%	20.99%
2011	2.77%	12646	1336	-286	13.45%	14.29%
			4475	-181	54.77%	59.70%
Value of 'N'		1	3	2	3	3
		Average	1492 (Mean) X	-91 (Inc. mean) Y	18.26% (Dec. rate) r_d	19.90% (Geo. rate) r_g (Negative Excluded)
Reference Population P_1		10686				
					23% (Dec. rate) r_d	

**As per the past population growth trend the actual population growth rate is found as 18.26% but based upon MoHUA instruction it has been taken as 23%.

METHODS USED FOR POPULATION PROJECTIONS

Formula

1. Arithmetical Increase Method $P_n = P_1 + nX$
2. Incremental Increase Method $P_n = P_1 + nX + n(n+1)Y/2$
3. Geometrical Growth Method $P_n = P_1 \cdot (1 + r_g/100)^n$
4. Decadal Growth Method $P_n = P_1 \cdot (1 + r_d/100)^n$

Where

P_1 is a reference population
n is a number of decade from reference year
N is a no. of decades whose data has been taken in calculation
X is a arithmetical mean
Y is a incremental increase mean
r_d is a decadal average growth ratio
r_g is a geometrical average growth ratio

YEARWISE POPULATION PROJECTIONS BY DIFFERENT METHODS FOR Alampur

Year	Value of 'n'	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E1)	Decadel Growth (-23%) (E2)
2012	0.1	10835	10826	10892	10848	10867	10910
2013	0.2	10984	10966	11081	11010	11050	11138
2014	0.3	11134	11106	11284	11175	11237	11371
2015	0.4	11283	11246	11491	11340	11427	11609
2016	0.5	11432	11387	11701	11507	11621	11851
2017	0.6	11581	11527	11915	11674	11817	12099
2018	0.7	11730	11667	12134	11844	12017	12352
2019	0.8	11879	11807	12356	12014	12220	12611
2020	0.9	12029	11947	12582	12186	12427	12874
2021	1.0	12178	12087	12813	12359	12637	13144
2022	1.1	12327	12227	13047	12534	12851	13419
2023	1.2	12476	12367	13286	12710	13068	13699
2024	1.3	12625	12508	13530	12888	13289	13986
2025	1.4	12774	12648	13777	13066	13514	14278
2026	1.5	12924	12788	14030	13247	13742	14577
2027	1.6	13073	12928	14287	13429	13975	14882
2028	1.7	13222	13068	14548	13613	14211	15193
2029	1.8	13371	13208	14815	13798	14451	15511
2030	1.9	13520	13348	15086	13985	14696	15836
2031	2.0	13669	13488	15362	14173	14944	16167
2032	2.1	13819	13628	15644	14364	15197	16505
2033	2.2	13968	13769	15930	14556	15454	16850
2034	2.3	14117	13909	16222	14749	15715	17203
2035	2.4	14266	14049	16519	14945	15981	17563
2036	2.5	14415	14189	16822	15142	16251	17930
2037	2.6	14564	14329	17130	15341	16526	18305
2038	2.7	14714	14469	17443	15542	16806	18688
2039	2.8	14863	14609	17763	15745	17090	19079
2040	2.9	15012	14749	18088	15950	17379	19478
2041	3.0	15161	14890	18420	16157	17673	19885
2042	3.1	15310	15030	18757	16366	17972	20301
2043	3.2	15459	15170	19100	16576	18276	20726
2044	3.3	15609	15310	19450	16790	18585	21159
2045	3.4	15758	15450	19807	17005	18899	21602
2046	3.5	15907	15590	20169	17222	19219	22054
2047	3.6	16056	15730	20539	17442	19544	22515

ADOPTED POPULATION FOR DESIGN FOR Alampur

Year	By Arithmetical Increase Method (A)	By Incremental Increase Method (B)	By Geometrical Method (C)	Average (D) Average of A,B,C	By Decadel Growth Method (E)	**Decadel Growth Considering 23% as per MoHUA (E2)	Adopted Population for Design (F)
2023	12476	12367	13286	12710	13068	13699	13699
2027	13073	12928	14287	13429	13975	14882	14882
2032	13819	13628	15644	14364	15197	16505	16505
2037	14564	14329	17130	15341	16526	18305	18305
2042	15310	15030	18757	16366	17972	20301	20301
2047	16056	15730	20539	17442	19544	22515	22515

Source: Analysis by the consultant

2. *Calculation of Inert Quantity and Capacity of SLF*

41.

Table 12: Calculation of Inert Quantity and Capacity of SLF

CALCULATION OF CAPACITY FOR SLF

Nos.	Name of ULB covered	Details	Unit	2023	2027	2032	2037	2042	2047
1	Datia	Projected Population	Nos.	128564	139663	154893	171785	190519	211295
		Population % Share to Total	%	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%
		Projected Waste Generation	TPD	**57.90**	**62.80**	**69.70**	**77.30**	**85.70**	**95.10**
2	Seondha	Projected Population	Nos.	13216	14357	15923	17659	19585	21721
		Population % Share to Total	%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
		Projected Waste Generation	TPD	**4.00**	**4.30**	**4.80**	**5.30**	**5.90**	**6.50**
3	Bhander	Projected Population	Nos.	32311	35101	38929	43174	47882	53104
		Population % Share to Total	%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
		Projected Waste Generation	TPD	**9.70**	**10.50**	**11.70**	**13.00**	**14.40**	**15.90**
4	Indergarh	Projected Population	Nos.	29544	32094	35594	39476	43781	48555
		Population % Share to Total	%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
		Projected Waste Generation	TPD	**8.90**	**9.60**	**10.70**	**11.80**	**13.10**	**14.60**
5	Alampur	Projected Population	Nos.	13699	14882	16505	18305	20301	22515
		Population % Share to Total	%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
		Projected Waste Generation	TPD	**4.10**	**4.50**	**5.00**	**5.50**	**6.10**	**6.80**
6	Daboh	Projected Population	Nos.	23200	25203	27952	31000	34381	38130
		Population % Share to Total	%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
		Projected Waste Generation	TPD	**7.00**	**7.60**	**8.40**	**9.30**	**10.30**	**11.40**
7	Bhitarwar	Projected Population	Nos.	24481	26594	29495	32711	36278	40235
		Population % Share to Total	%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
		Projected Waste Generation	TPD	**7.30**	**8.00**	**8.80**	**9.80**	**10.90**	**12.10**
8	Debra	Projected Population	Nos.	78557	85339	94645	104967	116413	129109
		Population % Share to Total	%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
		Projected Waste Generation	TPD	**23.60**	**25.60**	**28.40**	**47.20**	**52.40**	**58.10**
9	Pichhore	Projected Population	Nos.	23239	25245	27998	31051	34438	38193
		Population % Share to Total	%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
		Projected Waste Generation	TPD	**7.00**	**7.60**	**8.40**	**9.30**	**10.30**	**11.50**
TOTAL		Projected Population	Nos.	366811	398478	441934	490128	543578	602857
		Projected Waste Generation	TPD	**129.50**	**140.50**	**155.90**	**188.50**	**209.10**	**232.00**
INERT GENERATION		**Inert Disposal Req @ 20%**	TPD	**25.90**	**28.10**	**31.20**	**37.70**	**41.80**	**46.40**
		Average Inert Disposal Req (2023-27)	TPD	**NA**	**27.00**	**29.65**	**34.45**	**39.75**	**44.10**
		Total Capacity Req. (with Avg.)	MT	**NA**	**49,275.00**	**54,111.25**	**62,871.25**	**72,543.75**	**80,482.50**
		Capacity Req. For Every Five Year (Density=0.9 Ton/CUM)	CuM	NA	54750.00	60124.00	69857.00	80604.00	89425.00

It is Proposed to Construct One Cell for a period of 5 Years. The same has been considered for designing the SLF.

Source: Consultant

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42. The following is the summary of quantity of daily Waste Generation and daily inert to be disposed in landfill from each participating Urban Local Body.

Table 13: Summary of quantity of daily Waste Generation and daily inert Generation

Nos.	Name of ULB covered	Projected Population for 2026	Projected Waste generation for 2026 (IN TPD)	Projected Inert for 2026 (IN TPD)
1	Datia	136801	61.60	12.31
2	Bhander	34382	10.30	2.06
3	Indergarh	31437	9.40	1.89
4	Badoni	14063	4.20	0.84
5	Pichhore	24728	7.40	1.48
6	Bhitarwar	26050	7.80	1.56
7	Dabra	83590	25.10	5.02
8	Daboh	24687	7.40	1.48
9	Alampur	14577	4.40	0.87
Total		**390315**	**137.6**	**27.5**

Source: Consultant

3. *Phasing of Landfill Site Development*

43. Phase 1 Development- A new landfill cell is proposed for Phase-1 which can accommodate **54,750.00** m^3 volume of inert waste including cover material. The preliminary design and capacity are done in the following table.

Table 14: SLF for Phase-1

No.	Type of Landfill cell	Dimension	Capacity (m^3)	Area covered on ground (m^2)
1.	As per Topography	As per Topography	54,750.00	11,664.00
		Total	**54,750.00**	**11,664.00**

44. Phase 2 Development- A new landfill cell is proposed for Phase-2 which can accommodate **60,124.00** m^3 volume of inert waste. The preliminary design and capacity are done in the following table.

Table 15: SLF for Phase-2

No.	Type of Landfill cell	Dimension	Capacity (m^3)	Area covered on ground (m^2)
1	As per Topography	As per Topography	60,124.00	12,731.62
		Total	**60,124.00**	**12,731.62**

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45. Phase 3 Development- A new landfill cell is proposed for Phase-3 which can accommodate **69,857.00m^3** volume of inert waste. The preliminary design and capacity are done in the following table.

Table 16: SLF for Phase-3

No.	Type of Landfill cell	Dimension	Capacity (m^3)	Area covered on ground (m^2)
1.	As per Topography	As per Topography	69857.00	14674.17
		Total	**69,857.00**	**14674.17**

46. Phase 4 Development- A new landfill cell is proposed for Phase-4 which can accommodate **80604.00** m^3 volume of inert waste. The preliminary design and capacity are done in the following table.

Table 17: SLF for Phase-4

No.	Type of Landfill cell	Dimension	Capacity (m^3)	Area covered on ground (m^2)
1.	As per Topography	As per Topography	80604.00	16810.81.58
		Total	**80604.00**	**16810.81.58**

47. As per Khasra detail given by ULB Khasra number-2471/2 situated at Datia gird has total area around 14.02 hector among this only 10 hector land parcels are given by Authority to ULB. But as of now on that particular location boundary demarcation is difficult. Due to that reason given proposal is Hypothetically by taking tentative 10 hector land area. Which may be revised after confirm boundary demarcation given by ULB.

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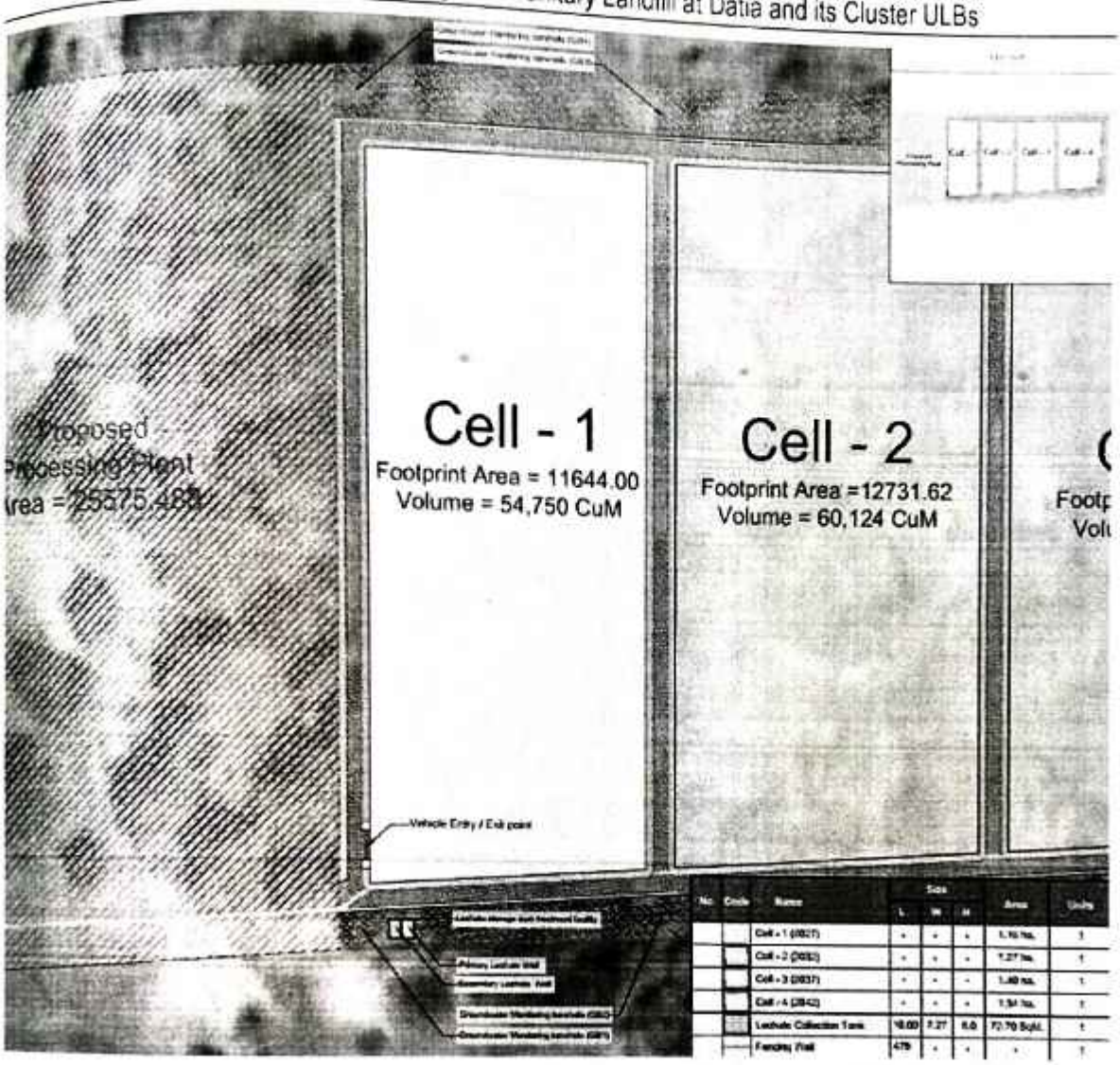

48. As per the design standards, shape and area of both the Cells (Cell-1 & Cell-2) are designed and calculated as of Square. But due to geographical conditions and for the best utilization of the available land, irregular shapes are considered and accordingly planned on the map which are as per the design i.e. of equal area & accumulates same quantum of waste.

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4. *Proposed Components of SLF*

49. The Proposed Components for Construction of SLF are shown below:

Table 18: Proposed Components for SLF

Installation and operation of small SLF

(a) Excavation of site (b) Installation of base sealing system including Leachate & Gas Collection System, (c) discharge of inert in excavated portion, (d) add daily cover manually or through vehicle, (e) Installation of Top sealing system including soil cover and vegetative cover

50. The seven essential components of a SLF are-

1. *A liner system at the base and sides of the* SLF *site which prevents migration of leachate or gas to the surrounding soil.*
2. *A leachate collection and control facility which collects and extracts leachate from within and from the base of the landfill and then treats the leachate.*
3. *A gas collection and control facility (optional for small sized* SLF*) which collects and extracts gas from within and from the top of the landfill and then treats it or uses it for energy recovery.*
4. *A final cover system at the top of the* SLF *site which enhances surface drainage, prevents infiltrating water and supports surface vegetation.*
5. *A surface water drainage system which collects and removes all surface runoff from the* SLF *site.*
6. *An environmental monitoring system which periodically collects and analyses air, surface water, soil-gas and ground water samples around the* SLF *site.*
7. *A closure and post-closure plan which lists the steps that must be taken to close and secure the* SLF *site once the filling operation has been completed and the activities for long-term monitoring, operation and maintenance of the completed* SLF.

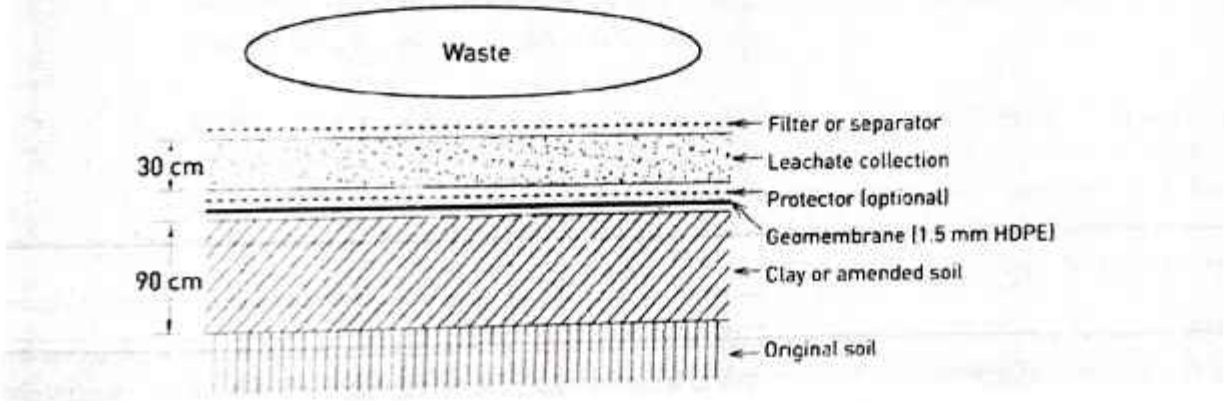
5. *Proposed Requirements for SLF*

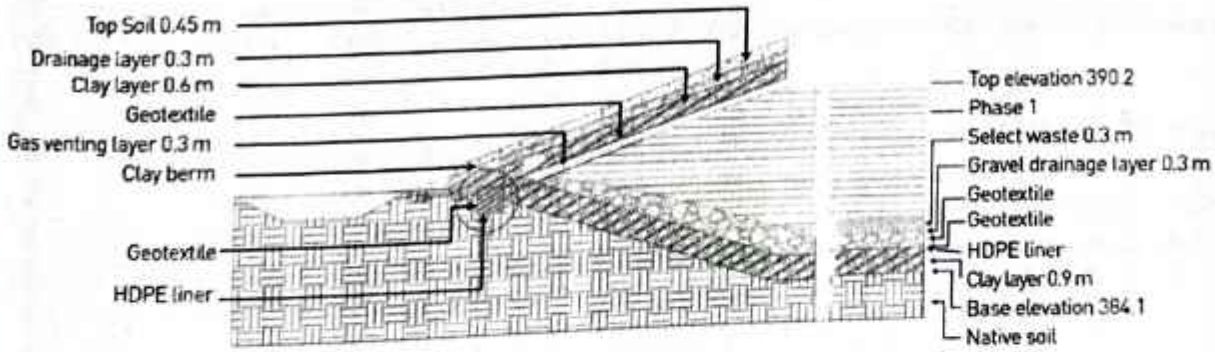
51. The requirements for SLF are broadly divided into three components i.e. (1) Excavation & Earth Works, (2) Bottom sealing system and (3) Top sealing system. The first two components are required during the construction of the facility. The top sealing system shall be carried out at the end of completely filling of inert. The SLF requirements are presented below-

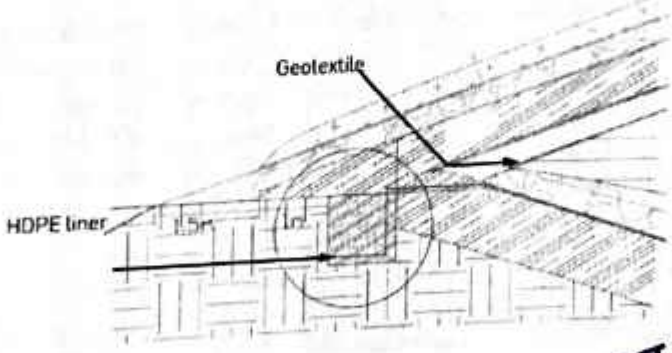
a) Excavation and Earth Works

52. The layout shall be made in such a way that all planed areas have sufficient inclination to guarantee an unhindered run off of leachate and storm water. The SLF shall be done in such a manner, that the amount of cut and fills are finally in a balance. Required cover material shall be made available. A trapezoidal shape is ideal for excavation.

b) Bottom Sealing System







53. The bottom sealing system has to the following elements:

1. ***Compacted Clay/ Amended Soil layer / mineral sealing layer*** - A 90cm thick compacted clay or amended soil (amended with bentonite) as per IS: 6186-1986 Specification to reach the permeability not greater than $1X10^{-7}$ cm/sec. The amended soil layer shall meet the following criteria:
   - *Hydraulic conductivity of $k<10^{-7}$ cm/sec or less*
   - *Specified thickness*
   - *Absence of shrinkage cracks due to desiccation*
   - *Absence of clods in the compacted clay layer*
   - *Adequate strength for stability of liner under compressive loads as well as alongside slopes*
   - *Minimal influence of leachate/waste on hydraulic conductivity*
   - *Percentage Fines – between 40 and 50% (IS: 2720 Part IV)*
   - *Placidity Index – between 10 and 30% (IS 2720 – part V)*
   - *Liquid Limit – 25 to 30% (IS 2720 – part V)*
   - *Clay content – 18 to 25%*

   Alternatively, use geo-synthetic clay layer (GCL) in place of compacted clay or amended soil, to avoid utilization of valuable clay.

2. ***HDPE Geo-membrane layer-*** The second sealing liner will be a High-density polyethylene (HDPE) geo-membrane with a minimum thickness of 1.5 mm. The geo-membrane can only be installed during favorable weather conditions. For the constructing of the layer the following items have to be considered
   - *Welding of the HDPE layer is only possible if the sun does not shine directly on the HDPE layer in summer time (danger of blisterin).*
   - *Water is not allowed on the base of the HDPE layer,*
   - *Before work starts the way of placing has to be defined in a plan,*
   - *The placed HDPE layer must be fixed (e. g. sandbags),*
   - *No equipment must drive on the welded HDPE layers (only the necessary equipment for welding), and*
   - *Every welding seam has to be double checked (stability, density with under pressure method, thickness, visual inspection).*

3. ***Protection Layer (Optional):*** - A protection layer (of silty soil) should be 20-30 cm thick or, alternatively, a protection layer (geotextile) should be 400 grams per square meter (g/m^2) for bottom liner and 200 g/m^2 for top cover, depending on the landfill height. If the planned height (height +depth) of the landfill is more than 20 m, geotextile should be 800 g/m^2.

4. ***Drainage (Leachate) Layer-*** The drainage layer shall be made up of granular soil of permeability coefficient (k) greater than 10^{-2} cm/sec. The size of material to be used shall be 25 mm and fraction content of material size less than 25 mm should not be more than 5%. Clean coarse sand is the preferred material for this layer; however, gravel may also be used. Here, Construction and Demolition (C&D) waste can also be utilized in top cover in place of granular soil. In this case the size of material to be used shall be maximum 25 mm size.The quality control test for drainage layer shall include test for grain size and permeability by following test method:

• **Parameter**	**Test Method**
• Grain Size	Is 2720 (Part 4)

- Permeability IS 2720 (Part 17)

The test results shall meet the material specifications to be used in drainage layer.

5. ***Soil Layer (For Protection)***- For protection of the Geotextile layer, a soil layer of 300 mm thickness must be applied. A suitable binding material (suitable combination of coarse and fine particles) should be used. This material must be installed during favorable weather conditions. The following qualities are required:
   - *at least 10 mass-% of clay particles with a high adsorptive capacity,*
   - *maximum 5 mass-% of organic substances and*
   - *maximum 15 mass-% of carbonate.*

6. ***Gas management system (if applicable)***- It is required to provide a suitable gas management system. The system shall be according to the gas generation estimate from the SLF site, whether active or passive, as per the CPCB guidelines & MSW Rules, 2016.

7. ***Leachate management system***- It is required to construct a leachate management system including leachate collection network, storage tank and Treatment Facilities. The system should in such a way that there is a possibility of leachate recirculation to the maximum possible extent. For the remaining leachate, a suitably treatment unit should be provided before its final disposal into the nearest water body, ensuring that the quality of water in the nearest water body as well as the ground water is not deteriorated further to that determined in the baseline testing. The overall leachate system shall be such as to ensure that there is no percolation of the leachate into the ground and raw leachate does not come into contact with any water body without treatment.

8. ***Proposed leachate Management***. - Seasons affect the amount of leachate generated during inert waste disposal. Leachate produced during the disposal of inerts is first collected via a lateral perforated pipe then conveyed via a header pipe system on the surface of the bottom sealing system. The header pipe is connected to the primary leachate well of the leachate storage cum treatment facility, where all the collected leachate is stored for three days. During this time; any particles in the leachate are settled by gravity to the bottom of the tank, where they are periodically removed by manual means and disposed off in the SLF itself. Only the treated leachate is moved to secondary leachate well. The purified water that the secondary leachate well pumps out will either flow to the nearest drain or be used for irrigation.

c) Top Sealing System

54. The Top sealing system has to the following elements:

1. ***Gas drainage layer:*** The layer should be a 30 cm thick granular gas drainage layer formed by crushed gravel or crushed demolition waste to facilitate gas collection.

2. ***Mineral clay layer:*** The mineral material (60 cm) should be clay or amended soil and should satisfy permeability requirements of k = 10 cm/s. If the available soil has higher permeability, additional layers of 1.5 mm HDPE can be installed over 60 cm thick soil layer. The overall equivalence of such design of soil plus additional layers has to be checked and certified by geotechnical experts. 1.5 mm HDPE liner should be covered with a 20 cm protection layer or geotextile.

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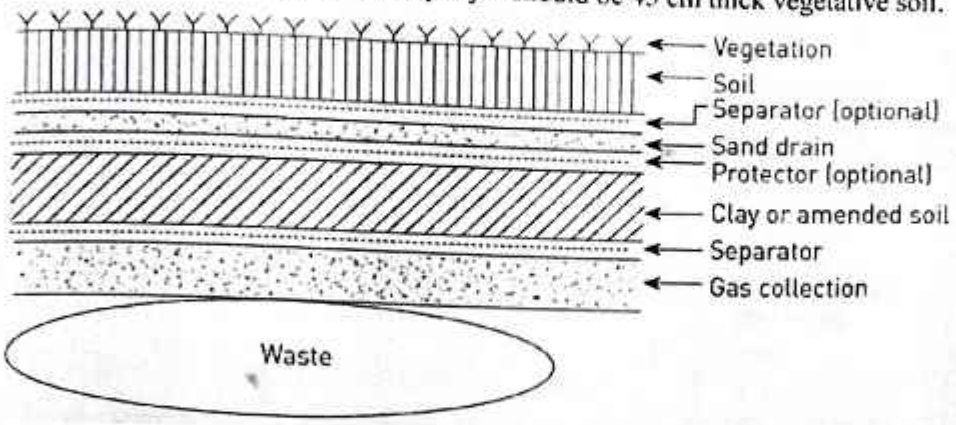
3. ***Water drainage layer:*** The water drainage layer should be 30 cm thick formed by crushed gravel. The gravel layer should be covered by a geotextile or alternate separator to prevent clogging of the drainage layer by the overlying soil. An alternative is a drainage mat (Secudrain), but it is more costly.

4. **Vegetative soil layer:** The top layer should be 45 cm thick vegetative soil.



d) Testing of top soil

55. Testing of topsoil shall be performed on representative samples of each principal type or combination of topsoil material. At least one set of tests shall be performed on each borrow source proposed. A minimum of 2 kg of top soil from each proposed borrow source shall be send to the designated laboratory at least 15 days prior to placement. Testing shall consist of the determination of maximum particle size in accordance with ASTM D 422, pH in accordance with ASTM D 4972 and organic content in accordance with ASTM D 2974. No topsoil shall be placed until the borrow source assessment report is approved. The report shall include the location of each source, estimated quantity of borrow available, logs of subsurface exploration and laboratory test results.

e) Topsoil Placement

56. Topsoil shall not be placed when the base is excessively wet, extremely dry, or in a condition otherwise detrimental to proper grading. Topsoil shall be placed in one lift and shall be evenly spread to a final compacted thickness of desired thickness. Topsoil shall be traffic compacted using approved placement equipment. On slopes, topsoil shall be placed from bottom of the slope upward.

f) Protection and Stock piling of top soil

57. Erosion rills or other damage that occurs during construction shall be repaired and grades re-established. Repairs to the select topsoil layer shall be documented including location and volume of soil layer affected, corrective action taken, and results of retests. Storage or stockpiling of material on the completed surface of the topsoil layers shall not be permitted.

g) HDPE Lining Specifications

58. *Smooth HDPE Liner (in bottom liner and top cover):* - The lining material shall be of highest

quality high-density polyethylene (HDPE) sheeting, manufactured in using virgin high-density polyethylene resin entirely free of plasticisers or other filler materials. Only 10% of the resin may be from edge cut-offs. The HDPE sheet shall be manufactured through Flat Cast extrusion technology and shall have minimum length of 150 m and minimum width of 7 m per roll to reduce the no of welding/seaming points. The liner material shall be supplied with a 125mm-film sheet along the roll longitudinal edges in order to keep this zone clean and to stop oxidization. This film shall be removed immediately before welding. The overlapping and welding area shall be marked with a white line to assure an optimum welding. The welding area on the outside edge of the liner shall be smooth. The thickness of the HDPE Geo-membrane shall not vary across the roll by more than 5%. The properties of the geo membrane have given in table below:

Table 19: Specification for Smooth HDPE Liner (in bottom liner and top cover)

Description	Test Method	Unit	Minimum Value	Frequency of Test
Thickness Nominal	ASTM D 5199	mm	1.50 (should not vary across the roll by more than 5%)	Every Roll
Density	ASTM D 1505	gm/cc	0.94	Every 5th role
Melt Flow Index (recommended in GRI Standards)	ASTM D 1238-(190° C – 2.16 kg)	Gm/10 min	≤ 1.0	
Tensile Strength at Yield (recommended as per GRI standards)	ASTM D 6693	KN/m	24	Every 5th role
Tensile Strength at break	ASTM D 6693	N/mm	42	Every 5th role
Elongation at Yield	ASTM D 6693	%	15	Every 5th roll
Elongation at Break	ASTM D 6693	%	≥700	Every 5th roll
Tear Resistance	ASTM D 1004	N	200	Every 5th roll
Puncture Resistance	ASTM D 4833	N	480	Every 5th roll
Low temp Brittleness(optional)	UNE EN-495	-	No Cracks (optional criteria)	
Carbon Black Content	ASTM D 1603	%	2 - 3 %	Every 5th roll
Carbon Black Dispersion	ASTM D 5596		Cat 1-2	Every 5th roll
Cold Belding at –20^{0}C (optional)	ASTM D 2136	-	passed (optional criteria)	Every 5th roll
NCTL	ASTM D 5397	Hrs	>300	
Environmental Stress Crack Resistance – (ESRC Test.)	DIN 16726	Hrs	NR	Every 5th roll
Dimensional Stability	ASTM D 1204 (1 h, 100 ° C)	%	± 2	Every 5th roll
Roll Width		m	7	Every roll

Table 19: Specification for Smooth HDPE Liner (in bottom liner and top cover)				
Description	**Test Method**	**Unit**	**Minimum Value**	**Frequency of Test**
Oxidative Induction Time (OIT) (min. ave)	ASTM D 3895	Mins	100	
Oven Aging at 85^0 C – Standard OIT (min. ave.) % retained after 90 days	ASTM D 3895	%	55	
Chemical Resistance				Every 5th roll
(a)Resistance to Chemical Waste Mixture	-	-	Test method not clear	
(b) Resistance to Pure chemical Reagents.	-	-	Test method not clear	
Source: Market Analysis				

59. The immediate surface to be lined so that it is free of irregularities, protrusion, vegetation, excessive water, loose soil or abrupt changes in grade. The supporting surfaces does not certain contain stones or other matter of such composition shape or size which may be damaging to the HPDE and there are no excessively soft surfaces areas.

