



Instromedix Waste Management Pvt. Ltd.

(Formerly known as : Hosmedic Healthcare Projects Consultants Pvt. Ltd.)

4th Floor, 402, Gaurav Tower, Malviya Nagar, Jaipur-302017
M. 9772123777, 9829398664, E-mail : iipl.jpr@instromedix.net

To,

Date:

The Regional Officer (Jaipur South)

Rajasthan State Pollution Control Board

#8/263, Malviya Nagar, Behind Renault Showroom

Near Jawahar Circle, Jaipur

Sub: Regarding conduct of public hearing for the proposed common biomedical waste treatment facility, Jaipur Rural coming up at Khasra No. 400, Rampuraonti Village, Tehsil Sanganer Jaipur Rajasthan promoted by Instromedix Waste Management Pvt. Ltd.

Ref: Terms of Reference granted from SEAC Rajasthan vide letter no. Terms of Reference obtained vide letter no. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project / Cat.7 (da) (20119)/ 2021.22 dated 21.02.2022.

Sir,

In regards to the above we would like to bring to your kind notice that we are coming with the proposed "Common Bio-Medical Waste Treatment Facility (CBWTF), Jaipur Rural " coming up at Khasra No. 400, Rampuraonti Village, Tehsil Sanganer Jaipur Rajasthan promoted by Instromedix Waste Management Pvt. Ltd. Terms of Reference for carrying out EIA Studies was accorded by SEAC, Rajasthan vide letter no **F1 (4)/SEIAA/SEAC-Raj/Sectt/Project / Cat.7 (da) (20119)/ 2021.22 dated 21.02.2022**. Baseline studies for the project were carried out during December, 2021 to February 2022.

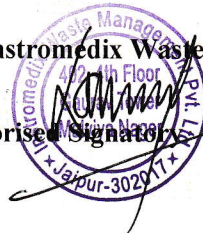
Therefore, as per the provisions of EIA Notification, 2006 and subsequent amendments thereafter, we hereby enclose the following documents for conduct of public consultation for your kind perusal:

- 10 sets of English Executive Summary.
- 10 sets of Hindi Executive Summary.
- 10 sets of Draft EIA/ EMP Report (hard & Soft copy)

In light of the above, we request your good self to kindly consider the same and expedite the process of public consultation at your earliest.

For Instromedix Waste Management Pvt. Ltd

Authorised Signatory





Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural

Proponent: Instromedix Waste Management Pvt. Ltd

INDEMNIFICATION

Utmost care has been taken in preparation of this Report vis a vis proposed greenfield project of Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural promoted by M/s Instromedix Waste Management Pvt. Ltd. The data incorporated in the report is generated through information received from clients in form of their project report received through e-mail, secondary information, besides stakeholders interaction and inputs. Due care has been taken to represent facts and figures and sources acknowledged. The purpose of this document is to facilitate environmental appraisal of the proposal and as such the exercise has been scientifically carried out. The Consultant stand indemnified against any consequences arising out of any inadvertent omissions.

REVISION HISTORY


Project Name	Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural
Report No.	GESPL_430/2021/EIA/225
Type of report	Draft EIA Report for the Public Consultation
Revision No.	00
Issue to	Instromedix Waste Management Pvt. Ltd
Issue Date	26.03.2022



Gaurang Environmental Solutions Pvt. Ltd.


Report Ref: GESPL_430/2021/EIA/225

Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Index

INDEX

S. No	Particulars	Page No.
1.	Declaration by Consultant with NABET certification and status of ACOs	1-7
2.	Project Summary	8-16
3.	Form 1 with 15 km GT sheet	17-37
4.	Draft EIA/EMP Report	38-274
Chapter 1	Introduction	39-57
Chapter 2	Project description	58-98
Chapter 3	Description of the environment	99-190
Chapter 4	Anticipated Environmental Impacts & Mitigation Measures	191-216
Chapter 5	Analysis of alternatives	217-222
Chapter 6	Environmental monitoring program	223-229
Chapter 7	Additional studies	230-244
Chapter 8	Project benefits	245-247
Chapter 9	Environmental cost benefit analysis	248-249
Chapter 10	EMP	250-263
Chapter 11	Summary & conclusion	264-271
Chapter 12	Disclosure of consultants engaged	72-274
7.	ANNEXURE	
I.	Copy of Terms of Reference Letter along with its compliance	276-294
II.	Authorization Letter in favour Authorised Signatory	295-296
III.	Location map	297-298
IV.	Google map Imagery showing surrounding features of project site	299-300
V.	Copy of lease deed	301-305
VI.	List of Directors	306-307
VII.	Organization chart	308-309
VIII.	Distance certificate from Deputy conservator of Forest	310-313
IX.	Budgetary provision for construction labor	314-315
X.	Compliance to the Bio-Medical Waste Management Rules, 2016 & Subsequent amendments.	316-320
XI.	Copy of Consent to Establish	21-328
XII.	Environmental Monitoring reports along with NABL/ MoEF Certificate	329-373
XIII.	Toposheet showing location of Monitoring stations	374-375
XIV.	10 km radius Toposheet showing Environmental Sensitivity	376-377

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Index

XV.	Amendment to the EIA Notification dated 17th April 2015	378-379 (a)
XVI.	Layout Plan	380-381
XVII.	Landscape Plan	382-383
XVIII.	Contour Plan	384-385

DECLARATION BY THE EXPERTS

Declaration by Experts contributing to the Project	:	Proposed “Common Bio-Medical Waste Treatment Facility (CBWTF)”, Jaipur Rural
Site Address	:	Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer Jaipur Rajasthan
Promoter	:	Instromedix Waste Management Pvt. Limited

EIA coordinator : Bio Medical Waste Treatment Facilities [7 (d) (a)]

Name : Ms. Pooja Bunker

Signature and Date :

Contact information:

Address : Gaurang Environmental Solutions Pvt. Ltd.
#102, SNG, Shri Ratna Apartment near Tambi petrol pump,
Peetal factory, Jhotwara road, Jaipur-302016


Mobile No. : 9782074776

E-mail : gaurangenviro@gmail.com

Status of accreditation with : Listed on S. No. 104 of List of Accredited EIA (as per Jan 2020)

Functional area experts:

Functional areas	Name of the expert/s	Involvement (period and task**)	Signature and date
AP*	<ul style="list-style-type: none"> Ms. Ginni Barotia 	<ul style="list-style-type: none"> Selecting parameters for monitoring. Suggesting measures of reducing fugitive emission. Identifying and assessing quantum of emissions Identification of probable impacts of the different air emissions from the proposed project 	


		<ul style="list-style-type: none"> • Identification of suitable pollution control device 	
WP*	<ul style="list-style-type: none"> • Ms. Pooja Bunker 	<ul style="list-style-type: none"> • Designing of water balance and developing schemes for cascading use (recycle, reuse) of water • Identification of probable impacts of effluent/ waste water discharges in to the receiving environment/ water bodies 	
SHW*	<ul style="list-style-type: none"> • Ms. Ginni Barotia • Ms. Pooja Bunker (BMW) 	<ul style="list-style-type: none"> • Suggesting Methodologies for segregation and collection, Transportation, Treatment & Disposal of Biomedical Waste as per Biomedical Waste Management Rules, 2016. • Suggesting measures for handling waste. 	
SE*	Mr. Gajendra Singh Rathore	<ul style="list-style-type: none"> • Conducting baseline socio-economic survey • Conduct social needs assessment studies • Preparing need-based socio economic plan. 	
EB*	Dr. Yati Kacchawa Dr. Mahendra Singh (TM)	<ul style="list-style-type: none"> • To survey flora – fauna. • To identify ecologically important areas around project location. • To identify threatened species in the project area. • To identify impact of proposed project on flora – fauna. • To recommend mitigations / greenbelt development 	
Geo	• Mr. Vidya Bhushan Trivedi	<ul style="list-style-type: none"> • Field Survey for assessing the regional and local geology of the area. 	
HG*	• Mr. Vidya Bhushan Trivedi	<ul style="list-style-type: none"> • Analysis of surface hydrological data • Computation of ground water recharge, flow rate and direction. 	
SC*	• Mr. Pradyumna Arvind Deshpande	<ul style="list-style-type: none"> • Assessment of fertility/ productivity of soil, nutrient availability • Controlling degradation of soil/soil conservation Effect of waste handling on soil 	

AQ*	<ul style="list-style-type: none"> Mr. Mallikarjuna Guttula 	<ul style="list-style-type: none"> Analyzing micro meteorological data for use in modeling Collecting and using secondary data on meteorology like cloud cover, inversion related data, mixing heights etc., for modeling Application of relevant air quality models in prediction of dispersion of pollutants, Plotting of isopleths of GLCs representing incremental pollution levels, on suitable maps showing both, the sources of pollution as well as the environmentally sensitive receptors. 	Mallik.
NV*	<ul style="list-style-type: none"> Mr. Mallikarjuna Guttula 	<ul style="list-style-type: none"> Identification of the noise generation sources Noise dispersion modeling Mitigation measures for the impact 	Mallik.
LU*	<ul style="list-style-type: none"> Mr. Vinod Kumar Verma 	<ul style="list-style-type: none"> •Study of change in LULC with extent of impact. •Interpretation & preparation of LULC. 	
RH*	<ul style="list-style-type: none"> Ms. Ginni Barotia 	<ul style="list-style-type: none"> Assessment and mitigation of probable impacts. Suggesting PPE for workers. Measures for risk assessment. 	

*One TM against each FAE may be shown

**Please attach additional sheet if required

Declaration by the Head of the accredited consultant organization/authorized person

	Gaurang Environmental Solutions Pvt. Ltd	Page 12.3
	Report Ref : GESPL_275/2019/EIA/130	Rev No. 02



Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural

Proponent: Instromedix Waste Management Pvt. Ltd

I, **Vipul Khandelwal** hereby confirm that the above mentioned experts will prepare the EIA/EMP report of proposed “Common Bio-Medical Waste Treatment Facility (CBWTF)” Jaipur Rural Rajasthan, promoted **M/s Instromedix Waste Management Pvt** by for Environmental Clearance. I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.

Signature:

Name : **Mr. Vipul Khandelwal**

Designation : **Director**

Name of the EIA consultant organization : **Gaurang Environmental Solutions Pvt. Ltd.**

NABET Certificate no. & Issue Date : NABET/EIA/2023/RA0192: Feb 01, 2021



Gaurang Environmental Solutions Pvt. Ltd

Report Ref: : GESPL_275/2019/EIA/130

Page 12.4

Rev No. 02



Quality Council of India

National Accreditation Board for Education & Training



Certificate OF Accreditation

Gaurang Environmental Solutions Pvt. Ltd.

**102, SNG Shree Ratna Apartments, Near Tambi Petrol Pump, Jhotwara Road,
Banipark, Jaipur, Rajasthan-302016**

The organization is **accredited as Category-'A'** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations, Version 3: for preparing EIA-EMP reports in the following Sectors –

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast / underground mining	1	1 (a) (i)	A
2.	Offshore and onshore oil and gas exploration, development & production	2	1 (b)	A
3.	Thermal power plants	4	1 (d)	B
4.	Mineral beneficiation	7	2 (b)	A
5.	Metallurgical industries (ferrous & non-ferrous)	8	3 (a)	A
6.	Cement Plants	9	3 (b)	A
7.	Chemical fertilizers	16	5 (a)	A
8.	Synthetic organic chemicals industry	21	5 (f)	A
9.	Distilleries	22	5 (g)	A
10.	Isolated storage & handling of hazardous chemicals	28	-	B
11.	Airports	29	7 (a)	A
12.	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	A
13.	Common hazardous waste treatment, storage and disposal facilities	32	7 (d)	A
14.	Bio-medical waste treatment facilities	32A	7 (da)	B
15.	Ports, harbours, break waters and dredging	33	7 (e)	A
16.	Highways,	34	7 (f)	B
17.	Common Effluent Treatment Plants (CETPs)	36	7 (h)	B
18.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
19.	Building and construction projects	38	8 (a)	B
20.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated Dec 24, 2020 and supplementary assessment minutes dated April 6, 2021 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/21/1612 dated Feb 01, 2021. The accreditation needs to be renewed before the expiry date Gaurang Environmental Solutions Pvt. Ltd following due process of assessment.

Sr. Director, NABET
Dated: July 16, 2021

Certificate No.
NABET/EIA/2023/RA 0192 (Rev.01)

Valid till
Jan 19, 2023

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

EXECUTIVE SUMMARY

11.1. INTRODUCTION

Instromedix Waste Management Pvt. Ltd proposes a Common Bio-Medical Waste Treatment Facility (CBWTF) established at Khasra No. 400, Village Rampuraoonti, Tehsil Sanganer Jaipur, Rajasthan. The project covers an area of approximately 16188 sq. m (1.6188 Ha).

The project involves development of Common Bio Medical Waste Treatment Facility which is categorized under Item 7 (d) (a) of the Schedule-Gazette Notification dated 17.04.2015.


The project site has been owned Instromedix Waste Management Pvt. Ltd for establishing a Common Bio Medical Waste Treatment Facility (CBWTF) in Jaipur Rajasthan. This is a plain land area. The site is well connected by road network, power supply and other necessary facilities required for CBWTF.

11.2. PROJECT DESCRIPTION

11.2.1. Project Details

S. No.	Particulars	Details
1.	Project	Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural
2.	Site Address	Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer Jaipur
3.	Promoter	Instromedix Waste Management Pvt. Ltd
4.	Plot area (sq. m.)	16188 sq. m (1.6188 Ha)
5.	Greenbelt & Plantation Area	5827.68 sq. m (36 %)
6.	Geographical Coordinates	<div>1.26°46' 38.79"N 75°30'49.69"E</div> <div>2.26°46'46.28"N 75°30'50.57"E</div> <div>3.26°46'46.03"N 75°30'53.00"E</div> <div>4.26°46'38.26"N 75°30'52.10"E</div>



 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11


S. No.	Particulars	Details		
7.	Project capacity	As under:-		
		Particular	Capacity	Nos.
		Incinerator	300 kg/hr	1
		Autoclave	100 Kg/Hour	1
		Shredder	100Kg/Hour	1
		Ash Pit	-	1
		Sharp Pit	-	1
		Effluent Treatment Plant	10 KLD	1
8.	Areas catered	Health care facilities located in Jaipur (rural) & Dausa Districts of Rajasthan.		
9.	Healthcare units	Health care units, Jaipur (Rural)		: 661 nos.
		Health care units, Dausa		: 379 nos.
10.	No of beds	8392 nos.		
11.	Estimated Biomedical waste	3200 Kg/day Approx		
14.	Project cost	Rs. 3.50 Crore		


11.2.2. Waste Water Generation

Approximately 5.2 KLD water effluents will be generated from all sources such as Venturi Scrubber, Floor Washing, Vehicle/ Container Washing etc. and the same is treated in ETP and after treatment the treated water is recycled and reused in the Quencher as well in Air Pollution Control Device (Venturi Scrubber).

11.2.3. Air Emission & Air Pollution Control Measures Details

The sources of air pollution from the proposed project are particulate matter, nitrogen oxides, sulphur dioxide, Carbon monoxide, etc. The facility is provided with appropriate air pollution control device (Venturi Scrubber) for reducing the pollutants and also a stack height is provided for proper dispersion of the air pollutants. Adequate stack height will be provided to each D.G. set (3.5 m) and Incinerator (30 m).

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.2
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

11.2.4. Solid Waste Generation & Disposal

Solid waste generated during the biomedical waste treatment process and wastewater treatment process is mainly ash and sludge which is generated depending upon the hydraulic load. Municipal solid wastes generated from the proposed project are estimated to be 4 kg/day. Sludge will be disposed in secured landfill. The disinfected plastic waste will be sent for recycling to registered recycler.


11.3. DESCRIPTION OF THE ENVIRONMENT

11.3.1. Introduction

The baseline environmental quality of Air, water, soil, noise, socioeconomic status and ecology has been assessed in the period of December 2021 to February 2022 in the study area of 10 km radial distance from the project site.

11.3.2. Environmental Setting

Particulars	Details
Nearest Village	❑ Rampura : 1.7 Km towards SSE
Nearest Town/City	❑ Bagru : 4.2 Km towards NE
Nearest Railway Station	❑ Bobas Junction : 13.9 km towards NNW
	❑ Jaipur Junction : 31.3 km towards ENE
Nearest Highway	❑ NH 48 : 4.2 Km towards NNW
	❑ Bagru - Jhag Road : 1.1 Km towards SE
Nearest Airport	❑ Jaipur International Airport : 29.0 Km towards ENE
River	❑ Sardiya Nadi : 2.3 Km towards NNE
	❑ Hingoniya Sagar : 4.9 km towards WSW
	❑ Bandi Nadi : 6.7 Km towards SSW
RF/ PF/ Wildlife Sanctuary, national Park, Elephant Corridor, Tiger Reserve etc	None Within the 15 kms radius of the project site.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

11.3.3. Base Line Data

Baseline study was carried out during December 2021 to February 2022.

➤ **Ambient Air Quality**

○ **Respirable Particulate Matter (PM₁₀)**

A maximum value of 79.82 µg/m³ was observed at project site and minimum value of 53.4 µg/m³ was observed at the Sherpura. The average values were observed to be in the range of 57.17 µg/m³ to 70.01 µg/m³. All the values were well within the prescribed limit of CPCB.

○ **Particulate Matter (PM_{2.5}):**


A maximum value of 45 µg/m³ was observed at Syosinghpur and minimum value of 19.21 µg/m³ was observed at Nayabas. The average values were observed to be in the range of 34.09 µg/m³ to 43.23 µg/m³. All the values were well within the prescribed limit of CPCB.


○ **Sulphur Dioxide (SO₂)**

Maximum concentration of SO₂ is observed to be 18.5 µg/m³ at Nariya & minimum value of 5.84 µg/m³ observed at Bagru. The average values were observed to be in the range of 7.70 µg/m³ to 13.87 µg/m³. All the values are well within the prescribed limit of CPCB.

○ **Nitrogen Dioxide (NO₂)**

Maximum concentration of NO₂ is observed to be 20.31 µg/m³ at the Nariya & minimum value of 9.45 µg/m³ were observed at Bagru. The average values were observed to be in the range of 17.41 µg/m³ to 25.86 µg/m³. All the values were well within the prescribed limit of CPCB.

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.4
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

➤ **Water Quality Monitoring**

- During the study period, pH values observed were in the range of 7.36 to 7.71
- Total dissolved solids in the range of 1411.1 mg/l to 2715 mg/l
- Calcium values observed were in the range of 120.95 mg/l to 128.50 mg/l.

11.3.4. Surface Water

- During the study period, pH values observed were in the range of 7.35 to 7.68 with total dissolved solids in the range of 242 mg/l to 270 mg/l and the hardness values observed were in the range of 164 mg/l to 210 mg/l. The dissolved oxygen values are in between 6.2 mg/l to 7.8 mg/l, while the BOD levels are in the range of 8.8 to 10.2 mg/l and the COD values were in range 21mg/l to 36mg/l.

➤ **Background Noise Level**


Ambient noise levels were measured at 8 locations around the proposed project site. Minimum and maximum noise levels recorded during the day time were from 58.4 dB and 50.5dB respectively and Minimum and maximum level of noise during night time was 36.5 dB and 41.2 dB respectively.

➤ **Soil Quality**

- Texture of the soil samples is generally sandy.
- Water holding capacity of soil samples were in range of 32.85 % to 38.75 %.
- pH of the soil samples ranged from 7.7 to 7.81.

➤ **Socio Economic Study**

In the study area, there are 14774 households of which 3.43 % household's falls in 0 to 2 km, 49.93% household's in 2 to 5 km , 11.62% household's in 5 to 7 km and 35.01% household's in 7 to 10 km respectively. The total population falling in the project area is 91980 of which 3.56 % resides within 0 to 2 km, 48.74% are in 2 to 5 km , 11.70% are in 5 to 7 km and 36.00 % in 7 to 10 km. The total male population

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.5
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

consists of 51.62 % and female population accounts to be 48.38 % of the total population. The sex ratio of the 10.0 km study area is 937 females over thousand males. There are approx 4 to 6 members in a family. The 0-6 population comprises of 14.49% of the total population of the study area. The sex ratio of 0-6 population is 870 females over thousand males.

➤ **Biological Environment**

Within the study area of 10 km radius of the project site, there is no any reserve forest and protected forest from project site.

○ **Floral Diversity of the Study Area**


The tree species commonly occurring in the study area were Desi babul, Khejari, Neem and Shisham, etc. Among the tree, approx 27 species of trees were seen and no rare or endangered flora was observed.

○ **Faunal Biodiversity of the Study Area**

For the documentation of the faunal biodiversity of the study area with respect to birds, reptiles, amphibians, and butterfly species, a detailed survey had been conducted. Schedule-I fauna was observed in the Buffer zone of the study area.

11.4. Anticipated Environmental Impacts & Mitigation Measures

Due to this facility, there is minor increment in the air pollution due to the air emissions like PM, SO₂, NO_x from the stack attached to incinerator facility. Entire liquid waste water generated from the facility is treated through ETP and treated water is used in the development of internal green belt to follow zero discharge concept. Biomedical waste, generated from a number of healthcare units, is imparted necessary treatment to reduce adverse effects that this waste may pose. The treated waste may finally be sent for disposal in a landfill or for recycling purposes.

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.6
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

The solid waste at the CBWTF would be ash from incinerator, sludge from ETP and mercury waste from bio medical waste. All these waste would be sent to the nearest TSDF.

11.5. Environmental Monitoring Programme

Regular monitoring of environmental parameters like air, water, noise and soil as well as performance of pollution control devices and safety measures in the facility proper environmental management is carried out periodically as recommended for proper environmental management.

11.6. Additional Studies

Risk Assessment


The management is very much aware of their obligation to protect all persons at work and others in the neighborhood that may be affected by an unfortunate and unforeseen incidence occurring at the CBWTF. Any hazard either to employees or others arising from activities at the facility shall, as far as possible, be handled by the management of the company and prevented from spreading any further.

11.7. ENVIRONMENTAL MANAGEMENT PLAN


The management team is very much concerned about environmental issues. All the environmental components are looked out. Mitigation of environmental impacts has to be implemented according to the suggestions and is monitored regularly to prevent any lapse.

11.8. CONCLUSION

Company is committed to implement all the pollution control measures to protect the surrounding Environment. Projects like this certainly improve the living standard of local people. The implementation of this project definitely improves the physical and social infrastructure of the surrounding area.

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.7
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.8
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00



परियोजना : प्रस्तावितसांझा जैव चिकित्साअपशिष्टउपचारसुविधा (सीबीडब्ल्यूटीएफ), जयपुरग्रामीण

प्रमोटर : इंस्ट्रोमेडिक्स वेस्ट मैनेजमेंट प्राइवेट लिमिटेड

कार्यकारी सारांश

कार्यकारी सारांश

11.1. परिचय

इंस्ट्रोमेडिक्स वेस्ट मैनेजमेंट प्राइवेट लिमिटेड खसरा नंबर 400, ग्राम रामपुरौंती, तहसील सांगानेर जयपुर, राजस्थान में स्थापित एक सामान्य जैव-चिकित्सा वेस्ट उपचार सुविधा (सीबीडब्ल्यूटीएफ) का प्रस्ताव करता है। यह परियोजना लगभग 16188 वर्ग मीटर (1.6188 हेक्टेयर) के क्षेत्र को कवर करेगा।

परियोजना में सामान्य जैव चिकित्सा वेस्ट उपचार सुविधा का विकास शामिल है जिसे अनुसूची-राजपत्र अधिसूचना दिनांक 17.04.2015 के मद 7 (डी) (ए) के तहत वर्गीकृत किया गया है।

परियोजना स्थल पर इंस्ट्रोमेडिक्स वेस्ट मैनेजमेंट प्राइवेट लिमिटेड का स्वामित्व है। लिमिटेड जयपुर राजस्थान में एक सामान्य जैव चिकित्सा वेस्ट उपचार सुविधा (सीबीडब्ल्यूटीएफ) की स्थापना के लिए। यह समतल भूमि क्षेत्र है। साइट सड़क नेटवर्क, बिजली आपूर्ति और सीबीडब्ल्यूटीएफ के लिए आवश्यक अन्य आवश्यक सुविधाओं से अच्छी तरह से जुड़ी हुई है।

11.2. परियोजनाविवरण

11.2.1. परियोजनाविवरण

क्रमांक	विवरण	विवरण																					
1.	परियोजना	प्रस्तावित कॉमन जैव चिकित्सा अपशिष्ट उपचार सुविधा (सीबीडब्ल्यूटीएफ), जयपुर ग्रामीण																					
2.	साइट का पता	खसरा नंबर 400, रामपुरौंती गांव, तहसील सांगानेर जयपुर																					
3.	प्रमोटर	इंस्ट्रोमेडिक्स वेस्ट मैनेजमेंट प्राइवेट लिमिटेड																					
4.	प्लॉटक्षेत्र (मीटर वर्ग)	16188 वर्ग मीटर (1.6188 हेक्टेयर)																					
5.	ग्रीन बेल्ट और वृक्षारोपण क्षेत्र	5827.68 वर्ग मीटर (36%)																					
6.	भौगोलिक निर्देशांक	<div>1.26°46'38.79"N 75°30'49.69"E</div> <div>2.26°46'46.28"N 75°30'50.57"E</div> <div>3.26°46'46.03"N 75°30'53.00"E</div> <div>4.26°46'38.26"N 75°30'52.10"E</div>																					
7.	परियोजना क्षमता	<table> <tr> <th>विशेष</th><th>क्षमता</th><th>संख्या</th></tr> <tr> <td>इंसीनेटर</td><td>300 किग्रा घंटा</td><td>1</td></tr> <tr> <td>ऑटोक्लेव</td><td>100 किग्रा/घंटा</td><td>1</td></tr> <tr> <td>श्रेडर</td><td>100 किग्रा/घंटा</td><td>1</td></tr> <tr> <td>ऐश पिट</td><td>-</td><td>1</td></tr> <tr> <td>शार्प पिट</td><td>-</td><td>1</td></tr> <tr> <td>एफ्लुएंट ट्रीटमेंट प्लांट</td><td>10 KLD</td><td>1</td></tr> </table>	विशेष	क्षमता	संख्या	इंसीनेटर	300 किग्रा घंटा	1	ऑटोक्लेव	100 किग्रा/घंटा	1	श्रेडर	100 किग्रा/घंटा	1	ऐश पिट	-	1	शार्प पिट	-	1	एफ्लुएंट ट्रीटमेंट प्लांट	10 KLD	1
विशेष	क्षमता	संख्या																					
इंसीनेटर	300 किग्रा घंटा	1																					
ऑटोक्लेव	100 किग्रा/घंटा	1																					
श्रेडर	100 किग्रा/घंटा	1																					
ऐश पिट	-	1																					
शार्प पिट	-	1																					
एफ्लुएंट ट्रीटमेंट प्लांट	10 KLD	1																					
8.	क्षेत्र कैटेरेड	राजस्थान के जयपुर (ग्रामीण) और दौसा जिलों में स्थित स्वास्थ्य देखभाल सुविधाएं।																					



गौरांग एनवायरनमेंटल सोल्यूशंस प्राइवेट लिमिटेड

Report Ref: GESPL_430/2021/EIA/225

Rev No. 00



परियोजना : प्रस्तावितसांझा जैव चिकित्साअपशिष्टउपचारसुविधा (सीबीडब्ल्यूटीएफ, जयपुरग्रामीण

प्रमोटर : इंस्ट्रोमेडिक्स वेस्ट मैनेजमेंट प्राइवेट लिमिटेड

कार्यकारी सारांश

9	स्वास्थ्य देखभाल इकाइयां	स्वास्थ्य देखभाल इकाइयां, जयपुर (ग्रामीण) : 661 संख्या स्वास्थ्य देखभाल इकाइयां, दौसा : 379 संख्या
10	बिस्तरों की संख्या	8392 संख्या
11	अनुमानित बायोमेडिकल वेस्ट	3200 kg/day
12	परियोजना लागत	3.50 करोड़

11.2.2 अपशिष्टजलउत्पादन

लगभग 5.2 KLD अपशिष्टजल सभी स्रोतों जैसे वेंचुरी स्क्रबर, फर्श की धुलाई, वाहन/कंटेनर की धुलाई आदि से उत्पन्न होगा और इसे ईटीपी में उपचारित किया जायगा और उपचार के बाद उपचारित पानी को पुनः रीसायकल किया जाएगा और कैंचर के साथ-साथ वायु प्रदूषण में पुनः उपयोग किया जाएगा।

11.2.3 वायु उत्सर्जन और वायु प्रदूषण नियंत्रण उपाय विवरण

प्रस्तावित परियोजना से वायु प्रदूषण के स्रोत पार्टिकुलेट मैटर, नाइट्रोजन ऑक्साइड, सल्फर डाइऑक्साइड, कार्बन मोनोऑक्साइड आदि हैं। प्रदूषकों को कम करने के लिए उपयुक्त वायु प्रदूषण नियंत्रण उपकरण दिये जाएंगे और वायु प्रदूषकों के उचित फैलाव हेतु पर्याप्त स्टैक ऊंचाई प्रदान की जाएगी।

11.2.4 ठोस अपशिष्ट उत्पादन और निपटान

जैव चिकित्सा अपशिष्ट उपचार प्रक्रिया और अपशिष्ट जल उपचार प्रक्रिया के दौरान उत्पन्न ठोस अपशिष्ट मुख्य रूप से राख और कीचड़ है जो हाइड्रोलिक भार के आधार पर उत्पन्न होता है। प्रस्तावित परियोजना से उत्पन्न नगरीय ठोस अपशिष्ट 4 किग्रा/दिन होने का अनुमान है। सुरक्षित लैंडफिल में कीचड़ का निपटान किया जाएगा। कीटाणुरहित प्लास्टिक कचरे को पुनर्चक्रण के लिए पंजीकृत पुनर्चक्रणकर्ता के पास भेजा जाएगा।

11.3 पर्यावरणका विवरण

11.3.1 परिचय

परियोजना स्थल से 10 किमी रेडियल दूरी के अध्ययन क्षेत्र में दिसंबर 2021 से फरवरी 2022 की अवधि में पर्यावरण गुणवत्ता का मूल्यांकन वायु, जल, मिट्टी, शोर, सामाजिक आर्थिक जैविक (वन, पशु, पक्षी आदि)स्थिति और पारिस्थितिकी के आधारभूत परिपेक्ष्य किया गया है।



गौरांग एनवायरनमेंटल सोल्यूशंस प्राइवेट लिमिटेड

Report Ref: GESPL_430/2021/EIA/225

Rev No. 00

11.3.2 पर्यावरणसेटिंग

क्रमांक	निकटतम प्रमुख बुनियादी सुविधा सुविधाएं	परियोजनास्थल से दूरी
1	निकटतम गांव	रामपुरा : 1.7 किमी दक्षिण-दक्षिण-पूर्व की ओर
2	निकटतम शहर/ शहर	बगरू : पूर्वोत्तर की ओर 4.2 कि.मी
3	निकटतम रेलवे स्टेशन	बोबास जंक्शन:- उत्तर-उत्तर-पश्चिम की ओर 13.9 किमी जयपुर जंक्शन: - पूर्व-उत्तर-पूर्व की ओर 31.3 किमी
4	निकटतम राजमार्ग	एनएच 48:- उत्तर उत्तर पश्चिम की ओर 4.2 किमी बगरू -झाग रोड:- दक्षिण पूर्व की ओर 1.1 किमी
5	निकटतम हवाई अड्डा	जयपुर अंतर्राष्ट्रीय हवाई अड्डा: पूर्व उत्तर पूर्व की ओर 29.0 किमी
6	नदी	सरदिया नाडी:- उत्तर पूर्व की ओर 2.3 किमी हिंमोनिया सागर :- पश्चिम दक्षिण पश्चिम की ओर 4.9 किमी बांडी नदी : दक्षिण दक्षिण पश्चिम की ओर 6.7 किमी
7	आरएफ/पीएफ/वन्यजीव अभयारण्य, राष्ट्रीय उद्यान, हाथी गलियारा, टाइगर रिजर्व आदि	परियोजना स्थल के 15 किमी के दायरे में कोई नहीं है।

11.3.3 मूलाधार आंकड़े

बेसलाइन अध्ययन दिसंबर 2021 से फरवरी 2022 के दौरान किया गया था।

- परिवेशी वायु गुणवत्ता
- रेस्पिरेबल पार्टिकुलेट मैटर (PM10)

परियोजना स्थल पर अधिकतम 79.82 $\mu\text{g}/\text{m}^3$ और शेरपुरा में न्यूनतम मान 53.4 $\mu\text{g}/\text{m}^3$ देखा गया। औसत मान 57.17 $\mu\text{g}/\text{m}^3$ से 70.01 $\mu\text{g}/\text{m}^3$ की सीमा में देखा गया। सभी मूल्य सीपीसीबी की निर्धारित सीमा के भीतर थे।

- पार्टिकुलेट मैटर (PM2.5)

स्योसिंहपुर में अधिकतम 45 $\mu\text{g}/\text{m}^3$ और नयाबास में 19.21 $\mu\text{g}/\text{m}^3$ का न्यूनतम मान देखा गया। औसत मान 34.09 $\mu\text{g}/\text{m}^3$ से 43.23 $\mu\text{g}/\text{m}^3$ के बीच पाए गए। सभी मूल्य सीपीसीबी की निर्धारित सीमा के भीतर थे।

- सल्फर डाइऑक्साइड (SO2)

नारिया में SO2 की अधिकतम मात्रा 18.5 $\mu\text{g}/\text{m}^3$ और बगरू में 5.84 $\mu\text{g}/\text{m}^3$ का न्यूनतम मान देखा गया। औसत मान 7.70 $\mu\text{g}/\text{m}^3$ से 13.87 $\mu\text{g}/\text{m}^3$ के बीच पाए गए। सभी मान सीपीसीबी की निर्धारित सीमा के भीतर हैं।



○ नाइट्रोजन डाइऑक्साइड (NO₂)

नरिया में NO₂ की अधिकतम मात्रा 20.31 µg/m³ और बगरू में 9.45 µg/m³ का न्यूनतम मान देखा गया। औसत मान 17.41 µg/m³ से 25.86 µg/m³ की सीमा में देखा गया। सभी मूल्य सीपीसीबी की निर्धारित सीमा के भीतर थे।

➤ जल गुणवत्ता निगरानी

- अध्ययन अवधि के दौरान, पीएच मान 7.36 से 7.71 के बीच पाया गया
- 1411.1 मिलीग्राम/लीटर से 2715 मिलीग्राम/ली की सीमा में कुल डिस्सॉल्वड सॉलिड है
- कैल्शियम की मात्रा 120.95 मिग्रा/ली से 128.50 मिग्रा/ली के बीच पाई गई।

11.3.4. सतही जल

अध्ययन अवधि के दौरान, पीएच मान 7.35 से 7.68 के बीच पाया गया, जिसमें कुल डिस्सॉल्वड सॉलिड 242 मिलीग्राम/ली से 270 मिलीग्राम/ली की सीमा में थे और कठोरता मान 164 मिलीग्राम/ली से 210 मिलीग्राम/ली की सीमा में थे। डिस्सॉल्वड ऑक्सीजन का मान 6.2 mg/l से 7.8 mg/l के बीच था, जबकि BOD का स्तर 8.8 से 10.2 mg/l के बीच था और COD का मान 21mg/l से 36mg/l के बीच था।

➤ वातावरण ध्वनि स्तर

व्यापक ध्वनि स्तर आठ स्थानों पर मापा गया था। दिन के समय न्यूनतम और अधिकतम ध्वनि स्तर 58.4 डीबी और 50.5 डीबी दर्ज किया गया था और रात के समय न्यूनतम और अधिकतम ध्वनि स्तर 36.5 डीबी और 41.2 डीबी दर्ज किया गया था।

➤ मिट्टी की गुणवत्ता

- मिट्टी के नमूनों की बनावट आमतौर पर रेतीली होती है।
- मिट्टी के नमूनों की जल धारण क्षमता 32.85% से 38.75% के बीच थी।
- मिट्टी के नमूनों का पीएच 7.7 से 7.81 के बीच था।

➤ सामाजिक आर्थिक अध्ययन

अध्ययन क्षेत्र में, 14774 परिवार हैं जिनमें से 3.43% परिवार 0 से 2 किमी में, 49.93% परिवार 2 से 5 किमी में, 11.62% परिवार 5 से 7 किमी में और 35.01% परिवार 7 से 10 किमी में आते हैं। परियोजना क्षेत्र में पड़ने वाली कुल जनसंख्या 91980 है जिसमें से 3.56% 0 से 2 किमी के भीतर, 48.74% 2 से 5 किमी में, 11.70% 5 से 7 किमी में और 36.0% 7 से 10 किमी में रहते हैं। कुल पुरुष जनसंख्या में 51.62% और महिला जनसंख्या कुल जनसंख्या का 48.38% है। 10.0 किमी अध्ययन क्षेत्र का लिंगानुपात एक हजार पुरुषों पर 937 महिलाओं का है। एक परिवार में



लगभग 4 से 6 सदस्य हैं। 0-6 जनसंख्या अध्ययन क्षेत्र की कुल जनसंख्या का 14.49% है। 0-6 जनसंख्या का लिंगानुपात हजार पुरुषों पर 870 महिलाओं का है।

➤ **जैविक पर्यावरण**

परियोजना स्थल के 10 कि.मी. के अध्ययन क्षेत्र में परियोजना स्थल से कोई आरक्षित वन एवं संरक्षित वन नहीं है।

➤ **अध्ययन क्षेत्र की पुष्प विविधता**

अध्ययन क्षेत्र में आमतौर पर पाई जाने वाली वृक्ष प्रजातियां देसी बबुल, खेजरी, नीम और शीशम आदि थीं। वृक्षों में से लगभग 27 प्रजातियों के पेड़ देखे गए और कोई दुर्लभ या लुप्तप्राय वनस्पति नहीं देखी गई।

➤ **अध्ययन क्षेत्र की जीव-जंतु जैव विविधता**

पक्षियों, रेंगाइल्स, एम्फीबिअन्स और तितली प्रजातियों के संबंध में अध्ययन क्षेत्र की जीव-जंतु जैव विविधता के प्रलेखन के लिए एक विस्तृत सर्वेक्षण किया गया था। अध्ययन क्षेत्र के बफर जोन में अनुसूची-1 के जीव देखे गए।

11.4. प्रत्याशित पर्यावरणीय प्रभाव और शमन उपाय

इस सुविधा के कारण, इंसीनेटर सुविधा से जुड़े ढेर से पीएम, SO₂, NO_x जैसे वायु उत्सर्जन के कारण वायु प्रदूषण में मामूली वृद्धि होती है। सुविधा से उत्पन्न पूरे तरल ट्रीटेड जल को ईटीपी के माध्यम से उपचारित किया जायगा और उपचारित पानी का उपयोग शून्य डिस्चार्ज अवधारणा का पालन करने के लिए आंतरिक ग्रीन बेल्ट के विकास में किया जायगा। कई स्वास्थ्य देखभाल इकाइयों से उत्पन्न बायोमेडिकल कचरे को इस कचरे के प्रतिकूल प्रभावों को कम करने के लिए आवश्यक उपचार प्रदान किया जायगा। उपचारित डिस्चार्ज को अंत में एक लैंडफिल में या रीसाइक्लिंग प्रयोजनों के लिए निपटान के लिए भेजा जायगा।