60. *Textured HDPE Liner (on side slope for cover): -* The material specification and testing for one side textured HDPE geomembrane shall be as following: The specifications comply with the accepted GRI norms.

Table 20: Specifications for Textured HDPE Liner (on side slope for cover)				
No.	**Description**	**Test Method**	**Value**	**Frequency**
1.	Thickness miles (min. ave.)	D 5994	Nom. (-5%)	Per roll
a.	Lowest individual for 8 out of 10 values		-10%	
b.	Lowest individual; for any of the 10 values		-15%	
2.	Asperity Height mils (min. ave.)	GM 12	10 mil	Every 2nd roll
3.	Density (min. ave.)	D 1505/D 792	0.940 g/cc	200,000 lb
4.	Tensile Properties (min. ave)	D 6693 Type IV		20,000 lb
a.	Yield strength		126 lb/in	
b.	Break strength		90 lb/in	
c.	Yield elongation		12%	
d.	Break elongation		100%	
5.	Tear resistance (min. ave.)	D 1004	42 lb	45,000 lb
6.	Puncture resistance (min. ave.)	D 4833	90 lb	45,000 lb
7.	Stress Crack Resistance	D 5397 (App.)	300hr	Per GRI GM 10
8.	Carbon Black Content (range)	D 1603	2% - 3%	20,000 lb
9.	Carbon Black Dispersion	D 5596	*	45,000 lb
10.	Oxidative Induction Time (OIT) (min. ave.)			200,000 lb
a.	Standard OIT or,	D 3895	100 min.	
b.	High Pressure OIT	D 5885	400 min	
11.	Oven Aging at 85°	D5721		Per each formulation
a.	Standard OIT (min. ave.) - % retained after 90 days, or,	D 3895	55%	
b.	High Pressure OIT (min. ave.) - % retained after 90 days	D 5885	80%	
12.	UV Resistance	GM 11		Per each

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Table 20: Specifications for Textured HDPE Liner (on side slope for cover)

No.	Description	Test Method	Value	Frequency
(a)	Standard OIT (min. ave.), or,	D 3895	N.R.	formulation
(b)	High Pressure OIT (min. ave.) - % retained after 1600 hrs	D 5885	50%	

* Carbon black dispersion (only near spherical agglomerates) for 10 different view: 9 in categories 1 or 2 and 1 in category 3

Source: Market Analysis

h) Tests and Samples during Construction of the Sealing Systems

61. The tests and samples during construction of the sealing system need to be agreed with the Contracting Authority but it is likely that they will include the following items.

62. *Aptitude Test:* The fundamental suitability (aptitude test) of the used materials provided for the mineral base and surface sealing system must be proven before construction works start. The suitability tests of the used mineral sealing material have to be approved by laboratory tests and a test field. The following laboratory testing is required.

- *grain-size distribution*
- *water content*
- *consistency of material*
- *water absorption of material*
- *portion of organic materials*
- *portion of carbonate*
- *density*
- *proctor density*
- *water permeability*
- *homogeneity*

63. The suitability of the used drainage material has to be also approved by laboratory tests. The following tests are required:

- *grain-size distribution*
- *content of organic materials*
- *content of carbonate*

64. *Test Field:* Within a test field the suitability of the clay must be proven under the supposed site conditions. These test fields are the basis for all conditions stipulated for later application by an independent supervisor.

65. Construction starts with 4 layers of 225 mm each and includes all above mentioned laboratory tests and examinations required for each layer by taking some samples. Visual tests have to be performed by trial pits. The test fields have to be performed outside of the sealing areas. The results from the test field (including the results of the laboratory tests) must be evaluated and documented including the following statements with regard to the design of the mineral sealing system.

- *Compacting methods*
- *Compacting equipment*
- *Number of compacting transitions*
- *Operation speed of compacting equipment*
- *Thickness of un-compacted layers (before compaction)*
- *Type of homogenization*

66. The test field must be at least 20 m in length, the minimum width must be 2 machine widths plus the required ramps 1: 10 and the embankments 1: 5 as well as the distance of acceleration and deceleration with driving tracks as wide as the equipment, which are arranged alongside. The test fields should be located at the bottom and embankment area of the SLF site. They should represent the same slopes as SLF site. After the mineral sealing material has been tested, the application of the other sealing compounds, protection layer and drainage layer will be tested in the test field accordingly. This will be done for the base sealing as well as for the surface sealing.

67. Quality Assurance during Construction Works: For the quality assurance during construction works the requirements are as follows:

- *The mineral sealing layers must be built under weather conditions which are following required conditions (water content, degree of compression, coefficient of permeability; example: no construction during heavy rain fall)*
- *The top of each completed layer of the mineral sealing system must be dewatered sufficiently. Shrinkage cracks must be avoided by taking technical measures.*
- *Soil lumps which are bigger than 32 mm shall not be used for construction the mineral sealing.*
- *The sealing material must be homogenous and show regular placement water content. The layers must achieve a homogenous sealing mass. The layers shall overlap.*
- *After completion of each compacted layer an acceptance test must be carried out before starting the next layer.*
- *During and after incorporation the following tests and checks must be carried out especially for the mineral-sealing layer (for re-cultivation layer, drainage layer and compensation layer the test has to be done similar):*
  - *density*
  - *thickness of each layer*
  - *flatness of each layer*
  - *grain-size distribution*
  - *water content*
  - *consistency of material*
  - *water absorption of material*
  - *proctor density*
  - *permeability*
  - *content of organic parts & carbonate*

68. These tests should be carried according a defined scheme. The laboratory test for the aptitude test and the quality assurance during construction works have to be carried out by a qualified geo-technical institute.

i) Infrastructure Requirements

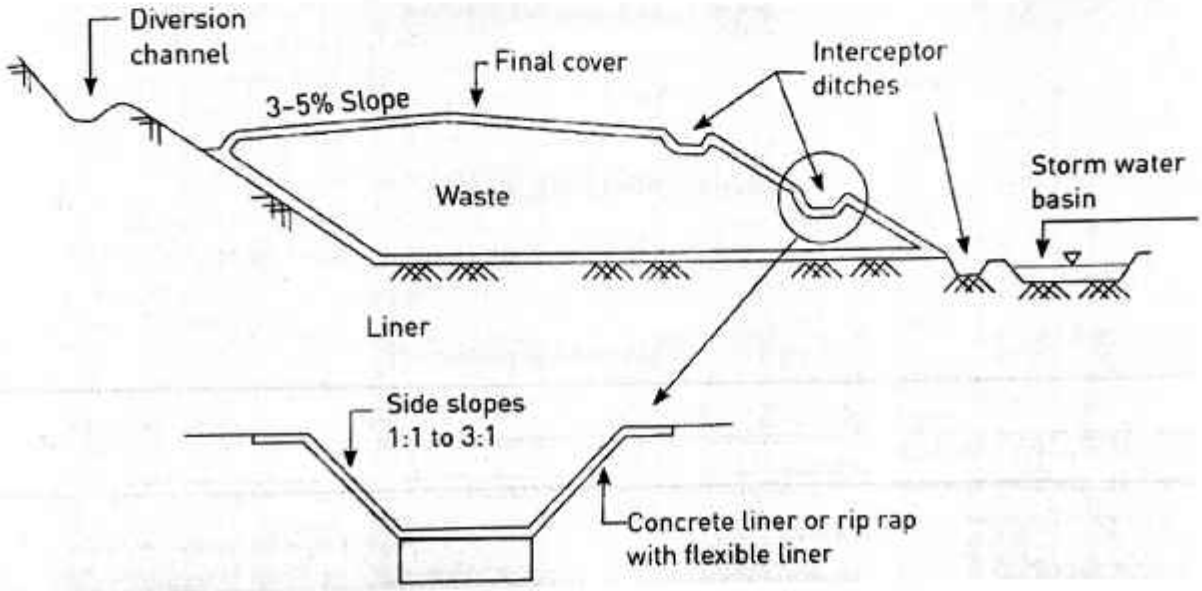
69. The following site infrastructure should be provided:

- *Site Entrance and Fencing*
- *Administrative and Site Control Offices*
- *Access Roads*
- *Waste Inspection and Sampling Facility*
- *Equipment Workshops and Garages*
- *Signs and Directions*
- *Water Supply*
- *Lighting*
- *Fire Fighting Equipment.*

70. The following equipment is required at a landfill site:

(a) Dozers – for spreading waste and daily cover
(b) Landfill Compactors – for compaction of waste
(c) Loader Backhoes – for loading of waste (internal movement), for excavating trenches etc., for embankment construction
(d) Backhoes and front-end loaders (instead of (c) above)
(e) Tractor trailors – for internal movement of waste or daily cover soil
(f) Poclains or heavy-duty backhoes for large excavation and embankment construction

71. *Storm Water Management*- All surface water ditches, culverts, drainage channels, and settling ponds (storm water ponds) should be designed using hydrometeorological data. The following is the indicate storm water management system post closure of the site-



72. The following are the design requirements for SLF.

Table 21: Design Requirement for Construction of Scientific Landfill Site (for First Phase of 5 Years- till 2027) for Datia and its cluster ULBs

No.	Parameter	Quantity	Unit / Assumption
i	Total Volume of Waste	54,750.00	cum
ii	Density of Waste	**0.90**	Ton/cum
iii	Quantity of Waste	49275.00	MT
	Size Design		
1	Total required volume for Scientific Capping	54750.00	cum
2	Provide Square type landfill site		
3	Provide depth from Centre	3.00	m
4	Provide height from Centre	2.30	m
5 (i)	Volume below Centre	31223	cum
5 (ii)	Volume above Centre	23527	cum
6	provide side slope below Centre V : H	1:2	
7	provide side slope above Centre V : H	1:3	
8	Now, Length at bottom	96.00	m
9	Width at bottom	96.00	m
10	Length at Centre	108.00	m
11	Width at Top	94.00	m

Table 21: Design Requirement for Construction of Scientific Landfill Site (for First Phase of 5 Years- till 2027) for Datia and its cluster ULBs

No.	Parameter	Quantity	Unit / Assumption
12	Now, Volume provided below Centre	31223.46	cum
13	Volume provided above Centre	23526.64	cum
14	Total Volume Provided	54750	cum
15	Length at Bottom (L1)	Safe	Design Check
16	Width at bottom (B1)	96.00	m
17	Length at Centre (L2)	96.00	m
18	Width at Centre (B2)	108.00	m
19	Length at Top (L3)	108.00	m
20	Width at Top (B3)	94.00	m
21	Footprint area on site	94.00	m
	Area for Bottom Sealing System	11664.00	sqm
22	Width Side Slope Area (Below)	1367.94	Sqm
23	Length Side Slope Area (Below)	1367.94	Sqm
24	Bottom Area	9208.30	Sqm
25	Total Area (Below)	11944.17	Sqm
	Area for Top Sealing System		
26	Width Side Slope Area (Above)	1470.07	Sqm
27	Length Side Slope Area (Above)	1470.07	Sqm
28	Top Area	8866.09	Sqm
29	Total Area (Above)	11806.22	Sqm
	Estimation of Leachate Generation		
30	Average Total Precipitation	467.43	mm/Year
31	Plan area of operating phase	11664.00	Sqm
32	Assume Precipitation	80.00%	Assuming precipitation (in monsoon period)
33	Precipitation (monsoon period)	374.00	mm/ Considered for 4 months
34	Assume Precipitation Days (monsoon period)	120.00	days
35	Peak leachate Quantity (thumb rule basis)	36.35	cu.m. per day CPHEEO, Manual Part 2 Pg no. 379
	Design of Leachate Collection Pipe		
36	Dia of Lateral pipes (HDPE perforated)	200.00	mm
37	Dia of Header pipes (HDPE perforated)	250.00	mm
38	Spacing of Lateral pipe required	20.00	m
39	Number of Lateral pipe	7.00	Nos.
40	Number of Header pipe	1.00	Nos.
41	Total Length of Lateral pipe	371.00	m
42	Total length of Header pipe	174.0	m
	Estimation of Leachate Holding Unit		
43	Assume Leachate holding days	3.00	Day
44	Total Leachate Storage Quantity	109.06	Cum
45	Assume Depth for Storage Unit	3.00	m
46	Assume Width for Storage Unit	5.00	m
47	Required Length for Storage Unit	7.27	m
48	Provide clear space all around	2.00	m
49	Required Area with Circulation for Leachate Holding Unit	101.00	sqm
	Estimation of Gas Vent Pipe		
50	Dia of Lateral pipes (HDPE perforated)	200.00	mm
51	Dia of Header pipes (HDPE)	250.00	mm
52	Spacing of Lateral pipe required	20.00	m

Table 21: Design Requirement for Construction of Scientific Landfill Site (for First Phase of 5 Years- till 2027) for Datia and its cluster ULBs			
No.	Parameter	Quantity	Unit / Assumption
53	Number of Lateral perforated pipe	7.00	Nos.
54	Total Length of Lateral pipe	473.00	m
55	Number of Header pipe	7.00	Nos.
56	Length of 1 Header pipe	3.60	m
57	Total length of Header pipes	25.00	m
Source: Consultant			

73. The following are the other Infrastructural Requirements to be developed along with SLF as per guidelines.

Table 22: Minimum Requirements for SLF			
No	Description	Minimum Requirements	Unit
1	**Construction of Scientific Landfill Site (for First Phase of 5 Years- till 2027) at starting stage**	11664.00	Sqm
1.1	***Top Sealing System***		
1.1.1	Geosynthetic clay Liner (GCL)	12,396.53	Sqm
1.1.2	HDPE Liner of 1.5 mm thick	12,396.53	Sqm
1.1.3	Non-woven geotextile	12,396.53	Sqm
1.1.4	Drainage layer	5,312.80	Cum
1.1.5	Vegetative cover	5,312.80	Cum
1.2	***Bottom Sealing System***		
1.2.1	Geosynthetic clay Liner (GCL)	12,541.38	Sqm
1.2.2	HDPE Liner of 1.5 mm thick	12,541.38	Sqm
1.2.3	Non-woven geotextile	22,210.10	Sqm
1.2.4	Drainage layer	2,762.49	Cum
2	**Construction of Leachate Collection Tank**	436.23	Cum
3	**Construction of Wire fencing**	478.09	RM
Source: Consultant			

74. Various safety aspects which are need to be manage for SLF are describe as below.

a) HEALTH AND SAFETY:

75. The landfill management (municipality or private operator) should be responsible for all aspects of site safety, including public safety in areas adjoining the site. The safety officer of the municipality or of the private operator should also be responsible for the health and safety of landfill staff. He or she should support the landfill management in the following tasks:

- planning, operation, maintenance, and inspection of installations with regard to health and safety;
- Organisation and realisation of training and instructions of landfill staff with regard to occupational health and safety;
- assessment and evaluation of accidents; and
- internal reporting on safety aspects.

b) PERSONAL ACCIDENT

76. In case of accidents involving injuries, the following procedures have to be applied:

- stop work immediately;

- inform first aider;
- inform management; and
- call medical services (ambulance emergency number should be duly filled in and maintained by the responsible landfill operator).

c) FIRE PREVENTION AND PROTECTION GENERAL REQUIREMENTS

77. In any case, the actual firefighting operation is under the responsibility of the fire brigade of the urban local body (ULB). To prevent fire incidents, the following rules have to be applied:
   - Banning smoking in all areas of the sanitary landfill.
   - Handling material on fire as well as setting fire to materials on the landfill are strictly forbidden.
   - Waste that has been unloaded in the filling area has to be examined visually for potential fire sources (glowing ash or glowing burning remains). If fire sources are located, these have to be neutralised with cover material immediately.
   - All mobile equipment or vehicles should be furnished with a fire extinguisher.
   - Fire Control.

78. In case of fire, the following basic rules of conduct have to be complied with:
   - Every fire has to be reported immediately.
   - The preservation and protection of lives and health have priority over firefighting.
   - Alarm signals should be heeded.

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F. Cost Estimates & Implementation Plan

1. *Cost Estimates CAPEX*

79. The following are the summary of CAPEX **for Development of SLF –**

Table 23: Summary of CAPEX for Development of SLF –

RECAPITUALATION SHEET
For
DEVELOPMENT OF DISTRICT SANITARY LANDFILL SITE AT Datia AND ITS CLUSTER ULBs

Estimate Ref.		Particular	Size L	W	H	Qty	Unit	Amount
A		**CIVIL Cost at the start of the Project**						
i	BOQ	GCL at Bottom with installation and transportation				12,541.38	Sqm	42,26,195.00
ii	BOQ	Geo textile at Bottom with installation and transportation				22,210.10	Sqm	17,58,374.00
A1		**Subtotal-1**						59,84,569.00
iii	BOQ	Cost of Bottom Sealing & Leachate collection System Excluding cost of GCL & Geo Textile liner				11,944.17	Sqm	1,39,38,296.00
iv	BOQ	Construction of Leachate Collection Tank	7.27	10.00	6.00	436.23	Cum	11,50,323.00
v	BOQ	Construction of Barbed wire Fencing with RCC post	478.09			478.09	RM	3,15,036.00
vi		External Electrical Works (2% of Civil Cost at the start of the Project)						4,27,764.00
A2		**Subtotal-2**						1,58,31,419.00
vii		GST @12% on A1						7,18,148.28
viii		GST @18% on A2						28,49,655.42
A3		**Subtotal of GST**						35,67,803.70
A4		**Environment clearance cost**						15,00,000.00
A5		Total of A1 + A2 + A3 +A4						2,68,83,792.00
B		**Civil Cost at Closure Stage**						
ix	BOQ	GCL at Top with installation and transportation				12,396.53	Sqm	50,77,635.00
x	BOQ	Geo textile at Top with installation and transportation				12,396.53	Sqm	11,92,938.00
B1		**Subtotal-3**						62,70,573.00
B2	BOQ	**Cost of Top Sealing System Excluding cost of GCL & Geo textile liner**				11,806.22	Sqm	1,41,43,724.00
xi		GST @12% on B1						7,52,468.76
xii		GST @18% on B2						25,45,870.32
B3		**Subtotal of GST**						32,98,339.00
D4		Total of D1 + D2 + D3						2,37,12,636.00
						TOTAL PROJECT COST (A5+B4) (₹)=		**5,05,96,428.00**

Source: Consultant

2. *Cost Estimates OPEX*

80. The following are the Assumptions for calculation of OPEX **for Development of SLF –**

Table 24: Assumptions of OPEX for Development of SLF –

Sr. No	Details		Unit
	1. Assumption for Soilcover		
Sr. No	**Details**		**Unit**
1	Total inert for 5 year	54,750.00	MT
2	Per Month incoming Inert	913.00	MT
3	Soil Cover requirement	10%	in %
4	Soil requirement	91.00	MT
5	Filling by available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m. UADD SOR 2021 : Vol 2, Item 2.16, Page No.19 Considering 1 MT/Cum Density	89.00	Rs. Per Cum
6	Soil cover cost	8,099.00	Rs per Month

Table 24: Assumptions of OPEX for Development of SLF –

Sr. No	Details		Unit
	2. Assumption for Manpower requirements		
1	Administration / Site Manager	1	Nos.
2	Technical / Electrical	1	Nos.
3	Labour	1	Nos.
4	Security guard	1	Nos.
5	Administration / Site Manager	495.00	Rs. Per Day
6	Technical / Electrical	445.00	Rs. Per Day
7	Labour	359.00	Rs. Per Day
8	Security guard	359.00	Rs. Per Day
9	Per day Charge	1,658.00	Rs. Per Day
10	Per month charge	49,740.00	INR
	3. Assumption for Depreciation cost calculation		
Sr. No	**Details**		**Unit**
1	Depreciation rate for Civil Construction	10%	Per year
2	Total cost of Civil Construction Work	5,05,96,428.00	INR
3	Depreciation value Per year	50,59,642.80	INR
4	Depreciation value Per Month	4,21,637.00	INR
	4. Assumption for Electricity Requirements		
Sr. No	**Details**		**Unit**
1	Per day unit (Kwh) use	200.00	Kwh
2	Per unit rate	8.00	INR
3	Total charge per day	1,600.00	INR
4	Total charge per month	48,000.00	INR
	5. Assumption for water Requirements		
Sr. No	**Details**		**Unit**
1	Water requirement in litter	20,000.00	Per day
2	Per 1000 litter water charge	30.00	INR
3	Total water charge per day	600.00	INR
4	Total charge per month	18,000.00	INR
	6. Assumption for contingencies		
Sr. No	**Details**		**Unit**
1	Total operational cost per Month	5,45,476.00	Per day
2	Contingencies	5%	in %
3	Total Contingencies	27,274.00	INR

81. The following are the summary of OPEX for Development of SLF –

Table 25: Summary of OPEX for Development of SLF –

No.	Details	Unit	Monthly expense (In Lakh)
1	For Soil covering	In INR	8,099.00
2	For Manpower	In INR	49,740.00
4	For Depreciation	In INR	4,21,637.00
5	For Electricity	In INR	48,000.00
6	For water	In INR	18,000.00
7	For Contingencies	In INR	27,274.00
8	OPEX for 1 Month	In INR	5,72,750.00
9	OPEX for 12 Months	In INR	**68,73,000.00**

Source: Consultant

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3. *Proposed Implementation timeframe*

82. The following are the proposed timeframe for implementation

Table 26: Proposed Implementation timeframes

Particulars	Time Line of Implementation in Week																
Week	0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	27-30	30-33	33-36	36-39	39-42	42-45	45-48
Obtaining applicable clearances from different authorities																
Site Clearance of Landfill site																
Mobilization of staff of contractor, plant etc.																
Excavation for Proposed cell																
Bed & Side Slope Preparation for Bottom sealing system																
Bed Preparation on native soil																
Installation of GCL - 6 mm																
Installation of HDPE Liner																
Installation of Geo textile (400 GSM)																
Preparation of Drainage Layer																
Installation of Geo textile (400 GSM)																
Installation of leachate collection network																
Construction of Common Infrastructure including Electric Work																

Source: Consultant

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4. *Proposed Funding Mechanism*

83. As per direction of Urban Administration and Development Department, Govt. of Madhya Pradesh, the following is the fund sharing mechanism under for all the infrastructure to be financed under Swachh Bharat Mission (Urban) 2.0.

Table 27: Proposed Financial Structure & Funding Mechanism

Population Range	Govt. of India (GoI) Share	Govt. of Madhya Pradesh Share	Urban Local Body Share
More than 10 Lakh	25%	25%	50%
1 Lakh to 10 Lakh	33%	33%	34%
Less than 1 Lakh	50%	40%	10%

Source: Urban Administration & Development Department, Govt. of Madhya Pradesh

84. The following are the proposed funding share and financing arrangements for the project.

Table 28: Proposed Financial Share for Total Project Cost by Participating ULBs

Nos.	Name of ULB	Pop (2011)	%age Share of Total	Total Project Cost including GST	Share of ULB
1	Datia	100284	44.70%	5,05,96,428.00	2,26,15,342.91
2	Badoni	10309	3.06%		15,48,502.78
3	Bhander	25204	7.47%		37,81,227.72
4	Indergarh	23045	6.83%		34,57,122.48
5	Alampur	10686	3.20%		16,20,526.16
6	Daboh	18097	5.41%		27,36,888.63
7	Bhitarwar	19096	5.69%		28,80,935.40
8	Dabra	61277	18.22%		92,18,993.29
9	Pichhore	18127	5.41%		27,36,888.63
		286125	**100.00%**		5,05,96,428.00

85. As per MoHUA, funding for Sanitary Landfill under SBM 2.0 will be provided for the constructionof the base sealing system of the SLF and the associated cost of environmental clearance. Hence, the ULB wise share of approved funding for Base sealing system of SLF is mention in the below table.

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Table 29: Proposed Financial Share for Bottom Sealing Cost of Cell-1 by Participating ULBs

Nos.	Name of ULB	Pop (2011)	%age Share of Total	Total Bottom Sealing Cost of Cell-1 Excluding GST	Fund available from MOHUA for SLF (i.e. 6.5 Cr for 100 TPD)	Total Extra cost	Share of ULB as per fund available	Govt. of India (GoI) Share	Govt. of Madhya Pradesh Share	Urban Local Body Share	Extra Cost bare by ULB	Total GST Cost for Bottom Sealing System	GST Cost bare by ULB	GoI: GoMP: ULB
1	Datia	100284	44.70%	2,33,15,988.30	1,75,50,000.00	57,65,988.30	78,44,412.81	25,88,656.23	25,88,656.23	26,67,100.36	25,77,253.13	35,67,803.70	15,94,719.38	33:33:34
2	Baoni	10309	3.06%				5,37,117.44	2,68,558.72	2,14,846.98	53,711.74	1,76,467.97		1,09,192.57	50:40:10
3	Bhander	25204	7.47%				13,11,585.84	6,55,782.92	5,24,626.34	1,31,156.58	4,30,910.16		2,66,633.02	50:40:10
4	Indergarh	23045	6.83%				11,99,145.91	5,99,572.96	4,79,658.36	1,19,914.59	3,93,975.00		2,43,778.76	50:40:10
5	Alampur	10686	3.20%				5,62,099.64	2,81,049.82	2,24,839.86	56,210.00	1,84,675.78		1,14,271.29	50:40:10
6	Daboh	18097	5.41%				9,49,323.84	4,74,861.92	3,79,729.54	94,932.38	3,11,896.88		1,92,991.52	50:40:10
7	Shitarwar	19096	5.69%				9,99,288.26	4,99,644.13	3,99,715.30	99,928.83	3,28,312.50		2,03,148.97	50:40:10
8	Dabra	61277	18.22%				31,97,722.42	15,98,861.21	12,79,088.97	3,19,772.24	10,50,600.00		6,50,076.69	50:40:10
9	Pichhore	18127	5.41%				9,49,323.84	4,74,661.92	3,79,729.54	94,932.38	3,11,896.88		1,92,991.52	50:40:10
		286125	100.00%				1,75,50,000.00	74,41,449.82	64,70,891.10	36,37,659.11	57,65,988.30		35,67,803.70	

86. The ULB Share has to be brought in by each participating ULB which in case can be covered under the grant of 15th Finance Commission (Proposed amount under grant as per the leading financial year Budget).

G. Environment Mitigation Measures & O&M Requirements

I. *Environment Mitigation Measures*

87. In order to ensure the optimal performance of the landfill site, checking the environmental pollution and complying with the regulatory requirements is essential. The following checklist of measures are prescribed for during operation of Landfill site.

- *Landfill Siting and Buffer Zones*
  - 250 meters distance from residential development
  - Visual impacts should be minimized by evaluating location alternatives
  - 3 km distance from a turbojet airport and 1.6 km of a piston-type airport or as permitted by the aviation authority.
  - 500 meters distance from drinking, irrigation, or livestock water supply wells located down gradient of the landfill, unless alternative water sources are readily and economically available.
  - Areas within the landfill boundaries should be located outside of the 10-year groundwater recharge area for existing or pending water supply development
  - Perennial stream should not be located within 300 meters downgradient of the proposed landfill cell development, unless diversion, culverting or channelling is economically and environmentally feasible to protect the stream from potential contamination

- *Site geology and hydrogeology*
  - Landfills should be located in gently sloped topography to ensure proper leachate collection
  - Groundwater's seasonally high table level (i.e., 10 year high) should be at least 1.5 meters below the proposed base of any excavation or site preparation
  - Suitable soil cover material should be available on-site to meet the needs for intermediate and final cover

- *Prevention from potential hazards:*
  - Landfills should be sited outside of a floodplain subject to 10-year floods
  - There should be no significant seismic risk within the region of the landfill
  - No fault lines or significantly fractured geologic structure should be present within 500 meters of the perimeter of the proposed landfill
  - There should be no underlying limestone, carbonate, fissured or other porous rock formations which would be incompetent as barriers to leachate and gas migration

- *Leachate control from MSW landfills:*
  - Site landfills in areas with stable geology and avoid siting near particularly vulnerable or sensitive ecosystems and groundwater and surface water resources
  - Design and operate the landfill in accordance with applicable national requirements

and internationally recognized standards to minimize leachate generation

- Treat leachate onsite and/or discharge to municipal wastewater system
- Minimize the daily exposed working face and use perimeter drains and landfill cell compaction
- Prevent run-on of precipitation into the active area of the landfill: systems should be designed to handle the peak discharge from a 25-year storm
- Collect and control run-off from the active area of the landfill

- *Groundwater and leachate monitoring:*
  - Measure and record the quantity and quality of leachate generated
  - Install groundwater monitoring wells outside the landfill perimeter to evaluate the movement of leachate into groundwater, 1 well in the upgradient and 2 wells in the downgradient flow direction from the landfill.
  - The groundwater monitoring system should be consistent with applicable national regulations and internationally recognized standards
  - Regularly sample the monitoring wells and analyze for constituents to check the efficiency of the system.

- *To control and monitor landfill gas emissions, if applicable:*
  - Include landfill gas management system designed and operated in accordance with applicable national requirements and recognized international standards

- *To control dust and odor emissions:*
  - Compact and cover waste promptly after discharge from the vehicle delivering the waste
  - Minimize open tipping face area
  - Dispose of odorous sludge in covered trenches
  - Restrict acceptance of loads known to be particularly odorous
  - Restrict tipping activities during periods of adverse weather
  - Seal sump covers
  - Aerate leachate storage areas

- *To prevent, minimize, and control dispersal of litter:*
  - Avoid siting of facilities in particularly exposed, windy areas
  - Provide perimeter planting, landscaping, or fences to reduce wind
  - Pin waste by use of dozers and landfill compactors immediately after discharge from the vehicles delivering the waste
  - Use soil or artificial cover materials so that deposited waste is held in place
  - Use scaring techniques or natural predators to control scavenging birds
  - Provide an emergency tipping area/foul weather cell for lightweight wastes such as paper
  - Construct temporary banks and bunds immediately adjacent to the tipping area, install strategically placed mobile catch fences close to the tipping area or on the nearest downwind crest, and/or fully enclose of the tipping area within a mobile litter net

system

- Install wind fencing upwind of the tipping area to reduce the wind strength as it crosses the facility
- Temporarily close the facility to specific or all waste or vehicle types when weather conditions are particularly adverse

- *Closure and Post-Closure*
  - Development of a closure plan which specifies the necessary environmental objectives and controls, future land use, closure schedule, financial resources, and monitoring arrangements
  - Evaluation, selection, and application of closure methods consistent with post- closure use
  - Application of final cover components that are consistent with post closure use and local climatic conditions. The final cover should provide long term environmental protection.
  - Financial instruments in place to cover the costs of closure and post-closure care and monitoring

88. The following environmental parameters shall be monitored on a regular basis.

- *Quality of Leach ate after Treatment*
- *Surface Water Quality*
- *Ground Waste Quality*
- *Quantity and Quality of Gas Generated*
- *Ambient Air Quality*

Table 30: Sampling Specifications for Environmental Monitoring	
Description	**Sampling Specifications**
Quality of Leach ate after Treatment	One grab Sampling at out let of the treatment plant every month
Surface Water Quality	One grab Sample at upstream side and one grab sample at downstream side for water bodies near the landfill site every month
Ground Waste Quality	One sample at upstream side and three samples at downstream side of the landfill site every month
Quantity and Quality of Gas Generated	24 hours continuous stack monitoring at selected vent on every month
Ambient Air Quality	48 hours continuous ambient air quality monitoring at one location in upwind and three locations in downwind directions every month
Source: Proposed by the consultant	

2. ***O&M Requirements***

Table 31 : Operation and maintenance Requirements for Sanitary landfill site		
Component	**Operation Requirement**	**Maintenance Requirement**
Sanitary Landfill Site	(a)SLF site should be fully secured and developed according to SWM Rules, 2016. (b)Waste subjected to land filling should be non-biodegradable nature.	(a) Monitoring of air quality and water quality on periodical basis. (b) A vegetation cover shall be

Table 31 : Operation and maintenance Requirements for Sanitary landfill site

Component	Operation Requirement	Maintenance Requirement
	(c) Waste should be covered and well compacted at the day end with minimum 10-15 cm of soil or inert material. (d) Prior to commencement of monsoon season, an intermediate cover of 40- 60 cm thickness of soil should be placed with proper compaction and grading. (e) Proper arrangement for drainage, leachate and landfill gas management should be made. (f) After completion of landfill site, a final cover should be provided before closure of the site.	provided and maintained over the completed site. (c) Post closure care should be conducted for at least 15 years and long-term monitoring shall consist of followings: i. Maintaining the integrity and effectiveness of the final cover. ii. Monitoring leachate collection system iii. Monitoring of ground water iv. Maintaining and operating the landfill gas collection system

Suggestions:

- SLF site should be given to experienced private entrepreneur on Design, Build, Operate, Maintain and Transfer (DBOMT) basis.
- Regular upkeep and maintenance mechanism of the SLF site should be in place. If the entire system is in private hands, proper supervision will be required at municipal level.
- Proper record keeping of number of vehicles arrived; quantity and nature of waste should be maintained.

****End of Report****

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Glossary of Terms

1. **"aerobic composting"** means a controlled process involving microbial decomposition of organic matter in the presence of oxygen;

2. **"anaerobic digestion"** means a controlled process involving microbial decomposition of organic matter in absence of oxygen;

3. **"authorisation"** means the permission given by the State Pollution Control Board or Pollution Control Committee, as the case may be, to the operator of a facility or urban local authority, or any other agency responsible for processing and disposal of solid waste;

4. **"biodegradable waste "** means any organic material that can be degraded by micro-organisms into simpler
stable compounds;

5. **"bio-methanation"** means a process which entails enzymatic decomposition of the organic matter by microbial action to produce methane rich biogas;

6. **"brand owner"** means a person or company who sells any commodity under a registered brand label.

7. **"buffer zone"** means zone of no development to be maintained around solid waste processing and disposal facility, exceeding 5 TPD of installed capacity. This will be maintained within total and area allotted for the solid waste processing and disposal facility.

8. **"bulk waste generator"** means and includes buildings occupied by the Central government departments or undertakings, State government departments or undertakings, local bodies, public sector undertakings or private companies, hospitals, nursing homes, schools, colleges, universities, other educational institutions, hostels, hotels, commercial establishments, markets, places of worship, stadia and sports complexes having an average waste generation rate exceeding 100kg per day;

9. **"bye-laws"** means regulatory framework notified by local body, census town and notified area townships for facilitating the implementation of these rules effectively in their jurisdiction.

10. **"census town"** means an urban area as defined by the Registrar General and Census Commissioner of India;

11. **"combustible waste"** means non-biodegradable, non-recyclable, non-reusable, non-hazardous solid waste having minimum calorific value exceeding 1500 kcal/kg and excluding chlorinated materials like plastic, wood pulp, etc;

12. **"composting"** means a controlled process involving microbial decomposition of organic matter;

13. **"contractor"** means a person or firm that undertakes a contract to provide materials or labour to perform a service or do a job for service providing authority;

14. **"co-processing"** means use of non-biodegradable and non-recyclable solid waste having calorific value exceeding 1500k/cal as raw material or as a source of energy or both to replace or supplement the natural mineral resources and fossil fuels in industrial processes;

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15. **"decentralised processing"** means establishment of dispersed facilities for maximizing the processing of biodegradable waste and recovery of recyclables closest to the source of generation so as to minimize transportation of waste for processing or disposal;

16. **"disposal"** means the final and safe disposal of post processed residual solid waste and inert street sweepings and silt from surface drains on land as specified in Schedule I to prevent contamination of ground water, surface water, ambient air and attraction of animals or birds;

17. **"domestic hazardous waste"** means discarded paint drums, pesticide cans, CFL bulbs, tube lights, expired medicines, broken mercury thermometers, used batteries, used needles and syringes and contaminated gauge, etc., generated at the household level;

18. **"door to door collection" means** collection of solid waste from the door step of households, shops, commercial establishments, offices, institutional or any other non-residential premises and includes collection of such waste from entry gate or a designated location on the ground floor in a housing society, multi storied building or apartments, large residential, commercial or institutional complex or premises;

19. **"dry waste"** means waste other than bio-degradable waste and inert street sweepings and includes recyclable and non-recyclable waste, combustible waste and sanitary napkin and diapers, etc;

20. **"dump sites"** means a land utilised by local body for disposal of solid waste without following the principles of sanitary land filling;

21. **"extended producer responsibility" (EPR)** means responsibility of any producer of packaging products such as plastic, tin, glass and corrugated boxes, etc., for environmentally sound management, till end-of-life of the packaging products;

22. **"facility"** means any establishment wherein the solid waste management processes namely segregation,
recovery, storage, collection, recycling, processing, treatment or safe disposal are carried out;

23. **"fine" means** penalty imposed on waste generators or operators of waste processing and disposal facilities
under the bye-laws for non-compliance of the directions contained in these rules and/or bye- laws

24. **"Form"** means a F8orm appended to these rules;

25. **"handling"** includes all activities relating to sorting, segregation, material recovery, collection, secondary storage, shredding, baling, crushing, loading, unloading, transportation, processing and disposal of solid wastes;

26. **"inerts"** means wastes which are not bio-degradable, recyclable or combustible street sweeping or dust and silt removed from the surface drains;

27. **"incineration"** means an engineered process involving burning or combustion of solid waste to thermally degrade waste materials at high temperatures;

28. **"informal waste collector"** includes individuals, associations or waste traders who are involved in sorting, sale and purchase of recyclable materials;

29. **"leachate"** means the liquid that seeps through solid waste or other medium and has extracts of dissolved or suspended material from it;

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नगर पालिका परिषद दतिया

30. " **local body**" for the purpose of these rules means and includes the municipal corporation, nagar nigam, municipal council, nagarpalika, nagarpalika parishad, municipal board, nagar panchayat and town panchayat, census towns, notified areas and notified industrial townships with whatever name they are called in different States and union territories in India;

31. "**materials recovery facility" (MRF)** means a facility where non-compostable solid waste can be temporarily stored by the local body or any other entity mentioned in rule 2 or any person or agency authorised by any of them to facilitate segregation, sorting and recovery of recyclables from various components of waste by authorised informal sector of waste pickers, informal recyclers or any other work force engaged by the local body or entity mentioned in rule 2for the purpose before the waste is delivered
or taken up for its processing or disposal;

32. **"non-biodegradable waste"** means any waste that cannot be degraded by microorganisms into simpler stable compounds;

33. **"operator of a facility"** means a person or entity, who owns or operates a facility for handling solid waste
which includes the local body and any other entity or agency appointed by the local body;

34. **primary collection"** means collecting, lifting and removal of segregated solid waste from source of its generation including households, shops, offices and any other non-residential premises or from any collection points or any other location specified by the local body;

35. **"processing"** means any scientific process by which segregated solid waste is handled for the purpose of reuse, recycling or transformation into new products;

36. **"recycling"** means the process of transforming segregated non-biodegradable solid waste into new material or product or as raw material for producing new products which may or may not be similar to the original products;

37. **"redevelopment"** means rebuilding of old residential or commercial buildings at the same site, where the existing buildings and other infrastructures have become dilapidated;

38. **"refused derived fuel"**(RDF) means fuel derived from combustible waste fraction of solid waste like plastic, wood, pulp or organic waste, other than chlorinated materials, in the form of pellets or fluff produced by drying, shredding, dehydrating and compacting of solid waste;

39. **"residual solid waste"** means and includes the waste and rejects from the solid waste processing facilities which are not suitable for recycling or further processing;

40. **"sanitary land filling "** means the final and safe disposal of residual solid waste and inert wastes on land in a facility designed with protective measures against pollution of ground water, surface water and fugitive air dust, wind-blown litter, bad odour, fire hazard, animal menace, bird menace, pests or rodents, greenhouse gas emissions, persistent organic pollutants slope instability and erosion;

41. **"sanitary waste"** means wastes comprising of used diapers, sanitary towels or napkins, tampons, condoms, incontinence sheets and any other similar waste;

42. **"Schedule"** means the Schedule appended to these rules;

43. **"secondary storage"** means the temporary containment of solid waste after collection at secondary waste storage depots or MRFs or bins for onward transportation of the waste to the processing or disposal facility;

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44. **"segregation"** means sorting and separate storage of various components of solid waste namely biodegradable wastes including agriculture and dairy waste, non-biodegradable wastes including recyclable waste, nonrecyclable combustible waste, sanitary waste and non-recyclable inert waste, domestic hazardous wastes, and construction and demolition wastes;

45. **"service provider"** means an authority providing public utility services like water, sewerage, electricity, telephone, roads, drainage, etc;

46. **"solid waste"** means and includes solid or semi-solid domestic waste, sanitary waste, commercial waste, institutional waste, catering and market waste and other non-residential wastes, street sweepings, silt removed or collected from the surface drains, horticulture waste, agriculture and dairy waste, treated bio-medical waste excluding industrial waste, bio-medical waste and e-waste, battery waste, radio-active waste generated in the area under the local authorities and other entities mentioned in rule 2;

47. **"sorting"** means separating various components and categories of recyclables such as paper, plastic, cardboards, metal, glass, etc., from mixed waste as may be appropriate to facilitate recycling;

48. **"stabilising"** means the biological decomposition of biodegradable wastes to a stable state where it generates no leachate or offensive odours and is fit for application to farm land, soil erosion control and soil remediation;

49. **"street vendor"** means any person engaged in vending of articles, goods, wares, food items or merchandise of everyday use or offering services to the general public, in a street, lane, side walk, footpath, pavement, public park or any other public place or private area, from a temporary built up structure or by moving from place to place and includes hawker, peddler, squatter and all other synonymous terms which may be local or region specific; and the words "street vending" with their grammatical variations and cognate expressions, shall be construed accordingly;

50. **"tipping fee"** means a fee or support price determined by the local authorities or any state agency authorised by the State government to be paid to the concessionaire or operator of waste processing facility or for disposal of residual solid waste at the landfill;

51. **"transfer station"** means a facility created to receive solid waste from collection areas and transport in bulk in covered vehicles or containers to waste processing and, or, disposal facilities;

52. **"transportation"** means conveyance of solid waste, either treated, partly treated or untreated from a location to another location in an environmentally sound manner through specially designed and covered transport system so as to prevent the foul odour, littering and unsightly conditions;

53. **"treatment"** means the method, technique or process designed to modify physical, chemical or biological characteristics or composition of any waste so as to reduce its volume and potential to cause harm;

54. **"user fee"** means a fee imposed by the local body and any entity mentioned in rule 2 on the waste generator to cover full or part cost of providing solid waste collection, transportation, processing and disposal services.

55. **"vermi composting"** means the process of conversion of bio-degradable waste into compost using earth worms;

56. **"waste generator"** means and includes every person or group of persons, every residential premises and non-residential establishments including Indian Railways, defence establishments, which generate solid waste;

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Annexure 1: - Drawings

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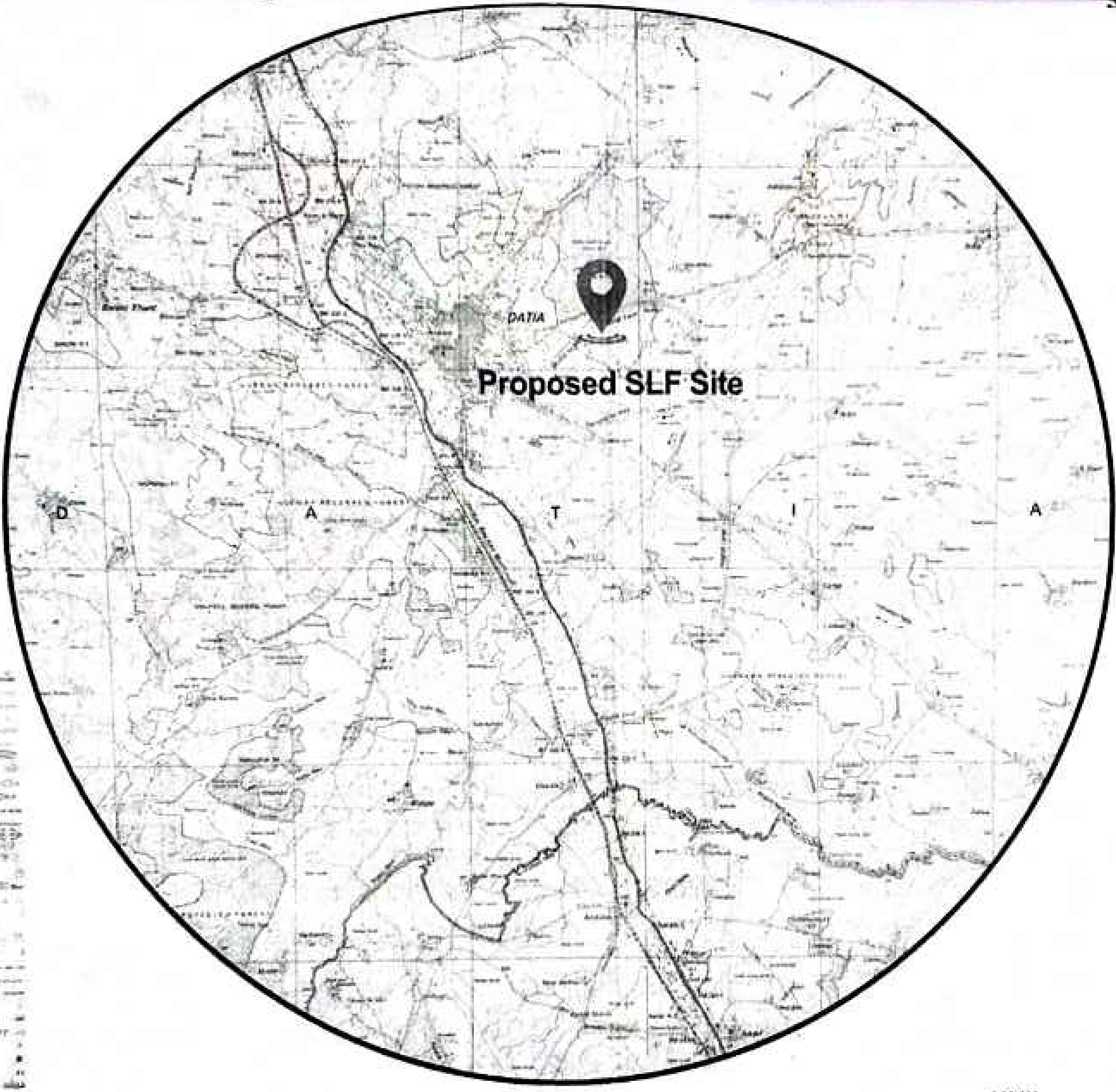
कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Report for Solid Waste Management in Madhya Pradesh

Sub Project

Regional Sanitary Landfill ... Narmadapuram



CONVENTIONAL SYMBOLS

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6. All Dimensions are in ...

Drawing No	Scale	Drawing Status
C-01 R0	NTS	Issued for DPR Approval

Drawing Name

Topographical Map

Revision History

Client

Authority

Directorate, Urban Administration & Development, Government of MP

Nodal Authority: Urban Local Body

Consultant

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Size A3

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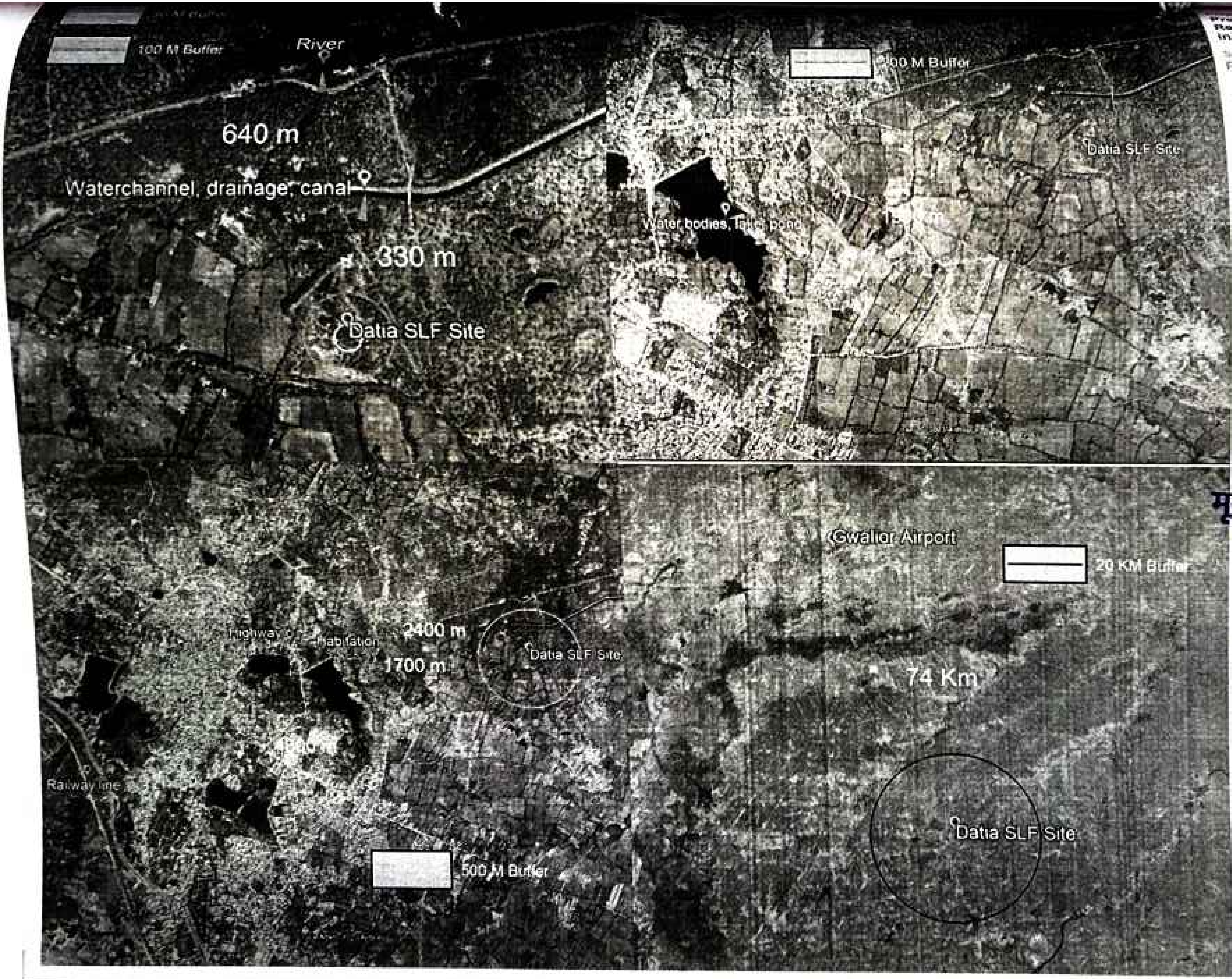
नगर पालिका परिषद ...



Preparation of Detailed Project Report for Solid Waste Management in Madhya Pradesh

Sub Project
Regional Sanitary Landfill at DATIA

NOTES:

Drawing No	Scale	Drawing Status
C-02 R0	NTS	Issued for DPR Approval

Drawing Name
Landfill site suitability analysis

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नगर पालिका परिषद दतिया

Client

Authority

Nodal Authority

Consultant

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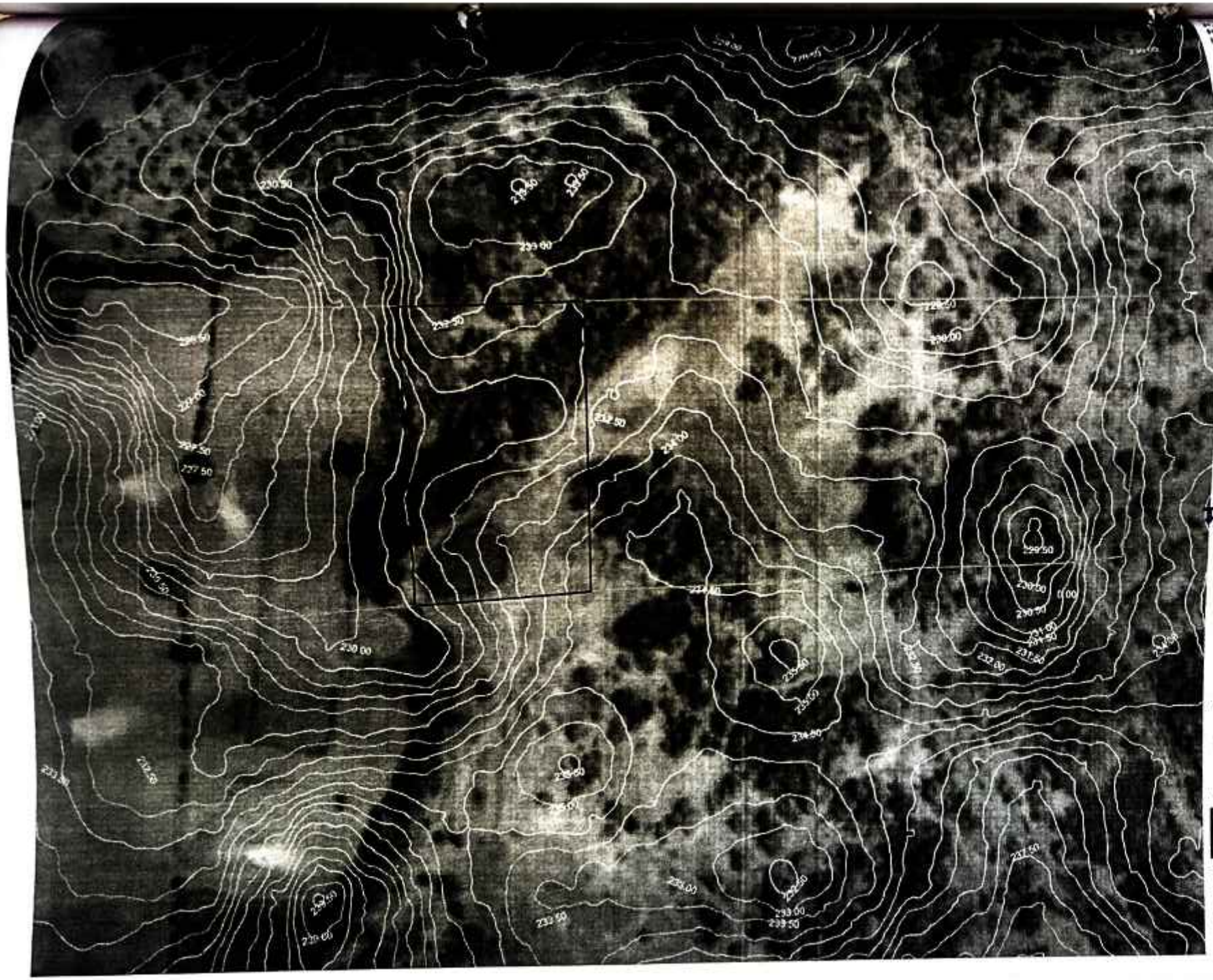

Preparation of Detailed Project Report for Solid Waste Management in Madhya Pradesh

Sub Project:
Regional Sanitary Landfill at [illegible]

Division: [illegible] District: [illegible]
GWALIOR [illegible]

NOTES

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Drawing No: C-63 R0
Scale: NTS
Drawing Size: [illegible]
Issued for DPR [illegible]

Drawing Name:
Contour Map

Revision History

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नगर पालिका परिषद दतिया

Client:
Authority
Directorate Urban Administration & Development, Government of Madhya Pradesh
Nodal Authority: [illegible]

Consultant:
MaRS PIVOTAL PLANNING SERVICES
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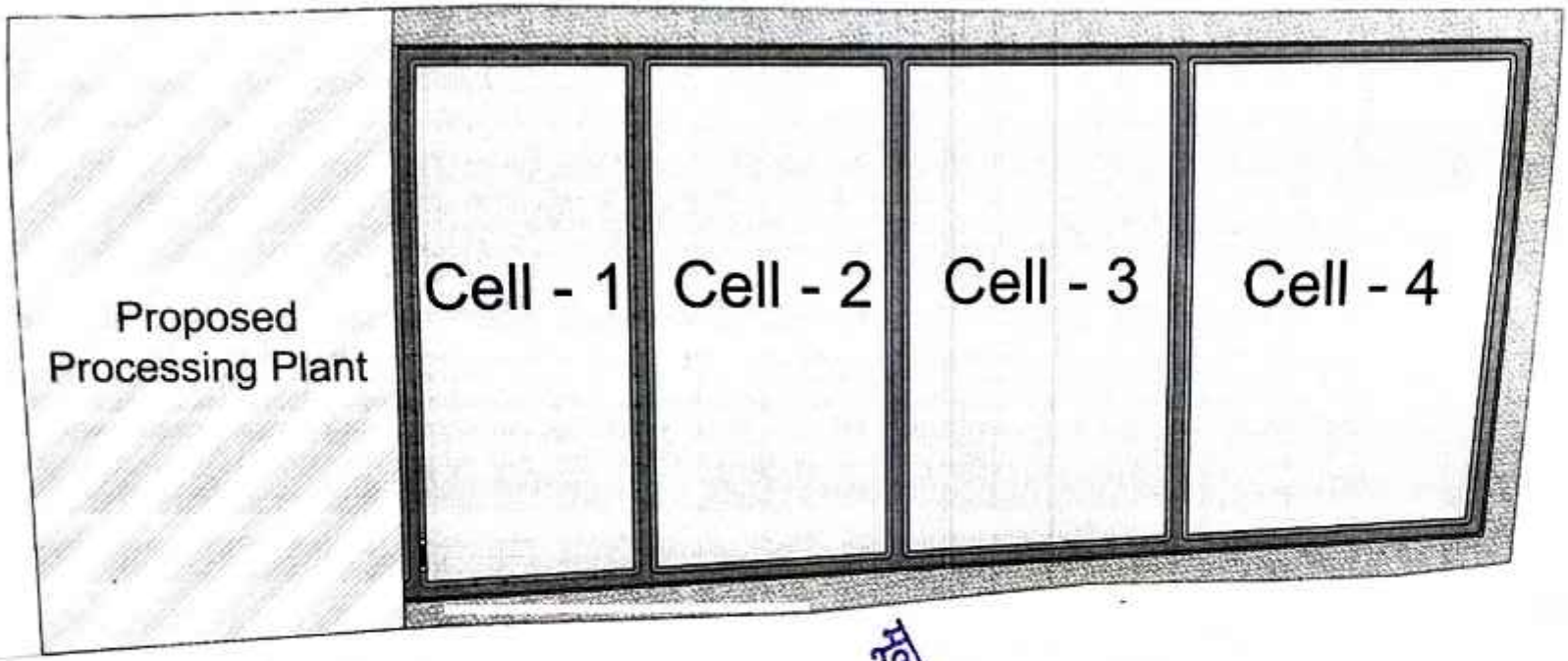