सीबीडब्ल्यूटीएफ में ठोस ककग्रा इंसीनेटर से राख, ईटीपी से कीचड़ और जैव चिकित्सा अपशिष्ट से पारा अपशिष्ट होगा। इन सभी कचरे को निकटतम TSDF को भेजा जाएगा।

11.5. पर्यावरण निगरानी कार्यक्रम

हवा, पानी, शोर और मिट्टी जैसे पर्यावरणीय मापदंडों की नियमित निगरानी के साथ-साथ प्रदूषण नियंत्रण उपकरणों के प्रदर्शन और सुविधा में सुरक्षा उपायों को उचित पर्यावरण प्रबंधन के लिए समय-समय पर उचित पर्यावरण प्रबंधन के लिए अनुशंसित किया जायगा।

**INSTROMEDIX****परियोजना : प्रस्तावितसांझा जैव चिकित्साअपशिष्टउपचारसुविधा (सीबीडब्ल्यूटीएफ), जयपुरग्रामीण****प्रमोटर : इंस्ट्रोमेडिक्सवेस्ट मैनेजमेंट प्राइवेट लिमिटेड****कार्यकारी सारांश****11.6. अतिरिक्त अध्ययन****• जोखिम आकलन**

सीबीडब्ल्यूटीएफ में होने वाली एक दुर्भाग्यपूर्ण और अप्रत्याशित घटना से प्रभावित हो सकने वाले काम पर सभी व्यक्तियों और आस-पड़ोस के अन्य लोगों की सुरक्षा के लिए प्रबंधन अपने दायित्व के बारे में बहुत जागरूक है। सुविधा में गतिविधियों से उत्पन्न होने वाले कर्मचारियों या अन्य लोगों के लिए किसी भी खतरे को, जहां तक संभव हो, कंपनी के प्रबंधन द्वारा नियंत्रित किया जाएगा और इसे आगे फैलने से रोका जाएगा।


11.7 पर्यावरण प्रबंधन योजना

प्रबंधन टीम पर्यावरण के मुद्दों के बारे में बहुत चिंतित है। सभी पर्यावरणीय घटकों को देखा जाता है। पर्यावरणीय प्रभावों के शमन को सुझावों के अनुसार लागू किया जाना चाहिए और किसी भी चूक को रोकने के लिए नियमित रूप से निगरानी की जानी चाहिए।

11.8. निष्कर्ष

कंपनी आसपास के पर्यावरण की रक्षा के लिए सभी प्रदूषण नियंत्रण उपायों को लागू करने के लिए प्रतिबद्ध है। इस तरह की परियोजनाएं निश्चित रूप से स्थानीय लोगों के जीवन स्तर में सुधार करती हैं। इस परियोजना के कार्यान्वयन से निश्चित रूप से आसपास के क्षेत्र के भौतिक और सामाजिक बुनियादी ढांचे में सुधार आएगा।

**गौरांग एनवायरनमेंटल सोल्युशंस प्राइवेट लिमिटेड****Report Ref: GESPL_430/2021/EIA/225****Rev No. 00**


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

APPENDIX - I
(See paragraph – 6)


FORM – 1

(I) Basic Information

S. No	Item	Details																					
1.	Name of the project/s	Proposed Common Bio Medical Waste Treatment Facility (CBWTF), Jaipur Promoter : Instromedix Waste Management Pvt. Ltd																					
2.	S. No. in the schedule	‘7 (d)(a)’ (CBMWTF projects)																					
3.	Proposed capacity/area/ length/ tonnage to be handled/ command area/ lease area/ number of wells to be drilled.	The capacity details are as follows:- <table border="1"> <thead> <tr> <th>Particular</th><th>Capacity</th><th>Nos.</th></tr> </thead> <tbody> <tr> <td>Incinerator</td><td>300 kg/hr</td><td>1</td></tr> <tr> <td>Autoclave</td><td>100 Kg/Hour</td><td>1</td></tr> <tr> <td>Shredder</td><td>100Kg/Hour</td><td>1</td></tr> <tr> <td>Ash Pit</td><td>-</td><td>1</td></tr> <tr> <td>Sharp Pit</td><td>-</td><td>1</td></tr> <tr> <td>Effluent Treatment Plant</td><td>10 KLD</td><td>1</td></tr> </tbody> </table>	Particular	Capacity	Nos.	Incinerator	300 kg/hr	1	Autoclave	100 Kg/Hour	1	Shredder	100Kg/Hour	1	Ash Pit	-	1	Sharp Pit	-	1	Effluent Treatment Plant	10 KLD	1
Particular	Capacity	Nos.																					
Incinerator	300 kg/hr	1																					
Autoclave	100 Kg/Hour	1																					
Shredder	100Kg/Hour	1																					
Ash Pit	-	1																					
Sharp Pit	-	1																					
Effluent Treatment Plant	10 KLD	1																					
4.	New/Expansion/Modernization	New Project																					
5.	Existing Capacity/Area, etc.	Not applicable																					
6.	Category of Project i.e. 'A' or 'B'	Category “B”																					
7.	Does it attract the general condition? If yes, please specify.	No, it does not attract the general condition.																					
8.	Does it attract the specific condition? If yes, please specify.	No, it does not attract the specific condition.																					
9.	Location																						
	Plot/Survey/Khasra No.	Khasra No. 400																					
	Village	Rampuraoonti																					
	Tehsil	Sanganer																					
	District	Jaipur																					
	State	Rajasthan																					
10.	Nearest railway station / airport	Bobas Junction 13.9 km towards NNW																					

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1


	along with distance in km	Jaipur Junction 31.3 km towards ENE Jaipur International Airport 29.0 Km towards ENE
11.	Nearest Town, City, District Headquarters along with distance in kms.	Nearest Town : Bagru 4.2 Km towards NE Nearest City : Jaipur 30 Km towards NE Jaipur Collectorate 32.2 KM towards ENE
12.	Village Panchayats, Zila Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Municipal Corporation Jaipur Greater, Jaipur Pandit Dindayal Uppadhyay Bhawan, Lal Kothi Tonk Road, Jaipur, Rajasthan Contact No. 91-141-2744273
13.	Name of the applicant	Instromedix Waste Management Pvt. Ltd
14.	Registered Address	Instromedix Waste Management Pvt. Ltd Gaurav Tower, D-Block, Crystal Court, Malviya Nagar, Jaipur, Rajasthan 302017
15.	Address for correspondence :	
	Name	Mr. Sohan Choudhary
	Designation (Owner/Partner/CEO)	Authorized signatory
	Address	402, 4th Floor, Gaurav Tower, Malviya Nagar, Jaipur
	Pin Code	302017
	E-mail	iipl.jpr@instromedix.net cbwtfjaipur@gmail.com
	Telephone No.	9772123777
	Fax No:	—
16.	Details of Alternative Sites examined, if any. Location of these sites should be shown on a Toposheet.	No alternative site was examined.
17.	Interlinked Projects	No Interlinked Project
18.	Whether separate application of interlinked project has been submitted?	Not Applicable

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1


19.	If yes, date of submission	Not Applicable
20.	If no, reason	Not Applicable
20.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z Notification, 1991?	No
21.	Whether there is any Government Order/ Policy relevant/ relating to the site?	None
22.	Forest land involved (hectares)	No Forest land is involved.
23.	Whether there is any litigation pending against the project and/or land in which the project is proposed to be set up? (a) Name of the Court (b) Case No. (c) Orders/directions of the Court, if any and its relevance with the proposed project.	No litigation is pending against the project.

(II) Activity


Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1


S. No.	Information / Checklist Confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	<p>Land-use:</p> <p>The project site is a government land leased by Municipal Corporation Jaipur Greater, Jaipur for development of CBWTF.</p> <p>Land cover:</p> <p>Presently, the project site is a vacant parcel of land and land cover will change due to development of CBWTF.</p> <p>Leveling of the site for construction work will be done. However, top soil shall be stored at separate place and reused for gardening purposes.</p>
1.2	Clearance of existing land, vegetation and buildings?	No	There are only scattered shrubs on site which will be cleared & site levelling done for the proposed CBWTF. No tree cutting or building clearance is required.
1.3	Creation of new land uses?	Yes	There will be permanent change of land use to industrial use, as the land has been leased to Instromedix Waste Management Pvt. Ltd.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	No	Not Applicable
1.5	Construction works?	Yes	The proposal involves construction of incinerator shed, storage area, Administration building etc.
1.6	Demolition works?	No	No demolition works are needed.
1.7	Temporary sites used for construction works or housing of construction workers?	No	Local labour force will be sourced by contractor therefore no housing facilities are required.
1.8	Above ground buildings,	Yes	There will be excavation, cut and fill during the

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

	structures or earthworks including linear structures, cut and fill or excavations.		process of installation of plant & machinery.
1.9	Underground works including mining or tunneling?	No	Not Applicable
1.10	Reclamation works?	No	Not envisaged as no major construction or earthworks are proposed.
1.11	Dredging?	No	Not Applicable
1.12	Offshore structures?	No	Not Applicable
1.13	Production and manufacturing processes?	No	The proposal is for CBWTF facility. No production or manufacturing is proposed.
1.14	Facilities for storage of goods or materials?	Yes	Storage facility for Biomedical waste will be provided within plant premises as per CPCB guidelines and Biomedical waste rules 2016 and subsequent amendments.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	<p>The Incinerator ash will be disposed off to authorized landfill facility.</p> <p>Effluent generated from scrubbing will be treated in proposed ETP. ETP sludge will disposed off to authorize TSDF.</p> <p>Domestic wastewater will be treated in modular STP & treated water used for greenbelt maintenance.</p>
1.16	Facilities for long term housing of operational workers?	No	No residential facilities for operational workers are proposed. Staff resting rooms shall be provided within the plant premises.
1.17	New road, rail or sea traffic during construction or operation?	No	<p>There will be no new road, rail or sea traffic during construction or operation.</p> <p>There will be marginal increase in the traffic levels due to proposed project.</p>
1.18	New road, rail, air waterborne or other transport infrastructure	No	There will be no new road and rail, air, water borne or other transport infrastructure.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1


	including new or altered routes and stations, ports, airports, etc?		
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	There will be no closure or diversion of existing transport routes or infrastructures leading to changes in traffic movements due to the project.
1.20	New or diverted transmission lines or pipelines?	No	There is no diversion of transmission lines and/ or pipelines.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	The proposed project does not involve any impoundment, damming, culverting or realignment or other changes to the hydrology of watercourses or aquifers.
1.22	Stream crossings?	No	None
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	Water requirement will be sourced from ground water.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	Yes	No change in water bodies in the study area is envisaged. However, construction of CBWTF in the presently vacant plot may affect run-off. Proper storm-water drains connecting to ETP will be constructed as per the natural contours of the area.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	No	There will be transport of personnel or materials for construction, operation of the project. However, the same is not envisaged to cause any physical changes in the locality.
1.26	Long-term dismantling or decommissioning or restoration works?	No	Not envisaged.
1.27	Ongoing activity during decommissioning, which could have an impact on the	No	No dismantling or decommissioning works are required.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

	environment?		
1.28	Influx of people to an area in either temporarily or permanently?	No	Not anticipated. Manpower required is 25 persons for project operations. About 20 workers will be required during construction stage & the same shall be sourced locally.
1.29	Introduction of alien species?	No	Not envisaged. Local plant species will be selected for the green belt & plantation.
1.30	Loss of native species or genetic diversity?	No	Not anticipated.
1.31	Any other actions?	No	None

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):


S. No.	Information / checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	Yes	The proposed project is coming up in presently vacant parcel of land leased by Municipal Corporation Jaipur Greater, Jaipur for development of CBWTF.
2.2	Water (expected source & competing users) unit: KLD	Yes	About 8.34 KLD of fresh water will be required for operations & domestic use which will be sourced from ground water.
2.3	Minerals (MT)	No	Not anticipated as the project is proposed CBWTF and no manufacturing or production process is involved.
2.4	Construction material – stone, aggregates, sand / soil	Yes	Locally available general construction material will be used for the construction works.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

	(expected source – MT)		
2.5	Forests and timber (source – MT)	No	Not envisaged
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Power demand : 100 KVA. Source : JVVNL Supply Power Backup : D.G Set (160 KVA :1 No) Fuel : HSD (32lt/hr)
2.7	Any other natural resources (Use appropriate standard units)	No	Not Applicable

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.


S. No	Information/ Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and Water supplies)	Yes	Biomedical wastes defines under Bio-medical waste management Rules 2016 and subsequent amendments from Health care facilities in Jaipur (Rural) & Dausa districts shall be brought to the proposed CBWTF for treatment & disposal. HSD will be used for incineration & D.G Set operations. Sodium Hypochlorite will be used for disinfection & treatment of biomedical waste.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	None

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooanti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

S. No	Information/ Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.3	Affect the welfare of people e.g. by changing living conditions?	No	No adverse impact on welfare of people in study area is anticipated.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	No adverse impact anticipated.
3.5	Any other causes	No	Not envisaged.

4. Production of solid wastes during construction or operation or Decommissioning (MT/month)


S. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	Not applicable.
4.2	Municipal waste (domestic and or commercial wastes)	Yes	Approx 4 kg/day Municipal waste will be generated. This will be segregated as organic and inorganic using twin bin system and will be disposed to local municipal waste disposal site.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	<p>Incinerator ash: 7 to 10 kg/hr at maximum capacity utilisation will be disposed off to authorized landfill facility.</p> <p>ETP sludge will be disposed off to authorized TSDF.</p> <p>Used oil from the plant & machinery will be stored in earmarked place in closed Drums and sold off to authorized recycler.</p>

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1


4.4	Other industrial process wastes	No	Not anticipated
4.5	Surplus product	No	No production or manufacturing is proposed.
4.6	Sewage sludge or other sludge from effluent treatment	Yes	Sludge from ETP will send to authorized secure landfill facility. Sludge from STP will be dried & used as manure for landscaping within plant premises.
4.7	Construction or demolition wastes	Yes	No significant construction waste will be generated. Construction waste, if any, will be disposed off through contractor as per C & D Waste Rules, 2016.
4.8	Redundant machinery or equipment	No	Not envisaged.
4.9	Contaminated soils or other materials	Yes	Contamination of soil may occur due to improper storage & handling of wastes. HoW Rules 2016 & CPCB guidelines will be followed to avoid contamination of soil or land.
4.10	Agricultural wastes	Yes	Landscaping waste will be generated from the project.
4.11	Other solid wastes	No	There will not be any other solid wastes.

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	Emissions from Incinerator operations due to burning of HSD will be passed through air pollution control devices to clean the flue gas and discharged to atmosphere through stack of height as per CPCB guidelines. Emission from DG set operations (HSD) will be discharged through stack height as per CPCB

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

			guidelines.
5.2	Emissions from production processes	No	The proposal is for CBWTF. No production process is involved.
5.3	Emissions from materials handling including storage or transport	Yes	Fugitive emissions are anticipated due to material handling & transfer.
5.4	Emissions from construction activities including plant and equipment	Yes	Fugitive dust emissions are anticipated from plant & machinery installation and vehicular movement. These emissions will be low in magnitude, temporary in nature and reversible as no major construction activity is envisaged. Dust screens and water sprinkling method will be adopted.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	Biomedical waste will be disposed off within 48 hours of receipt at CBWTF as per CPCB guidelines. Hazardous waste will be handled in closed containers. Domestic sewage will be treated in STP. Good housekeeping practices shall be adopted.
5.6	Emissions from incineration of waste	Yes	Emissions like PM, SO ₂ , NO _x , CO, VOCs etc from Incineration of waste will be passed through air pollution control devices to clean the flue gas and discharged to atmosphere through stack of height as per CPCB guidelines. Incinerator will be equipped with dioxin & furan control system.
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	No open air burning of waste will be done. Construction waste will be disposed off as per C&D Waste Rules 2016 through contractor.
5.8	Emissions from any other sources	No	No other emission sources are anticipated.


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

6. Generation of Noise and Vibration, and Emissions of Light and Heat:


S. No.	Information / Checklist Confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise is anticipated from operation of pumps, fans, etc. Installation of barriers & enclosures wherever feasible & development of greenbelt will mitigate noise pollution. Use of PPEs by workers will be ensured.
6.2	From industrial or similar processes	Yes	Noise is anticipated from Incinerator operations. Regular maintenance of plant & machinery & greenbelt will mitigate noise pollution. Use of PPEs by workers will be ensured.
6.3	From construction or demolition	Yes	Noise is anticipated from plant & machinery installation. Construction / installation of plant & machinery will only be done during daytime.
6.4	From blasting or piling	No	Not applicable
6.5	From construction or operational traffic	Yes	There will be marginal increase in noise due to movement of vehicles. Regular maintenance of vehicles will be carried out to reduce noise.
6.6	From lighting or cooling systems	No	Not envisaged.
6.7	From any other sources	No	None

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S. No.	Information / Checklist Confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	Yes	The project will involve handling, storage, treatment and disposal of Bio-medical waste. Due


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

			<p>care will be taken to minimize risk of contamination from the project.</p> <p>Improper storage, handling & treatment of Biomedical waste & hazardous waste generated from treatment of BMW may contaminate land &/or water. Handling, storage & treatment of BMW & hazardous wastes will be done as per BMW Management Rules & HoW Rules 2016 & CPCB guidelines. Used oil generated from plant & machinery will be stored temporarily at earmarked place in MS drums and disposed off to authorized recyclers.</p>
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	<p>No effluent will be discharged outside plant premises. Effluent from scrubbing will be treated in ETP & treated water reused for quenching.</p> <p>Domestic sewage will be treated in STP & treated water reused for greenbelt development.</p>
7.3	By deposition of pollutants emitted to air into the land or into water	Yes	<p>Incinerator will be equipped with scrubbers for acidic gas removal in the flue gas from waste incineration. Stack height will be as per CPCB guidelines for discharge of clean gases into the atmosphere to avoid land &/or water contamination.</p>
7.4	From any other sources	No	None
7.5	Is there a risk of long term build-up of pollutants in the environment from these sources?	Yes	<p>The proposed CBWTF will be scientifically designed & operated as per statutory clearances, BMW Management Rules, 2016 and CPCB guidelines to prevent any build-up of pollutants in the environment.</p>


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

S. No.	Information / Checklist Confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data						
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	Yes	<p>HSD is explosive in nature & therefore following measures will be adopted to prevent spillages, fires & explosions:</p> <ul style="list-style-type: none">• On-site & off-site emergency has been prepared.• Use of PPEs like protective footwear, helmets, jackets, gloves, masks etc. will be ensured• First aid facility will be made available on site• Regular safety trainings will be provided to employees• Periodical medical checkup of workers will be conducted.• Fire detection & alarm system along with adequate fire-fighting facilities will be provided• One vehicle will be kept on standby at all times for immediate transport of injured personnel to avail medical assistance• SOP will be put in place for emergency situation						
8.2	From any other causes	Yes	There will be only collection, transportation, treatment and disposal of waste by using techniques such as incineration etc which involves the risk of damage to environment in case of accidental failure of air pollution control system. CPCB guidelines & BMW Management rules will be followed for CBWTF operations.						
8.3	Could the project be affected by natural disasters causing	No	<p>As under:-</p> <table><tr><th>Natural</th><th>Occurrence</th><th>Management</th></tr><tr><td></td><td></td><td></td></tr></table>	Natural	Occurrence	Management			
Natural	Occurrence	Management							

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1


	environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?		disaster	possibility	
			Floods	As per the secondary data available, no such precedents have been reported. However, the possibility of occurrence cannot be ruled out.	For effective functioning, pre-monsoon & post monsoon checks of the drainage structures will be undertaken. The project has planned storm water layout in regards to the peak intensity of the rainfall so far received as recorded by IMD.
			Earth quake	The site is located in the seismic zone II, as per the seismic zoning map of India given in BIS code IS: 1893 (part I)-2002, which is low damage risk zone.	Earthquake resistant design structures
			Landslides	No such precedent has been reported	--

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

			Cloudburs t	No precedent has been reported.	--
--	--	--	----------------	--	----

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality


S. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting utilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: <ul style="list-style-type: none"> Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) Housing development Extractive industries Supply industries Other 	No	It is a Bio-medical waste treatment plant which helps in the proper disposal of Bio Medical Waste which results in the betterment of the surrounding areas. There is no such infrastructure development leading to this proposed treatment plant.
9.2	Lead to after-use of the site, which could have an impact on the environment	No	Not anticipated
9.3	Set a precedent for later developments	No	Not anticipated

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1


9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	Not anticipated
-----	---	----	-----------------

(III) Environmental Sensitivity-

S.N.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary												
1.	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value.	None within 15 Km radius													
2.	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests.	Water bodies :- <table><tr><th>S. No.</th><th>Water body</th><th>Distance & direction</th></tr><tr><td>1</td><td>Sardiya Nadi</td><td>2.3 Km towards NNE</td></tr><tr><td>2</td><td>Hingoniya Sagar</td><td>4.9 km towards WSW</td></tr><tr><td>3</td><td>Bandi Nadi</td><td>6.7 Km towards SSW</td></tr></table>		S. No.	Water body	Distance & direction	1	Sardiya Nadi	2.3 Km towards NNE	2	Hingoniya Sagar	4.9 km towards WSW	3	Bandi Nadi	6.7 Km towards SSW
S. No.	Water body	Distance & direction													
1	Sardiya Nadi	2.3 Km towards NNE													
2	Hingoniya Sagar	4.9 km towards WSW													
3	Bandi Nadi	6.7 Km towards SSW													
3.	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration.	None within 15 Km radius													
4.	Inland, coastal, marine or underground waters.	None	None												
5.	State, National boundaries	None	None												
6.	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	NH 48 – 4.2 Km towards NNW Bagru - Jhag Road 1.1 Km towards SE													

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

7.	Defense installations	None	
8.	Densely populated or built-up area	Bagru : 4.2 Km towards NE	
9.	Areas occupied by sensitive man-made land uses (<i>hospitals, schools, places of worship, community facilities</i>)	Name	Distance with Direction
		Educational Facilities	
		YSA School	4.0 km towards SE
		MG English International School	4.2 km towards NE
		BN Academy School	4.2 km SSE
		Medical Facilities	
		Siddhi vinayak hospital	5.5 km towards NE
		Balaji soni hospital	7.0 km towards NE
		Bagru nursing home	5.3 km towards NNE
		Places of Worship	
		Temple	3.0 km towards NW
		Shree bheruji Mahraj Mandir	1.1 km towards ENE
		Balaji temple dhobi Samaj	4.0 km towards NE
10.	Areas containing important, high quality or scarce resources.	The project is coming up in Bagru Block which is over exploited block as per the CGWA Classification	
11.	Areas already subjected to pollution or environmental damage.	None	None
12.	Areas susceptible to natural hazard which could cause the project to present environmental problems.	Earthquake Zone II	The area is classified as Zone II (low risk zone) as per the BIS classification.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur	
	Proponent: Instromedix Waste Management Pvt. Ltd	Form 1

"I hereby give undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance give, if any to the project will be revoked at our risk and cost.


Date : 19.11.2021

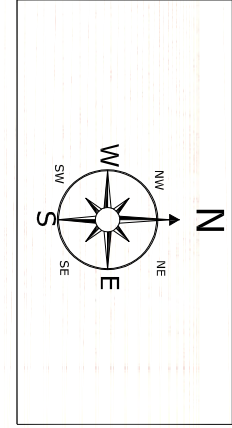
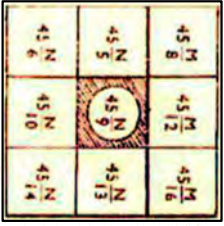
Place : Jaipur

Sohan Choudhary

Authorized Signatory

Instromedix Waste Management Pvt. Ltd

	Gaurang Environmental Solutions Pvt. Ltd.	Page 19
	Report Ref: GESPL_430/2021/EIA/225	Rev No. 02



Legend

Project site

Water bodies

Particulars	Distance	Direction
1. Sadriya Nadi	2.3 km	NNE
2. Bandi Nadi	6.7 km	SSW
3. Hingoniya Sagar	4.9 km	WSW



TOPOGRAPHICAL MAP
OF 15 KM RADIUS

Project: Proposed Common Bio-medical Waste
Treatment Facility (CBWTF) coming up
Khasra No. 400, Rampuraont Village, Tehsil
Sanganer, Jaipur

Chapter I: Introduction

1.1 PURPOSE OF THE REPORT

M/s Gaurang Environmental Solutions Pvt. Ltd. has been assigned the job of carrying out Environmental Impact Assessment (EIA) studies and preparation of report with suitable Environmental Management Plan (EMP) for the Common Bio Medical Waste Treatment Facility, Jaipur Rural coming up at Khasra No. 400, Village Rampuraooti, Tehsil Sanganer Jaipur promoted by Instromedix Waste Management Pvt. Ltd.

The project activity is listed at item 7(da) of the Schedule-Gazette Notification dated 17th April 2015 as Category “B” project and therefore requires prior Environmental Clearance. Terms of reference for carrying out EIA studies was prescribed by SEIAA, Rajasthan vide *letter F1 (4)/SEIAA/SEAC-Raj/Sectt/Project / Cat.7 (da) (20119)/2021.22 dated 21.02.2022*. Copy of ToR letter enclosed S.No.8).

The objective of the Environmental Impact Assessment (EIA) report is

- To identify, predict and evaluate the economic, environmental and social impact of project activities
- To provide information on the environmental consequences for decision making and
- To promote environmentally sound and sustainable development through the identification of appropriate alternatives and mitigation measures.

Baseline studies for one season (non-monsoon) along with field surveys were conducted and potential environmental impacts of the project activities were identified, assessed and documented in this report.

1.2 IDENTIFICATION OF PROJECT & PROJECT PROPONENT

1.2.1 Identification of the Project

The project is a Greenfield Common Bio Medical Waste Treatment Facility. The proposed project will be as under:



Table 1.1: Project capacity

Particular	Capacity	Nos.
Incinerator	300 kg/hr	1
Autoclave	100 Kg/Hour	1
Shredder	100Kg/Hour	1
Ash Pit	-	1
Sharp Pit	-	1
Effluent Treatment Plant	10 KLD	1

1.2.2 Identification of the Project Proponent

The project is promoted by M/s Instromedix Waste Management Pvt. Ltd. The company has diverse experience in operating common biomedical waste treatment facilities in the country.

General Information of the company:

Name of the Company	:	Instromedix Waste Management Pvt. Ltd
Registered Address	:	402, 4th Floor, Gaurav Tower, Malviya Nagar, Jaipur.
Directors	:	Mr. Pradeep Kumar Acharjee Mr. Antarpreet Kaur Gulshan
Email	:	iipl.jpr@instromedix.net
Contact No.	:	9772123777

1.3 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY, REGION

1.3.1 Nature of the Project:

The project involves development of Common Bio Medical Waste Treatment Facility which is categorized under *Item 7 (d) (a) (Bio-Medical Waste Treatment Facilities) of the Schedule-Gazette Notification dated 17th April 2015*. The project falls under category “B”.

(*Ref: Amendment to the EIA Notification dated 17th April 2015. Copy enclosed as **Annexure XIII**)

1.3.2 Size of the Project

Brief description about of the project is detailed in the table below:

Table 1.2: Brief Description

S. No.	Particulars	Details																					
1.	Project	Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural																					
2.	Site Address	Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer Jaipur																					
3.	Promoter	Instromedix Waste Management Pvt. Ltd																					
4.	Plot area (sq. m.)	16188 sq. m (1.6188 Ha)																					
5.	Greenbelt & Plantation Area	5827.68 sq. m (36 %)																					
6.	Geographical Coordinates	<div>1.26°46' 38.79"N 75°30'49.69"E</div> <div>2.26°46'46.28"N 75°30'50.57"E</div> <div>3.26°46'46.03"N 75°30'53.00"E</div> <div>4.26°46'38.26"N 75°30'52.10"E</div>																					
7.	Project capacity	As under:- <table border="1"> <thead> <tr> <th>Particular</th><th>Capacity</th><th>Nos.</th></tr> </thead> <tbody> <tr> <td>Incinerator</td><td>300 kg/hr</td><td>1</td></tr> <tr> <td>Autoclave</td><td>100 Kg/Hour</td><td>1</td></tr> <tr> <td>Shredder</td><td>100Kg/Hour</td><td>1</td></tr> <tr> <td>Ash Pit</td><td>-</td><td>1</td></tr> <tr> <td>Sharp Pit</td><td>-</td><td>1</td></tr> <tr> <td>Effluent Treatment Plant</td><td>10 KLD</td><td>1</td></tr> </tbody> </table>	Particular	Capacity	Nos.	Incinerator	300 kg/hr	1	Autoclave	100 Kg/Hour	1	Shredder	100Kg/Hour	1	Ash Pit	-	1	Sharp Pit	-	1	Effluent Treatment Plant	10 KLD	1
Particular	Capacity	Nos.																					
Incinerator	300 kg/hr	1																					
Autoclave	100 Kg/Hour	1																					
Shredder	100Kg/Hour	1																					
Ash Pit	-	1																					
Sharp Pit	-	1																					
Effluent Treatment Plant	10 KLD	1																					
8.	Areas catered	Health care facilities located in Jaipur (rural) & Dausa Districts of Rajasthan.																					
9.	Healthcare units	Health care units, Jaipur (Rural) : 661 nos. Health care units, Dausa : 379 nos.																					
10.	No of beds	8392 nos.																					

S. No.	Particulars	Details
11.	Estimated Biomedical waste	3200 Kg/day Approx
14.	Project cost	Rs. 3.50 Crore

1.3.3 Location of the project

The project site is coming up at Khasra No. 400, Rampuraonti Village, Tehsil Sanganer, Jaipur, Rajasthan.

Table 1.3: Access to the Project Site

Particulars	Distance and directions	
Nearest Railway Station	Bobas Junction	:13.9 km towards NNW
	Jaipur Junction	: 31.3 km towards ENE
Nearest Highway	NH 48	: 4.2 Km towards NNW
	Bagru - Jhag Road	: 1.1 Km towards SE
Nearest Airport	Jaipur International Airport	: 29.0 Km towards ENE

1.3.4 Project importance to country/ region

Biomedical waste is generated from Biological and Medical sources and other associated activities, such as diagnosis, prevention, or treatment of diseases. Common generators (or producers) of Biomedical Waste include hospitals, health clinics, nursing homes, medical research laboratories, dentists, and veterinarians, home health care etc. Disposal of this waste is an environmental concern, as Biomedical Waste is classified as infectious or bio hazardous and could potentially lead to the spread of infectious disease.

Biomedical waste must be properly managed and disposed of to protect the environment, general public and workers, especially healthcare and sanitation workers who are at high risk of exposure to Biomedical Waste as an occupational health hazard. Steps in the management of Biomedical Waste include generation, collection, storage, transport, treatment and disposal.

At the Common Bio Medical Waste Management Treatment Facility (CBWTF), the segregated wastes are collected from the bio medical waste generators, treated as per their characteristics and finally disposed off. More than one type unit operation may be employed for the treatment and disposal of the wastes at CBWTF.

1.4 SCOPE OF THE STUDY – DETAILS OF REGULATORY SCOPING CARRIED OUT (AS PER TERMS OF REFERENCE)

Terms of Reference (ToR) for carrying out EIA studies for the proposed project was prescribed by SEAC, Rajasthan in the 5B.07 meeting of SEAC, Rajasthan held on 19.01.2022 vide letter no. ***F1 (4)/SEIAA/SEAC-Raj/Sectt/Project / Cat.7 (da) (20119)/2021.22 dated 21.02.2022.*** (Copy of TOR letter enclosed at .No 7).

Baseline data generation for one season (non-monsoon) was carried out during December 2021-February 2022 (winter season). Radial distance of 10 km from the project site was considered as the study area.

1.4.1 Structure of EIA Report:

This EIA Report has been structured as follows:

- **Chapter 1: Introduction:** Provides a background to the project, identification of the project and project proponent, brief description of the project, details of the project proponent, scope of the study and structure of this report.
- **Chapter 2: Project description:** Provides details of project, infrastructure required, technology and process description with process flow diagram, information on the needs and desirability of the project and sources of pollution with pollution control measures.
- **Chapter 3: Description of the Environment:** Provides description of the receiving Environment details, baseline conditions identified for the project within 10 km radius from the project site.

- **Chapter 4: Anticipated Environmental Impact and Mitigation Measures:** describe the anticipated impacts identified during the EIA process during the various project phases.
- **Chapter 5: Analysis of alternatives:** provides the different technology alternatives which were considered for the project.
- **Chapter 6: Environment Monitoring program:** provides the monitoring schedule and implementation plan during the operation phase of the project.
- **Chapter 7: Additional Studies:** has the information about risk and hazard assessment and details of disaster management plan and public hearing.
- **Chapter 8: Project benefits:** associated with the proposed project are discussed in this chapter.
- **Chapter 9: Environmental Cost Benefit Analysis:** Not recommended in ToR
- **Chapter 10: EMP:** Details of the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored, after approval of the EIA
- **Chapter 11: Summary & Conclusion**
- **Chapter 12: Disclosure of Consultants engaged.**

1.4.2 Point Wise Compliance to the ToR:

The point wise compliance of the conditions mentioned in the ToR is detailed as under:-

Table: 1.4: Compliance of ToR

S. No	Items in the letter of the ToRs	Reply/Responses by the PP
1.	The validity period of this ToR letter would be for a period of four years from the date of dispatch of the ToR letter.	Point No.1 is noted and complied.
2.	The study area will compromise 10 km zone around the project from periphery.	The content of para 2 are noted and followed.
3.	Examine and provide details relating the impact on infrastructure like water supply,	The same is complied with. Project details are Elaborated in chapter 2.

	storm water drainage, sewerage power etc., and the disposal of treated/raw wastes from the park on land/water body and into sewerage system.	
4.	Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna. Ambient Air quality should be determined by measuring the concentration of parameters like P.M.2.5, P.M.10, SO ₂ , NO _x according to the latest standards prescribed by CPCB. Site-specific meteorological data should also be collected. The location of the monitoring stations (minimum 6) should be justified. Date wise collected baseline AAQ data should form part of EIA and EMP report. The monitoring shall be carried out by CPCB/NABL/MOEF/GoR approved laboratory and copy of the analysis report should be submitted.	Baseline environmental study for the environmental parameters of ambient air, noise level, soil and flora and fauna for one season has been done (December 2021 -February 2022) from MoEF& CC and NABL Accredited laboratory. Detailed description of baseline data is elaborated in chapter 3 and baseline reports along with MoEF& CC and NABL Accredited certificate is enclosed as Annexure XII .
5.	Study the socio-economic conditions of the project area and its surroundings and their impact on the project design and operation.	Likely socio-economic conditions of the project area and its surroundings are elaborated in the chapter 3 and their impact on the project design and operation are elaborated in the Chapter 4.
6.	Study the existing flora and fauna of the area and the impact of the project on them should be submitted along with detailed listing of vegetation.	Details relating the Study of the existing flora and fauna of the area and the impact of the project on them has been submitted along with detailed listing of vegetation are elaborated in the Chapter 3 & 4.
7.	Study the hydrological and geo-hydrological conditions of the project area. Include a contour plan indicating slopes and	Details relating the hydrological and geo-hydrological conditions of the project area, Including a contour plan indicating slopes and

	showing drainage pattern and outfall.	showing drainage pattern and outfall are elaborated in the Chapter 3. Contour plan enclosed as Annexure
8.	Examine and submit details about the resettlement and rehabilitation of project-affected persons in the nearby villages, in accordance with the national resettlement and rehabilitation policy.	There is no resettlement and rehabilitation of project-affected persons as the project land is developed land duly allotted for the residential project.
9.	Submit development strategy of the area	The proposed project is a common biomedical waste treatment facility for Jaipur Rural.
10.	Provide relevant elevation and conceptual plan of the area	Conceptual plan details have been mentioned chapter-2 and layout plan is enclosed as Annexure XVI .
11.	Storm water drainage details and outfall may be described. Rainwater harvesting proposals should be made with due safeguards for ground water quality Maximize recycling of water and utilization of rainwater.	The project is a common biomedical waste treatment facility for Jaipur Rural. Thus, rain water harvesting is not recommended, whoever rain water collection has been proposed, details of the same is given in chapter 4.
12.	Water balance taking into account the population projection residents and the sources of water using the reduced water consumption as given in the Manual on norms and standards for EC of large construction projects. Also give water requirements for D. G sets, air conditioning system etc. Commitment regarding availability of requisite quantity of water from the competent authority. Also provide account of reuse and re-circulation of effluents.	Detailed water requirement along with the water balance are elaborated in chapter 2.
13.	Provide water supply system design (taking	The project is a proposed common biomedical

	care of the dual plumbing)	waste treatment facility, Jaipur Rural. Layout plan is enclosed as Annexure XVI .
14.	Budgetary provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as health facility, sanitation facility, fuel for cooking, along with safe drinking water, medical camps, and toilets for women, crèche for infants. The housing may be in the form of temporary structures to be removed after the completion of the project.	Budgetary provision for construction labor within the site is enclosed as Annexure IX .
15.	Details regarding Occupational health impact of the project should be provided. Health study in the surrounding area be carried out covering information regarding prevailing diseases, mortality rate etc. Health and Safety Plan should be prepared and submitted.	The same is complied with. Details regarding Occupational health impact of the project are enclosed in Chapter-4 .
16.	Examine soil characteristics, topography, rain fall pattern and soil erosion. Ground water recharge pits to be suitably proposed as per MoEF guidelines.	Details of soil characteristics, topography, and rain fall pattern and soil erosion of the project are enclosed in Chapter-3 & 4 .
17.	Application of renewable energy/alternate energy, such as solar energy, wind energy may be described. Quantify the amount of non conventional energy used, day light utilization, solar component etc.	The project is a proposed common biomedical waste treatment facility, Solar energy will be used for the external lighting purpose.
18.	Risk assessment and disaster management plan be prepared which should include flood fighting with cost estimation and relevant budgetary provision.	Risk assessment and disaster management plan be prepared which should include flood fighting with cost estimation and relevant budgetary provision are enclosed in Chapter-7 .

19.	Detailed fire fighting plan along with the location and capacity of water hydrants.	Details of fire fighting plan is given in the Chapter 7.
20.	Identification of recyclable plan along with the location and capacity of the water hydrants.	Recyclable and waste utilization arrangements are enclosed in Chapter-2.
21.	Explore possibility of generating biogas from decomposable wastes. Provide details and capacity of organic converters. Provide locations and size of composting area.	The project is itself a waste management facility.
22.	Arrangement for hazardous waste management (if any) may be described.	Proper management for the hazardous waste will be done.
23.	Give electrical design including various loads, DG, transformer selection etc. Provide details of the D.G sets also giving details of Eco- friendly D.G sets.	Details of electrical design including various loads, DG, transformer selection etc given in chapter 2.
24.	Common facilities for waste collection, treatment, recycling and disposal (all effluent, emission and refuse including MSW, biomedical and hazardous wastes).	Approx 4 kg/day will be generated from the project which will be effectively managed as per the Solid Waste Management Rules, 2016.
25.	Traffic management and circulation plan including parking and loading/unloading areas may be described. Traffic survey should be carried out on weekdays and weekend.	Traffic management and circulation plan including parking and loading/unloading areas is given in Layout plan and the same is enclosed as Annexure XVI.
26.	Make provision of green belt as a measure for mitigation of dust and noise and buffer between habitation and industry.	5827.68 sq. m. (36%) is under Green Belt has been developed under this earmarked area. Landscape plan is enclosed as Annexure XVII.
27.	EMP should include technical and institutional aspects for pre-treatment by constituent units and cost of EMP should be properly worked out and appropriate funds should be allocated.	EMP of technical and institutional aspects for pre-treatment by constituent units and cost of EMP are described in Chapter-10.