Code	Particular	Units	Details
	Cell - 1 (2023-2027)	Sq.M.	11664.00
	Cell - 2 (2027-2032)	Sq.M.	12731.62
	Cell - 3 (2032-2037)	Sq.M.	14674.17
	Cell - 4 (2037-2042)	Sq.M.	16810.61
	Area of Green Belt and Road Network	Sq.M.	20574.73
	Total Area For Landfill (SLF)	Sq.M.	74499.66
	Area For Processing Plant	Sq.M.	25575.48
	Gross Site Area	Sq.M.	100075.15

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कार्यालय अधीक्षक
नगर पालिका परिषद [illegible]

Report for Solid Waste Management in Madhya Pradesh

Regional Sanitary Landfill at [illegible]

Division	District	Urban Local Body
GWALIOR	DATIA	[illegible]

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Drawing No.	Scale	Drawing Status
C-04 R0	NTS	[illegible]

Drawing Name
[illegible]

Revision History

Rev No.	Description	Date	Approved
[illegible]			

Client

Authority
Directorate Urban Administration & Development, Government of MP

Nodal Authority- Urban Local Body

Consultant

MaRS PIVOTAL

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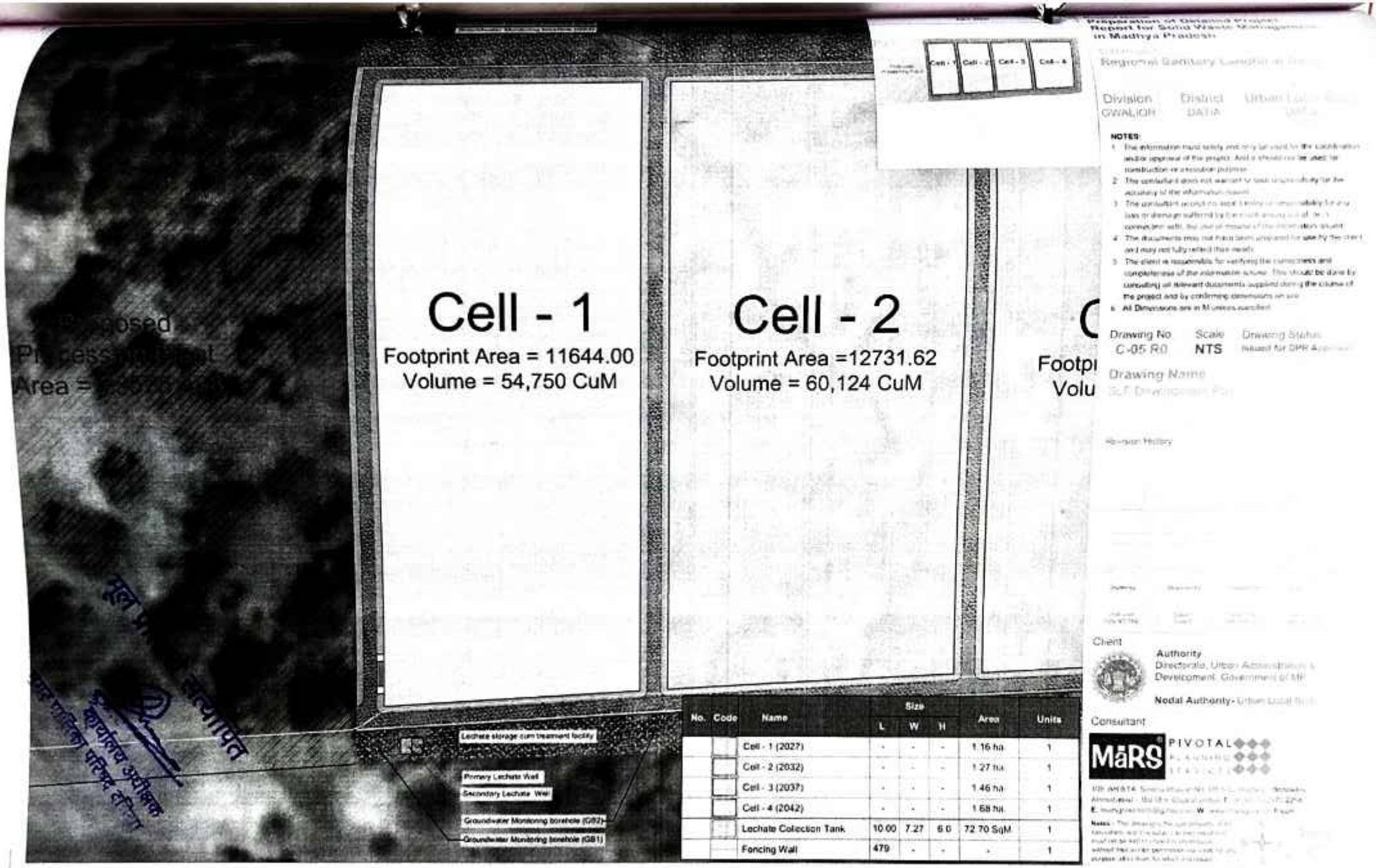

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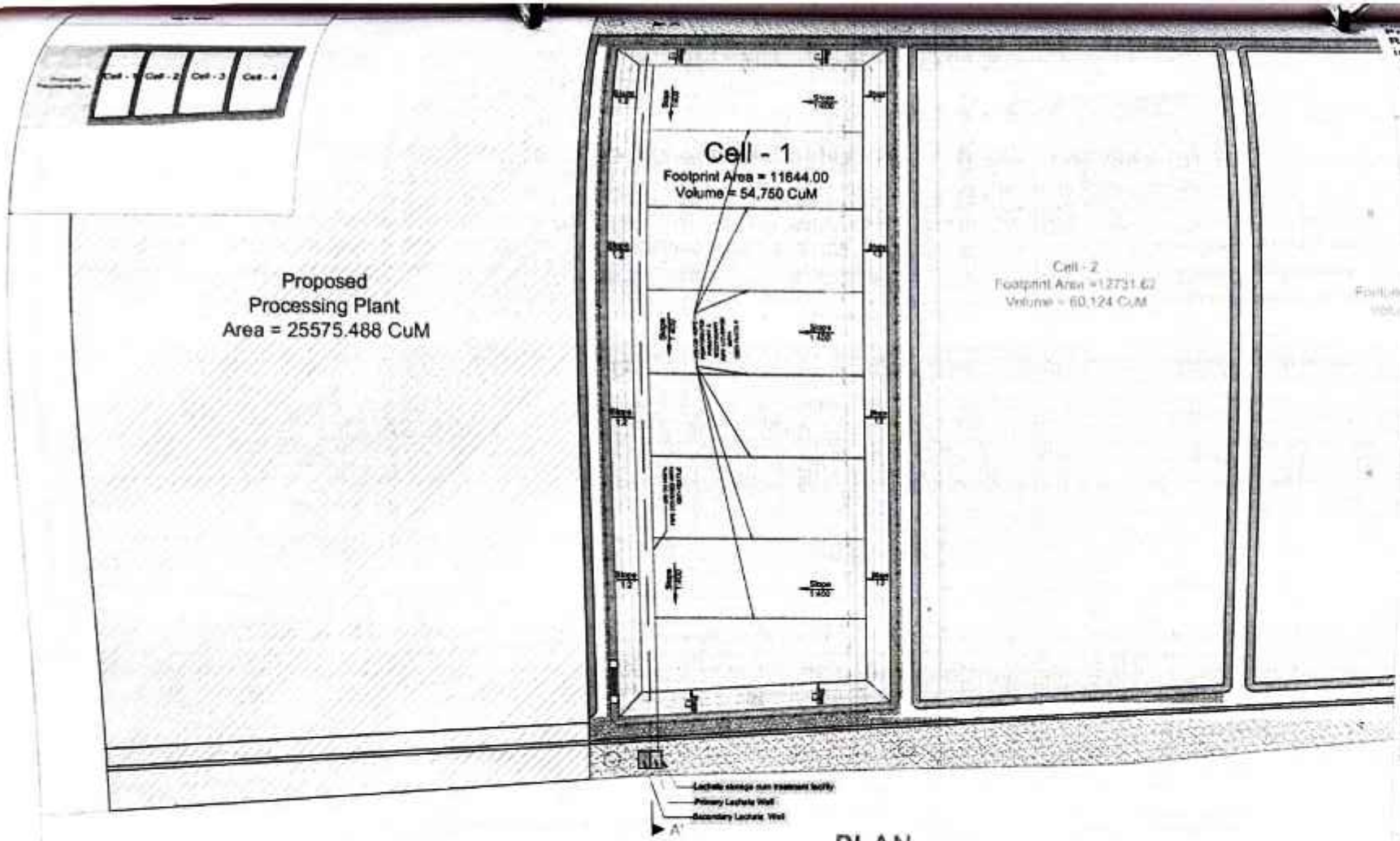
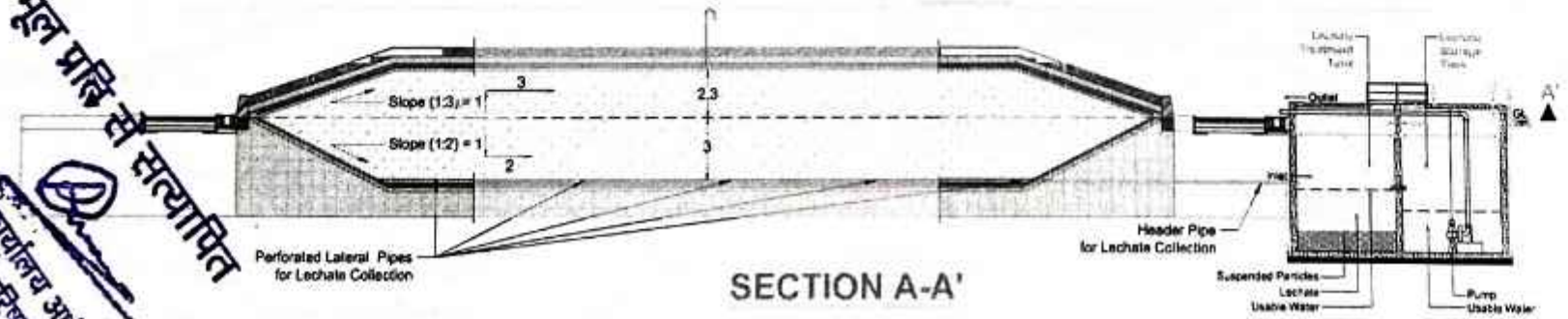
		Cell - 1 (2027)	-	-	-	1.16 ha	1
		Cell - 2 (2032)	-	-	-	1.27 ha	1
		Cell - 3 (2037)	-	-	-	1.46 ha	1
		Cell - 4 (2042)	-	-	-	1.68 ha	1
		Lechate Collection Tank	10.00	7.27	6.0	72.70 SqM	1
		Fencing Wall	479	-	-	-	1



PLAN



SECTION A-A'

Preparation of Detailed Project Report for Solid Waste Management in Madhya Pradesh

Regional Sanitary Landfill

Division: GWALIOR | District: | ULB:

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Drawing No	Scale	Drawing Status
C-06 R0	NTS	Issued for DPR Approval

Drawing Name
Detailed Layout of Cells

Revision History

Client

Authority
Directorate Urban Administration & Development, Government of MP

Nodal Authority- Urban Local Body

Consultant

MaRS PIVOTAL PLANNING SERVICES

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E: mars@rediffmail.com W: www.marsplanning.com

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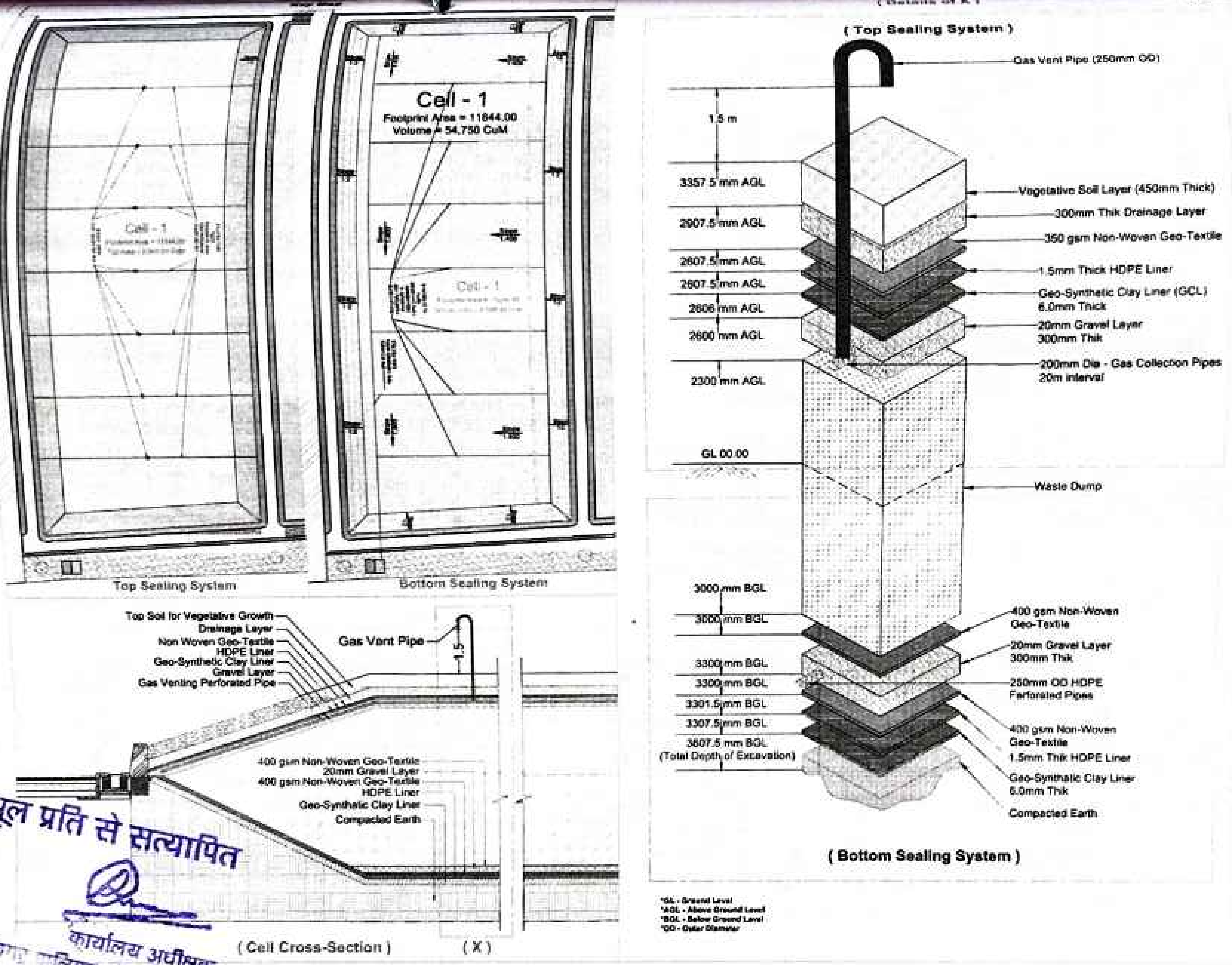
कार्यालय अधीक्षक
नगर पालिका परिषद, दतिया

100



Preparation of Detailed Project Report for Solid Waste Management in Madhya Pradesh

Regional Sanitary Landfill

Division: GWALIOR

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Drawing No	Scale	Drawing Status
C-07 R0	NTS	Issued for DPR Approval

Drawing Name
Liner Details Layout for Cell

Revision History

Client

Authority
Directorate Urban Administration & Development, Government of M.P.

Nodal Authority: Urban Local Body

Consultant

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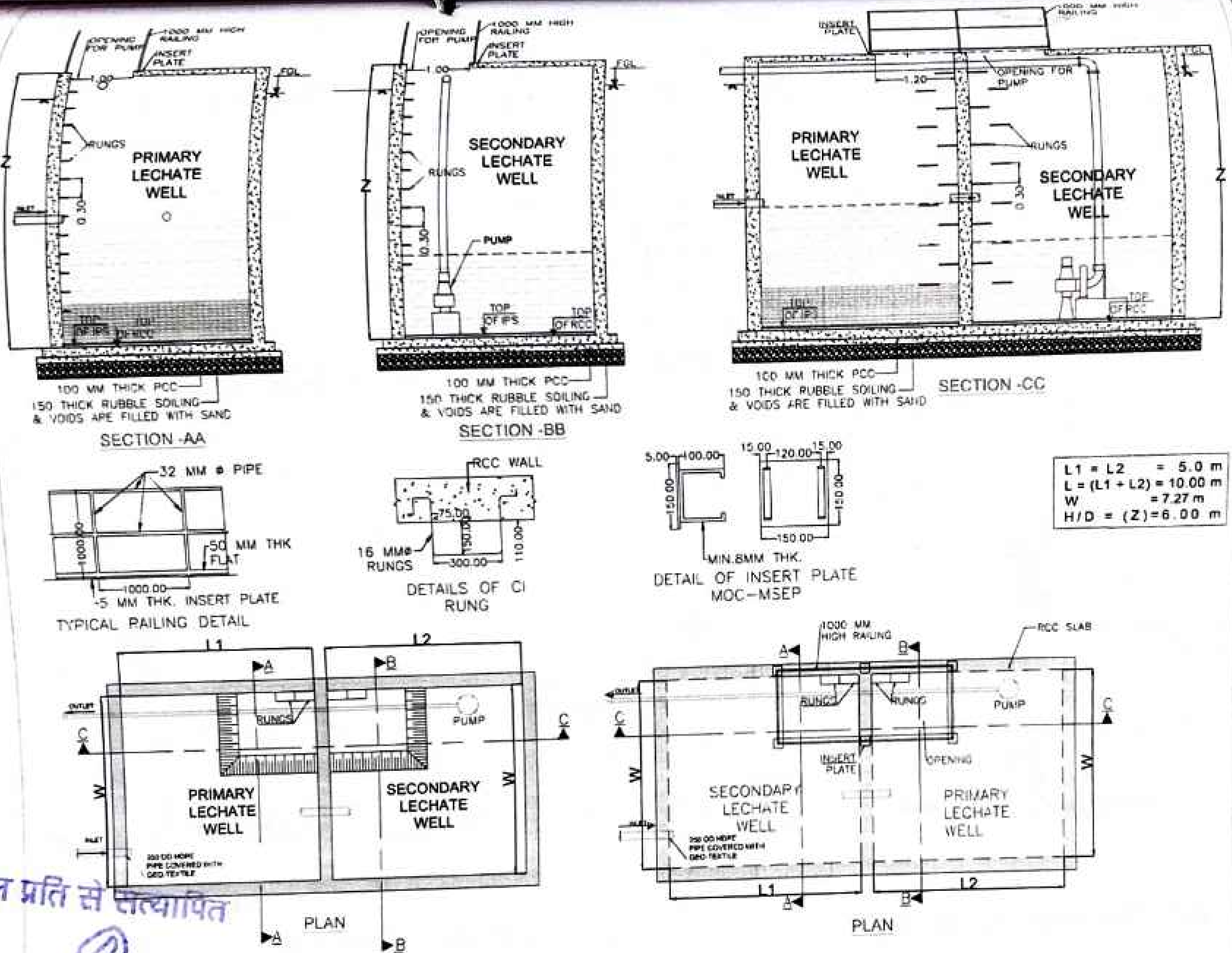
कार्यालय अधीक्षक
नगर पालिका परिषद दतिया



Preparation of Detailed Project Report for Solid Waste Management in Madhya Pradesh

Sub Project
Regional Sanitary Landfill at [illegible]

Division [illegible] | District [illegible]

NOTES.
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Drawing No	Scale	Drawing Status
C-08 R0	NTS	Issued for DPR Approval

Drawing Name
Lechate Collection Tank

Revision History

Client

Authority
Directorate Urban Administration & Development, [illegible]

Nodal Authority [illegible]

Consultant

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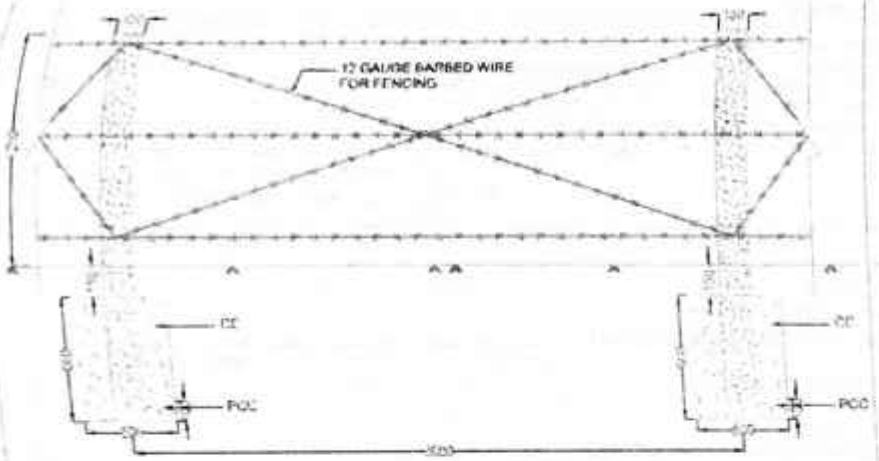
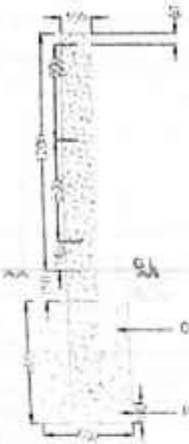
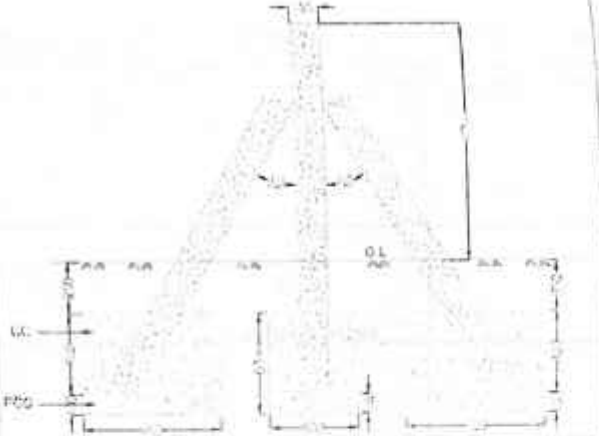
कार्यालय अधीक्षक
नगर पालिका परिषद दतिया



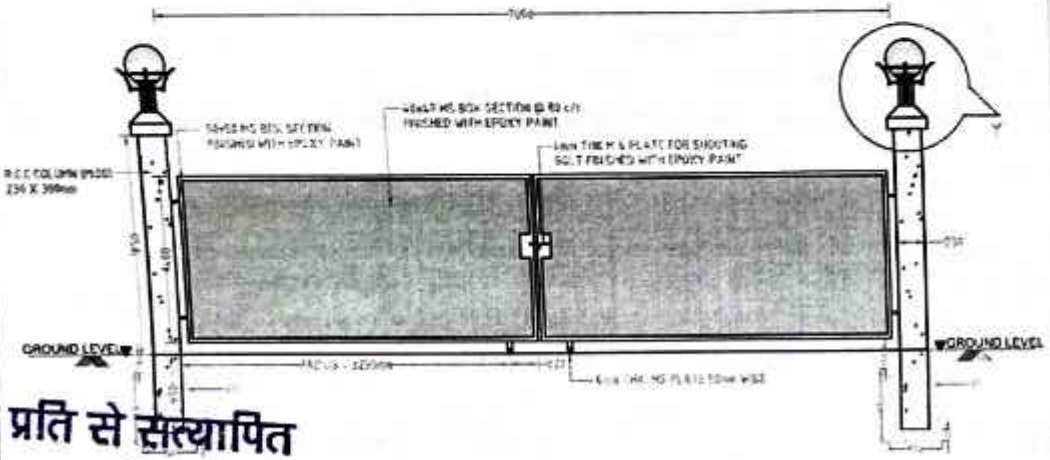
SECTIONAL VIEW FOR BARBED WIRE



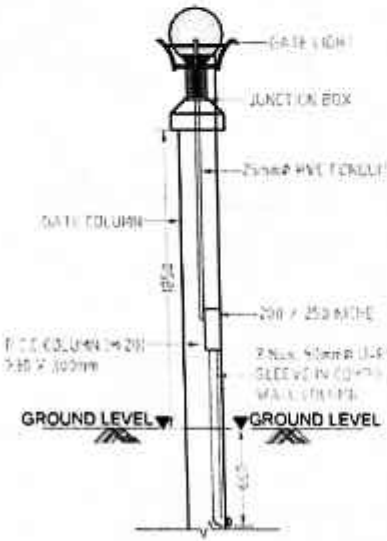
TYPICAL BARBED WIRE SECTION



TYPICAL BARBED WIRE SECTION FOR END AND INTERMEDIATE



ELEVATION (ENTRANCE GATE)



Y- DETAIL OF GATE LIGHTING

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नगर पालिका परिषद, [illegible]

103

Preparation of Detailed Project Report for Solid Waste Management in Madhya Pradesh

Sub Project
Regional Sanitary Landfill at Dabra

Division | District | Urban Local Body
GWALIOR | DATIA

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Drawing No: C-09 R0 | Scale: NTS | Drawing status: Issued for DPR Approval

Drawing Name
Typical Details of Wire Fencing

Re-issue History

Sr. No.	Description	Date

Client

Authority
Directorate Urban Administration & Development, Government of MP

Nodal Authority: Urban Local Body

Consultant

MaRS PIVOTAL PLANNING SERVICES

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Ref: A1

Name of Work

Construction of Scientific Landfill Site (for First Phase of 5 Years- till 2027) at starting stage

PART B:- MEASUREMENTS SHEET | PART A:- ABSTRACT SHEET

ITEM DESCRIPTION		L	W	D/H	Quantity Unit	Quantity	Unit	Rate	Amount
CIVIL Cost at the start of the Project									
Item No. 1 / Excavation for Cell 1 (below Centre)									
1.1 Earth work in excavation for foundation, trenches for pipes / cables or drains etc. by mechanical means / manual means (exceeding 30cm in depth.) including ramming of bottom, dressing of sides, disposal of excavated earth including of all lift and lead upto 50m. Disposed earth to be levelled and neatly dressed. All kinds of soil UADD SOR 2021 : Vol 2, Item 2.6.2, Page No.17						37,656.77	Cum	151.00	56,86,172.38
A Excavation for Cell 1									
	Centre Area	107.96	107.96		11655.34				
	Bottom Area	95.96	95.96		9208.30				
	Depth of Cell (Below Centre)			3.00					
	Total Volume of Cell Below Centre				**31224.00 Cum**				
B Thickness of Liner									
	Geo textile (400 GSM)								
	Drainage Layer			0.3					
	Geo textile (400 GSM)								
	HDPE Geo membrane (1.5 mm Smooth)			0.0015					
	GCL - 6 mm thick			0.006					
	Compacted Clay layer			0.3					
	Total thickness of liner			0.6075					
	Total Volume of liner				**6432.77 Cum**				
C Total Excavated Volume									
	Total Bottom Area of Excavation								
	Bottom Length	95.96							
	additional buffer (Single side)	-0.55							
	additional buffer (both side)	-1.09							
	total length	94.87							
	Total bottom Area				8999.58				
	Total Centre Area of Excavation								
	Centre Length	107.96							
	additional buffer (Single side)	0.67							
	additional buffer (both side)	1.34							
	total length	109.30							
	Total Centre Area				11946.82				
	Total Height of Excavation			3.61					
	Total Volume of Excavation				37656.77 Cum				

मूल प्रति से सत्यापित

कार्यालय अधीक्षक

नगर पालिका परिषद

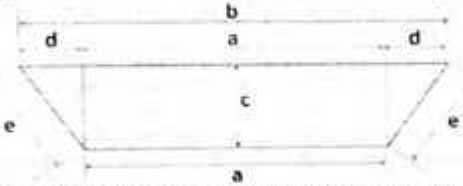
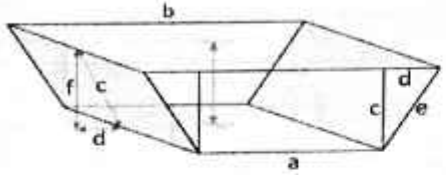
Annexure 2: - BOQ

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद

Ref: **A1**
Name of Work
Construction of Scientific Landfill Site (for First Phase of 5 Years- till 2027) at starting stage

PART B:- MEASUREMENTS SHEET | PART A:- ABSTRACT SHEET

ITEM DESCRIPTION	L	W	D/H	Quantity Unit	Quantity	Unit	Rate	Amount
Item No. 2 / Bottom Sealing System								
2.0 Bottom Sealing Area								
Bottom Width (a)		95.96						
Centre Width (b)		107.96						
Centre Height (inclined Distance between Centre Point of Centre Width and Centre Point of Bottom Width) (c)			6.71					
Horizontal Distance between Centre Width and Bottom Width (Centre Width - Bottom Width)/2 (d)			6.00					
Slant Height of trapezoid (e)			9.00					
Side Slopping Surface is not a perfect Rectangle, that is a Trapezoid, of which bottom edge is the width of bottom Area. Centre area Width is top edge, Slant Hight is the hight of the trapezoid. Total area of this trapezoid is sum of 2 triangles and 1 rectangle.								
								
								
the length and the width of rectangle are respectively (a) and (c), so area of Rectangle is (a)*(c)		95.96	6.71	643.72				
the length of the edges of the triangle are (c), (d) & (e), so the area of 2 triangles (is 2*0.5*(c)*(d)		6.00	6.71	40.25				
Total area of 1 trapezoid is (2 triangle's area + 1 rectangle's area)				683.97 Sqm				
Total area of 4 trapezoid is				2735.87 Sqm				
Bottom Area of Cell (a)*(a)	95.96	95.96		9208.30 Sqm				
Total bottom sealing Area (4 trapezoids area + Cell Bottom Area)				11944.17 Sqm	3,583.25	Cum	312.00	11,17,974.65
2.1 Constructionof granularsub-base by providing Coarse graded material (CBR>30), spreading in uniform layers with motor grader on prepared surface ,mixing by mixin place method at OMC and compacting with vibratory Roller of 80-100KN Static weight to achieve the desired density,complete in all respect as per relevant clauses of section-400. UADD SOR 2021 : Vol 3, Item 4.1, Page No. 29								
Compacted Clay layer	11944.17 Area		0.3	3583.25 Cum				
			Total	**3583.25 Cum**				
2.2 GCL - 6 mm thick with Installation and Transportation					12,541.38	Sqm	332.00 MR	41,63,738.92
Laying Area				11944.17 Sqm				
Extra for Wastage	5%			597.21 Sqm				
			Total	**12541.38 Sqm**				
2.3 HDPE Liner (1.5 mm Smooth) with Installation and Transportation					12,541.38	Sqm	315.00 MR	39,50,535.42
Laying Area				11944.17 Sqm				
Extra for Wastage	5%			597.21 Sqm				
			Total	**12541.38 Sqm**				
2.4 Geo textile (400 GSM) with installation and transportation					9,668.72	Sqm	78.00 MR	7,54,159.97
Laying Area				9208.30 Sqm				
Extra for Wastage	5%			460.42 Sqm				
			Total	**9668.72 Sqm**				

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद

Ref: **A1**

Name of Work

Construction of Scientific Landfill Site (for First Phase of 5 Years- till 2027) at starting stage

PART B:- MEASUREMENTS SHEET

PART A:- ABSTRACT SHEET

ITEM DESCRIPTION	L	W	D/H	Quantity Unit	Quantity	Unit	Rate	Amount
2.5 Providing gravel packing with uniformly graded gravel as per I.S. 4097 of 1999 (revised up to date)in the annular space between outer wall of casing pipe assembly and inner wall of bore hole including cost of gravel, transportation, stacking, washing and packing in layers of suitable thicknessincluding all lead and lifts complete. UADD SOR 2021 : Vol 1, Item 20.13, Page No. 257					**2,762.49**	**Cum**	**638.00**	**17,62,469.08**
Drainage Layer	9208.30 Area		0.3	2762.49 Cum				
			Total	**2762.49 Cum**				
2.6 Geo textile (400 GSM) with installation and transportation					**12,541.38**	**Sqm**	**78.00 MR**	**9,78,227.82**
Laying Area				11944.17 Sqm				
Extra for Wastage	5%			597.21 Sqm				
			Total	**12541.38 Sqm**				
Item No. 3 / Leachate collection System								
3.1 Providing, laying, Jointing & field testing of High Density Polyethylene pipes, (HDPE) confirming to IS 4984/ 14151/ 12786/ 13488 with necessary jointing material like mechanical connector or jointing pipes by heating to the ends of pipes with the help of Teflon coated electric mirror/ heater to the required temperature and then pressing the ends together against each other, to form a monolithic & leak proof joint by thermosetting process. It may be required to be done with Jacks/Hydraulic Jacks/ But fusion machine. (50mm & above fusion jointed & below 50mm mechanical jointed) PE-100 (10kg/sq.cm) UADD SOR 2021 :Vol 1, Item No. 7.1, Page No. 103								
250 mm pipes					**189.00**	**Rmt**	**2742.00**	**5,18,238.00**
Header pipe 250 mm				174.00 Rmt				
for Centrifugal Pump 250 MM pipe				15.00 Rmt				
			Total	**189.00 Rmt**				
200 mm pipes					**371.00**	**Rmt**	**1782.00**	**6,61,122.00**
Lateral Pipe 200 mm				371.00 Rmt				
			Total	**371.00 Rmt**				
3.2 Providing butt fusion welded joint/jointing by heating to the ends with the help of Teflon coated electric mirror/heater ends together etc. by thermosetting process to HDPE Pipe and specials. (6kg, 8kg, 10kg) (50mm & above fusion jointed & below 50mm mechanical jointed) UADD SOR 2021 : Vol 1, Item 7.9, Page No.109								
Header pipe 250 mm				38.00 Nos	**39.00**	**Nos**	**316.00**	**12,324.00**
for Centrifugal Pump 250 MM pipe Connected Pipe				1.00 Nos				
			Total	**39.00 Nos**				
Lateral Pipe 200 mm			**Total**	**75.00 Nos**	**75.00**	**Nos**	**245.00**	**18,375.00**
3.3 Providing Centrifugal Pump to lift the water from Secondary Collection Tank of lechate treatment system with capacity of 900 / 1200 / 1350 cubic meter per hour in the drainage for maintaining the moisture or plantation purpose in the perphery.					**1.00**	**Nos**	**5,100.00**	**5,100.00**
Capacity				900.00 **CuM/Hr**				
No.				1.00 **Nos**				
			Total	**1.00 Nos**				

Cost of GCL for Bottom sealing including 1.5% contingency (A)	42,26,195.00
Cost of Geo textile for Bottom sealing including 1.5% contingency (B)	17,58,374.00
Cost for Bottom sealing system Excluding GCL & Geo textile liner (C)	1,37,32,311.00
Add Contingency @ 1.5% (D)	2,05,985.00
Total cost of Bottom sealing system excluding GCL & Geo textile liner (E)=(C+D)	1,39,38,296.00
Total cost for Bottom sealing system (F)	**1,99,22,865.00**

पूर्ण प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद, ओरैया

Ref: **AI**

Name of Work

Construction of Scientific Landfill Site (for First Phase of 5 Years- till 2027) at starting stage

PART B:- MEASUREMENTS SHEET

PART A:- ABSTRACT SHEET

ITEM DESCRIPTION	L	W	D/H	Quantity	Unit	Quantity	Unit	Rate	Amount
CIVIL Cost at the End of the Project									
Item No. 4 / Top Sealing System									
4.0 Top Sealing Area									
Top Width (a)		94.16							
Centre Width (b)		107.96							
Centre point Distance (Inclined Distance between Centre Point of Centre Width and Centre Point of Top Width) (c)			7.27						
Horizontal Distance between Centre Width and Top Width (Centre Width - Top Width)/2 (d)			6.90						
Slant Height of trapezoid (e)			10.03						
Side Slopping Surface is not a perfect Rectangle, that is a Trapezoid, of which Top edge is the width of Top Area. Centre area Width is top edge, Slant Hight is the hight of the trapezoid. Total area of this trapezoid is sum of 2 triangles and 1 rectangle.									
the length and the width of rectangle are respectively (a) and (c), so area of Rectangle is (a)*(c)		94.16	7.27	684.85					
the length of the edges of the triangle are (c), (d) & (e), so the area of 2 triangles (is 2*0.5*(c)*(d)		6.90	7.27	50.19					
Total area of 1 trapezoid is (2 triangle's area + 1 rectangle's area)				735.03	Sqm				
Total area of 4 trapezoid is				2940.13	Sqm				
Top Area of Cell (a)*(a)	94.16	94.16		8866.09	Sqm				
Total Top sealing Area (4 trapezoids area + Cell Top Area)				11806.22	Sqm				
Total Thickness of Top Liner			0.758						
4.1 **Gas Collection Layer** Providing gravel packing with uniformly graded gravel as per I.S. 4097 of 1999 (revised up to date)in the annular space between outer wall of casing pipe assembly and inner wall of bore hole including cost of gravel, transportation, stacking, washing and packing in layers of suitable thicknessincluding all lead and lifts complete. UADD SOR 2021 : Vol 1, Item 20.13, Page No. 257						**3,541.87**	**Cum**	**638.00**	**22,59,710.09**
Drainage Layer	11806.22 Area		0.3	3541.87 Cum					
			Total	**3541.87 Cum**					
Gas Collection Vent Pipe Providing, laying, Jointing & field testing of High Density Polyethylene pipes, (HDPE) confirming to IS 4984/ 14151/ 12786/ 13488 with necessary jointing material like mechanical connector or jointing pipes by heating to the ends of pipes with the help of Teflon coated electric mirror/ heater to the required temperature and then pressing the ends together against each other, to form a monolithic & leak proof joint by thermosetting process. It may be required to be done with Jacks/Hydraulic Jacks/ But fusion machine. (50mm & above fusion jointed & below 50mm mechanical jointed) PE-100 (8kg/sq.cm) UADD SOR 2021 :Vol 1, Item No. 7.1, Page No. 103									
Header pipe 250 mm			**Total**	**25.00 RM**		**25.00**	**RM**	**2281.00**	**57,025.00**
Lateral Pipe 200 mm			**Total**	**473.00 RM**		**473.00**	**RM**	**1468.00**	**6,94,364.00**
4.2 GCL - 6 mm thick with Installation and Transportation						**12,396.53**	**Sqm**	**332.00 MR**	**41,15,647.54**
Laying Area				11806.22 Sqm					
Extra for Wastage	5%		0.006	590.31 Sqm					
			Total	**12396.53 Sqm**					
4.3 HDPE Liner (1.5 mm Smooth) with Installation and Transportation						**12,396.53**	**Sqm**	**315.00 MR**	**39,04,906.55**
Laying Area				11806.22 Sqm					
Extra for Wastage	5%		0.0015	590.31 Sqm					
			Total	**12396.53 Sqm**					

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Ref: A1

Name of Work

Construction of Scientific Landfill Site (for First Phase of 5 Years- till 2027) at starting stage

PART B:- MEASUREMENTS SHEET

ITEM DESCRIPTION	L	W	D/H	Quantity Unit	Quantity	Unit	Rate	Amount
4.4 Geo textile (400 GSM) with installation and transportation					12,396.53	Sqm	78.00 MR	9,66,929.24
Laying Area				11806.22 Sqm				
Extra for Wastage	5%			590.31 Sqm				
			Total	12396.53 Sqm				
4.5 Providing gravel packing with uniformly graded gravel as per I.S. 4097 of 1999 (revised up to date)in the annular space between outer wall of casing pipe assembly and inner wall of bore hole including cost of gravel, transportation, stacking, washing and packing in layers of suitable thicknessincluding all lead and lifts complete. UADD SOR 2021 : Vol 1, Item 20.13, Page No. 257					3,541.87	Cum	638.00	22,59,710.09
Drainage Layer	11806.22 Area		0.3	3541.87 Cum				
			Total	3541.87 Cum				
4.6 **Local top soil for vegetative growth** Supplying,stacking and spreading of good earth for plantation at site including Royalty and carriage (earth measured in stacks will be reduced by 20% for payment. UADD SOR 2021 :Vol 3, Item 11.4, Page No. 72					5,312.80	Cum	292.00	15,51,337.02
	11806.22 Area		0.45	5312.80 Cum				
			Total	5312.80 Cum				
4.7 Grassing with 'Doob' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for mowing.(If needed good earth shall be paid separately). In rows 5 cm apart in either direction. UADD SOR 2021 :Vol 3, Item No. 11.9.3, Page No. 72					11,806.22	100 Sqm	6243.00	7,37,062.00
Landscaping Area	11806.22 Area			11806.22 Sqm				
			Total	11806.22 Sqm				

PART A:- ABSTRACT SHEET

Cost of GCL liner for Top sealing (G)	41,15,647.54
Cost of GCL liner for Top sealing system at 1st year (H)	41,15,647.54
Escalated Cost of GCL liner for Top sealing system at 2nd year (I)=(H+5% on H)	43,21,430.00
Escalated Cost of GCL liner for Top sealing system at 3rd year (J)=(I+5% on I)	45,37,502.00
Escalated Cost of GCL liner for Top sealing system at 4th year (K)=(J+5% on J)	47,64,377.00
Escalated Cost of GCL liner for Top sealing system at 5th year (L)=(K+5% on K)	50,02,596.00
Add Contingency @ 1.5% (M)	75,039.00
Total cost for GCL liner for Top sealing system (M)= (K)+(L)	**50,77,635.00**
Cost of Geo Textile liner for Top sealing (N)	9,66,929.00
Cost of Geo Textile liner for Top sealing system at 1st year (O)	9,66,929.00
Escalated Cost of Geo Textile liner for Top sealing system at 2nd year (P)=(O+5% on O)	10,15,275.00
Escalated Cost of Geo Textile liner for Top sealing system at 3rd year (Q)=(P+5% on P)	10,66,039.00
Escalated Cost of Geo Textile liner for Top sealing system at 4th year (R)=(Q+5% on Q)	11,19,341.00
Escalated Cost of Geo Textile liner for Top sealing system at 5th year (S)=(R+5% on R)	11,75,308.00
Add Contingency @ 1.5% (T)	17,630.00
Total cost for Geo Textile liner for Top sealing system (U)= (S)+(T)	**11,92,938.00**
Cost for Top sealing system Excluding GCL & Geo Textile liner (V)	1,14,64,115.00
Cost for Top sealing system Excluding GCL & Geo Textile liner at 1st year (W)	1,14,64,115.00
Escalated Cost for Top sealing system Excluding GCL & Geo Textile liner at 2nd year (X)=(W+5% on W)	1,20,37,321.00
Escalated Cost for Top sealing system Excluding GCL & Geo Textile liner at 3rd year (Y)=(X+5% on X)	1,26,39,187.00
Escalated Cost for Top sealing system Excluding GCL & Geo Textile liner at 4th year (Z)=(Y+5% on Y)	1,32,71,146.00
Escalated Cost for Top sealing system Excluding GCL & Geo Textile liner at 5th year (A1)=(Z+5% on Z)	1,39,34,703.00
Add Contingency @ 1.5% (B1)	2,09,021.00
Total cost for Top sealing system Excluding GCL & Geo Textile liner (C1)= (A1)+(B1)	**1,41,43,724.00**
Total Cost for Top Sealing System (D1)=(B1+C1)	**2,04,14,297.00**

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Ref: A2

Name of Work

Construction of Lechate Collection Well

PART B:- MEASUREMENTS SHEET | **PART A:- ABSTRACT SHEET**

ITEM DESCRIPTION		Nos.	L	W	D/H	Quantity Unit	Quantity	Unit	Rate	Amount
Item No. 1 / Excavation										
1.1 Earth work in excavation for foundation, trenches for pipes / cables or drains etc. by mechanical means / manual means (exceeding 30cm in depth.) including ramming of bottom, dressing of sides, disposal of excavated earth including of all lift and lead upto 50m. Disposed earth to be levelled and neatly dressed. UADD SOR 2021 : Vol 2,Cha.-2,Item No.:-2.6,Page No.17										
	Pit Size	1	8.27	11.00	6.00	545.86 cum				
					Total :-	**545.86 cum**	**545.86**	**cum**	**151.00**	**82,424.00**
Item No. 2 / PCC										
2.1 Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering All work upto plinth level. Cement concrete grade M-15 (Nominal Mix) with 40 mm maximum size of stone aggregate Labour rate for Item No.- 4.1.1 to 4.1.7 UADD SOR 2021 : Vol 2,Cha.-4,Item No.:-4.1.6.1,Page No.32										
	Pcc For Raft	1	8.07	10.80	0.10	8.72 cum				
					Total :-	**8.72 cum**	**8.72**	**cum**	**5490.00**	**47,852.00**
Item No. 3 / Site Treatment										
3.1 Diluting and injecting chemical emulsion for POST CONSTRUCTIONAL anti-termite treatment (including the cost of chemical emulsion. Along external wall where the apron is not provided using chemical emulsion @ 7.5 liters / sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete. With Chlorpyriphos/ Lindane E.C. 20% with 1% concentration. UADD SOR 2021 : Vol 2,Cha.-2, Item 2.20.1, Page No.19										
	Building Size	1	8.07	10.80	-	87.16 sqm				
					Total :-	**87.16 sqm**	**87.16**	**sqm**	**13.00**	**1,133.00**
Item No. 4 / Raft										
4.1 Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases up to floor two level excluding the cost of centering, shuttering and reinforcement with Cement concrete grade M-20 (Nominal Mix) with 20 mm maximum size of stone aggregate. UADD SOR 2021 : Vol 2, Item 5.3, Page No.46										
	Raft Footing	1.00	7.87	10.60	0.30	25.03 cum				
	Long wall	2.00	7.67	0.20	6.00	18.41 cum				
	Short Wall	3.00	10.40	0.20	6.00	37.44 cum				
	Slab	1.00	5.27	9.40	0.20	9.91 cum				
					Total :-	**90.79 cum**	**90.79**	**cum**	**5932.00**	**5,38,545.00**
Centering and shuttering including strutting, propping stretching etc. complete for and removal of form work by sheet plate or ply wood shuttering for : Foundations, footings, bases of columns, etc. For mass concrete UADD SOR 2021 : Vol 2, Item 19.1.1, Page No.208										
	Raft Footing					11.08				
					Total :-	**11.08 sqm**	**11.08**	**sqm**	**160.00**	**1,773.00**

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Name of Work

Construction of Lechate Collection Well

ITEM DESCRIPTION	Nos.	L	W	D/H	Quantity	Unit	Quantity	Unit	Rate	Amount
Centering and shuttering including strutting, propping stretching etc. complete for and removal of form work by sheet plate or ply wood shuttering for : Walls (any thickness) including attached pilasters,butteresses,plinth and string courses etc UADD SOR 2021 : Vol 2, Item 19.1.2, Page No.208										
Long wall					188.89 sqm					
Short Wall					381.60 sqm					
				Total :-	570.49 sqm		570.49	sqm	289.00	1,64,873.00
Centering and shuttering including strutting, propping stretching etc. complete for and removal of form work by sheet plate or ply wood shuttering for : Lintels, beams, plinth beams, girders, bressumers and cantilevers. UADD SOR 2021 : Vol 2, Item 19.1.5, Page No.208										
Slab					5.87					
				Total :-	5.87 sqm		5.87	sqm	270.00	1,584.00
Item No. 5 / Reinforcement										
5.1 Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding upto floor level including cost of binding wire, wastage and over laps upto 12mm horizontal/ inclined position of reinforcement bars in slab and beams, plinth, chajjas, lintels, upto 4.5m vertical length of reinforcement in wall columns (over laps shall be provided as per requirement of IS : 13920; IS 456 & SP :34) etc. complete. Thermo-Mechanically Treated bars. (Fe 500 D or more) UADD SOR 2021 : Vol 2,Cha.-5, Item 5.11.4, Page No.47									
Raft Footing	309.89			kg	309.89 kg					
RCC Walls	726.94			kg	726.94 kg					
Short Wall				kg	kg					
Slab	103.07			kg	103.07 kg					
				Total :-	1,139.90 kg		1,139.90	kg	58.00	66,114.00
Item No. 6 / Filling										
6.1 Filling by available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m. All kinds of soil. UADD SOR 2021 : Vol 2,Cha.-2,Item No.:-2.17.1,Page No.19										
Total Excavation					545.86 cum					
				(A).....	545.86 cum					
Rubble Soling					13.07 cum					
Pcc For Raft					8.72 cum					
Raft Footing					25.03 cum					
				(B).....	46.82 cum					
				Total :-	499.04 cum		499.04	cum	89.00	44,414.39

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Ref: **A2**

PART B:- MEASUREMENTS SHEET | **PART A:- ABSTRACT SHEET**

Name of Work

Construction of Lechate Collection Well

ITEM DESCRIPTION		Nos.	L	W	D/H	Quantity Unit	Quantity	Unit	Rate	Amount
Item No. 7 / Finishes										
7.1 20mm cement plaster 1:3(1 cement : coarse sand) finished with coat of neat cement							**553.69**	**sqm**	**262.00**	1,45,068.00
UADD SOR 2021 : Vol 2, Item13.6, Page No.160										
	Long Wall (Outside)	2	7.67		6.00	92.05 sqm				
	Short Wall (Outside)	3	10.40		6.00	187.20 sqm				
	Long Wall (Inside)	2	7.27		6.00	87.25 sqm				
	Short Wall (Inside)	3	10.40		6.00	187.20 sqm				
	Slab (inside & Outside)	0	7.27	10.00		0.00 sqm				
					(A).....	**553.69 sqm**				
	Deductions									
					(B).....	**0.00 sqm**				
				(A - B).....	**Total :-**	**553.69 sqm**				
7.2 Steel work welded in builtup sections/framed work in cluding cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings,frames,guardbar,ladder,railings,brackets,gates and similar works. UADD SOR 2021 : Vol 2,Cha.-2,Item No.:-10.14.1.2,Page No.118							**19.20**	**Kg**	**92.00**	1,766.00
	Ms Railing	2.00	1.20	1.00	0.10	0.24 Cum				
	Ms Railing Per KG	0.24		80.00	kg/cum	19.20 Kg				
					Total :-	**19.20** Kg				
									TOTAL COST (A):-	**10,95,546.39**
									ADD 5% Contigency charges (5% of A) (B):-	54,777.00
									TOTAL COST (A+B) (C):-	**11,50,323.00**

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Ref: A3

Name of Work

Construction of Barbed wire Fencing with RCC post

PART B:- MEASUREMENTS SHEET

PART A:- ABSTRACT SHEET

ITEM DESCRIPTION		Nos.	L	W	D/H	Quantity Unit	Quantity	Unit	Rate	Amount
Item No. 1 / Excavation										
1.1	Earth work in excavation for foundation, trenches for pipes / cables or drains etc. by mechanical means / manual means (exceeding 30cm in depth.) including ramming of bottom, dressing of sides, disposal of excavated earth including of all lift and lead upto 50m. Disposed earth to be levelled and neatly dressed. Ordinary rock UADD SOR 2021 : Vol 2, Item 2.6, Page No.17									
	Excavation for Columns footings	178	0.50	0.50	0.75	33.38 cum				
					Total :-	**33.38 cum**	**33.38**	**cum**	**151.00**	**5,040.00**
Item No. 2 / PCC										
2.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering All work upto plinth level. Cement concrete grade M-15 (Nominal Mix) with 40 mm maximum size of stone aggregate Labour rate for Item No.- 4.1.1 to 4.1.7 UADD SOR 2021 : Vol 2,Cha.-4,Item No.:-4.1.6.1,Page No.32									
	Pcc for RCC Post	178	0.50	0.50	0.10	4.45 cum				
					Total :-	**4.45 cum**	**4.45**	**cum**	**5490.00**	**24,431.00**
Item No.3 /R.C.C.										
3.1	Providing and laying in position specified grade of reinforcedcement concrete excluding the cost of centering,shuttering,finishing and reinforcement - All work up to plinth level : CementconcretegradeM-20(NominalMix)with20mmmaximumsize of stone aggregate. SOR 2021 : Vol 2.Cha.-5.Item No.:-5.1.1..Page No.46					UADD				
	Rcc for RCC Post	178.00	0.50	0.50	0.50	20.25 cum				
					Total :-	**20.25 cum**	**20.25**	**cum**	**5435.00**	**1,10,045.00**
Item No.4 /G.I. barbed wire										
4.1	Fencing with R.C.C. post placed at required distance, embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post one side only, provided with horizontal lines and two diagonals of barbed wire weighing 9.38 kg per 100 metres (minimun) between the two posts fitted and fixed with G.I. staples on wooden plugs or G.I. binding wire tied to 6 mm bar nibs fixed while casting the post (cost of R.C.C. posts, struts, earth work and concrete to be paid for separately) :- Payment to be made per metre cost of total length of barbed wire used. With G.I. barbed wire UADD SOR 2021 : Vol 2,Cha.-10,Item No.:-10.22.1,Page No.119									
	G.I. barbed wire		2577.69			2577.69 Rmt				
					Total :-	**2577.69 Rmt**	**2,577.69**	**Rmt**	**10.00**	**25,777.00**
Item No.5 /RCC Post										
5.1	R.C.C. post M30 Garde, well finished, 2.0 mt height									
	RCC Post	214				214 Nos.				
					Total :-	**214.00 Nos.**	**214.00**	**Nos.**	**180.00**	**38,520.00**
Item No. 6 / Entrance Gate										

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6.1	*Providing and fixing of MS Gate with Excavation for foundation upto 1.5 mt. Depth including sorting out and stacking of useful materials and disposing of the excavated stuff upto 50 meter lead also including PCC (1:3:6) as per Strata. Providing and placing in position HYSD bar reinforcement for following items including cutting bending hooking and tying complete as-per detailed drawing. Also, including Formwork, reinforcement Concrete (1:2:4) , 15mm Cement plaster etc. all complete.* **As Per Rate Analysis**				**1.00**	**Nos.**	**96221.41**	**96,221.00**
	Entrance Gate	1	1.00	1.00 Nos.				
						TOTAL COST (A):-		**3,00,034.00**
						ADD 5% Contigency charges (5% of A) (B):-		15,002.00
						TOTAL COST (A+B) (C):-		**3,15,036.00**

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Annexure 3: - SOR

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RATES BASED ON SOR ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Item No. 1 / Excavation *Earth work in excavation for foundation, trenches for pipes / cables or drains etc. by mechanical means / manual means (exceeding 30cm in depth.) including ramming of bottom, dressing of sides, disposal of excavated earth including of all lift and lead upto 50m. Disposed earth to be levelled and neatly dressed. All kinds of soil* **UADD SOR 2021 : Vol 2, Item 2.6.2, Page No.17**	**cum**	151.00	0.00	**151.00**
Excavation for foundation depth from 1.5 mt. to 3.00 Mt. depth including sorting out and stacking of useful materials and disposing of the excavated stuff up to 50M. meter lead (A) Loose or Soft Soil **[Item Code 04002A]**	**cum**	194.00	0.00	**194.00**
Item No. 2 / PCC Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering All work up to plinth level. Cement concrete grade M-15 (Nominal Mix) with 40 mm maximum size of stone aggregate Labour rate for Item No.- 4.1.1 to 4.1.7 **UADD SOR 2021 : Vol 2, Item 2.6.2, Page No.17**	**cum**	5490.00	0.00	**5490.00**
Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 hand broken stone aggregate 40mm nominal size) and curring complete excluding cost of formwork in (A) Foundation and plinth **[Item Code 05006A]**	**cum**	4025.00	0.00	**4025.00**
Item No. 3 / Column Footing Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering,finishing and reinforcement - All work up to plinth level : Cement concrete grade M-20 (Nominal Mix) with 20 mm maximum size of stone aggregate. **UADD SOR 2021 : Vol 2, Item 5.1.1, Page No.46**	**cum**	5435.00	0.00	**5435.00**
Centering and shuttering including strutting, propping stretching etc. complete for and removal of form work by sheet plate or ply wood shuttering for : Foundations, footings, bases of columns, etc. For mass concrete. **UADD SOR 2021 : Vol 2, Item 19.1.1, Page No.208**	**Sqm**	160.00	0.00	**160.00**

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RATES BASED ON SOR ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Item No. 4 / Columns Above Ground Level				
Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc.above plinth level and up to floor two level excluding cost of centering, shuttering and reinforcement etc. Cement concrete grade M-20 (Nominal Mix) with 20 mm maximum size of stone aggregate. **UADD SOR 2021 : Vol 2, Item 5.2.1, Page No.46**	**cum**	5656.00	0.00	**5656.00**
Centering and shuttering including strutting, propping stretching etc. complete for and removal of form work by sheet plate or ply wood shuttering for : Columns, Pillars, Piers, Abutments, Posts and Struts. **UADD SOR 2021 : Vol 2, Item 19.1.6, Page No.208**	**Sqm**	362.00	0.00	**362.00**
Item No. 5 / Beams				
Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases up to floor two level excluding the cost of centering, shuttering and reinforcement with Cement concrete grade M-20 (Nominal Mix) with 20 mm maximum size of stone aggregate. **UADD SOR 2021 : Vol 2, Item 5.3, Page No.46**	**cum**	5932.00	0.00	**5932.00**
Centering and shuttering including strutting, propping stretching etc. complete for and removal of form work by sheet plate or ply wood shuttering for : Lintels, beams, plinth beams, girders, bressumers and cantilevers. **UADD SOR 2021 : Vol 2, Item 19.1.5, Page No.208**	**sqm**	270.00	0.00	**270.00**

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RATES BASED ON SOR

ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Item No. 6 / Site Treatment				
Diluting and injecting chemical emulsion for POSTCONSTRUCTIONAL anti-termite treatment (including the cost of chemical emulsion. Along external wall where the apron is not provided using chemical emulsion @ 7.5 liters / sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete. With Chlorpyriphos/ Lindane E.C. 20% with 1% concentration. **UADD SOR 2021 : Vol 2, Item 2.20.1, Page No.19**	**Meter**	13.00	0.00	**13.00**
Item No. 7 / Filling				
Filling by available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m. **UADD SOR 2021 : Vol 2, Item 2.16, Page No.19**	**cum**	89.00	0.00	**89.00**
Item No. 8 / Slabs				
Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases up to floor two level excluding the cost of centering, shuttering and reinforcement with Cement concrete grade M-20 (Nominal Mix) with 20 mm maximum size of stone aggregate. **UADD SOR 2021 : Vol 2, Item 5.3, Page No.46**	**cum**	5932.00	0.00	**5932.00**
Item No. 9 / Reinforcement				
Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding upto floor level including cost of binding wire, wastage and over laps upto 12mm horizontal/ inclined position of reinforcement bars in slab and beams, plinth, chajjas, lintels, upto 4.5m vertical length of reinforcement in wall columns (over laps shall be provided as per requirement of IS : 13920; IS 456 & SP :34) etc. complete. Thermo-Mechanically Treated bars. (Fe 500 D or more) **UADD SOR 2021 : Vol 2, Item 5.11.4, Page No.47**	**KG**	58.00	0.00	**58.00**

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RATES BASED ON SOR ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Item No. 10 / Openings				
Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters using following hinges. 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws. **UADD SOR 2021 : Vol 2, Item 9.19.1, Page No.95**	**sqm**	1384.00	0.00	**1384.00**
Supplying and fixing rolling shutters of approved make, made of required size M.S. laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS : 4454 Part-I. and M.S. top cover of required thickness for rolling shutters. 80x1.25mm M.S. laths with 1.25 mm thick top cover. **UADD SOR 2021 : Vol 2, Item 10.6.1., Page No.116**	**sqm**	2049.00	0.00	**2049.00**
Providing and fixing anodised aluminium grill (anodised transparentor dyed to required shade according to IS: 1868 with minimumanodic coating of grade AC15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment). **UADD SOR 2021 : Vol 2, Item 17.18, Page No.193**	**KG**	402.00	0.00	**402.00**