28.	Use of local building materials should be described. The provisions of Fly Ash Notification should be kept in view.	Description of Local building material used in Chapter-5 . Fly ash has been used as a building material for this project.
29.	Green belt should be developed in 33% of total area landscape plan green belts and open spaces may be described. Provide a horticulture plan with percentage of green cover given, type of plantation taking into account both local species and biodiversity.	Total green area of 5827.68sq.m (36%) Landscape plan is enclosed as Annexure XVII .
30.	Environmental Management Plan should be accompanied with Environmental Monitoring Plan and environmental cost and benefit assessment.	Environmental Management Plan is elaborated in Chapter 10 .
31.	Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan.	Environmental Monitoring Plan for both construction and operation phases is given in chapter 6 and EMP for both construction and operation phase are described in Chapter-10 .
32.	The P.P. will carry out proper Socio-economic survey of the villages situated in the study area. Based upon its findings and keeping in view the felt needs of local populations, the P.P. will provide adequate budget for carrying out CER activities. The proposal should contain provision for toilets for girls in nearby schools.	Details of Socio-economic survey in Chapter-3 & 4 .
33.	A voluntary commitment of the Social responsibility activities to be undertaken by the project proponent is to be given and the budgeted amount proposed for such activity will be kept. Refer enclosed Annexure -1.	Social responsibility activities to be undertaken by the project proponent are given in Chapter 8.
34.	Provide for conservation of resources, energy efficiency and use of renewable	The same is not applicable as the project is a common biomedical waste treatment facility.

	sources of energy in the light of ECBC code.	
35.	Make assessment of any regulatory measure in view of the environmental and social impacts of the project (such as unauthorized development around the township).	The same is complied with. The environmental and social impacts of the project is enclosed in Chapet-4
36.	Any litigation pending against the project and /or any direction /order passed by any Court of Law against the project, if so, details thereof.	None, affidavit stating the same has been provided.
37.	The P.P. should ensure compliance of the order of the Hon'ble Rajasthan High Court, Jodhpur, in D. B. Civil writ petition no. 1536 of 2003 in the matter of Abdul Rahman vs State of Rajasthan and others and submit detail report.	Point Noted and complied with.
38.	The impact of the project on land use including change of course of water, if any should be given. Also Impact on topography, drainage, agricultural fields, cattle fields, wildlife, water logging leading to water borne diseases, if any. It may also be shown whether it will lead to change of watercourse of the river. Modeling exercise should also be carried out through an expert agency to show the change in river flow dynamics, if any.	10 km Land use map is provided in Chapter-3 Impact of project on Land, topography, drainage, agricultural fields, cattle fields, wildlife, water logging leading to water borne diseases were studied and enclosed in Chapter-3 & 4.
39.	Details of construction activity including date of starting of construction work and investment incurred till date along with photographs and in case of industries / mining, the quantity of products produced	Not applicable as it is a greenfield common biomedical waste treatment plant.

	so far, should be essentially mentioned by the PP / Consultant.	
40.	A separate chapter on compliance to the environmental clearance conditions and / or the NOC / consent from the Rajasthan State Pollution Control Board should be submitted. The testing/ verification undertaken for the compliance should be from the recognized environmental laboratory.	The project is a new project there no environmental granted earlier, thus the content of para 40 are not applicable.
41.	Used filter papers (Air monitoring) along with photographs of the site showing Air / Water sampling / monitoring activity / equipment used at each station should be submitted. Original copies of analysis report of all the relevant data referred in the documents should be enclosed.	Copy of analysis reports are enclosed as Annexure XII.
42.	Public Hearing: The PP shall get the Public hearing conducted in terms of the OM dated 16.3.2018 of the MoEF& CC. After preparing the draft EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006 and as amended), the proponent shall get the public hearing conducted (strictly following the procedure laid down in the Appendix IV of the Amendment Notification Dt. 01.12.2009 and MoEF circular no. J-15012/29/2010/IA.II(M) dt. 19.04.2010). In this regard due care would be taken in (i) deciding the venue of public hearing (at the project site or in its closed proximity, to	The report is submitted for the public consultation.

	<p>ensure widest possible public participation),</p> <p>(ii) forwarding the Draft EIA Reports with Executive Summary Reports and notice for hearing to various authorities / offices, specifically to Urban Local Bodies/ Panchayati Raj. Institutions (i.e Zila Parishad, Panchayat Samiti & Gram Panchayat)/ Development Authorities (i.e. U.I.T., J.D.A. etc.), (iii) adequate publicity regarding date, place and time of public hearing among local public, (iv) recording requisite “certificate” at the end of public hearing proceedings / report and (v) displaying the report in the office of Gram Panchayat, Zila Parishad, Collectorate etc. After completing the public hearing process as described above, the proponent shall take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006 and amendments made thereafter.</p>	
43.	<p>Following information regarding the work order/agreement issued by the P.P. to the consultant (Accredited from QCI/ NABET for proposed project Sector) should be submitted:-</p> <p>a. Dispatch No. of the work order/agreement.</p> <p>b. Date of issue of work order.</p> <p>c. Date of start of air/water/other monitoring work (as applicable)</p>	The same is noted and will be followed.

d. Postal address/ Email Address/ Fax Number/ Mobile Number and Landline Number of the P.P.

Points included in TOR as per MoEF circular no. J-11013/41/2006-IA.II (I)-Pt. dt. 19.05.2011 regarding Corporate Environmental Responsibility.

1.	(a) Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.	Instromedix Waste Management Pvt. Ltd has a well laid Environment Policy approved by its Board of Directors.
2.	(b) Does the Environment Policy prescribed for standard operating process/procedures to bring into focus any infringement/deviation/violation of the Environmental or forest norms /conditions? If so, it may be detailed in the EIA report.	Organization chart is enclosed as Annexure VII.
3.	What is the hierarchical system or administrative order of the company to deal with the Environmental issues and for ensuring compliance with the EC conditions? Details of this system may be given.	Organization chart is enclosed as Annexure VII.
4.	Does the company have a system of reporting of non-compliances/violations of Environmental norms to the Board of Directors of the company and /or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.	Organization chart is enclosed as Annexure VII.

Specific ToR applicable in the cases of violation in terms of the notification dated 14.03.2017 and 08.03.2018 and OM 30.5.2018, 04.07.2018 of the MoEF& CC.

1.	The PP/Consultant is required to give details of violations of the EIA notification	Not applicable as it is a greenfield common biomedical waste treatment plant.
----	---	---

	through affidavit in the specified format.	
2.	The PP Shall undertake assessment of ecological damage, remediation plan and natural and community resource augmentation plan. Such plan shall be prepared as an independent chapter in the EIA report. The report shall be prepared by the accredited consultant. The collection and analyses of data for assessment of ecological damage, preparation of remediation plan and natural and community resource plan shall be done by an environmental laboratory duly notified under the Environment (protection) Act, 1986 or an environmental laboratory, accredited by the National Accreditation board for testing and calibration laboratories or a laboratory of the council of scientific and industrial research institution working in the field of environment.	
3.	The PP shall prepare EMP. The Environment management plan shall comprise remediation plan and natural and community resources augmentation plan corresponding to ecological damage assessed and economic benefit derived due to violation.	Not applicable as it is a greenfield common biomedical waste treatment plant.
4.	The PP shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resources augmentation plan with the State pollution control board and	Not applicable as it is a greenfield common biomedical waste treatment plant.

	the PP shall deposits the bank guarantee prior to the grant of environmental clearance and which shall be released after successful implementation of the remediation plan and natural and community resources augmentation plan and after recommendation by region office of the ministry, state level expert appraisal committee and approval of SEIAA.	
5.	The PP who has committed violations of the EIA notification dated 14.09.2006 shall abide by the directions dated 14.03.2018 of the Hon'ble Madras high court in the matter of WIVIP Nos. 3361 and 3362 of 2018 and WMP No. 3721 of 2018 in WP No. 11189 of 2017 and the OM dated 16.03.2018 of the MoEF& CC GoI.	Not applicable as it is a greenfield common biomedical waste treatment plant.

1.4.3 DETAILS OF REGULATORY COMPLIANCES:

Details of regulatory compliances (limited to Environment, safety and/or required by SEAC/EAC/ MoEF&CC) with respect to the project are as under:

S. No.	Regulatory compliance	Compliance Status	Remarks
1.	Land Documents	Total 18.30 Ha land has been allotted to Nagar Nigam Jaipur, Greater by Jaipur Development Authority out of which 4.0 Ha has been allotted to Instromedix Waste Management Pvt. Ltd for the development of common biomedical waste treatment Plant, The proposed project is coming up on land admeasuring 16188 sq. m (1.61 Ha) out of 4.0 Ha land vide lease deed 20.10.2021.	
2.	Distance certificate	Certificate from Deputy conservator of forest has	

		been obtained for <ul style="list-style-type: none"> • Nahargarh WLS : 33.5 km • Jamwa Ramgarh WLS: 53.97 km • Sariska Tiger Reserve :None within 10 km 	
3.	Consent to Establish	Consent to Establish has been obtained vide letter from RSPCB dated 24.01.2022.	

Chapter 2: Project Description

This chapter provides description of those aspects of the project (based on project feasibility study), likely to cause environmental effects.

2.1 TYPE OF PROJECT:

The project involves relocation of existing Common Bio Medical Waste Treatment Facility located at Khorī Ropda which is currently treating the waste of Jaipur (rural) & Jaipur city to the new location at Khasra No. 400, Village Rampuraonti, Tehsil Sanganer Jaipur on a land admeasuring 16188 sq.m (1.61 Ha) allotted by Jaipur Development Authority, Municipal Corporation Jaipur Greater, Jaipur on leased to M/s Instromedix Waste Management Pvt. Ltd for setting up new Common Bio- medical Waste Treatment Facility (CBWTF) and the estimated capital cost of the project is Rs. 3.50 Crores.

The prime activities of the project comprises of collection, reception, storage, transport, treatment & disposal of Bio medical waste form the health care facilities of the area of Jaipur (Rural) & Dausa districts of Rajasthan as per the provisions laid in the Bio-Medical Waste Management Rules, 2016.

2.2 NEED OF THE PROJECT

A Common Bio-medical Waste Treatment Facility (CBWTF) is a set up where biomedical waste, generated from a number of healthcare units, is imparted necessary treatment to reduce adverse effects that this waste may pose. Jaipur District has operational Common biomedical waste facilities for catering the biomedical waste from Jaipur Rural and Jaipur City. The CBWTF Facility is located at Khorī Ropda is now surrounded by residential areas and the population in the area increasing day by day , thus there is an urgent need to relocate the existing plant. The existing plant will be relocate to the new location at Khasra No. 400, Village Rampuraonti, Tehsil Sanganer Jaipur on a land admeasuring 16188 sq. m (1.61 Ha) allotted by Jaipur Development Authority, Municipal Corporation Jaipur Greater, Jaipur on leased to M/s Instromedix Waste Management Pvt. Ltd.

2.2.1. Justification for selecting the proposed capacity of the incineration facility

The proposed project will install an incinerator of capacity 300 kg/hr. The proposed incinerator facility will be enough to cater the biomedical waste generated in the Jaipur (Rural) and Dausa District of Rajasthan. The mentioned districts have a total no. 438 of health care units with 8392 beds generating approx 3200 kg/day biomedical waste as per the research and calculations. The incinerator will work for 12 hours to treat the estimated biomedical waste.

2.2.2. Bio-Medical Waste Inventorization for the Proposed Facility

Instromedix Waste Management Pvt. Ltd proposes to set up or relocate a common bio-medical waste treatment facility at Jaipur to collect biomedical waste from Jaipur (Rural) and Dausa district of Rajasthan.

2.3 LOCATION OF THE PROJECT

2.3.1 General location

The project is coming up at Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur, Rajasthan.

Table 2.1: Site Connectivity

Particulars	Distance and directions	
Nearest Railway Station	Bobas Junction	:13.9 km towards NNW
	Jaipur Junction	: 31.3 km towards ENE
Nearest Highway	NH 48	: 4.2 Km towards NNW
	Bagru - Jhag Road	: 1.1 Km towards SE
Nearest Airport	Jaipur International Airport	: 29.0 Km towards ENE

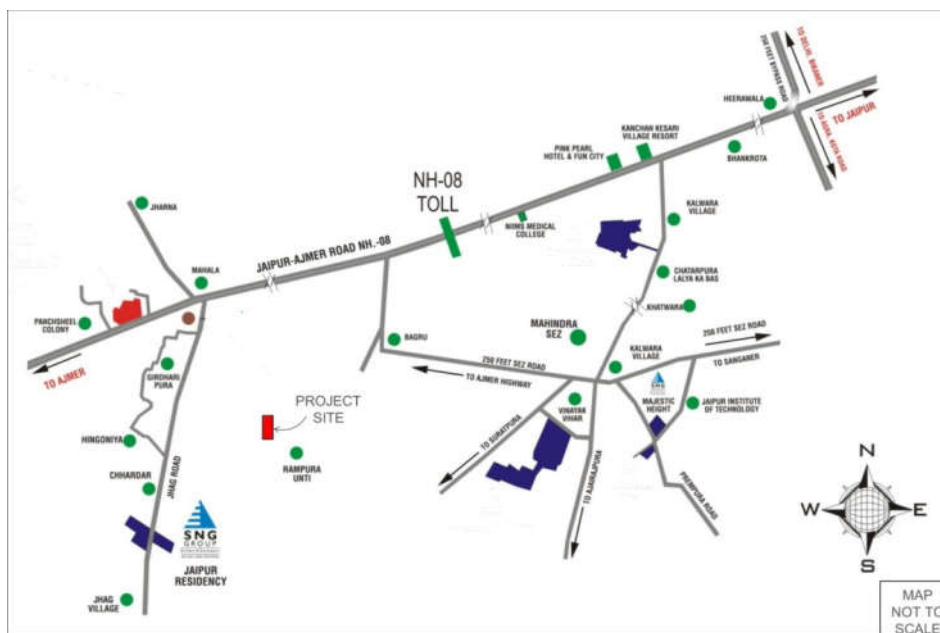


Fig 2.1: General location Map

2.3.2 Specific location

The site falls in Geological Survey of India of Toposheet No. 45N/9.

Table 2.2: Geographical coordinates of project site

1.Point 1	2.Point 2
Latitude : 26°46'38.79"N	Latitude : 26°46'46.28"N
Longitude : 75°30'49.69"E	Longitude : 75°30'50.57"E
3.Point 3	4.Point 4
Latitude : 26°46'46.03"N	Latitude : 26°46'38.26"N
Longitude : 75°30'53.00"E	Longitude : 75°30'52.10"E

The project boundary (specific location) & project site layout are depicted below as Fig. No. 2.2, & 2.3 respectively

GOOGLE SNAPSHOT SHOWING SITE & SURROUNDING FEATURES

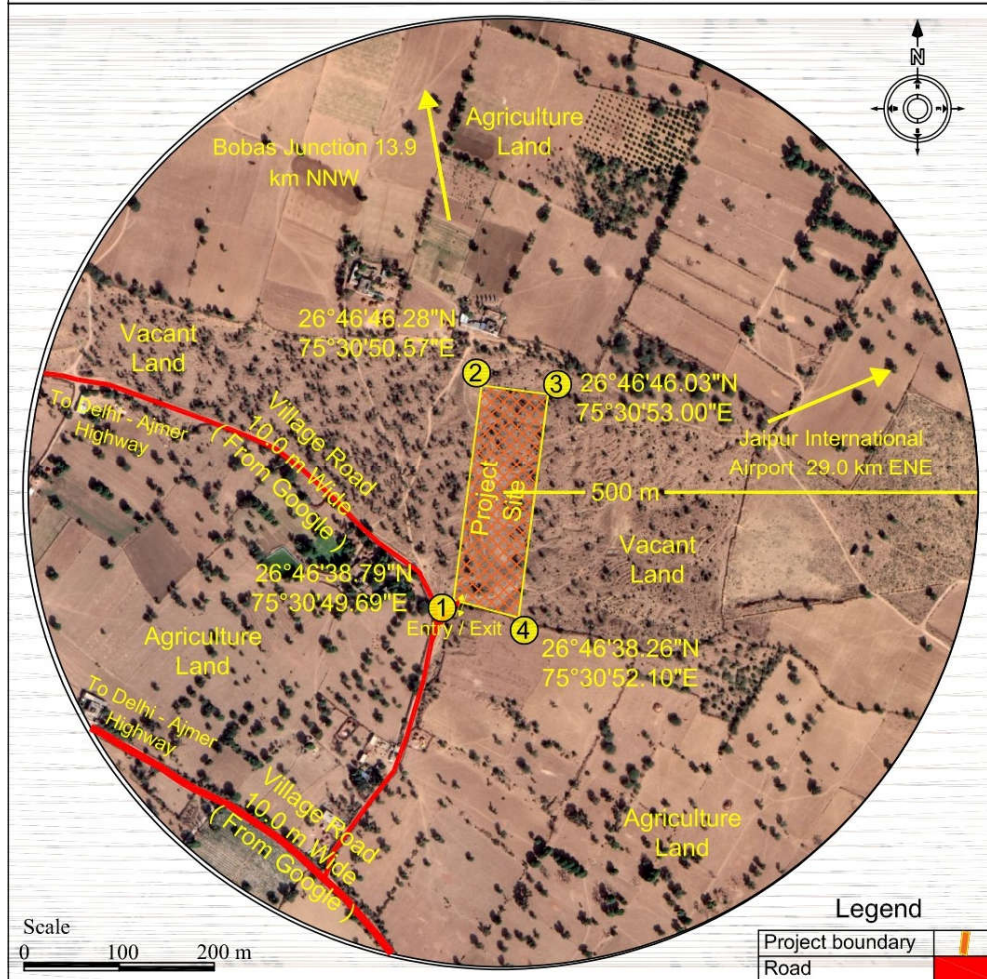


Fig 2.2: Project boundary (specific location) of the project site

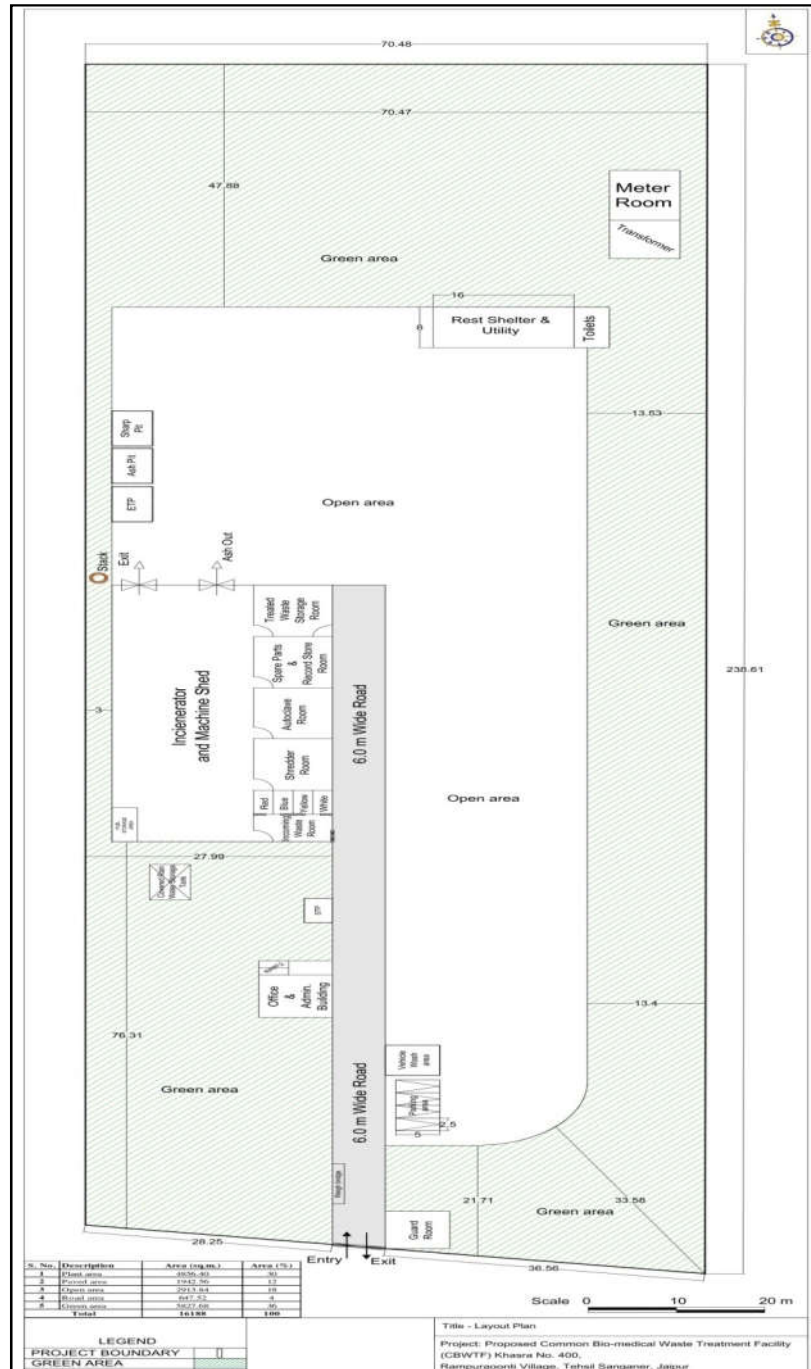


Fig. 2.3: Plant site layout

2.4 SIZE OR MAGNITUDE OF OPERATION:

2.4.1 Magnitude of project

The proposed project involves collection, reception, storage, transport, treatment & disposal of Bio medical waste from various healthcare units of Jaipur (Rural) & Dausa districts of Rajasthan. Activities such as incineration, autoclaving, shredding etc are proposed as per the capacities mentioned below:

Table 2.3: Project capacity

Particular	Capacity	Nos.
Incinerator	300 kg/hr	1
Autoclave	100 Kg/Hour	1
Shredder	100Kg/Hour	1
Ash Pit	-	1
Sharp Pit	-	1
Effluent Treatment Plant	10 KLD	1

- Districts to be catered: Jaipur (Rural) & Dausa districts of Rajasthan
 - Health care units : 438 nos.
 - No. of beds : 8392 nos.
 - Biomedical waste generated per day : 3200 kg/day (approx.)