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RATES BASED ON SOR

ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Providing and fixing panelled or panelled and glazed wooden shutters for doors, windows and clerestory windows including ISI marked M.S pressed bright finished butt hinges with necessary screws excluding, panelling / glazing which will be paid for separately. Second class teak wood **UADD SOR 2021 : Vol 2, Item 9.5.1, Page No.91**	**sqm**	2354.00	0.00	**2354.00**
Providing and fixing glazed shutters for doors, windows and clerestory windows using 4 mm thick float glass panes including black enamelled ISI marked M.S butt hinges with necessary screws. Second class teak wood **UADD SOR 2021 : Vol 2, Item 9.8.1, Page No.93**	**sqm**	2850.00	0.00	**2850.00**
Item No. 11 / Brickwork				
Brick work with well burnt chimney bricks in bulls patent trench kiln manufactured by ghol process,crushing strength not less than 40kg /sqcm and water absorption not more than 15% in foundation and plinth. Cement mortar 1:6 (1 cement : 6 coarse sand Labour rate for Item No.- 6.1.1 to 6.1.2 **UADD SOR 2021 : Vol 2, Item 6.1.2,6.1.3, Page No.56**	**cum**	5634.00	0.00	**5634.00**
Half brick masonry with of class designation 40 in foundation and plinth in. Cement mortar 1:4 (1 cement : 4 coarse sand) Labour rate for Item No.- 6.9.1 to 6.9.2 **UADD SOR 2021 : Vol 2, Item 6.4.2,6.4.3, Page No.56**	**Sqm**	737.00	0.00	**737.00**
Item No. 12 / Finishes				
20mm cement plaster 1:3(1 cement : coarse sand) finished with coat of neat cement **UADD SOR 2021 : Vol 2, Item13.6, Page No.160**	**sqm**	262.00	0.00	**262.00**
Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade: Two or more coats on new work **UADD SOR 2021 : Vol 2, Item13.39, Page No.163**	**sqm**	58.00	0.00	**58.00**

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RATES BASED ON SOR

ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Item No. 13 / Shed				
Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete: **UADD SOR 2021 : Vol 2, Item 10.2, Page No.116**	**Kg**	69.00	0.00	**69.00**
Providing & fixing corrugated Galvanised steel (CGS) sheet roofing including vertical/curved surface fixed with polymer coated J or L hooks, bolts and nuts 8mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in orizontal/vertical or curved surfaces) excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. 0.80mm thick with zinc coating not less than 275gm/m² **UADD SOR 2021 : Vol 2, Item 12.1.2, Page No.143**	**sqm**	738.00	0.00	**738.00**
Providing & fixing ridges or hips of width 60 cm over all width plain G.S. sheet fixed with polymer coated J. or L hooks, bolts and nuts 8 mm dia. G.I. limpet and bitumen washers complete. 0.80mm thick with zinc coating not less than 275gm/m² **UADD SOR 2021 : Vol 2, Item 12.4.1, Page No.143**	**RMT**	416.00	0.00	**416.00**
Item No. 14 / Entrance Gate				
Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. all complete. Fixed to steel windows by welding. **UADD SOR 2021 : Vol 2, Item 9.46.1, Page No.98**	**KG**	92.00	0.00	**92.00**
Item No. 15 / Flooring				
Kota stone 25mm thick flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of 1:4 cement mortar (1 cement : 4 course sand) (minimum size of kota stone 2.0 sqft) **UADD SOR 2021 : Vol 2, Item 11.25, Page No.134**	**sqm**	875.00	0.00	**875.00**

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RATES BASED ON SOR

ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Providing and laying vitrified floor tiles (without Soluble salt) or printed (with soluble salt) Nano polished (Glossy finish) in different sizes with water absorption less than 0.05% and conforming to IS : 15622 of approved make in all colours & shades, Ist quality/ premium quality in flooring laid on 20mm thick cement mortar 1:4 (1 cement : 4 sand) including grouting the joints with white cement and matching pigments etc. complete. Size 600x600mm as per manufacturer specification. **UADD SOR 2021 : Vol 2, Item 11.35, Page No.135**	**sqm**	1116.00	0.00	**1116.00**
Kota stone slabs 25mm thick in risers of steps, skirting,dado and pillars laid on 12mm (average) thick cement mortar 1:3 (1 cement 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete. **UADD SOR 2021 : Vol 2, Item 11.26, Page No.134**	**sqm**	949.00	0.00	**949.00**
Providing and laying broken China Mosaic Flooring for Terrace using 12mm to 20mm broken pieces of glazed tiles to be laid over cement mortar 1:3 to plain or slope and to be tempered to bring mortar crème out upto surface using white cement including rounding off junctions and extending them up to 15cm. along the wall, clearing with water and oxalic acid etc. as directed. (Item Code 14035)	**sqm**	479.00	0.00	**479.00**
Item No. 16 / Road				
Excavation for roadwork in soil with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location with all lifts and lead upto 1000m as per relevent clauses of section-300 of specification. **UADD SOR 2021 : Vol 3, Item 3.3, Page No.21**	**cum**	65.00	0.00	**65.00**
Construction of Embankment/Sub grade/ earth shoulders, as per clause 305 & its sub-clauses, Where required but with approved materials having CBR>7 obtained from the excavation of road construction (vide clauses 3.1-3.7) consolidating the original ground by rolling as directed by Engineer in charge but with a maximum of 6 passes of 8-10 tonnes vibratory rollers and maintenance of surface during construction to ensure shedding of water & preventing ponding, shaping & dressing, finishing etc. complete as per clause 305 but excluding scarifying existing granular/bituminous road surface. UADD SOR 2021 : Vol 3, Item 3.10, Page No.22	**cum**	76.00	0.00	**76.00**

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RATES BASED ON SOR ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Construction of granular sub-base by providing Coarse graded material (CBR>30), spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method at OMC and compacting with vibratory roller of 80-100 KN Static weight to achieve the desired density, complete in all respect as per relevant clauses of section-400. **UADD SOR 2021 : Vol 3, Item 4.1, Page No.29**	**cum**	689.00	0.00	**689.00**
Providing and applying primer coat with cationic bitumen emulsion (SS1 grade) on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.75 kg/sqm using mechanical/Manual means and as per relevant clauses of section-502. **UADD SOR 2021 : Vol 3, Item 5.1, Page No.39**	**sqm**	33.00	0.00	**33.00**
Providing and applying tack coat with cationic bitumen emulsion (RS-1) using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom and as per relevant clauses of section-503. @ 0.25 kg per sqm (normal bituminous surfaces) **UADD SOR 2021 : Vol 3, Item 5.2.i, Page No.39**	**sqm**	12.00	0.00	**12.00**
Providing and laying bituminous macadam with hot mix plant using crushed aggregates of specified grading premixed with bituminous binder, transported to site, laid over a previously prepared surface with mechanical paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired compaction complete in all respects and as per relevant clauses of section-504. for Grading II(50-75mm thickness) bitumen content 3.4% (VG-30) **UADD SOR 2021 : Vol 3, Item 5.3.ii, Page No.39**	**cum**	5293.00	0.00	**5293.00**

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RATES BASED ON SOR

ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Providing and laying dense bituminous macadam with hot mix plant batch using crushed aggregates of specified grading, premixed with bituminous binder, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction complete in all respects and as per relevant clauses of section-505. (Lime or cement will be used as filler) for Grading II(50-75mm thickness) bitumen content 4.5% (VG-30) **UADD SOR 2021 : Vol 3, Item 5.6.ii, Page No.40**	cum	6899.00	0.00	**6899.00**
Providing and laying RMC (Ready Mixed Concrete) M-15 grade Plain cement concrete in full encasement, cradle sides, haunches and/or block coping including boxing, curing by any means, etc. complete as specified and/or as directed by Engineer in Charge.				
Excavation				
Earth work in excavation for foundation,trenches for pipes/cables or drains etc.by mechanical means/ manual means(exceeding 30cm in depth.)including ramming of bottom,dressing of sides,disposal of excavated earth including of all lift and lead up to 50m.Disposedearth to be levelled and neatly dressed. **UADD SOR 2021 : Vol 2, Item 2.6, Page No.17**	**Cum**	151	0.00	**151**
Construction of granular sub-base				
Constructionof granularsub-base by providing Coarse graded material (CBR>30), spreading in uniform layers with motor grader on prepared surface ,mixing by mixin place method at OMC and compacting with vibratory Roller of 80-100KN Static weight to achieve the desired density,complete in all respect as per relevant clauses of section-400. **UADD SOR 2021 : Vol 3, Item 4.1, Page No. 29**	**Cum**	689	0.00	**689**
Gravel packing				
Providing gravel packing with uniformly graded gravel as per I.S. 4097 of 1999 (revised up to date)in the annular space between outer wall of casing pipe assembly and inner wall of bore hole including cost of gravel, transportation, stacking, washing and packing in layers of suitable thicknessincluding all lead and lifts complete. **UADD SOR 2021 : Vol 1, Item 20.13, Page No. 257**	**Cum**	638	0.00	**638**
Earthwork for plantation				
Supplying,stacking and spreading of good earth for plantation at site including Royalty and carriage (earth measured in stacks will be reduced by 20% for payment. **UADD SOR 2021 :Vol 3, Item 11.4, Page No. 72**	**Cum**	292	0.00	**292**

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RATES BASED ON SOR

ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
Horticulture & Landscaping				
Grassing with 'Doob' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for mowing.(if needed good earth shall be paid separately). In rows 5 cm apart in either direction. **UADD SOR 2021 :Vol 3, Item No. 11.9.3, Page No. 72**	**100 Sqm**	6243	0.00	**6243**
butt fusion welded joint				
Providing butt fusion welded joint/jointing by heating to the ends with the help of Teflon coated electric mirror/heater ends together etc. by thermosetting process to HDPE Pipe and specials. (6kg, 8kg, 10kg) (50mm & above fusion jointed & below 50mm mechanical jointed) **UADD SOR 2021 : Vol 1, Item 7.9, Page No.109**				
250mm	**Each**	316	0.00	**316**
200mm	**Each**	245	0.00	**245**
For SLF				
Brick work with well burnt chimney bricks in bulls patent trench kiln manufactured by ghol process,crushing strength not less than 40kg /sqcm and water absorption not more than 15% in foundation and plinth. Cement mortar 1:4 (1 cement : 4 coarse sand) Labour rate for Item No.- 6.1.1 **UADD SOR 2021 :Vol 2, Item No. 6.1.1., Page No. 56**	**Cum**	5840	0.00	**5840**
Providing and laying in position Plain cement concrete (PCC) of specified grade excluding the cost of centering and shuttering Cement concrete grade M-30 (Design Mix) with 20 mm maximum size of stone aggregate **UADD SOR 2021 :Vol 1, Item No. 18.14.1., Page No. 229**	**Cum**	5839	0.00	**5839**
12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 sand) **UADD SOR 2021 :Vol 2, Item No. 13.4.1., Page No. 160**	**Sqm**	181	0.00	**181**
Laying and spreading available soil in the subgrade on a prepared surface, pulverising, mixing the spread soil in place with rotavator with 3% slaked lime having minimum content of 70% of CaO, grading with motor grader and compacting with vibratory roller at OMC to the desired density to form a layer of improved sub grade complete and as per relevant clauses of section-300. (Lime stabilisation for improving sub-grade) **UADD SOR 2021 :Vol 3, Item No. 3.15, Page No. 22**				
a) By Mechanical Means	**Cum**	312	0.00	**312**
b) By Manual Means	**Cum**	307	0.00	**307**

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नगर पालिका परिषद [illegible]ा

ITEM DESCRIPTION	Unit	SOR Rate	Add 1% L.C.	Final Rate
RATES BASED ON SOR				
Providing, laying, Jointing & field testing of High Density Polyethylene pipes, (HDPE) confirming to IS 4984/ 14151/ 12786/ 13488 with necessary jointing material like mechanical connector or jointing pipes by heating to the ends of pipes with the help of Teflon coated electric mirror/ heater to the required temperature and then pressing the ends together against each other, to form a monolithic & leak proof joint by thermosetting process. It may be required to be done with Jacks/Hydraulic Jacks/ But fusion machine. (50mm & above fusion jointed & below 50mm mechanical jointed) PE-100 (8kg/sq.cm) **UADD SOR 2021 :Vol 1, Item No. 7.1, Page No. 103**				
250 mm dia	**RM**	2281	0.00	**2281**
200 mm dia	**RM**	1468	0.00	**1468**
Providing, laying, Jointing & field testing of High Density Polyethylene pipes, (HDPE) confirming to IS 4984/ 14151/ 12786/ 13488 with necessary jointing material like mechanical connector or jointing pipes by heating to the ends of pipes with the help of Teflon coated electric mirror/ heater to the required temperature and then pressing the ends together against each other, to form a monolithic & leak proof joint by thermosetting process. It may be required to be done with Jacks/Hydraulic Jacks/ But fusion machine. (50mm & above fusion jointed & below 50mm mechanical jointed) PE-100 (10kg/sq.cm) **UADD SOR 2021 :Vol 1, Item No. 7.1, Page No. 103**				
250 mm dia	**RM**	2742	0.00	**2742**
200 mm dia	**RM**	1782	0.00	**1782**

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Annexure 4: - Geo-Technical Report

DRILLING FOR CONSTRUCTION OF SANITARY LANDFILL SITE AT DATIA

CLIENT: - MUNICIPAL COUNCIL, DATIA (M.P.)

CONSULTANT: - MARS PLANNING AND NEGINEERING PVT. LTD.

(JV) PIVOTAL PLANNING SERVICES

ENGINEERING

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An ISO 9001:2015 company

RAJMI GEOEXPLORATION & ENGINEERING PVT LTD

Consultancy Services For:

Geotechnical Investigation, Geophysical Investigation, Geohydrological Investigation, Stability Analysis, Environmental Studies & Clearance, All Type of Testing on Field Testing & Laborite Testing, Topographical Survey, Sitting for Artificial recharge structure, Tube Well /Core Drilling,Ground Water Assessment & Modeling, Ground Water Management, Geo-hydrological Investigations.

Reg. office: 106-109, M.L Tower 292-A, Scheme No. 91 near Malwa Mill Square Indore, MadhyaPradesh. 4520001.

Email: rajmigeoexploration@gmail.com.
Land Line: 0731 2434588
Cell No: +919977035888, +919926845588, +919425460588, +919826645588,

AUGUST - 2023

1.0 INTRODUCTION

The subject of load bearing capacity of soils is of great importance to Engineers who have to design foundations for buildings and structures which are heavy, large and tall. Such structures are required to be put to meet the varying requirements which have come about in the work of substantial. More important the structure is, greater is the need to give attention to design and construction of its foundation.

The design and construction of foundation of heavy structure is not an easy task. It calls for ability and experience. The most important factor which influences design of foundations is the load bearing capacity of soils met with. Therefore, in arriving at the safe load bearing capacity of soils, the properties and characteristics of the soil at site is required to be determined.

It has many times been experienced that not only the design of foundation is difficult task, the pre- requisite for which are the proper site investigation, field test and laboratory testing, but the actual construction of foundation also poses difficult problems. It is, therefore necessary to conduct the detail investigations at site before a design can be finalized. The object of subsurface and related site investigations is to provide the engineer / Architect with as much information as possible about the existing conditions, for example, the exposed overburden, the course of a stream nearby, a rock outcrop or a hillock, vegetation and other geological features of the area. It is equally important to know the sub soil conditions below a proposed structure.

The methods of sub surface investigation enable vertical sections of the strata to be drawn and samples to be tested, on the site or in a laboratory for determining shear strength parameters, bearing capacity of the soils, permeability, water table, type, classification and other geophysical information in the field. This information together with the normal topographical survey provides the Engineer with complete details of the site and enables him to know the complexity of natural deposits. No one method of exploration is best for all situations. Site reconnaissance would help in deriving program of field investigations that is to assess the need for preliminary or detailed investigations.

Municipal Council Datia, has proposed the construction of Sanitary Landfill Site at Datia District (M.P.). The consultant of the client **M/S Mars Planning and Engineering Services Pvt. Ltd. In Jv with Pivotal Planning Services** has Consultancy Services for Landfill Site. Accordingly, **Mars Planning and Engineering Services Pvt. Ltd. In Jv with Pivotal Planning Services** has assigned **M/s Rajmi Geoexploration & Engg. Pvt. Ltd. (RGEPL), Indore** to conduct the drilling boreholes at two locations for assessments of Safe Bearing Capacity for

structural design. As per the discussions and directions of the local representative of the client; two locations were marked for drilled the bore to know the soil/rock profile and engineering properties of the underlying soil/rock.

AIMS & SCOPE OF INVESTIGATION

The present soil investigation work has been assigned to **M/S Rajmi Geoexploration & Engineering Pvt. Ltd., Indore** by **Mars Planning and Engineering Services Pvt. Ltd., Pivotal Planning Services (Jv)**

It was desired by the client to drill two boreholes within the plot. The location of boreholes was decided by the client and was marked on the plot.

The proposed work includes drilling of Bore holes through overburden and rock up to a maximum depth of 6.0 m depth, collection of disturbed soil samples for laboratory tests. The drilling and field work has been started on 13th August 2023 and completed by 14th August 2023 using one drilling rig. Thus, there was no delay in conducting the investigation work and it has been completed in the manner as laid down in various codes of Indian Standards.

FIELD TESTS

Collection of representative soil samples: - It was planned to collect the disturbed soil samples and undisturbed soil samples at suitable depths wherever possible looking to the strata observed at the site.

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BORE LOG SHEET FOR BH – 1

RAJMI GEOEXPLORATION & ENGINEERING PVT. LTD. INDORE.

CLIENT	Municipal Council, Datia (M.P.)	PROJECT NAME	Construction of Sanitary Landfill Site at Datia District
CONSULTANT	Mars Planning and Engineering Services Pvt. Ltd. /Pivotal Planning Services (Jv)	SITE	Datia District (M.P.)
RL OF GROUND	-	BOREHOLE NO.	BH – 1
DATE OF START	13/08/2023	DATE OF COMPLETION	13/08/2023

DRILL RUN (M) BELOW GROUND/WATER LEVEL	REDUCED LEVEL (m)	DATE OF SAMPLING	NATURE OF SAMPLE	NUMBER OF CORES EXTRACTED	SIZE OF CORE PIECES IN CM (MIN – MAX)	NUMBER OF CORE SAMPLE FOR TESTING	LEVEL OF WATER TABLE/G.W.L.	S.P.T. BLOWS PER 30 CM		STATIC PENETRATION RESISTANCE KG/CM²		DIA OF CASING (MM)	DESCRIPTION OF ROCK TYPE (COLOUR GRAIN SIZE TEXTURAL COMPOSITION DEGREE OF WEATHERING ETC.)	DETAILS OF WATER COLOUR ETC	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION (RQD) (%)	SYMBOLIC REPRESENTATION OF ROCK TYPE	Grain Size Analysis				Atterberg's Limits			FREE SWELL INDEX (%)	SPECIFIC GRAVITY	SHEARING STRENGTH PARAMETERS		BULK DENSITY (KN/M³)	NATURAL MOISTURE CONTENT	WATER ABSORPTION (%)	CALCAREOUSNESS	
								DEPTH (M)	VALUE	POINT RESISTANCE	SKIN RESISTANCE							% GRAVEL(>4.75mm)	% SAND (4.75 - 0.075 mm)	% SILT (0.075-0.002mm)	% CLAY (<0.002mm)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	SHRINKAGE LIMIT (%)			COHESION - C (t/m²)	ANGLE OF SHEARING RESISTANCE				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
0.0 1.50	-	13.08.23	SPT	-	-	-	No Water Table Encountered up to	1.50	45	-	-	100	Highly weathered Basalt Core Crushed During Drilling	Grey	Nil	Nil		-	-	-	-	-	-	-	-	2.55	-	-	17.5	-	-	
1.50 - 3.00	-	13.08.23	SPT	-	-	-		3.00	>50	-	-	75	----------do----------	–do–	Nil	Nil		-	-	-	-	-	-	-	-	2.56	2	30	17.6	-	-	
3.00 - 4.50	-	13.08.23	SPT	-	-	-		4.50	>50	-	-	75	----------do----------	–do–	Nil	Nil		-	-	-	-	-	-	-	-	2.58	1	31	17.9	-	-	
4.50 - 6.00	-	13.08.23	SPT	-	-	-				-	-	75	Small Core of Fairly Hard Basalt	–do–	28	Nil		-	-	-	-	-	-	-	-	2.57	-	-	24.2	3.23		

1. Classification of soil: as per IS 1498, 2. Abbreviation used: DS = Disturbed sample, UD = Undisturbed sample, 1/2 Sample No.1/at Bore No, Fr. = Fractures, SW1 = Static Water Level, Sv = Sub vertical, Irr. = Irregular, 3 Type of Machine used in drilling: Rotary Drill, 4 Type of Core Barrel Used = Single Tube, 5 No. of Samples Accumulated, 6 Position of Ground Water table: as shown, 7 Shearing strength Characteristics based on Triaxial / Box ShearS- Test on Undisturbed / Disturbed Sample at Bulk Density gm/cm³).

Investigation Report Prepared by: Rajmi Geoexploration & Engineering Pvt. Ltd. Reg. Office 106-109, M. L. Tower 297-A, Scheme No.91 Near Malwa Mill Square Indore (MP) Cont: (0731) 2436586, Mob.9977035888, 9425406598.

***POINT LOAD INDEX VALUE**

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BORE LOG SHEET FOR BH – 2

RAJMI GEOEXPLORATION & ENGINEERING PVT. LTD. INDORE

CLIENT	Municipal Council, Datia (M.P.)	PROJECT NAME	Construction of Sanitary Landfill Site at Datia District
CONSULTANT	Mars Planning and Engineering Services Pvt. Ltd. /Pivotal Planning Services (Jv)	SITE	Datia District (M.P.)
		BOREHOLE NO.	BH – 2
RL OF GROUND =	-	DATE OF START	14/08/2023
		DATE OF COMPLETION	14/08/2023

DRILL RUN (M) (FROM GROUND REFERENCE)	REDUCED LEVEL (m)	DATE OF SAMPLING	NATURE OF SAMPLE	NUMBER OF CORES EXTRACTED	SIZE OF CORE PIECES IN CM (MIN – MAX)	NUMBER OF CORE SAMPLE FOR TESTING	LEVEL OF WATER TABLE/FL W.L	S.P.T. BLOWS PER 30 CM		STATIC PENETRATION RESISTANCE KG/CM²		DIA OF CASING (MM)	DESCRIPTION OF ROCK TYPE (COLOUR GRAIN SIZE TEXTURAL COMPOSITION DEGREE OF WEATHERING ETC.)	DETAILS OF WATHE COLOUR ETC.	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION (RQD) (*)	SYMBOLIC REPRESENTATION OF ROCK TYPE	Grain Size Analysis				Atterberg's Limits			FREE SWELL INDEX (%)	SPECIFIC GRAVITY	SHEARING STRENGTH PARAMETERS		BULK DENSITY (KN/M³)	NATURAL MOISTURE CONTENT	MAXIMUM DRY DENSITY	UNCONFINED COMPRESSIVE STRENGTH (KG/CM²)
								DEPTH (M)	VALUE	POINT RESISTANCE	SKIN RESISTANCE							% GRAVEL (>4.75mm)	% SAND (4.75 – 0.075 mm)	% SILT (0.075-0.002mm)	% CLAY (<0.002mm)	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	SHRINKAGE LIMIT (%)			COHESION C (kPa)	ANGLE OF SHEARING RESISTANCE				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1.0 1.50	-	14.08.23	SPT	-	-	-	No Water Table Encountered up to	1.50	44	-	-	100	Highly weathered Basalt Core Crushed During Drilling	Grey	Nil	Nil		-	-	-	-	-	-	-	-	2.56	-	-	15.2	-	-	-
1.50 - 3.00	-	14.08.23	SPT	-	-	-		3.00	>50	-	-	75	----------do----------	-do-	Nil	Nil		-	-	-	-	-	-	-	-	2.57	3	29	17.4	-	-	-
3.00 - 4.50	-	14.08.23	SPT	-	-	-		4.50	>50	-	-	75	----------do----------	-do-	Nil	Nil		-	-	-	-	-	-	-	-	2.59	2	30	17.6	-	-	-
4.50 - 6.00	-	14.08.23	SPT	-	-	-				-	-	75	Small Core of Fairly Hard Basalt	-do-	23	Nil		-	-	-	-	-	-	-	-	2.60	-	-	25.5	2.23	-	0.425

1. Classification of soil as per IS 1498, 2. Abbreviation used: DS = Disturbed sample, UD = Undisturbed sample, 1/2 Sample No.1/ at Bore No, Fr. = Fractures, SWL= Static Water Level, Sv = Sub vertical, Irr. = Irregular, 3 Type of Machine used in drilling: Rotary Drill, 4 Type of Core Barrel Used = Single Tube, 5 Size of Samples: As mentioned above, 6 Position of Ground Water table: as shown, 7 Shearing strength Characteristics based on Triaxial / Box Shear/S- Test on Undisturbed / Disturbed Sample: ø Bulk Density (gm cm³)

Investigation Report Prepared by: Rajmi Geoexploration & Engineering Pvt. Ltd. Regd. Office:106-109, M. I. Tower 292-A, Scheme No 91 Near Malwa Mill Square Indore (MP) Contact:(0731)2434588, Mob:9977035858, 9425460598

***POINT LOAD INDEX VALUE**

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Annexure 5: - Quotations

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कार्यालय अधीक्षक

Ref. Number:- MR# B(1.1)
Item Name :- SLF Layer

	Quote#1	Quote#2	Quote#3
GCL Liner Price (excluding GST)	332	338	335
HDPE LINER Price (excluding GST)	315	330	320
GEO TEXTILE Price (excluding GST)	78	82	81
Detail of Manufacturer	Climax	Siddhi Rubber	LIVOSA
Adopted Quotation and Rate		Quote#1	
Source: MARKET RATE			

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कार्यालय अधीक्षक
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CLIMAX

CLIMAX SYNTHETICS PRIVATE LIMTED
A/1-835, GIDC, MAKARPURA, VADODARA - 390 010
PHONE : (0265) 2642169, 2642572 . 2642836
M. 9909922062 / FAX : (0265) 2643362
E-mail : support-sales@climaxindia.com / mktg@climaxindia.com
Web-Site : www.climaxindia.com

QUOTATION

M/S MaRS GREENTECH	Enquiry No : WHATSAPP	Dt	15.11.2023
Ahmedabad. Gujarat	Offer No. : CSPL/BRD/059	Dt	16.11.2023
E-mail: swm.mars@marsconsultancy.com	Product Specification :		
	Contact Person : Mr. Ronak		
	Mobile No.: 9664833144		

Dear Sir,

With reference to the above mentioned inquiry, we are pleased to quote our best price for supply of:-
GEOSYNTHETICS for your kind consideration.

Item No.	Description of Item	Unit	Qty in Sq. Mtr	Roll Size (Mtr.)	Basic Rate (INR) Per Sq. Mtr.
A	BLACK HDPE LINER THK. 1500 MICRON	SQM	7000	5.0 x 50	Rs. 315.00
B	GEOSYNTHETIC CLAY LINER 6 MM THK.	SQM	5000	5.1 x 48	Rs.332.00
C	PP NON WOVEN GEO TEXTILE 200 GSM	SQM	5000	5.0 x 100	Rs.53.76
D	PP NON WOVEN GEO TEXTILE 400 GSM	SQM	5000	5.0 x 100	Rs. 78.00
GST	: Inclusive @ 18% for Item A.	Delivery	: 30 Days		
GST	: Inclusive @12% for other Products	Validity	: 30 Days		
Freight	: All rates FOR M.H.	Payment Terms	: 50% Advance, balance before dispatch.		

TERMS & CONDITIONS

1. Any Change in Govt. levies such as GST if applicable will be to buyers account at the the time of dispatch on pro - rata basis. Any other local taxes shall be charged extra at actuals.
2. Pre-dispatch inspection shall be carried out at our works.
3. Unloading of material to be arranged by the customer at free of cost.
4. We shall provide In-house test report along with dispatch documents. Third party test shall be provided on chargeable basis at actual.
5. Offer Subject to Force measure clause & Baroda Jurisdiction.

In case of any clarification / Queries feel free to contact us.

Hope you will find the offer most competitive and looking forward to receive your valued order.

For CLIMAX SYNTHETICS PVT. LTD.

Remarks :

In - House Test Certificate for the Material Quality shall be provided along with the dispatch documents. Third party test report shall be charged extra.

Ajay Menon
M.: 9909922073
F:MKT:07

NOTE: GSTIN NO. 24AABCC0519Q1ZO

Please mention GSTIN no., Delivery Address, Billing Address and Contact Person details in your purchase order.

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नगर पालिका परि[illegible]गा

SIDDHI RUBBER UDYOG

(AN ISO 9001 : 2015 CERTIFIED COMPANY)

Manufacturers & Supplier of:

All kinds Rubber & Pvc Hoses / Pvc Water Stop Seal, Rubber Sheets,
Neoprene Bearing Pads ,Expansion Joint Filler Board ,HDPE / LDPE Membrane
on Woven Geotextiles, coir Geo textile / Drainage Board, Geocomposite / Drain Cell & Related Goods Etc
Unit No- C-127, Sector-10, Noida, Gautam Buddha Nagar (UP) INDIA

Ref No. SRU/445/23-24
M/S – Mars consultancy
ADD – Ahmedabad
Contact No –
EMAIL –.
Kind Attn:
Quotation
ear Sir,

Date: 17/11/2023

per your requirement, we are pleased to quote you our lowest possible rate for the following:

S.No	Item Description	UNIT	QTY	PRICE /(INR.)
1.	GCL 6 mm thick	SQMTR	5000	@Rs338/SQMTR
2.	NON WOVEN GEOTEXTILE 400GSM	SQMTR	5000	@Rs82/SQMTR
3.	HDPE SHEET THICK – 1.5MM MAKE - SIDDHI	SQMTR	7000	@Rs330/SQMTR

MS & CONDITION:

- Payment. - 100% ADVANCE
- GST - 18% & 12%
- Freight - TO PAY BY PARTY
- Delivery - *Within 7 TO 10 days after receiving your Purchase Order.*
- Validity - 15 days from the date of Quotation

oking forward for positive response from your side.

anking You,

Regards

[illegible]
[illegible]
[illegible]
No-C-127 Sector-10 Noida (UP), India
+91-120-4380207 Mb: 9760060096
mail: info@siddhirubber.com, info@siddhirubber.net
http://www.siddhirubber.com ,www.siddhirubber.net

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कार्यालय परीक्षक
नगर पालिका [illegible]

LAVIOSA

OFFER

Ref No LIPL/DB/MARS/231205
DATE 05-12-2023

Kind Attn	**Mr. Abhishek Parmar** 90334 70645
Customer Name	**M/s. MARS Consultants India Pvt Ltd** Ahmedabad
Project	***Various MSW ULB landfills, Maharashtra state***
Location	**Konkan Region, Maharashtra**
Application	**Landfill**

PURCHASE ORDER TO BE SEND TO:

LAVIOSA INDIA PVT LTD.
Survey No.388, Bhuj Mandvi Highway,
And Village: Pundi, Taluka: Mandvi,
Kutch - PIN 370487, Gujarat.

Description	QTY In SQM	RATE /SQM	Dimension
6mm thick GCL Modulogeobent XP 4310	As per Requirment	INR 335 PER SQM	As per Requirment
HDPE Liner (1.5 mm)		INR 320 PER SQM	
Geo Textile (400 GSM)		INR 81 PER SQM	

FOR at site, Transportation included
12% GST extra

PRODUCTION LEAD TIME	7 days
DELIVERY SCHEDULE	TO BE SHARED BY CUSTOMER TO PLAN DISPATCH
TRANSIT TIME	3-4 days from the date of dispatch
PAYMENT	100% ADVANCE AGAINST PROFORMA INVOICE
TAXES/ DUTIES	GST WILL BE CHARGED EXTRA @ 12%
Freight	EXTRA AS PER ACTUAL IF REQUESTED for site delivery
OFFER VALIDITY	31.03.2024
GSTN	24AABCL6008P1ZD
HSN CODE	59119090 (GST @ 12%)

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कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Other Conditions of Sale

Prices: Our above offer given for material & transport separate . *Offer Excludes GST/ CUSTOM DUTIES & other Applicable charges*; that will be charged extra as applicable. **Unloading to be arranged at site by customer,** not included in our above offer. Any delay in unloading, clearance, resulting in demurrage/ DETENTION , will be charged at actuals as applicable.

Inspection and Acceptance: The Customer shall examine the goods immediately after delivery and LAVIOSA INDIA. PVT LTD shall not be liable for any mistake, shortage, defect or damage unless LAVIOSA INDIA. PVT LTD receives details in writing (by mail, fax or email) within Eight (8) days of the date of delivery of the goods.

Delivery Terms & Conditions: Delivery in multiple lots as mutually agreed upon. This offer supersedes our all earlier offers submitted.

Amendments: Different conditions of sale from the ones above mentioned will have to be agreed and confirmed by written communication by LAVIOSA INDIA PVT LTD. LAVIOSA INDIA. PVT LTD may change the specifications of all products by giving written communication

Dispute: Any dispute will be settled down by arbitration. The seat of the arbitration will be Mumbai.

MUMBAI

DATE 05-12-2023

Place : Mumbai

Best Regards,

DILIP BAGHELE
National Sales Manager
8767325700

LAVIOSA INDIA PRIVATE LIMITED
Regd. Office/Factory: Survey No.388, Bhuj Mandvi Highway, Village: Pundi, Taluka: Mandvi, Kutch - 370485, Gujarat - INDIA
Telephone: +91 9265793228 | +91 8767325700
Marketing Office: 509-510 ACME PLAZA, Andheri Kurla Road, JB Nagar, Andheri (East), Mumbai 400059 -INDIA.
Telephone: +91 22 6708 4552 / +91 22 2839 6520
e-mail : info_LI@laviosa.com Website: www.laviosa.com - CIN U14210GJ2009PTC056289

Ref. Number:- MR# A1(3.3)
Item Name :- Belt Drive Water Pump Motor Speed (RPM) 2000 Flow Rate (LPM) 100

	Quote#1	Quote#2	Quote#3
Link	https://mkp.gem.gov.in/belt-drive-water-pump/engine-operated-water-pump/p-5116877-29384449150-cat.html#variant_id=5116877-29384449150	https://mkp.gem.gov.in/belt-drive-water-pump/petrol-water-pump/p-5116877-58339827157-cat.html#variant_id=5116877-58339827157	https://mkp.gem.gov.in/belt-drive-water-pump/kisankraft-petrol-engine-water-pump/p-5116877-49645537052-cat.html#variant_id=5116877-49645537052
Price (excluding GST)	₹ 5,100.00	₹ 7,499.10	₹ 9,800.00
Detail of Manufacturer			
Specification Comparison			
Modal No.	KK-WPP-31	KK-WPP-21	KK-WPP-21
Manufacturer	kisanKraftR	kisanKraftR	kisanKraftR
Speed of Motor (RPM)	2000	2000	2000
Flow Rate (LPM)	100	100	100
Motor Horsepower (HP)	5	5	5
Pump Size (breath)	80 millimeter	150 millimeter	150 millimeter
Voltage	220 Volt	230 Volt	230 Volt
Adopted Quotation and Rate	Quote#1	₹ 5,100.00	
Saurce: GEM Portal			

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कार्यालय अधीक्षक
नगर पालिका परिषद इटिया

Belt Drive Water Pump

Air Distribution and Conditioning Systems and Equipment and ComponentsIndustrial pumps and compressorspumpsBelt Drive Water Pump (Q3 Category)

kisanKraft Belt Drive Water Pump Motor Speed (RPM) 2000 Flow Rate (LPM) 100

kisanKraft®

(KK-WPP-31)

₹5,100.00 85% OFF

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Trends

Product Details

Price For :	1 pieces
MRP/Unit:	₹ 35,000.00
Offer Price/Unit:	**₹ 5,100.00**
Availability:	10 In Stock
Min. Qty. Per Consignee:	2
Product id:	5116877-29384449150
Country Of Origin:	India
Local Content (MII):	Not Declared

Seller Details

Sold by:	Resellers
Reseller not verified by OEM	
Catalogue not verified by OEM	
Seller Excellence	4.5 - 5.0
Seller Details	VIEW ALL SELLERS

Specifications

Material	Cast Iron

Ask GeMini

Product History 4

Availability of ISO certification of manufacture	No

echnical Specifications

Speed of Motor (RPM)	2000
Flow Rate (LPM)	100
Motor Horsepower (HP)	5
Color	Yellow
Material	Cast Iron
Pump Size (breath)	80 millimeter
Packaging of Product	Carton box
Temperature	300 degree Celsius
Pressure (PSI)	1000
Head	50 millimeter
Frequency	50 Hertz
Discharge(Lps)	50
Pump Size (length)	200 millimeter
Phase	Single
Shaft	50 millimeter
Capacity (M3/Hr)	500
Voltage	220 Volt

orts & Certifications

ailability of ISO certification of manufacture	No
pies of certifications to be furnished to buyer on demand at time of pplies	Yes

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद

Ask GeMmy

Product History 4

est Reports

Name of the Lab and Address	NSIC ,Rajkot
Availability of Test Report from Central Govt/NABL/ILAC accredited lab to prove conformity to specification	Yes
Test Report to be submitted to the Buyer on Demand	Yes
Test Report No and Date	NSIC-TSC/DELT/PT 029

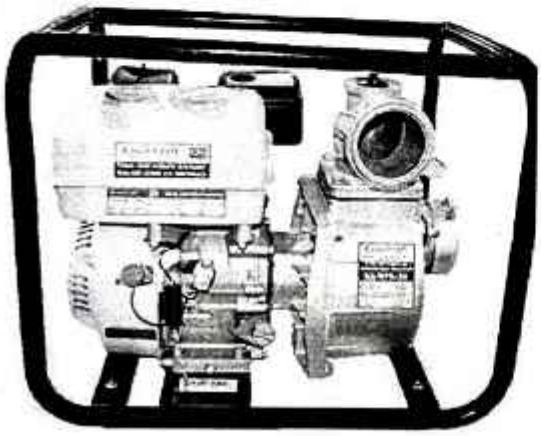
मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दांतरा

Ask GeMmy

Product History 4

Belt Drive Water Pump



kisanKraft Belt Drive Water Pump Motor Speed (RPM) 2000 Flow Rate (LPM) 100

kisanKraft®

(KK-WPP-21)

₹7,499.10 63% OFF

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Trends

Product Details

Price For :	1 pieces
MRP/Unit:	₹ 20,000.00
Offer Price/Unit:	**₹ 7,499.10**
Availability:	8 In Stock
Min. Qty. Per Consignee:	1
Product Id:	5116877-58339827157
Country Of Origin:	India
Local Content (MII):	Not Declared

Seller Details

Sold by:	**Resellers**
Reseller not verified by OEM	
Catalogue not verified by OEM	
Seller Excellence	**4.5 - 5.0**
Seller Details	**VIEW ALL SELLERS**

Specifications

Material	Stainless Steel

Ask GeMmy

Product History 4

Availability of ISO certification of manufacture	No

Technical Specifications

Speed of Motor (RPM)	2000
Flow Rate (LPM)	100
Motor Horsepower (HP)	5
Color	Yellow
Material	Stainless Steel
Pump Size (breath)	150 millimeter
Packaging of Product	Carton box
Temperature	300 degree Celsius
Pressure (PSI)	1000
Head	50 millimeter
Frequency	50 Hertz
Discharge(Lps)	50
Pump Size (length)	100 millimeter
Phase	Single
Shaft	20 millimeter
Capacity (M3/Hr)	100
Voltage	230 Volt

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद रतिया

Reports & Certifications

Availability of ISO certification of manufacture	No
Copies of certifications to be furnished to buyer on demand at time of supplies	NA

Ask GeMmy

Product History 4

Test Reports

Name of the Lab and Address	NA
Availability of Test Report from Central Govt/NABL/ILAC accredited lab to prove conformity to specification	No
Test Report to be submitted to the Buyer on Demand	No
Test Report No and Date	NA

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद रतलाम

Belt Drive Water Pump

kisanKraft Belt Drive Water Pump Motor Speed (RPM) 2000 Flow Rate (LPM) 100

kisanKraft[R]

(KK-WPP-21)

₹9,800.00 67% OFF

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Trends

Product Details

Price For :	1 pieces
MRP/Unit:	₹ 30,000.00
Offer Price/Unit:	**₹ 9,800.00**
Availability:	1 In Stock
Min. Qty. Per Consignee:	1
Product id:	5116877-49645537052
Country Of Origin:	India
Local Content (MII):	Not Declared

Seller Details

Sold by:	Resellers
Reseller not verified by OEM	
Catalogue not verified by OEM	
Seller Excellence	4.5 - 5.0
Seller Details	VIEW ALL SELLERS

Specifications

Material	Steel

Ask GeMmy

Product History 4

Availability of ISO certification of manufacture	Yes

Technical Specifications

Speed of Motor (RPM)	2000
Flow Rate (LPM)	100
Motor Horsepower (HP)	5
Color	Yellow
Material	Steel
Pump Size (breath)	150 millimeter
Packaging of Product	Carton box
Temperature	300 degree Celsius
Pressure (PSI)	1000
Head	50 millimeter
Frequency	50 Hertz
Discharge(Lps)	50
Pump Size (length)	100 millimeter
Phase	Single
Shaft	20 millimeter
Capacity (M3/Hr)	100
Voltage	230 Volt

मूल प्रति से सत्यापित
कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

Reports & Certifications

Availability of ISO certification of manufacture	Yes
Copies of certifications to be furnished to buyer on demand at time of supplies	NA

Ask GeMmy

Product History 4

Test Reports

Name of the Lab and Address	NSIC, Rajkoat
Availability of Test Report from Central Govt/NABL/ILAC accredited lab to prove conformity to specification	Yes
Test Report to be submitted to the Buyer on Demand	Yes
Test Report No and Date	P.T. 028/ 15/9/2017

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद

Product History 4

परिशिष्ट-(द)

~~मनीष~~ तिवारी (51)

	प्रस्ताव सर्व सम्मति से पारित।
92 05/10/2025 [illegible] का अनुमोदन बाबत	प्रकरण प्रस्तुत हुआ। अवलोकन किया। प्रकरण में [illegible] (अमृत)-2.0 के अनुसार [illegible] वर्ष 2026 में [illegible] की आज्ञा के अनुसार [illegible] क्षमता के [illegible] की स्थापना को [illegible] हेतु श्री [illegible] का अनुमोदन किया जाता है। प्रकरण में आवश्यक समस्त कार्यवाही हेतु अध्यक्ष/मुख्य नगरपालिका अधिकारी को अधिकृत किया जाता है। प्रस्ताव सर्व सम्मति से पारित।
93 05/10/2025 श्री [illegible] गुप्ता [illegible] वर्ग-03 को लेखा प्रशिक्षण की स्वीकृति बाबत	प्रकरण प्रस्तुत हुआ। अवलोकन किया। प्रकरण में श्री राजेन्द्र गुप्ता [illegible] वर्ग-3 को लेखा प्रशिक्षण हेतु विद्यालय ग्वालियर में प्रशिक्षण लेने की स्वीकृति दी जाती है। प्रकरण में आवश्यक समस्त कार्यवाही हेतु मुख्य नगरपालिका अधिकारी को अधिकृत किया जाता है। प्रस्ताव सर्व सम्मति से पारित।
94 05/10/2025 [illegible]	प्रकरण [illegible]

परिशिष्ट-(3)

कार्यालय नगर पालिका परिषद दतिया (म.प्र.)

क्रमांक/2025/675 दतिया, दिनांक–18-2-25

प्रति,

मै. मार्स प्लानिंग एण्ड इंजीनियरिंग
सर्विसेज प्रा.लि.
अहमदाबाद गुजरात–380059

विषयः– स्वच्छ भारत मिशन 2.0 के अंतर्गत MRF एवं Composting Plant की डीपीआर बनाये जाने बावत्।

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उपरोक्त विषयान्तर्गत स्वच्छ भारत मिशन 2.0 के अंतर्गत निकाय में गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु वर्ष 2026 में जनित होने वाले अपशिष्ट की मात्रा के अनुसार पर्याप्त क्षमता के संयंत्रों MRF एवं Composting Plant का निर्माण कराया जाना है। इस हेतु निकाय में स्वीकृत क्षमता अनुसार MRF एवं Composting Plant की डीपीआर तैयार कराई जानी है।

अतः संचालनालय के संलग्न पत्र अनुसार MRF एवं Composting Plant की डीपीआर तैयार कर प्रस्तुत करें। जिससे MRF एवं Composting Plant के निर्माण हेतु निविदा जारी की जा सकें।

मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद दतिया (म.प्र.)

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

कार्यालय नगर पालिका परिषद .दतिया (म0प्र0)

Email – cmodatia@mpurban.gov.in

क्रमांक / 2023 /2610 दतिया,दिनांक २७/०९/२३

प्रति,

श्री हिमांशु कुमार सिंह
उप मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्यप्रदेश भोपाल

विषयः–स्वच्छ भारत मिशन (शहरी)–2.0 के ठोस अपशिष्ट प्रबंधक घटक अंतर्गत नगरीय निकाय में वर्ष 2026 तक गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु आवश्यक संयत्रों की स्थापना एवं वित्त पोषण (Funding) के संबंध में।

संदर्भः–श्रीमान् का पत्र क्रमांक / शा–14 / स्व.भा.मि. / 2023 / 14064 भोपाल दिनांक 18.08.2023

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उपरोक्त विषयान्तर्गत एवं संदर्भित पत्र के तारतम्य में स्वच्छ भारत मिशन (शहरी)–2.0 के ठोस अपशिष्ट प्रबंधक घटक अंतर्गत नगरीय निकाय में वर्ष 2026 तक गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु आवश्यक संयत्रों की स्थापना किये जाने हेतु एवं डीपीआर तैयार किये जाने हेतु निकाय अंशदान पर सहमति दी जाती है।

S.N.	District	Name of ULB	Population as per Census 2011	Progected Population 2026	Progected 2026 Total Waste Generation in TPD	Progected 2026 Wet Waste @ 55% (in TPD)	Actual Waste Design Capacity (in TPD)	Progected Compost Plant Capacity (in TPD)
1	दतिया	दतिया	100284	136801	61.56	33.86	0.00	33.86

उक्त क्रम में वर्ष –2026 तक जनित होने वाले सूखे अपशिष्ट की मात्रा के अनुसार प्रसंस्करण हेतु उपलब्ध एवं प्रस्तावित संयंत्र की क्षमता का विवरण है–

S.N.	District	Name of ULB	Population as per Census 2011	Progected Population 2026	Progected 2026 Total Waste Generation in TPD	Progected 2026 Dry Waste @ 35% (in TPD)	Actual Dry Waste Design Capacity (in TPD)	Compost MRF Plant Capacity (in TPD)
1	दतिया	दतिया	100284	136801	61.56	21.55	0.00	21.55

नोट–वर्तमान में गीला एवं सूखे कचरे का प्रसंस्करण नहीं किया जा रहा है। अतः 0 का मान मानते हुये नवीन डीपीआर तैयार कराये जाने हेतु एवं अग्रिम कार्यवाही हेतु सादर प्रस्तुत।

(विनय कुमार भट्ट)
मुख्य नगर पालिका अधिकारी
नगर पालिका परिषद दतिया

मूल प्रति से सत्यापित
कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal

Palika Bhawan, Near 6 No. Bus Stop Shivaji Nagar, Bhopal – 462016
Tel. 0755-2558796
Website: www.mpurban.gov.in

क्र./शा–14/स्व.भा.मि./2023/14064 भोपाल, दिनांक 18/08/2023

प्रति,

मुख्य नगर पालिका अधिकारी,
नगर पालिका परिषद,
दतिया, जिला दतिया,
मध्यप्रदेश।

विषयः– स्वच्छ भारत मिशन (शहरी)–2.0 के ठोस अपशिष्ट प्रबंधन घटक अंतर्गत नगरीय निकाय में वर्ष 2026 तक गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु आवश्यक सयंत्रों की स्थापना एवं वित्त पोषण (Funding) के संबंध में।

उपरोक्त विषयांतर्गत ठोस अपशिष्ट प्रबंधन नियम, 2016 के दिशा–निर्देशों के अनुसार राज्य के नगरीय निकायों में ठोस अपशिष्ट का प्रसंस्करण किया जाना अनिवार्य है। स्वच्छ भारत मिशन (शहरी)–2.0 के अनुसार, समस्त नगरीय निकायों में गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु वर्ष 2026 में जनित होने वाले अपशिष्ट की मात्रा के अनुसार पर्याप्त क्षमता के संयंत्रों की स्थापना को प्राथमिकता दी गई है। इस संबंध में राज्य स्तर से स्वच्छ भारत मिशन (शहरी)–2.0 के अंतर्गत निकाय स्तर पर गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु उपलब्ध सयंत्रों की क्षमता एवं वर्ष–2026 तक अनुमानित आवश्यक क्षमता के अंतर का आंकलन करते हुए, वर्तमान में उपलब्ध संयंत्रों की क्षमता में वृद्धि करने का निर्णय लिया गया है।

उपरोक्तानुसार नगर पालिका परिषद, दतिया में वर्ष–2026 तक जनित होने वाले गीले अपशिष्ट की मात्रा के अनुसार प्रसंस्करण हेतु उपलब्ध एवं प्रस्तावित संयंत्र की क्षमता का विवरण निम्नानुसार है –

S. No.	District	Name of ULB	Population as per Census 2011	Projected Population 2026	Projected 2026 Total Waste Generation in TPD	Projected 2026 Wet Waste @55% (in TPD)	Actual Wet Waste Design Capacity (in TPD)	Proposed Compost Plant Capacity (in TPD)
1	दतिया	दतिया	100284	136801	61.56	33.86	10.00	23.86

उक्त क्रम में वर्ष–2026 तक जनित होने वाले सूखे अपशिष्ट की मात्रा के अनुसार प्रसंस्करण हेतु उपलब्ध एवं प्रस्तावित संयंत्र की क्षमता का विवरण निम्नानुसार है –

S. No.	District	Name of ULB	Population as per census 2011	Projected Population 2026	Projected 2026 Total Waste Generation in TPD	Projected 2026 Dry Waste @35% (in TPD)	Actual Dry Waste Design Capacity (in TPD)	Proposed MRF Plant Capacity (in TPD)
1	दतिया	दतिया	100284	136801	61.56	21.55	5.00	16.55

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

निरंतर .....

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal
Palika Bhawan, Near 6 No. Bus Stop Saket Nagar, Bhopal – 462016
Tel. 0755-2558796
Website: www.mpurban.gov.in

उक्त परियोजनाओं के निर्माण हेतु अनुमानित लागत, वित्त पोषण (केन्द्र, राज्य व निकाय अंशदान) का विवरण निम्नानुसार है –

S.No	District	Name of the ULB	Population as per 2011 census	Projected Population 2026	Estimated cost (Rs. in Cr.)	Central Govt. Share (Rs. in Cr.)	State Govt. Share (Rs. in Cr.)	ULB Share (Rs. in Cr.)
1	दतिया	दतिया	100284	136801	4.15	1.37	1.37	1.41

*परियोजना की अनुमानित लागत राशि संभावित है, उक्त राशि में डीपीआर तैयार होने के पश्चात बदलाव हो सकता है।

अतः निर्देशित किया जाता है कि उक्त प्रस्तावित परियोजनाओं अंतर्गत संयंत्रों को स्थापित करने हेतु उपलब्ध और प्रस्तावित संयंत्रों की क्षमता एवं निकाय अंशदान पर सहमति देते हुए संलग्न सहमति पत्र (किसी भी बिन्दु पर असहमति होने की दशा में सहमति पत्र में संशोधन कर स्पष्ट करते हुए) संचालनालय को दिनांक 21.08.2023 तक प्रेषित किया जाना सुनिश्चित करें, ताकि आगामी कार्यवाही कर प्रस्ताव समय–सीमा में आवासन और शहरी कार्य मंत्रालय, भारत सरकार को प्रेषित किया जा सके।

(आयुक्त महोदय द्वारा अनुमोदित)

संलग्नः– उपरोक्तानुसार।

(हिमांशु कुमार सिंह)
उप मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्यप्रदेश, भोपाल
भोपाल, दिनांक 18/08/2023

पृ.क्र./शा–14/स्व.भा.मि./2023/14065

प्रतिलिपि :

1. संभागीय संयुक्त संचालक, ग्वालियर संभाग की ओर आवश्यक कार्यवाही हेतु प्रेषित।
2. अधीक्षण यंत्री, ग्वालियर संभाग, संभागीय कार्यालय, नगरीय प्रशासन एवं विकास, मध्यप्रदेश की ओर आवश्यक कार्यवाही, हेतु प्रेषित।

उप मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्यप्रदेश, भोपाल

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal
Palika Bhawan, Near 6 No. Bus Stop Shivaji Nagar, Bhopal – 462016
Tel: 0755-2558796
Website: www.mpurban.gov.in

क्र. / शा–14 / स्व.भा.मि. / 2024 / 7506 भोपाल, दिनांक 22 / 04 / 2024

प्रति,

1. आयुक्त (संलग्न सूची अनुसार)
   नगर पालिक निगम,
   मध्यप्रदेश।
2. मुख्य नगर पालिका अधिकारी (संलग्न सूची अनुसार)
   नगर पालिका/परिषद,
   मध्यप्रदेश।

विषयः– स्वच्छ भारत मिशन (शहरी)–2.0 के ठोस अपशिष्ट प्रबंधन घटक अंतर्गत नगरीय निकायों में गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु आवश्यक संयंत्रों की स्थापना के लिए डीपीआर तैयार करने के संबंध में।

उपरोक्त विषयांतर्गत ठोस अपशिष्ट प्रबंधन नियम, 2016 के दिशा–निर्देशों के अनुसार राज्य के नगरीय निकायों में ठोस अपशिष्ट का प्रसंस्करण किया जाना अनिवार्य है। स्वच्छ भारत मिशन (शहरी)–2.0 के अनुसार, समस्त नगरीय निकायों में गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु वर्ष 2026 में जनित होने वाले अपशिष्ट की मात्रा के अनुसार पर्याप्त क्षमता के संयंत्रों की स्थापना की जानी है।

इस हेतु चयनित संभागीय सलाहकार संस्थाओं के माध्यम से संलग्न सूची अनुसार 347 नगरीय निकायों की डीपीआर तैयार कराई जाना है।

उक्त के संबंध में नगरीय निकायों से प्राप्त सहमति पत्रों के आधार पर प्रमुख सचिव, नगरीय विकास एवं आवास विभाग की अध्यक्षता में राज्य स्तरीय तकनीकी समिति (SLTC) एवं National Advisory Review Committee (NARC) की बैठक में संलग्न परिशिष्ट–एक अनुसार स्वीकृति प्रदान की गई है।

अतः निर्देशित किया जाता है कि संबंधित नगरीय निकाय, गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु वर्ष 2026 में जनित होने वाले अपशिष्ट की मात्रा के अनुसार पर्याप्त क्षमता के संयंत्रों की स्थापना हेतु चयनित संभागीय सलाहकार संस्थाओं के माध्यम से डीपीआर तैयार कर दिनांक 15.05.2024 तक संचालनालय को प्रेषित किया जाना सुनिश्चित करें।

संचालनालय से डीपीआर अनुमोदन उपरांत संभागीय सलाहकार संस्था के माध्यम से आरएफपी तैयार कर निविदा आमंत्रण हेतु राज्य द्वारा निर्धारित नियमानुसार विधिवत कार्यवाही करें।

संलग्नः– उपरोक्तानुसार।

19/04/2024

(अक्षय कुमार तेम्रवाल)
मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्य प्रदेश, भोपाल

मूल प्रति से सत्यापित
कार्यालय अधीक्षक

निरंतर.....

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal
Palika Bhawan, Near G No. Bus Stop Shyc
Nayak, Bhopal - 462016
Tel. 0755-2558736
Website: www.mpurban.gov.in

क्र./शा-14/स्व.भा.मि./2024/7507 भोपाल, दिनांक 22/04/2024

प्रतिलिपि :

1. आयुक्त, नगरीय प्रशासन एवं विकास, मध्यप्रदेश की ओर सूचनार्थ।
2. संभागीय संयुक्त संचालक, नगरीय प्रशासन एवं विकास, समस्त, संभाग की ओर आवश्यक कार्यवाही हेतु प्रेषित।
3. अधीक्षण यंत्री, संभागीय कार्यालय, नगरीय प्रशासन एवं विकास, समस्त संभाग की ओर आवश्यक कार्यवाही हेतु प्रेषित।

22/04/2024

मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्य प्रदेश, भोपाल

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal
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Tel. 0755-2558796, 2675337
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क्र./शा–14/स्व.भा.मि./2024/2222 भोपाल, दिनांक 21/10/2024

प्रति,

मुख्य नगर पालिका अधिकारी (संलग्न सूची अनुसार)
नगर पालिका/नगर परिषद
मध्यप्रदेश।

विषयः– स्वच्छ भारत मिशन (शहरी)–2.0 अंतर्गत MRF/Composting Plant के निर्माण /सुदृढीकरण के संबंध में।

स्वच्छ भारत मिशन (शहरी)–2.0 के दिशा–निर्देशों के अनुसार, प्रदेश के समस्त नगरीय निकायों में गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु वर्ष 2026 में जनित होने वाले अपशिष्ट की मात्रा के अनुसार पर्याप्त क्षमता के संयंत्रों की स्थापना को प्राथमिकता दी गई है। इस संबंध में राज्य स्तर से स्वच्छ भारत मिशन (शहरी)–2.0 के अंतर्गत निकायों में गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु उपलब्ध सयंत्रों की क्षमता एवं वर्ष–2026 तक अनुमानित आवश्यक क्षमता के अंतर का आंकलन करते हुए, वर्तमान में उपलब्ध संयंत्रों की क्षमता में वृद्धि करने का निर्णय लिया गया है।

उपरोक्तानुसार निकाय स्तर पर वर्ष–2026 तक जनित होने वाले गीले एवं सूखे अपशिष्ट की मात्रा के अनुसार प्रसंस्करण हेतु प्रस्तावित संयंत्रों की क्षमता के संबंध में संबंधित नगरीय निकायों से सहमति प्राप्त की जा चुकी है।

उक्त के क्रम में भारत सरकार द्वारा नगरीय निकायों के सहयोग हेतु 10 टीपीडी एवं 50 टीपीडी के मटेरियल रिकवरी सेंटर सयंत्रों के फोटोग्राफ्स (डिजाइन एवं ड्रॉइंग) और एस्टिमेट (बीओक्यू) जारी किए गए हैं, जो स्वच्छतम पोर्टल पर भी उपलब्ध हैं।

निकायों की वर्ष–2026 की प्रस्तावित जनसंख्या के आधार पर उत्सर्जित सूखे कचरे की मात्रा के अनुसार संचालनालय द्वारा अनुलग्नक अ पर संलग्न सूची अनुसार नगरीय निकायों को चिन्हित किया गया है। उक्त निकायों द्वारा वास्तविक आवश्यकतानुसार 10 अथवा 50 टीपीडी क्षमता के प्रसंस्करण संयंत्रों का चयन करते हुए निम्नानुसार कार्यवाही किया जाना अपेक्षित है :–

1. निकायों को वर्तमान में संचालित प्रसंस्करण संयंत्रों की बुनियादी अधोसंरचनाओं का जमीनी स्तर पर मूल्यांकन करते हुए भारत सरकार द्वारा जारी 10 एवं 50 टीपीडी सयंत्रों के मानक ड्रॉईंग और डिजाइनों में सुझाए गए घटकों और प्रसंस्करण के लिए आवश्यक उपकरणों के अनुसार वर्तमान में उपलब्ध अधोसंरचनाओं (Existing Infrastructure) में अंतर (Gap) का आंकलन किया जाए।

2. उक्त आंकलन के आधार पर नगरीय निकाय 10 एवं 50 टीपीडी सयंत्रों के मानक ड्रॉईंग, डिजाइन और सुझाए गए उपकरणों में आवश्यक संशोधन करते हुए कार्ययोजना तैयार की जाए।

3. निकाय द्वारा ड्रॉईंग और डिजाइनों एवं आवश्यक उपकरणों हेतु तैयार कार्ययोजना की तकनीकी स्वीकृति एवं PIC/MIC से अनुमोदन प्राप्त करने के पश्चात निकाय स्तर पर निविदा की प्रक्रिया की जाए। समस्त निकाय, टेण्डर कार्यवाही पश्चात [illegible] दरों का

मूल प्रति से सत्यापित

निरंतर.....