The proposed facility will comply with the provisions of Bio-Medical Waste Management Rules, 2016 & its subsequent amendments and the CPCB guidelines.

2.4.2. Raw material

The project involves treatment of bio medical waste and the raw material for the process is collected from various health care establishments as defined and specified under Bio Medical Waste Management Rules, 2016. Details and the quantity of raw material are provided below in table below:-

Table 2.4: Raw material requirement

S. No.	Particular
1	Biomedical waste
2	Colour coded Trollies
3	Non Chlorinated Colour coded bags
4	Diesel
5	Spares
6	Chemicals: <ul style="list-style-type: none"> • Sodium Hypochlorite • Caustic soda • Lime • Alum • Disinfectant
7	Personal Protection Equipment (PPE)

2.4.3. Products

The proposal involves treatment and disposal of biomedical waste collected from various HCFs of Jaipur (Rural) & Dausa district of Rajasthan. Hence, does not involve production.

2.5 Proposed Schedule and Approval for Implementation

The operations will commence after obtaining all statutory clearances from the respective authorities.

Table 2.5: Schedule for Approval & Implementation

S. No.	Statutory Approval	Time period (from application)	Implementation
i.	Environment Clearance	8- 9 months	Current stage
ii.	CTE under Air & Water Acts	90 days	
iii.	CTO under Air & Water Acts	90 days	

2.6 TECHNOLOGY AND PROCESS DESCRIPTION:

Biomedical waste management has recently emerged as an issue of major concern not only to hospitals, nursing home authorities but also to the environment. Keeping in view inappropriate biomedical waste management, the Ministry of Environment, Forest and Climate Change (MOEF&CC) notified the “Biomedical Waste Management Rules, 2016” and subsequent amendment 2018 & 2019.

✓ **Waste Classification and Characterization as per BMW rules**

The classification and characterization of BMW shall be as per Bio-Medical Waste Management Rules, 2016 and subsequent amendments 2018 & 2019. Different categories of BMW are collected in different color coded bags.

✓ **Waste Quantities**



The project is being perceived to cater to a large number of small and medium sized health care establishments in the private sector and government establishments. Out of the total quantity of waste estimated, 80% would be incinerable and rest would be autoclavable and shreddable.


✓ **Categories of Bio Medical Waste**

Treatment & disposal method of various categories of Biomedical Wastes as per BMW waste rules, 2016 and subsequent amendments 2018 & 2019 is provided in Table below.

Table 2.6: Categories of Bio Medical Waste and Treatment / Disposal


Category	Type of Waste	Type of Bag or Container to be used	Treatment and Disposal
(1)	(2)	(3)	(4)
Yellow	(a) Human Anatomical Waste: Human tissues, organs, body parts and fetus below the viability period (as per the Medical Termination of Pregnancy Act 1971, amended from time to time).	Yellow colored non-chlorinated plastic bags	Incineration (Rotary kiln based incinerator)

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural		
	Proponent: Instromedix Waste Management Pvt. Ltd		Chapter 2
Category	Type of Waste	Type of Bag or Container to be used	Treatment and Disposal
(1)	(2)	(3)	(4)
	(b) Animal Anatomical Waste : Experimental animal carcasses, body parts, organs, tissues, including the waste generated from animals used in experiments or testing in veterinary hospitals or colleges or animal houses.		
	(c) Soiled Waste: Items contaminated with blood, body fluids like dressings, plaster casts, cotton swabs and bags containing residual or discarded blood and blood components.		Incineration (Rotary kiln based incinerator)
	(e) Chemical Waste: Chemicals used in production of biological and used or discarded disinfectants.	Yellow colored containers or non-chlorinated plastic bags	Incineration (Rotary kiln based incinerator)
	(g) Discarded linen, mattresses, beddings contaminated with blood or body fluid.	Non-chlorinated yellow plastic bags or suitable packing material	Non- chlorinated chemical disinfection followed by incineration in rotary kiln based incinerator.
	(h) Microbiology, Biotechnology and other clinical laboratory waste: Blood bags, Laboratory cultures, stocks or specimens of microorganism, live or attenuated vaccines, human and animal cell cultures used in research, industrial laboratories, production of	Autoclave safe plastic bags or containers	Pre-treat to sterilize with non-chlorinated chemicals on-site as per National AIDS Control Organization or World Health Organization guidelines thereafter incineration in rotary kiln based incinerator.
	Gaurang Environmental Solutions Pvt. Ltd		Page 2.9
	Report Ref: : GESPL_430/2021/EIA/225		Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural		
	Proponent: Instromedix Waste Management Pvt. Ltd		Chapter 2
Category	Type of Waste	Type of Bag or Container to be used	Treatment and Disposal
(1)	(2)	(3)	(4)
	biological, residual toxins, dishes and devices used for cultures.		
Red	Contaminated Waste (Recyclable) (a) Wastes generated from disposable items such as tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes (without needles and <i>fixed needle syringes</i>) and vaccutainers with their needles cut) and gloves.	Red colored non-chlorinated plastic bags or containers	Autoclaving followed by shredding. Treated waste including plastic waste sent to authorized recyclers.
White (Translucent)	Waste sharps including Metals: Needles, syringes with fixed needles, needles from needle tip cutter or burner, scalpels, blades, or any other contaminated sharp object that may cause puncture and cuts. This includes both used, discarded and contaminated metal sharps	Puncture proof, Leak proof, tamper proof containers	Autoclaving followed by shredding & encapsulation in metal container or cement concrete and sent for final disposal to designated concrete waste sharp pit.
Blue	(a) Glassware: Broken or discarded and contaminated glass including medicine vials and ampoules except those contaminated with cytotoxic wastes.	Cardboard boxes with blue colored marking	Disinfection through autoclaving and then sent for recycling.

2.6.1. Process Description

As described, hospital waste once generated need to be segregated, collected, transported and safely treated and disposed off without causing damage to the human health and the environment. To reduce this problem and provide the healthcare establishments with a cost-effective solution to the waste disposal dilemma, Instromedix Waste Management Pvt.

	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2

Ltd proposes for the development of CBWTF at strictly in accordance with the BMW Management Rules 2016 and subsequent amendments 2018 & 2019 published by Ministry of Environment and Forest & climate change (MoEF&CC).

Following activities will be undertaken at the proposed project:

- Segregation at source
- Collection
- Reception (including segregation of color coded bags)
- Storage
- Treatment & disposal

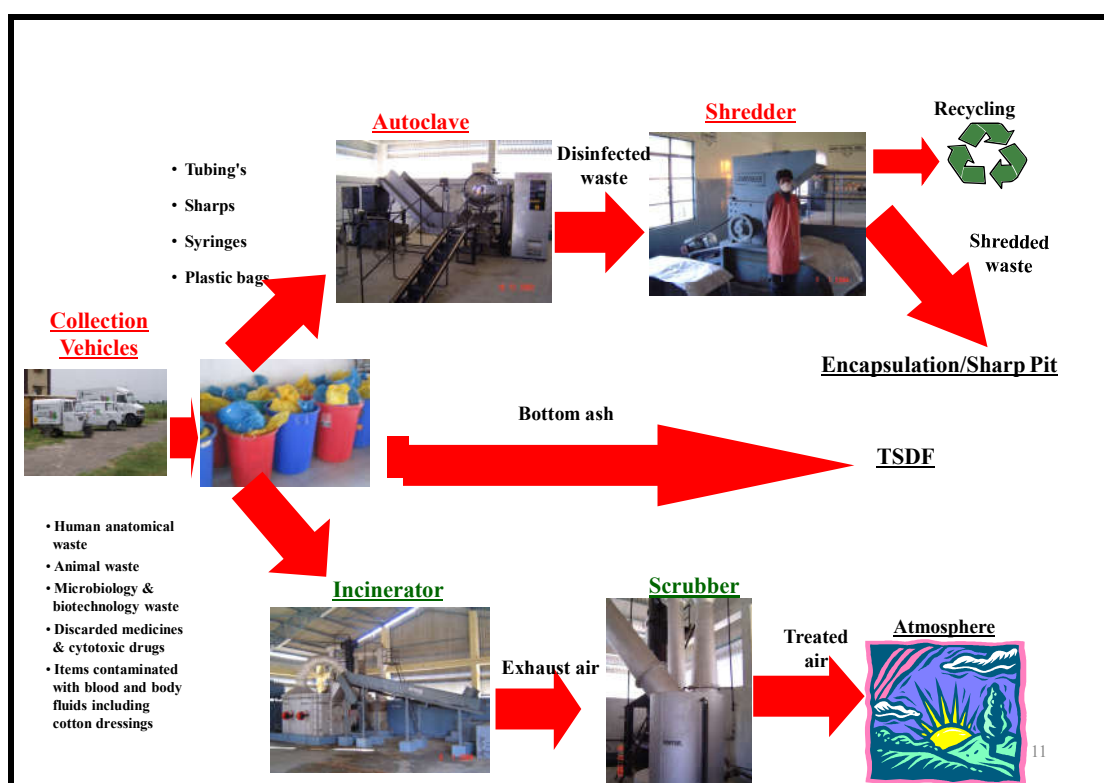




Fig 2.4: Process Flow diagram of biomedical waste management

a. Segregation at source

Segregation of wastes is the key to the success of bio-medical waste management. It is estimated that only about 10-15% of the total waste generated at health care establishment is infectious in nature. Thus segregation of wastes at source would firstly reduce the waste

	Gaurang Environmental Solutions Pvt. Ltd	Page 2.11
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2

management problem to 15%. Further to this segregation of wastes (infectious) is integral in terms of further waste handling and management.

Bio-Medical wastes would have to be managed by destruction, dis-infection and ultimate disposal. With this in view, wastes would have to be segregated into incinerable wastes/destructible wastes and disinfectable wastes. E tech Project proposes to establish an incinerator and an autoclave, thus wastes would have to be segregated into Incinerable and autoclavable wastes. Incinerable wastes include human anatomical wastes, animal carcasses, placenta, cotton, bandage, soiled materials and other similar wastes that have come in contact with the body fluids. Disinfectable wastes include plastics, glass, metal, rubber and other similar materials. These would include syringes, needles, ampoules, blades and many more.

b. Collection and Transportation of Bio Medical Waste:


Collection and transportation are the two operations where the chances of segregated bio-medical waste coming in contact with the public, rag pickers, animals/birds, etc are high. Therefore, all care shall be taken to ensure that the segregated bio-medical waste, handed over by the healthcare units, reach CBWTF without any damage, spillage or unauthorized access by public, animals etc.


The collection and transportation of bio-medical waste is carried out in a manner so as to avoid any possible hazard to human health and environment. A responsible person from the CBWTF operator always accompanies the vehicle to supervise the collection and transportation of bio-medical waste.

Generator of the bio-medical waste is responsible for providing segregated waste to the operator. The waste is segregated as per the provisions of the Bio-Medical Waste Management Rules. The CBWTF operator shall not accept the non-segregated waste and such incident shall be reported to the prescribed authority.

Following measures will be adopted for the collection of waste:

- Helper equipped with personal protected equipment, to pick up color coded bags/PPC containing Bio-Medical waste packed & labeled as per Bio-Medical Waste Management Rules, from a central collection point located in a particular HCF.

	Gaurang Environmental Solutions Pvt. Ltd	Page 2.12
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2


- Bio-Medical Waste to be weighed & recorded in the route charts (HCF wise & category wise) & be signed by helper & representative of HCF.
- Bags/PPC to be transferred to the waste collection vehicle carefully.
- Step 1 to 3 to be repeated for each HCF on a particular route till route is completed.

c. Transportation of the collected Bio Medical Waste to the CBWTF

The bio-medical waste collected in colored containers is being transported to the CBWTF in a fully covered vehicle. Provisions of AC vehicles will be explored during post EC period.

Following, measures have been taken for the safely transportation of the biomedical waste:

- Waste is transported in fully covered designated vehicles as per CPCB norms.
- There are separated cabins for driver/ staff and the bio medical waste.
- Vehicles are properly labeled with the symbol of Biohazard as per the Rules and displays the name, address and telephone number of the company.
- The vehicles are provided with the first aid kit to handle emergency situations.
- The vehicles are equipped with communication devices and safety gadgets etc.
- Separate cabins shall be provided for driver/staff and the bio-medical waste containers.
- The base of the waste cabin is leak proof to avoid pilferage of liquid during transportation.
- The waste cabin so designed that it is easy to wash and disinfect.
- The inner surface of the waste cabin is made of smooth surface to minimize water retention.
- The vehicle will be labeled with the bio-medical waste symbol (as per the schedule IV of the rules) and will display the name, address and telephone number of the CBWTF.
- Trained drivers and staff
- No exposure of public to contamination/odor
- *GPS tracking of vehicles*
- Records of waste movement
- Max 48 hours: generation to treatment

	Gaurang Environmental Solutions Pvt. Ltd	Page 2.13
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

On arrival at CBWTF, Bags/PPC to be weighed category wise for each vehicle and total weight of Bio-Medical waste is compared by plant supervisor with route chart received.

Depending upon the area to be covered under the facility, the route of transportation shall be worked out. The transportation routes of the vehicle shall be designed for optimum travel distance and to cover maximum number of healthcare units. As far as possible, the transportation is carried out during nonpeak traffic hours. It is ensured that the total time taken from generation of bio-medical waste to its treatment, which also includes collection and transportation and treatment time, shall not exceed 48 hours.

d. Storage of Bio Medical Waste at the CBWTF


Storage area is provided near the entry point of the CBWTF to unload and store all bio-medical wastes that have been transported to the facility by vehicle. The size of the room is adequate to store all wastes transported to the CBWTF. The front portion of the room is utilized for unloading the wastes from the vehicle. Floor at which unloading is done are made impermeable so that any liquid spilled during unloading does not percolate into the ground. The liquid generated during handling of wastes and washing, is diverted to the inlet of ETP. In the main storage room, wastes are stacked with clear distinction as per the color coding of the containers and then sent for final treatment as per the applicable Rules.

2.7.2. Technology and Description of Process (as per BMW Rules) of Bio Medical Waste Management adopted at CBWTF

Treatment technology adopted in the proposed project is incineration and sterilization (autoclaving) followed by shredding. Equipment selected for the treatment of biomedical waste are selected so as to comply with all the provisions of the Rules, simultaneously achieving high standards of efficiency of the treatment and durability.

Table 2.7: Details of the treatment facilities at site

Particular	Capacity	Nos.
Incinerator	300 kg/hr	1
Autoclave	100 Kg/Hour	1
Shredder	100Kg/Hour	1
Ash Pit	-	1

	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2

Sharp Pit	-	1
Effluent Treatment Plant	10 KLD	1


Table 2.8: Details of the treatment facilities at site


S. No.	Particular	Specification	Details
a.	Incinerator	300 kg/hr	Incineration unit is meant for the treatment of <ul style="list-style-type: none"> Human anatomical waste (human tissue, organs, body parts). Animal anatomical waste (animal tissue, organs, body parts, bleeding parts, experimental animals used in research). Discarded medicines and toxic drugs (waste comprising of outdated, contaminated and discarded medicines). Soiled waste (item contaminated with blood and body fluids including cotton, dressing, soiled plaster casts, lines, bedding other material contaminated with blood).
b.	Autoclave	100 Kg/Hour	Autoclave unit is meant for the treatment of: <ul style="list-style-type: none"> Microbiological waste (device used for transfer of medicines). Infected Plastic Waste, Gloves etc Broken Glass Bottles etc
c.	Shredder	100 kg/hr	Shredder Unit is meant for mutilation of Waste duly treated by Autoclave unit.
d.	Sharp pit	1 no	Sharp pit is for the encapsulation of Sharps such as Needles, Scalpels etc
e.	Ash pit	1 no.	Ash pit is for temporary disposal of Incinerator ash before final disposal to authorized landfill site.

a. Incinerator

Incineration is a process where the combustible waste is reduced to exhaust gaseous products and the incombustible waste is reduced to ash. Incineration system uses high temperature combustion under controlled conditions to convert wastes containing infectious and pathological material to inert mineral residues and gases.

The CBWTF is installed with a double chambered incinerator having the capacity of 300 kg/hour with automatic waste feeding system duly synchronized with PLC attached with the


	Gaurang Environmental Solutions Pvt. Ltd	Page 2.15
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2

incinerator to monitor and record operational parameters of incinerator. The incinerator is fitted with quencher and venturi scrubber with droplet separator to control air pollution. Incinerator operates at $800^{\circ}\text{C} \pm 50^{\circ}\text{C}$ in primary chamber and $1050^{\circ}\text{C} \pm 50^{\circ}\text{C}$ in secondary chamber for efficient treatment. The incinerator is attached with a chimney of 30 meters height above the ground level as per laid down norms. The yellow colour bags are treated in the incinerator.

Following design criteria are adopted for better performance:


- The incinerator is designed for capacity 300 kg/hr. The temperature of the secondary chamber shall be $1050^{\circ}\text{C} \pm 50^{\circ}\text{C}$. Incinerator is installed with an air pollution control system.
- The double chamber incinerator is designed on “controlled-air” incineration principle, as particulate matter emission is low in such incinerator. Minimum 100% excess air is used for overall design. Primary air shall be admitted near/at the hearth for better contact. Flow meter/suitable flow measurement device is provided on the primary & secondary air ducting. The combustion air is supplied through a separate forced draft fan after accounting for the air supplied through burners.
- A minimum negative draft of 1.27 to 2.54 mm of water column is maintained in the primary chamber to avoid leakage of gaseous emission from the chamber and for safety reason.
- The waste is fed into the incinerator in small batches after the fixed interval of time in case of fixed hearth incinerator and continuous charging using appropriate feeding mechanism in case of rotary kiln incinerator. The size of the hearth i.e. primary chamber is designed properly.
- The sides and the top portion of the primary and secondary chambers preferably have rounded corner from inside to avoid possibility of formation of black pockets/dead zones.
- The size of the second chamber is properly designed so as to facilitate a minimum of two seconds of residence time to gas flow.

	Gaurang Environmental Solutions Pvt. Ltd	Page 2.16
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

- The refractory lining of the chamber is strong enough to sustain minimum temperature of 1000° C in the primary chamber and 1200° C in the secondary chamber, the refractor and insulation bricks have minimum 115 mm thickness each & conform to IS:8-1983 - & IS: 2042-1972 respectively.
- The incinerator is made of mild steel plate of adequate thickness (minimum 5 mm thick) & painted externally with heat resistant aluminum paint suitable to withstand temperature of 250° C with proper surface preparation. Refractory lining of the hot duct is done with refractory cable (minimum 45 mm thick) & insulating cable (minimum 80 mm thick). Ceramic wool is used at hot duct flanges & expansion joints.
- The thermocouple location is as follows:
 - In primary chamber- Before admission of secondary air
 - In secondary chamber - At the end of secondary chamber or before admission of dilution medium to cool the gas.
 - There is a separate burner each for the primary & secondary chamber. The heat input capacity of each burner is sufficient to raise the temperature in the primary and secondary chambers as 850° C \pm 50° C and 1050°C \pm 50° C respectively within maximum of 60 minutes prior to waste charging. The burners have automatic switching “off/on” control to avoid the fluctuation of temperature beyond the required temperature range.
 - Each burner is equipped with spark igniter and main burner.
 - Proper flame safeguard of the burner is installed.
 - View ports to observe flame of the burners have been provided
 - Flame of the primary burner
 - The length is such that it touches the waste but does not impinge directly on the refractory floor or wall.
 - The flame points towards the center of the hearth.
 - The secondary burner is positioned in such a way that the flue gas passes through the flame.
 - There is no manual handling during charging of waste in to the primary chamber of the incinerator as the incinerator is fitted with hydraulic assisted automated waste feeding in

synchronization with operating parameters. The waste is charged in bags through automatic feeding device at the manufacturer's recommended intervals ensuring no direct exposure of furnace atmosphere to the operator. The device prevents leakage of the hot flue gas and any backfire. The waste is not introduced on the hearth in such a way so as to prevent the heap formation. Suitable raking arrangement is provided for uniform spreading of waste on the hearth.

- A tamper proof PLC (programmable Logic Control) based control system is installed to prevent:
 - Waste charging until the required temperature in the chambers is attained during beginning of the operation of the incinerator.
 - Waste charging unless primary & secondary chambers are maintained at the specified temperature range.
 - Waste charging in case of any unsafe conditions such as – very high temperature in the primary & secondary chambers; failure of the combustion air fan, ID fan, recirculation pump; low water pressure & high temperature of the flue gas at the outlet of air pollution control device.
 - The incineration system has an emergency vent. The emergency vent remains closed i.e. it does not emit flue gases during normal operation of the incinerator.
 - Each incineration system has graphic or computer recording devices, which is automatically and continuously monitored and record dates, time of day, batch sequential number and operating parameters such as temperatures in both the chambers. CO₂, CO and O₂ in gaseous emission shall also be measured daily (at least ½ hour at one minute interval).
 - The possibility of providing heat recovery system/ heat exchanger with the incinerator is also considered wherever possible.
 - Structural design of the chimney/stack is as per IS: 6533-1989. The chimney/stack is lined from inside with minimum of 3 mm thick natural hard rubber suitable for the duty conditions and also conforms to IS:4682 Part 1-1968 to avoid corrosion due to oxygen and acids in the flue gas.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2

- The location and specification of portholes, platform ladder etc. shall be as per the emission Regulation, Part-3 (COINDS/20/1984-85), published by CPCB.

Incinerator room and waste storage room

- The incinerator structure is built in a room with proper roofing and cross ventilation, there is minimum of 1.5 m clear distance in all the directions from the incinerator structure to the wall of the incinerator room.
- Waste storage area is so designed that waste can be stored in racks and washing can be done very easily & has proper ventilation. The waste storage room will be washed and chemically disinfected daily.
- The floor and inner wall of the incinerator and storage room has outer covering of impervious and glazed material so as to avoid retention of moisture and for easy cleaning.
- The incineration ash will be stored in a closed sturdy container in a masonry room to avoid any pilferage & put into ash pit for temporary storage. Finally, the ash will be disposed through authorized TSDF having land fill site.

Operator of the Incinerator

- A skilled person will be designated to operate and maintain the incinerator. The operator shall have adequate qualification in relevant subject, trained and certified by the incinerator supplier in operation & maintenance of the incinerator.
- At least one assistant will be designated at the incinerator plant to keep track of the wastes, records of incinerator operation, cleanliness of the surrounding area and incinerator & waste storage room. They shall also take care of waste charging and incineration ash disposal.
- All the staff at the incinerator plant shall put on protective gears such as gumboots, gloves, eyeglasses etc. for safety reasons.

The technical specifications of the incinerator are provided below in **Table-2.10**.


	Gaurang Environmental Solutions Pvt. Ltd	Page 2.19
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

Table-2.9: Specifications of Incinerator

INCINERATOR	
1. Brand Type & Model	“ALFA-THERM” controlled air Oil Fired Incinerator Model BMW-150
2. Type of Waste	Biomedical Waste
3. Burning Capacity	300 kg/hr
4. Auxiliary Fuel	Diesel
5. Type of Burner Operation	Monoblock fully automatic burners
6. Temperature	
Primary Chamber	800 ⁰ +50 ⁰ C
Secondary Chamber	1050 ⁰ +50 ⁰ C
PRIMARY CHAMBER	
1. Type	Static Solid Hearth
2. Material of Construction	Mild Steel, 5mm thick
3. Refractory thickness	115mm thick
4. Material	Refractory bricks confirming to IS-8
5. Temperature resistance	1400 ⁰ C
6. Insulation thickness	115mm thick
7. Material	Insulation bricks confirming to IS-2042
8. Waste Charging	Automatic through Hydraulic Ram Pusher. Hydraulic power pack- 5 HP
9. Ash Removal	Manual
SECONDARY CHAMBER	
1. Type	Static Solid Hearth
2. Material of Construction	Mild Steel, 5mm thick
3. Refractory thickness	115mm thick
4. Material	Refractory bricks confirming to IS-8
5. Temperature resistance	1400 ⁰ C
6. Insulation thickness	115mm
7. Material	Insulation bricks confirming to IS-2042
8. Residence time for flue gases	2 seconds
EMERGENCY STACK	

1. MOC	Mild Steel, 3mm thick
2. Refractory	45mm thick castable
3. Insulation	80mm thick castable

QUENCHER

1 MOC of outer body	Mild Steel refractory lined from inside
2 Water Circulation system	Provided with centrifugal pump
3 Purpose	To reduce flue gas temperature before venturi scrubber

AIR POLLUTION CONTROL DEVICE – VENTURI SCRUBBER

1. Type	High Pressure Jet Type
2. MOC	Stainless Steel – 316L
3. Temperature at the outlet	78-80 ⁰ C
4. Scrubbing Media	Water with 5% caustic

RE-CIRCULATION PUMP FOR VENTURI SCRUBBER

1. Type	Centrifugal
2. MOC	PP/SS
3. Piping	PPR

DROPLET SEPARATOR & RE-CIRCULATION TANK (INTEGRAL)

1. Type	Cyclonic
2. Application	To separate water droplets from flue gases
3. MOC	Mild Steel Rubber lined 3mm thick

PACKED BED SCRUBBER

1 MOC	Mild Steel rubber lined
2 Water re-circulation pump with motor	Provided
3 Interconnecting piping	PPR
4 Packing media	Intalox Saddles/Pall rings
5 Interconnecting ducting	Mild Steel Rubber lined


MIST ELIMINATOR

1 MOC	Mild Steel rubber lined
2. Purpose	To remove the water droplet from the gases

I. D. FAN

1. Type	High Pressure Centrifugal type
2. MOC	Stainless Steel Impeller and Mild Steel


	Rubber lined casing
3. Drive	Belt Driven
DIOXIN CONTROL SYSTEM	
1 Applicability	Remediation technologies of Dioxin & Furan
2 Cleaning	Manual
3 Type	Fixed, modular
4 Removal	To control dioxin and furans, Odour
COMBUSTION FAN	
1. Type	Centrifugal
2. Modulation	Manual damper control
3. MOC	Mild Steel
4. Drive	Direct drive
BURNERS	
1. No. of burners	As per our standard design of incinerator
2. Type	Monoblock fully automatic
3. Fuel	Diesel
4. Make	“Alfa-Therm”
FUEL OIL STORAGE TANK	
1. MOC & Capacity	Mild Steel, suitable capacity
2. Other Standard Accessories	Diesel Oil level indicator, piping with valves & N. R. Valve
3. Visual checking of Fuel	Provided
CONTROL PANEL	
1.Type	PLC based with recording device
2. MOC	CRCA Sheet
3. Type of temperature controller	Digital
4. Finish & Painting type	Powder coated
5. Audio-visual alarm system	Provided
CHIMNEY OF 30 MTRS HEIGHT	
1. MOC	Mild Steel
2. Type	Self-supporting
3. Height	30 mtrs from ground level

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2

4. Other Standard Accessories	Provided
5 Paint	The chimney is painted externally with two coats of heat resistant aluminum paint
6 Ladder	Spiral cage upto inspection platform and monkey cage ladder for rest height of the chimney
7 Inside Protection	3mm thick rubber lining from inside

Table 2.10: Statement on Compliance with CPCB guidelines for CBWTF incinerator


Design Parameter	CPCB Guidelines	Proposed Incinerator
Air Pollution Control Devices	Compulsory	Complied. All necessary air pollution control devices (Quencher, Venturi Scrubber, Wet Alkaline Scrubber etc.) will be provided to meet the emission standards prescribed in Bio-Medical Waste Management Rules, 2016
Chambers	Only double chamber	Complied. Dual chamber incinerator is proposed
Volume of Primary chamber	5 times the volume of one batch	Complied. Volume of primary chamber is proposed to be at least 5 times the volume of one batch of bio-medical waste
Size of opening	>Size for waste bag to be fed	Complied. The size of opening shall be greater than size of the waste bags to be fed.
Pressure gauge	Mandatory	Complied. Necessary pressure gauges will be provided
Double chamber incinerator design	Controlled air incinerator principle	Complied. Incinerator will be designed on controlled air incinerator principle
Overall design	Minimum 100% excess air	Complied.

	Gaurang Environmental Solutions Pvt. Ltd	Page 2.23
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

		Incinerator will be designed considering minimum 100% excess air.
Air supply	Principle chamber: 30-80% of stoichiometric amount	Complied.
Flow meter on Primary and Secondary ducting	Mandatory	Complied. Flow meter shall be provided as per guidelines
Pressure in incinerator	Lower than ambient pressure in incinerator room	Complied. Incinerator will be designed accordingly.
Draft height of WC Column	Minimum 1.27 to 2.54 of water column	Complied. Incinerator will be designed accordingly.
Water column pressure measurement by U-tube manometer	Mandatory	Complied. Incinerator will be designed accordingly.
Residence time of waste in secondary chamber	Minimum 2 sec	Complied. Secondary chamber of the incinerator will be designed to maintain a minimum residence time of 2 seconds.
Temperature	Primary chamber : min of 1000°C	Complied.
	Secondary chamber : min of 1200 °C	Complied.
Refractory bricks	Minimum thickness : 115 mm; IS: 8-1983 & IS: 2024-1972	Provided
Incinerator shell thickness	Min 5 mm	Complied. Incinerator will be designed accordingly.
Incinerator thickness temperature with standing capacity	Min. 250 °C and outside surface temp. < 20 °C above ambient temperature	Complied. Incinerator will be designed accordingly.

Refractory lining of hot ducts	Shall be done with refractory castable (min, 45 mm thickness) and insulating castable (min. 80 mm thickness)	Complied. Incinerator will be designed accordingly.
Thermocouple location	Primary chamber – before admission of secondary air	Complied. Incinerator will be designed accordingly.
	Secondary chamber : at the end of secondary chamber or before the admission of dilution medium	Complied. Incinerator will be designed accordingly.
Heat burning time prior to waste charge	Max. Of 60 minutes	Complied. Incinerator will be designed accordingly.
TOC content in slag and bottom ash	< 3%	Complied. Incinerator will be designed accordingly.
LOI	< 5% of dry weight	Complied. Incinerator will be designed accordingly.
Automatic switch on/off for temperature control	Mandatory	Complied. Incinerator will be designed accordingly.
Handling during charging of waste	No manually handling/waste shall be charged in bags through automatic feeder system	Complied. Incinerator will be designed accordingly.
PLC system	Mandatory	PLC system will be provided
Emergency vent	Mandatory	Emergency vent shall be provided
Graphic or computer recording devices	Mandatory	Incinerator will be designed accordingly.
Continuous emission monitoring system	For CO, CO ₂ and O ₂	Continuous online monitoring system shall be installed.

Structural design of chimney/stack	IS 65330-1989	Chimney will be designed accordingly.
	Lining with min. 3 mm thick natural hard rubber	
	IS : 4682 part I- (for avoiding corrosion)	
Instruction plates at suitable places	Mandatory	Complied.
Air Pollution Control Devices		
Acids	Acid gas scrubbers	Wet alkaline scrubber will be provided
Oxides of Nitrogen	Catalytic converter/ high temp. Reaction with ammonia	Will be provided, if necessary.
Heavy metals	Adsorption on injected activated carbon powder	Will be provided, if necessary.
Dioxins	Rapid quenching/catalyst/adsorption by activated carbon	Sufficient capacity quencher shall be provided
Mist	Demister	Demister is proposed
Oxygen Correction	<standard percentage oxygen concentration (11%)	Oxygen correction shall be as per guidelines
Stack height requirement	>or = 30 m above the ground , BMW rules, 2016	Stack height of 30 meters proposed.
Stack emission monitoring provision	As per emission Regulations, Part-3 (COINDS/20/1984-85)	Stack emission monitoring provision shall be ensured to be as per guidelines.
	Separate monitor provision for dioxins and furans	
Particulate matter, HCL, NO _x , Hg & compounds and combustion	Frequency: once in 3 months	Will be followed.
Dioxins and furan	Frequency: once in a year	Will be followed.
Continuous emission monitoring system	Mandatory	Continuous emission monitoring system is considered in Incinerator design
Quench/scrubber waste	Wastewater shall be treated	Wastewater shall be treated in in-house

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2
management		Effluent Treatment Plant.

b. Autoclave


The CBWTF has installed a horizontal type of Autoclave having a capacity of 100 Kg/Hour to treat and dispose of the Bio-Medical waste collected in the **Red and Blue** bags. The autoclave is fitted with PLC to record the operational parameters of autoclave. The autoclave operates at a temperature of not less than 121⁰C and pressure of 15 pounds per square inches (psi) for an autoclave residence time of not less than 60 minutes. The parameter are automatically controlled and recorded in the PLC synchronized with a printer attached with the autoclave.

Standard for Waste Autoclave

- i. The autoclave is dedicated for the purposes of disinfecting and treating bio-medical waste. When operating the gravity flow autoclave, medical waste is subjected to: A temperature of not less than 121° C and pressure of 15 pounds per square inch (psi) for an autoclave residence time of not less than 60 minutes.
- ii. Medical waste shall be considered properly treated unless the time, temperature and pressure indicator that the required time, temperature and pressure were reached during the autoclave process. If for any reason, time temperature or pressure indicator indicated that the required temperature, pressure or residence time does not reach, the entire load of medical waste must be autoclaves again until the proper temperature, pressure and residence time were achieved.
- iii. Recording of operational parameters: each autoclave has graphic or computer recording devices which automatically and continuously monitor and record dates, time of day, load identification number and operating parameters throughout the entire length of the autoclave cycle.

➤ **Validation test**

Store testing: The autoclave should completely and consistently kill approved biological indicator at the maximum design capacity of each autoclave unit. Biological indicator for autoclave shall be Geobacilluss tearothermophilus spores using vials or spore Strips; with

	Gaurang Environmental Solutions Pvt. Ltd	Page 2.27
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

at least 1×10^6 spores. Under no circumstances will an autoclave have minimum operating parameters less than a residence time of 30 minutes, a temperature less than 121°C or a pressure less than 15 psi.

➤ **Routine testing**

A chemical indicator strip/tape that changes Colour when a certain temperature is reached is used to verify that a specific temperature has been achieved. It may be necessary to use more than one strip over the waste package at different location to location that the inner content of the package has been adequately autoclave.

➤ **Safety Features**

The autoclave is designed with special doors to prevent opening in pressurized condition. Secondly the process is controlled by a PLC, where the parameters are programmed and cannot be changed by the operator. The system has been designed such that the load cannot be discharged unless the required vacuum, pressure, temperature and time have been achieved. Thirdly high temperature/pressure alarms and automatic pressure relief devices are incorporated for maximum operator safety.

The system also incorporates special treatment devices for processing the condensate, which is produced when the steam condenses upon contact with the chamber and the contaminated waste. The system also decontaminates the air drawn out of the chamber during the pre vacuum stage.

The technical specification of auto clave is provided below

Table 2.11: Specifications of Autoclave

Particular	Details
Number	1
Horizontal Autoclave Type	Rectangular
Sterilizing Temperature Range	Ambient to 135°C
Sterilizing pressure	1.2 to 1.5 kg/cm^2 (15 psi to 52psi)
Inner Dimensions (W x H x D)	600 x 700 x 1200 mm
Capacity	100 Kg/Hour
Load	15 KW
Pressure range	15-52 psi

Lid tightening	Radial locking system worked by handle
Gasket	Made of silicon Rubber
Sterilizing pressure	1.2 kgf / cm (15psi) at 121°C
Pressure gauge	0-2.1 kgf / cm ² (30 psi)
Operating pressure	From 15 to 30 psi
Inner Pressure tank	Stainless steel 304 grade
Tray	Made of Stainless steel
Boiler Hydraulically Tested	Up to + 40 psi
Ring and stand	Stainless steel 304 grade
Safety Device	Safety Gauge
Water Draining System	Hand operated Valve
Heating	BY ISI Marked Immersion Heaters
Steam & Vacuum Release	By valve
Power Supply	440 lts three Phase supply

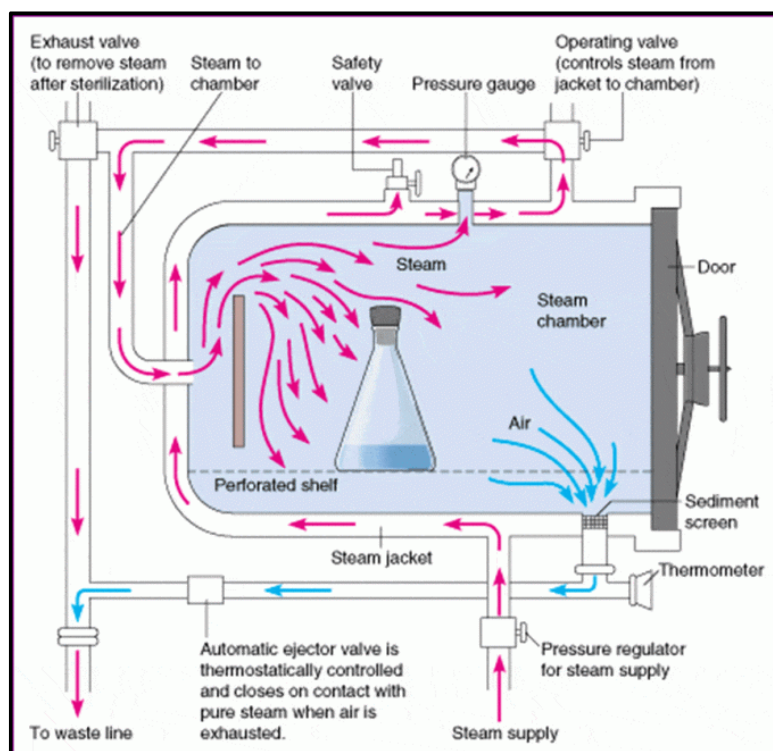


Fig. 2.5: Sterilization process

c. Shredder

After the waste is autoclaved it will be fed to the shredder. Shredder is equipped with hopper of adequate size to accept the material to be shredded. The hopper is also provided with a lid, which can be locked during operation. The hopper is well designed to take care of volume and weight of the material. The hopper will direct the materials to the cutting chamber. Both, main and side shafts are pivoted on bearings on cutting chamber endplates. The speed of the main shaft is less than 40 rpm and that of the side shaft is less than 35 rpm. The knives/cutters are fitted on shaft, which rotate in opposite direction to achieve necessary shredding action. Knives are constructed from non-corrosive, high alloy heat-treated steel for extra long life. Below the shredder there is a trolley for collecting shredded material. Once the hopper lid and enclosure door is closed, shredder will operate as a closed system. This also reduces dust generation. The shredded waste will then be packed in black-colored HDPE bags. These bags will then be transported to the sanitary landfill site for final disposal. The technical specification of the shredder is provided below in Table 2.13.