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal
Palika Bhawan, Near 6 No. Bus Sto
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Website: www.mpurban.gov.in

संचालनालय स्तरीय सक्षम समिति द्वारा परीक्षण कराया जाए, जिससे मापदण्ड एवं दरों में एकरूपता बनी रहे।

4. इसी प्रकार बिन्दु क्र. 1 से 3 को संदर्भित करते हुए गीले अपशिष्ट के प्रसंस्करण संयंत्र के लिए भी निकाय स्तर से कार्यवाही की जाए।

उक्त अंतर के आंकलन के आधार पर तैयार परियोजना हेतु निकायवार भारत सरकार से प्राप्त स्वीकृति (गीले एवं सूखे अपशिष्ट) के आधार पर ही राशि प्रदान की जाएगी। यदि किसी निकाय द्वारा संलग्न सूची अनुसार निकायवार स्वीकृत राशि से अधिक राशि की परियोजना तैयार की जाती है तो, उक्त अतिरिक्त राशि का वहन निकाय द्वारा स्वयं के मद से किया जाएगा।

संबंधित नगरीय निकाय तदनुसार शीघ्र आवश्यक कार्यवाही प्रारंभ किया जाना सुनिश्चित करें।

संलग्नः– उपरोक्तानुसार।

18/10/24

(अक्षय तेम्रवाल)
मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्य प्रदेश, भोपाल
भोपाल, दिनांक 21/10/2024

पृ.क्र./शा–14/स्व.भा.मि./2024/22223

प्रतिलिपिः–

1. आयुक्त, नगरीय प्रशासन एवं विकास, मध्यप्रदेश की ओर सूचनार्थ।
2. संभागीय संयुक्त संचालक, नगरीय प्रशासन एवं विकास, समस्त संभाग मध्यप्रदेश की ओर आवश्यक कार्यवाही हेतु प्रेषित।
3. अधीक्षण यंत्री, संभागीय कार्यालय, नगरीय प्रशासन एवं विकास, समस्त संभाग, मध्यप्रदेश की ओर आवश्यक कार्यवाही हेतु प्रेषित।

मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्य प्रदेश, भोपाल

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

अनुलग्नक - अ

Cost in Lakhs

Proposed ULBs for 10 TPD & 50 TPD Plant								MRF	MRF				Windrow Compost Plant			
S. No.	Division	District	Name of ULB	Projected Population 2026	Projected 2026 Total Waste Generation in TPD	Projected 2026 Dry Waste @35% (in TPD)	Projected 2026 Wet Waste @55% (in TPD)	Proposed MRF	Estimated cost (Rs. In Lakh)[@ Rs. 8.5 lakh/TPD]	Central Share	State Share	ULB Share	Estimated cost (Rs. In Lakh)[@ Rs. 11.50 lakh/TPD]	Central Share	State Share	ULB Share
1	Bhopal	Betul	Betul	140956	63.43	22.20	34.89	19.20	163.21	53.86	53.86	55.49	343.70	113.42	113.42	116.86
2	Bhopal	Betul	Sarni (M)	117508	35.25	12.34	19.39	9.34	79.38	39.69	31.75	7.94	165.47	82.74	66.19	16.55
3	Bhopal	Harda	Harda (M)	101312	30.39	10.64	16.72	9.64	81.92	40.96	32.77	8.19	169.24	84.62	67.70	16.92
4	Bhopal	Narmadapuram	Itarsi (M)	135500	40.65	14.23	22.36	11.23	95.43	47.72	38.17	9.54	199.61	99.81	79.84	19.96
5	Bhopal	Narmadapuram	Pipariya (M)	66605	19.98	6.99	10.99	0.00	0.00	0.00	0.00	0.00	114.88	57.44	45.95	11.49
6	Bhopal	Raisen	Baraily (NP)	47285	14.19	4.96	7.80	0.00	0.00	0.00	0.00	0.00	89.72	44.86	35.89	8.97
7	Bhopal	Raisen	Mandideep (M)	81376	24.41	8.54	13.43	8.54	72.63	36.32	29.05	7.26	154.41	77.21	61.76	15.44
8	Bhopal	Raisen	Raisen (M)	60243	18.07	6.33	9.94	0.00	0.00	0.00	0.00	0.00	102.81	51.41	41.12	10.28
9	Bhopal	Rajgarh	Biaora (M)	66970	20.09	7.03	11.05	0.00	0.00	0.00	0.00	0.00	104.07	52.04	41.63	10.41
10	Bhopal	Rajgarh	Sarangpur (M)	51066	15.32	5.36	8.43	0.00	0.00	0.00	0.00	0.00	96.90	48.45	38.76	9.69
11	Bhopal	Sehore	Ashta (M)	72550	21.77	7.62	11.97	0.00	0.00	0.00	0.00	0.00	131.91	65.96	52.76	13.19
12	Bhopal	Vidisha	Basoda (M)	106797	32.04	11.21	17.62	8.21	69.82	34.91	27.93	6.98	179.65	89.83	71.86	17.97
13	Bhopal	Vidisha	Sironj (M)	71563	21.47	7.51	11.81	7.51	63.87	31.94	25.55	6.39	135.79	67.90	54.32	13.58
14	Gwalior	Ashoknagar	Ashoknagar (M)	111625	33.49	11.72	18.42	0.00	0.00	0.00	0.00	0.00	96.81	48.41	38.72	9.68
15	Gwalior	Bhind	Bhind (M)	269533	121.29	42.45	66.71	37.45	318.34	105.05	105.05	108.24	652.16	215.21	215.21	221.73
16	Gwalior	Bhind	Gohad	80401	24.12	8.44	13.27	0.00	0.00	0.00	0.00	0.00	129.56	64.78	51.82	12.96
17	Gwalior	Datia	Datia (M)	136801	61.56	21.55	33.86	16.55	140.64	46.41	46.41	47.82	274.37	90.54	90.54	93.29
18	Gwalior	Guna	Guna	246820	111.07	38.87	61.09	33.87	287.93	95.02	95.02	97.90	530.01	174.90	174.90	180.20
19	Gwalior	Guna	Raghogarh - Vijaypur (M)	84799	25.44	8.90	13.99	8.90	75.68	37.84	30.27	7.57	157.46	78.73	62.98	15.75
20	Gwalior	Gwalior	Dabra (M)	83590	25.08	8.78	13.79	0.00	0.00	0.00	0.00	0.00	147.11	73.56	58.84	14.71
21	Gwalior	Morena	Ambah (M)	64356	19.31	6.76	10.62	0.00	0.00	0.00	0.00	0.00	99.12	49.56	39.65	9.91
22	Gwalior	Morena	Porsa (M)	54114	16.23	5.68	8.93	0.00	0.00	0.00	0.00	0.00	102.68	51.34	41.07	10.27
23	Gwalior	Sheopur	Sheopur (M)	98151	29.45	10.31	16.19	9.31	79.10	39.55	31.64	7.91	163.24	81.62	65.30	16.32
24	Gwalior	Shivpuri	Shivpuri (M)	245513	110.48	38.67	60.76	38.67	328.68	108.46	108.46	111.75	675.79	223.01	223.01	229.77
25	Indore	Barwani	Sendhwa (M)	77053	23.12	8.09	12.71	0.00	0.00	0.00	0.00	0.00	117.46	58.73	46.98	11.75
26	Indore	Dhar	Pithampur (M)	172154	77.47	27.11	42.61	17.11	145.47	48.01	48.01	49.46	202.49	66.82	66.82	68.85
27	Indore	Khargaon	Khargone (M)	181932	81.87	28.65	45.03	18.65	158.56	52.32	52.32	53.91	230.32	76.01	76.01	78.31
28	Indore	Khargaon	Sanawad	52847	15.85	5.55	8.72	0.00	0.00	0.00	0.00	0.00	88.78	44.39	35.51	8.88
29	Jabalpur	Balaghat	Balaghat (M)	114943	34.48	12.07	18.97	9.07	77.09	38.55	30.84	7.71	160.61	80.31	64.24	16.06

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

अनुलग्नक - अ

Cost in Lakhs

Proposed ULBs for 10 TPD & 50 TPD Plant								MRF	MRF				Windrow Compost Plant			
S. No.	Division	District.	Name of ULB	Projected Population 2026	Projected 2026 Total Waste Generation in TPD	Projected 2026 Dry Waste @35% (in TPD)	Projected 2026 Wet Waste @55% (in TPD)	Proposed MRF	Estimated cost (Rs. In Lakh)[@ Rs. 8.5 lakh/TPD]	Central Share	State Share	ULB Share	Estimated cost (Rs. In Lakh)[@ Rs. 11.50 lakh/TPD]	Central Share	State Share	ULB Share
30	Jabalpur	Chhindwara	Dongar Parasia (M)	58366	17.51	6.13	9.63	0.00	0.00	0.00	0.00	0.00	87.75	43.88	35.10	8.78
31	Jabalpur	Chhindwara	Pandhurna (M)	62040	18.61	6.51	10.24	0.00	0.00	0.00	0.00	0.00	100.47	50.24	40.19	10.05
32	Jabalpur	Mandla	Mandla (M)	67474	20.24	7.08	11.13	0.00	0.00	0.00	0.00	0.00	105.03	52.52	42.01	10.50
33	Jabalpur	Seoni	Seoni (M)	139610	62.82	21.99	34.55	18.99	161.40	53.26	53.26	54.88	339.86	112.15	112.15	115.55
34	Rewa	Shahdol	Dhanpuri (M)	61599	18.48	6.47	10.16	0.00	0.00	0.00	0.00	0.00	93.88	46.94	37.55	9.39
35	Rewa	Shahdol	Shahdol (M)	118245	35.47	12.42	19.51	12.42	105.53	52.77	42.21	10.55	178.37	89.19	71.35	17.84
36	Sagar	Chhatarpur	Chhatarpur (M)	193882	87.25	30.54	47.99	25.54	217.06	71.63	71.63	73.80	379.34	125.18	125.18	128.98
37	Sagar	Damoh	Damoh (M)	190380	85.67	29.98	47.12	24.98	212.37	70.08	70.08	72.21	426.87	140.87	140.87	145.14
38	Sagar	Panna	Panna (M)	80608	24.18	8.46	13.30	7.96	67.69	33.85	27.08	6.77	129.95	64.98	54.98	13.00
39	Sagar	Tikamgarh	Tikamgarh (M)	107911	32.37	11.33	17.81	11.33	96.31	48.16	38.52	9.63	147.26	73.63	58.90	14.73
40	Ujjain	Agar Malwa	Agar	51724	15.52	5.43	8.53	0.00	0.00	0.00	0.00	0.00	86.65	43.33	34.66	8.67
41	Ujjain	Mandsaur	Mandsaur (M)	193253	86.96	30.44	47.83	20.44	173.72	57.33	57.33	59.06	320.05	105.62	105.62	108.82
42	Ujjain	Neemuch	Neemuch (M)	175375	78.92	27.62	43.41	22.62	192.28	63.45	63.45	65.38	326.66	107.80	107.80	111.06
43	Ujjain	Ratlam	Jaora	102183	30.66	10.73	16.86	10.23	86.95	43.48	34.78	8.70	182.39	91.20	72.96	18.24
44	Ujjain	Shajapur	Shajapur (M)	94484	28.35	9.92	15.59	9.42	80.08	40.04	32.03	8.01	167.78	83.89	67.11	16.78
45	Ujjain	Ujjain	Nagda (M)	136467	61.41	21.49	33.78	16.49	140.19	46.26	46.26	47.66	215.92	71.25	71.25	73.41

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal
Palika Bhawan, Near 6 No. Bus S
Shivaji Nagar, Bhopal – 462016
Tel. 0755-2558796, 2675337
Email:-
Website: www.mpurban.gov.in

क्र./शा–14/स्व.भा.मि./2024/ 19645 भोपाल, दिनांक 12/09/2024

प्रति,

मुख्य नगर पालिका अधिकारी,
नगर पालिका/नगर परिषद,
(सूची अनुसार)

विषयः– स्वच्छ भारत मिशन (शहरी)–2.0 अंतर्गत MRF/Composting Plant के निर्माण /सुदृढीकरण के संबंध में।

स्वच्छ भारत मिशन (शहरी)–2.0 के अनुसार, समस्त नगरीय निकायों में गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु वर्ष 2026 में जनित होने वाले अपशिष्ट की मात्रा के अनुसार पर्याप्त क्षमता के संयंत्रों की स्थापना को प्राथमिकता दी गई है। इस संबंध में राज्य स्तर से स्वच्छ भारत मिशन (शहरी)–2.0 के अंतर्गत निकाय स्तर पर गीले एवं सूखे अपशिष्ट के प्रसंस्करण हेतु उपलब्ध सयंत्रों की क्षमता एवं वर्ष–2026 तक अनुमानित आवश्यक क्षमता के अंतर का आंकलन करते हुए, वर्तमान में उपलब्ध संयंत्रों की क्षमता में वृद्धि करने का निर्णय लिया गया था।

उपरोक्तानुसार निकाय स्तर पर वर्ष–2026 तक जनित होने वाले गीले एवं सूखे अपशिष्ट की मात्रा के अनुसार प्रसंस्करण हेतु प्रस्तावित संयंत्रों की क्षमता के संबंध में संबंधित नगरीय निकायों से सहमति प्राप्त की गई है। उपरोक्तानुसार 347 निकायों हेतु परियोजना स्वीकृत की गयी है।

निकायों की जनसंख्या के आधार पर उत्सर्जित गीले कचरे की मात्रा के आधार पर संचालनालय द्वारा 3 टीपीडी और 5 टीपीडी प्रसंस्करण संयंत्रों के लिए चित्र और मात्रा के बिल (बीओक्यू) तैयार किया गया है। उपरोक्तानुसार नगरीय निकायों में निम्नानुसार कार्यवाही किया जाना है:–

1. निकायों को वर्तमान में संचालित प्रसंस्करण संयंत्रों के बुनियादी ढांचे का जमीनी स्तर पर मूल्यांकन करते हुये existing infrastructure में गैप का आंकलन किया जाये।

2. इस आंकलन के आधार पर नगरीय निकाय मानक ड्रॉईंग और डिजाइनों में सुझाए गए घटकों और प्रसंस्करण के लिए आवश्यक उपकरणों को शामिल करते हुए योजना तैयार कर सकती हैं।

3. निकाय द्वारा ड्रॉईंग और डिजाइनों एवं आवश्यक उपकरणों हेतु तैयार योजना की प्रशासनिक एवं तकनीकी स्वीकृति प्राप्त करते हुये PIC/MIC से अनुमोदन कराने के पश्चात निकाय स्तर से निविदा की प्रक्रिया की जाये।

उक्त परियोजना हेतु निकायवार भारत सरकार से प्राप्त स्वीकृति के आधार पर ही राशि प्रदान की जायेगी। सूची अनुसार स्वीकृत राशि के अतिरिक्त यदि निकायों द्वारा अधिक राशि की परियोजना तैयार की जाती है तो अतिरिक्त राशि का व्यय निकायों द्वारा स्वयं किया जायेगा।

मूल प्रति से सत्यापित

11/09

निरंतर.....

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal
Palika Bhawan, Near 6 No. Bus St
Shivaji Nagar, Bhopal – 462016
Tel. 0755-2558796, 2554083
Email:himanshu.singh@mpurban.gov.
Website: www.mpurban.gov.in

उपरोक्तानुसार निकाय शीघ्र कार्यवाही प्रारंभ करें।

संलग्नः– उपरोक्तानुसार।

11/09/2024

(अक्षय तेम्रवाल)
मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्य प्रदेश, भोपाल

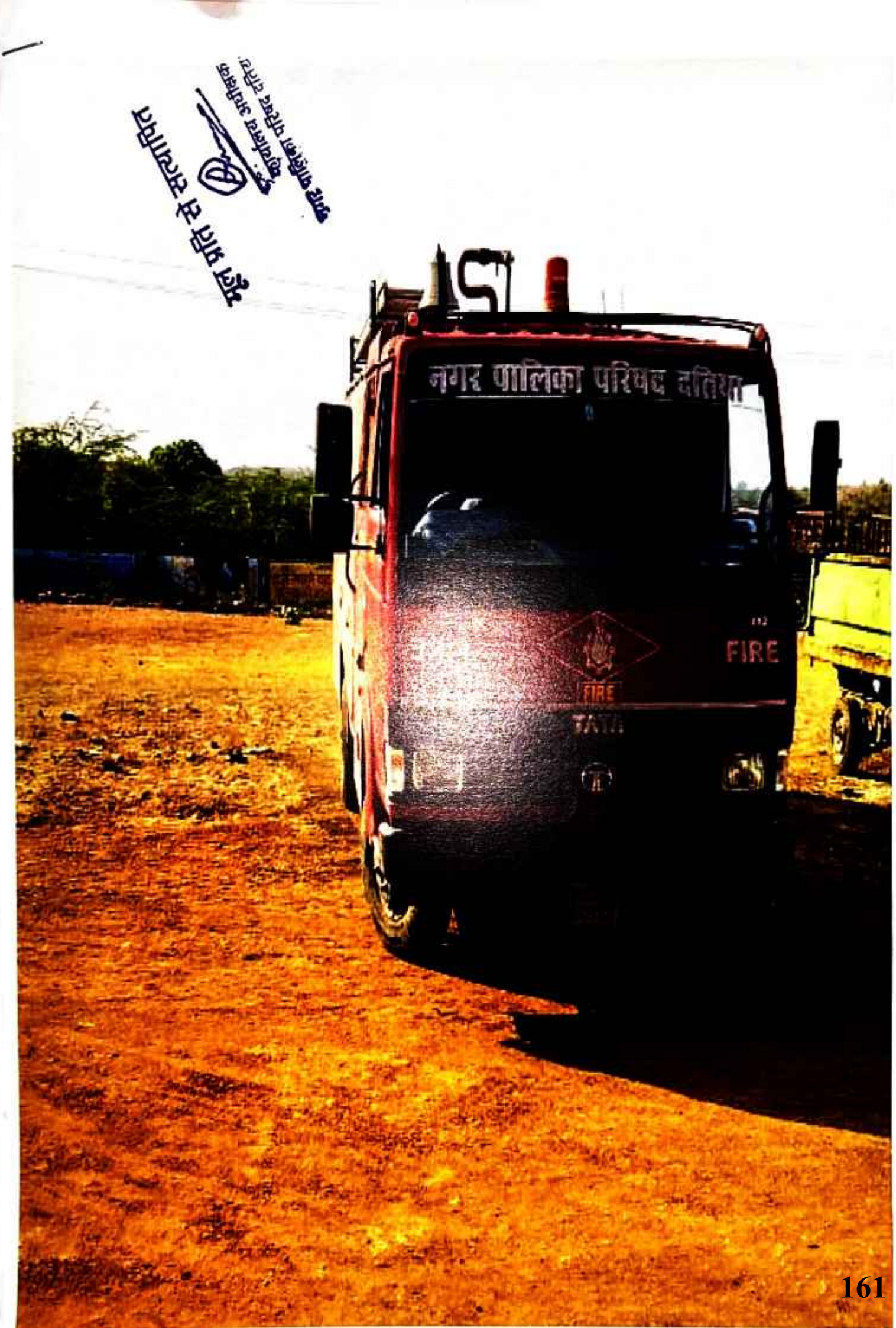
पृ.क्र./शा–14/स्व.भा.मि./2024/19646 भोपाल, दिनांक 12/09/2024

प्रतिलिपि :

1. आयुक्त, नगरीय प्रशासन एवं विकास, मध्यप्रदेश की ओर सूचनार्थ।
2. समस्त संभागीय संयुक्त संचालक, नगरीय प्रशासन एवं विकास, संभाग मध्यप्रदेश की ओर आवश्यक कार्यवाही हेतु प्रेषित।
3. समस्त अधीक्षण यंत्री, संभागीय कार्यालय, नगरीय प्रशासन एवं विकास, मध्यप्रदेश की ओर आवश्यक कार्यवाही हेतु प्रेषित।

मिशन संचालक
स्वच्छ भारत मिशन (शहरी)
नगरीय प्रशासन एवं विकास
मध्य प्रदेश, भोपाल

मूल प्रति से सत्यापित
कार्यालय प्रभारी
नगर पालिका परिषद दतिया


नगर पालिका परिषद
FIRE
FIRE
TATA


ULB CODE - 802109
SUB CABIN
LOCKER
FIRE

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

प्रमाणित की जाती है
कार्यालय अधीक्षक
जिला पंचायत दतिया

प्रेषित

सेवा में,

कार्यालय अधीक्षक

नगर पालिका परिषद


स्वच्छ सर्वेक्षण 2024
मटेरियल रिकवरी फेसिलिटी
ULB CODE - 802109
मशीनरी संयंत्र केन्द्र
• प्लांट इंजीनियर :- श्री अशोक यादव (मोबा.9425768492)
• प्लांट ऑपरेटर :- श्री नरेन्द्र अहिरवार (एन.डी.फर्म), मोबा. 6261030789
नगर पालिका परिषद दतिया (म.प्र.)
मूल प्रति से सत्यापित
कार्यालय अधीक्षक
नगर पालिका परिषद
Latitude: 25.692413
Longitude: 78.473864
Elevation: 109.46±11 m
Accuracy: 7.0 m
Time: 26-03-2025 14:02
Note: मशीनरी संयंत्र केंद्र
Powered by NoteCam

मूल प्रति से सत्यापित

मूल प्रति से सत्यापित

कार्यालय अधीक्षक
नगर पालिका परिषद तिरिया


लीथिन स्टिंग मशीन
(फटका मशीन) ULB CODE-802109
न.पा. दतिया
BAILING MACHINE
ULB CODE-802109
न.पा. दतिया

ULB CODE - 802109

रेकवरी फेसिलिटी

संयंत्र केन्द्र

श्री अशोक यादव (मोबा.9425768492)

अहिरवार (एन.डी.फर्म), मोबा. 6261030789

परिषद बतिया (म.प्र.)

मूल प्रति से सत्यापि

कार्यालय अधी

नगर पालिका परिषद

मूल प्रति से सत्यापित

कार्यालय अधिशासी
नगर पालिका परिषद दतिया

मूल प्रति से सत्यापित
कार्यालय अधिशासी
नगर पालिका परिषद


M.R.F.
M.R.F.
M.R.F.
मूल प्रति से सत्यापित
कार्यालय अधीक्षक


इंजीनियर :- श्री अशोक यादव (मोबा.9425168492) • प्लांट ऑपरेटर :- श्री नरेन्द्र अहिरवार (एन.डी.फर्मी), मोबा. 6261030789
नगर पालिका परिषद दतिया (म.प्र.)
नगर पालिका परिषद दतिया (मध्य प्रदेश)
निर्माण एवं विध्वंश प्रसंस्करण इकाई
स्वच्छ सर्वेक्षण 2024
मिट्टी
ईंट
सीमेन्ट/रेत
लोहा/सरिया

न्यायालय कलेक्टर जिला दतिया (म.प्र.)

प्र.क्र./06/अ–19(1)/2021–22 दतिया, दिनांक 25.01.2022

आदेश

मुख्य नगर पालिका अधिकारी नगर पालिका परिषद दतिया ने पत्र क्रमांक/3202/स्वा0/2021 दिनांक 19.11.2021 के द्वारा ठोस अपशिष्ट प्रबंधन नियम 2016 के समुचित कियान्वयन हेतु नवीन लैण्डफिल साईट हेतु नजूल निर्वतन नीति 2020 के अनुकम में नियत प्रारूप 1 पर आवेदन प्रस्तुत कर मौजा दतिया गिर्द में 15.00 है0 शासकीय भूमि के आवटन/हस्तांतरण करने की मांग की गयी।'

2/– प्रकरण में अनुविभागीय अधिकारी दतिया ने अपने प्रकरण 122/बी–121/2021–22 में प्रतिवेदन दिनांक 05/01/2022 से तहसीलदार दतिया के प्रतिवेदन अनुसार नियत प्रारूप –2 पर मौजा दतियागिर्द में स्थित शासकीय भूमि सर्वे नं. 2471/2 रकवा 14.02 है0 में से 10.00 है0 भूमि का नजरी नक्सा अक्स में A B C D भाग द्वारा चिन्हांकित भाग को ठोस अपशिष्ठ प्रबंधन के कियान्वन हेतु नवीन लैण्डफिल साइट निर्माण हेतु प्रस्तावित किया।

3/– प्रकरण में तहसीलदार दतिया द्वारा नजूल भूमि निर्वर्तन निर्देश की कंडिका 142 में विधिवत् सार्वजनिक उद्घोषणा जारी की गई, अंदर म्याद कोई आपत्ति प्राप्त नही हुई, इसके साथ ही भूमि हस्तानांतरण के संबंध में म.प्र. नजूल भूमि निर्वर्तन निर्देश 2020 के तहत दि. 17.01.2022 को जिला नजूल निर्वर्तन समिति की बैठक आयोजित की गयी, उक्त बैठक में ठोस अपशिष्ठ प्रबंधन के कियान्वन हेतु भूमि के संबंध में विचार किया गया, विचारोपरान्त सर्वसम्मति से बांछित भूमि नगरीय प्रशासन विभाग को हस्तानान्तरित करने की सहमति दी गयी।

अतः तहसीलदार दतिया के प्रतिवेदन, अनुविभागीय अधिकारी (राजस्व) दतिया के प्रकरण कमांक 122/बी–121/2021–22 में प्रस्ताव दिनांक 05/01/2022 के आधार पर एवं म0प्र0भू0रा0सं0 1959 की धारा 237 में वर्णित प्रावधानों के अन्तर्गत मौजा दतियागिर्द में स्थित शासकीय भूमि सर्वे नं. 2471/2 रकवा 14.02 है0 में से 10.00 है0 भूमि नजरी नक्सा अक्स में A B C D भाग द्वारा चिन्हांकित भाग को ठोस अपशिष्ठ प्रबंधन के कियान्वन हेतु नवीन लैण्डफिल साइट निर्माण हेतु चिन्हांकित भाग को म0प्र0 शासन, नगरीय प्रशासन एवं विकास विभाग के पक्ष में हस्तानांतरित की जाती है।

(संजय कुमार)
कलेक्टर
जिला दतिया म.प्र.

निवासीय अग्रवाल नस्टो तैयार कर

प्र.क्र./06/अ–19(1)/2021–22 785–4/271–22 दतिया, दिनांक 25.01.2022

प्रतिलिपि :–

1. आयुक्त, नगरीय प्रशासन एवं विकास विभाग मंत्रालय बल्लभ भवन, भोपाल
2. अनुविभागीय अधिकारी, दतिया की ओर आवश्यक कार्यवाही हेतु ।
3. तहसीलदार, तहसील दतिया आदेश के पालन में संबंधित नगरीय/स्थानीय निकाय को आवंटित भूखण्ड का आधिपत्य सौपे तथा भू अभिलेख में समुचित प्रविष्टियां अंकित कराकर अवगत कराने की व्यवस्था सुनिश्चित् करें।
4. मुख्य नंगरपालिका अधिकारी,नगर पालिका परिषद दतिया ।

1149 31-1-22

कलेक्टर
जिला दतिया म.प्र.

न्यायल कलेक्टर जिला (म.प्र.)

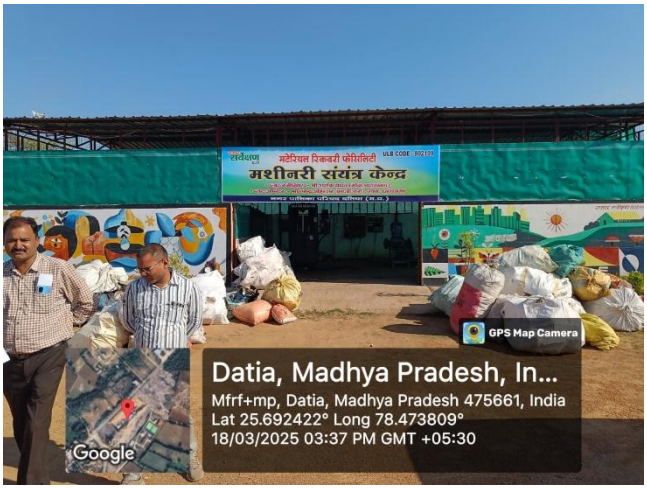
मूल प्रति से सत्यापित

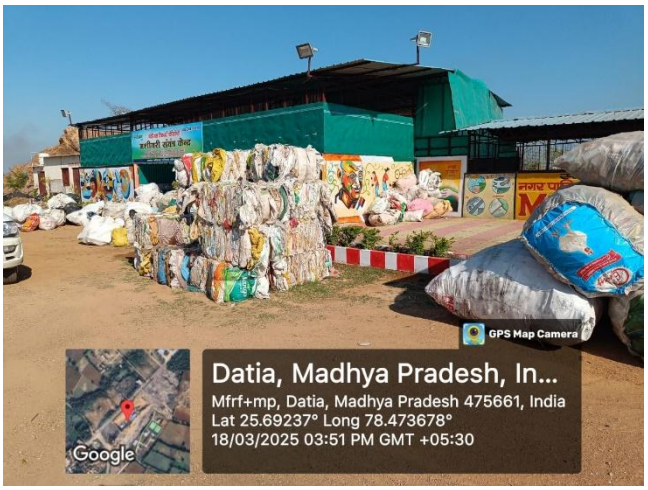
कार्यालय अधीक्षक
नगर पालिका परिषद दतिया

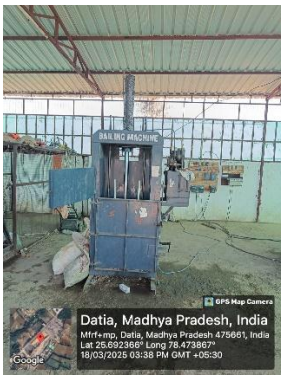
Annexure C/11

Photographs Taken at Solid Waste Dumping Site of Datia Town

Photographs showing MRF Facility:







Photographs showing C & D Waste Facility

Photographs showing Compost Facility

Photographs showing Solid Waste Dump

Photographs showing Joint Committee Member at Dumping Site

Email **Legal Cell**

joint committee report dated 09.07.2025 of MP PCB in OA A 24-2025 Narendra Singh v State of MP & Ors

From : Legal Cell <legalcell.pcb@mp.gov.in> Wed, Jul 09, 2025 09:04 PM

Subject : joint committee report dated 09.07.2025 of MP PCB in OA A 24-2025 Narendra Singh v State of MP & Ors

2 attachments

To : environment protection1986 <environment.protection1986@gmail.com>

Cc : dmdatia dmdatia <dmdatia@nic.in>, Nagendra Gurjar <cmodatia@mpurban.gov.in>, harnengt <harnengt@gmail.com>, parul bhadoria04 <parul.bhadoria04@gmail.com>

Madam/Sir

Please find enclosed the copy of joint committee report dated 09.07.2025 of MP PCB in OA **A 24-2025 Narendra Singh v State of MP & Ors.** This mail may be treated as proof of service.

Regards

Legal Section
MP PCB

JCR in OA 24-2025 CZ dated 09.07.2025.pdf
19 MB

38-2025.pdf
2 MB