Table 2.12: Specifications of Shredder

Particular	Details
Number	1
Capacity	100Kg/Hour
Blades	Combined hook / Shear blades
Safety Feature	Auto reverse system Interlocks to avoid aerosolizing Low noise Non ballistic Auto shut off

d. Sharp pit

A sharp pit or a facility for sharp encapsulation will be provided for treated sharps. An option may also be worked out for recovery of metal from sharps in a factory.

e. Ash pit

One ash pit will be provided in the CBWTF for temporary storage of incineration ash which will be sent to authorized TSDF for final disposal in landfill site.

2.7 PROJECT DESCRIPTION

2.7.1 Land Requirement

The total land area of the CBWTF project is 16188 sq. m (1.61 Ha). The land use break up is provided below in Table 2.14.

Table 2.13: Land Use Break Up

S. No.	Particulars	Area	%
1.	Plant area	4856.40	30
2.	Paved area	1942.56	12
3.	Open area	2913.84	18
4.	Road area	647.52	4
5.	Green area	5827.68	36
	Total	16188 sq.m	100



2.7.2 Power Requirement

The details of power requirement for the project are provided below.

Table 2.14 Electrical Power Requirement

S. No	Particulars	Details
1.	Electrical Load	100 kVA
2.	Source	JVVNL Supply
3.	Power back up	D. G set : 1 No. Capacity : 160 KVA Fuel : HSD Quantity : 32 l/hr

Stack height calculation for D.G Set of cumulative capacity 160 kVA

Effective Stack Height (H) = Height of the building (h) +

$0.2\sqrt{\text{Capacity of DG SET in kVA}}$

$$= h + 0.2 \times (\sqrt{160})$$

$$= h + 0.2 \times 12.64 = 2.5 \text{ m}$$

$$= h + 2.5 \text{ m}$$

However, safe stack height of 3.5 m will be provided as per the directions of CPCB.

2.7.3 Fuel


The fuel requirement for various equipment of the project is provided below in Table-2.16

Table-2.15 Diesel Requirement

Particular	Quantity (litres/month)
Incinerator	3400 L/month
DG set	32 L/hr

2.7.4 Manpower

The manpower for the project is 25 persons including skilled and semi-skilled.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2

2.7.5 Water Requirement

The total water requirement for the project is 14 KLD out of which 8.34 KLD is fresh water which is sourced from Ground water and treated/recycled water 5.66 KLD from ETP and STP. The details of water requirement are as follows:

The details of water requirement are provided below in Table 2.17 and the water balance is shown in **Figure-2.4**

Table 2.16: Water requirement

S. No	Particulars	Details	Basis	Fresh Water	Recycled water	Total
1.	Domestic	25 nos.	@ 45 lpcd	1 KLD	-	1 KLD
2.	Industrial	Venturi scrubber		0.06 KLD	4.94 KLD	5 KLD
3.	Others	Floor washing, vehicle, container washing etc.		2 KLD	Nil	2 KLD
4.	Green Belt	5827.68 sq. m.	1 lt/sq. m.	5.28 KLD	0.72 KLD	6 KLD
	Total			8.34 KLD	5.66 KLD	14 KLD

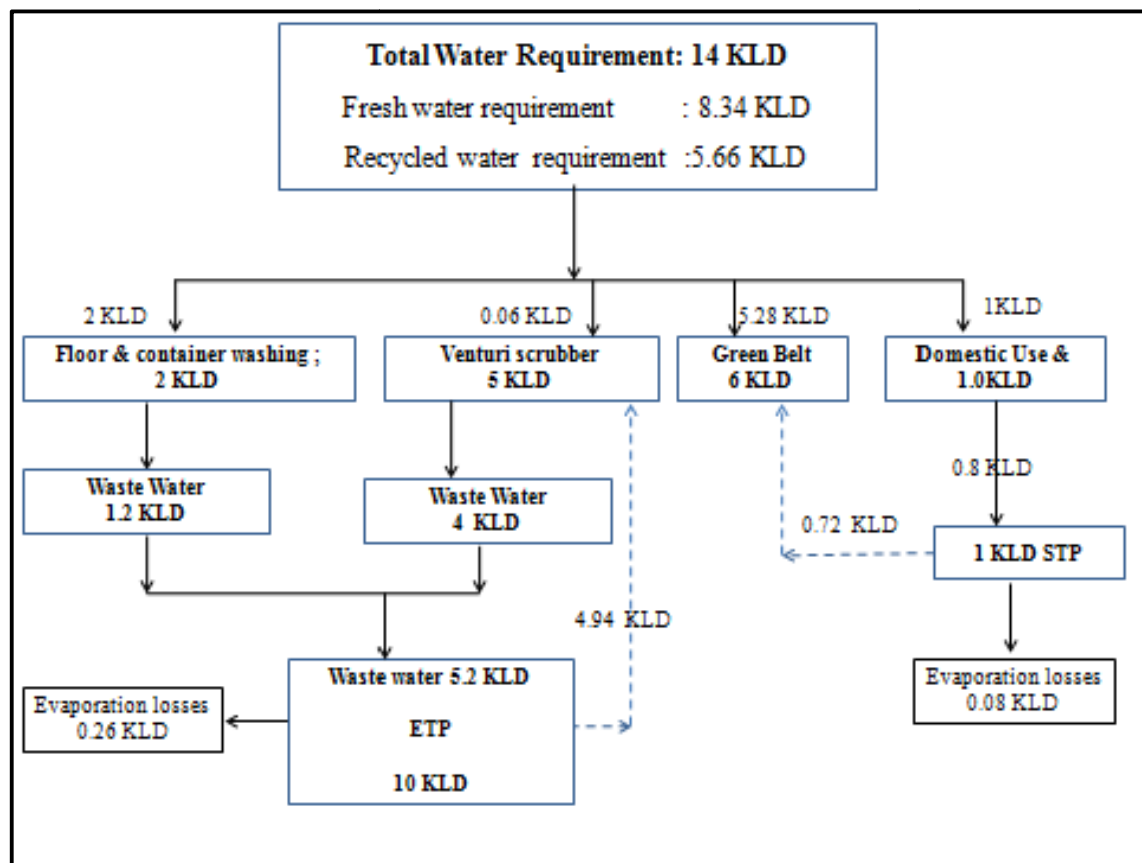


Fig 2.7: Water balance

2.7.6 Waste water generation and treatment

Both trade and domestic effluent will be generated from the unit. Details are as under:

Particulars	Waste water generation	Mode of treatment
Domestic	0.8 KLD	STP
Industrial	5.2 KLD	ETP

The effluent treatment plant will be installed to ensure that liquid effluent generated during the process of washing container, vehicles, floors etc., is treated and reused after treatment. Proper treatment of waste water will be ensured by recirculation of treated waste water for scrubbing.

The effluent treatment plant will have treatment unit operations comprising the following, to ensure compliance with liquid discharge standards stipulated under the Bio Medical Waste Management Rule 2016 and subsequent amendment till date.

- a) Collection tank
- b) Oil and Grease trap
- c) Chemical dosing cum mixing (Flash and Slow)
- d) Coagulation chamber
- e) Primary settling tank
- f) Biological treatment process
- g) Secondary settling tank
- h) Pressure filter and activated carbon filter
- i) pH correction tank

Table 2.17: Characteristics of treated and untreated water

S. No.	Parameters	Value
1.	pH	6.5-9
2.	Suspended solids	<100
3.	Oil & Grease	<10
4.	BOD	<30
5.	COD	<250
6.	Bio-assay test	90 % survival of fish after 96 hours in 100 % effluent

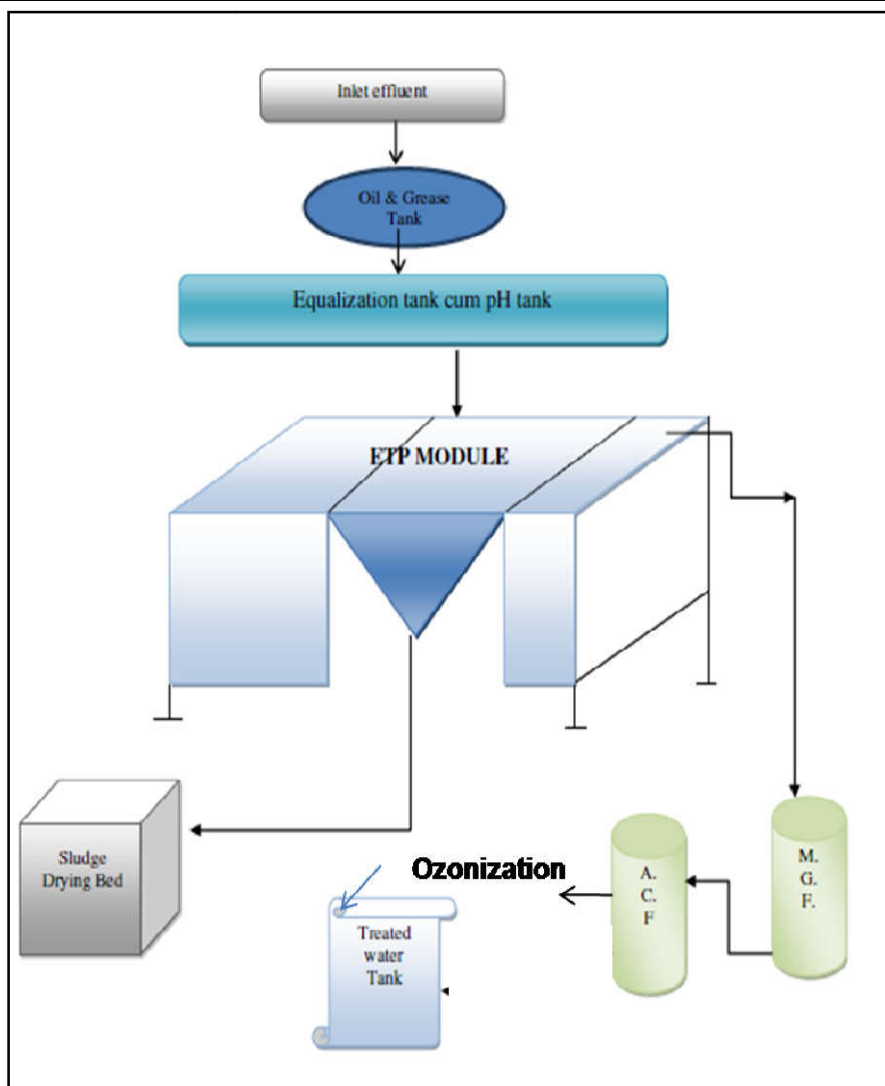


Fig 2.8: ETP


2.7.7 Solid waste generation and their management

➤ **Municipal Solid waste**

Approx 4 kg/day Municipal waste generated from the CBWTF will be collected using color coded bin system & disposed off to municipal waste treatment site.

➤ **Process waste**

Treated plastic waste, incineration ash, treated waste sharps and glass waste, oil & grease waste and ETP waste are generated from CBWTF from the treatment systems such as

	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2

autoclaving, incineration, chemical disinfection and effluent treatment plant, respectively.

The disposal methods for treated bio medical waste are provided below.


Table 2.18: Disposal of Solid Waste Generated from the CBWTF

S. No	Treated Waste Category	Treatment and Disposal Options
1	Plastic waste after disinfection and shredding	Plastic waste will not be sent to land fill sites. Treated plastic waste is sent to registered or authorized recyclers.
2	Disinfected sharps (including needles and syringes)	Autoclaving followed by shredding & encapsulation in metal container or cement concrete and sent for final disposal to designated concrete waste sharp pit.
3	Incineration ash	Incineration ash is temporarily stored in ash pit at site & then final disposal through authorized treatment, storage and disposal facility (TSDF).
4	Other treated solid wastes like glass waste	Autoclaving and then sent for recycling
5	Oil and Grease	Incineration
6	ETP Sludge	Incineration after drying in sludge drying beds or removal of moisture content using filter press
7	Hazardous waste	Disposal through TSDF located nearby following the manifest as per hazardous and other waste (Management and Transboundary Movement) Rules 2016

2.8 SOURCES OF POLLUTION AND DESCRIPTION OF MITIGATION MEASURES

The various types of pollution envisaged from the project:

- 1) Air pollution;
- 2) Water pollution;
- 3) Land Pollution;
- 4) Solid waste generation;
- 5) Noise pollution


	Gaurang Environmental Solutions Pvt. Ltd	Page 2.38
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

The mitigation measures given in this section are for management of the emissions, effluents, solid and hazardous waste generation from the project to meet the environmental standards and environmental operating conditions.

The project will be provided with necessary pollution control facilities to keep the gaseous emission, liquid effluent and noise emission within the permissible limits prescribed by Central and State Pollution Control Board. Details of emissions& effluent from the proposed activity are given in the following sections.

Table 2.19: Pollution sources & their mitigation measures


Particulars	Activity/Source	Aspect	Impact	Mitigation
Air Emissions	Incinerator facility	Emissions of PM, SO ₂ , NO _x , HCl, HF, CO, VOCs from stack.	In case of improper quenching, emission of dioxins/furans are also envisaged. Dioxin and furans are generated due to incomplete combustion of Polychlorinated Biphenyls & Polyvinyl Chloride in Incinerator.	<ul style="list-style-type: none"> • Adequate stack height of 30 m. • Quenching will be done • Regular monitoring of Dioxin and Furans will be done to limit its emissions to 0.1 ng TEQ/Nm³.
	D.G Sets	Emissions of PM, SO ₂ , NO _x & CO from stack.	These emissions are not continuous as DG sets are used only as emergency power back-up.	<ul style="list-style-type: none"> • Adequate stack height of 3.5 m.
	Transportation	<ul style="list-style-type: none"> • Increase in number of vehicles • Vehicular emissions like SPM, CO & HCs from exhaust of 	<ul style="list-style-type: none"> • Congestion of roads due to increase in existing traffic load. • Noise generation due to vehicular movement and increase in noise 	<ul style="list-style-type: none"> • Flow of vehicles to be maintained • Maintenance of parking area. Proper training to drivers for driving outside and inside


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 2

		the vehicles are generated.	level.	plant premises.
Effluents generation	Domestic sewage	Ground water contamination	<ul style="list-style-type: none"> • Odour Nuisance • Increased water borne Diseases 	Domestic sewage will be routed to soak pit via septic tank.
	Trade effluent			Trade effluent will be treated in ETP
Noise Pollution	Incinerator	Increase in the noise levels of ambient environment	Increase noise level at work zone Health impact such as hearing impairment & irritation	<ul style="list-style-type: none"> • Use of earmuffs, earplugs & ear Defenders • Maintenance of equipment • Insulated enclosures • Greenbelt development at plant boundary
	Pumps attached to the ETP and diesel generator			
Waste Generation		Generation of Municipal solid waste and Hazardous waste	Odor Nuisance Land & Soil contamination	<ul style="list-style-type: none"> • Colour coded bins will be provided for the management of solid waste. • Hazardous waste will be managed as per the HWOR 2016

2.9 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY

No new or untested technology will be used for the proposed project. The whole process will be based on proven technology. No technology failure is envisaged as proper maintenance and servicing of equipment and machineries will be carried out with proper risk and hazard assessment in order to handle failure of any machinery.

	Gaurang Environmental Solutions Pvt. Ltd	Page 2.40
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

Chapter 3

Description of Environment


3.1 INTRODUCTION


This chapter illustrates the description of the existing environmental status of the study area with reference to the prominent environmental attributes. The study area covers 10 km radius around the project site. The land use and socio-economic aspects were studied with respect to 10 km radius around the site. The existing environmental setting is considered to adjudge the baseline conditions which are described with respect to climate, atmospheric conditions, water quality, soil quality, ecology, socio-economic profile, land use and places of archaeological importance. The environmental status (baseline status) within the study area is used for prediction of anticipated environmental impact assessment study.

A comprehensive primary and secondary data collection program was undertaken to assess the status of baseline environment conditions within the study area, as per the TOR issued by MOEF&CC for carrying out the EIA/EMP study. The area covered by 10 km radius around the project has been considered for the baseline study.

The impacts from a CBWTF project on its surrounding environment are due to the nature of pollutants, their quantities discharged to the environment, existing environmental quality, assimilative capacity of the surrounding environment and topography.

As per the EIA notification 2006 guidelines for preparing EIA report, baseline study of 10 km radius area surrounding the project site shall be covered under the study and the same is denoted as study area. As part of the study, description of biological environment and human environment such as environmental settings, demography & socio-economics, land-use/land cover, ecology & biodiversity have been carried out for entire 10 km radius. However, as a universally accepted methodology of EIA studies, physical and environmental attributes such as meteorology, ambient air quality, water quality, soil quality, noise levels, hydro-geology and solid waste generation have been studied at

	Gaurang Environmental Solutions Pvt. Ltd	Page 3.1
	Report Ref: : GESPL_430/2021/ EIA/225	Rev No. 00

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3


selective locations representing various land use such as industrial, rural/ residential, commercial and sensitive locations including the densely populated areas, agricultural lands, forest lands and other ecologically sensitive areas, if any falling within 10 km radius study area. Secondary data deemed necessary was collected from various Government organizations and Institutes.

The baseline status of the project environment is described section wise for better understanding of the broad-spectrum conditions. Field monitoring studies to evaluate the baseline status of the project site has been carried out during the period of December'2021 to February 2022 covering winter season. The test reports are enclosed as **Annexure**.

3.2 BASELINE STUDIES

3.2.1 Study Area at a Glance

As per the EIA notification 2006 guidelines for preparing EIA report, baseline study of 10 km radius area surrounding the project site shall be covered under the study and the same is denoted as study area. As part of the study, description of biological environment and human environment such as environmental settings, demography & socio-economics, land-use/land cover, ecology & biodiversity have been carried out for entire 10 km radius. However, as a universally accepted methodology of EIA studies, physical and environmental attributes such as meteorology, ambient air quality, water quality, soil quality, noise levels, hydro-geology and solid waste generation have been studied at selective locations representing various land use such as industrial, rural/ residential, commercial and sensitive locations including the densely populated areas, agricultural lands, forest lands and other ecologically sensitive areas, if any falling within 10 km radius study area. Secondary data deemed necessary was collected from various Government organizations and Institutes.

	Gaurang Environmental Solutions Pvt. Ltd	Page 3.2
	Report Ref: : GESPL_430/2021/ EIA/225	Rev No. 00

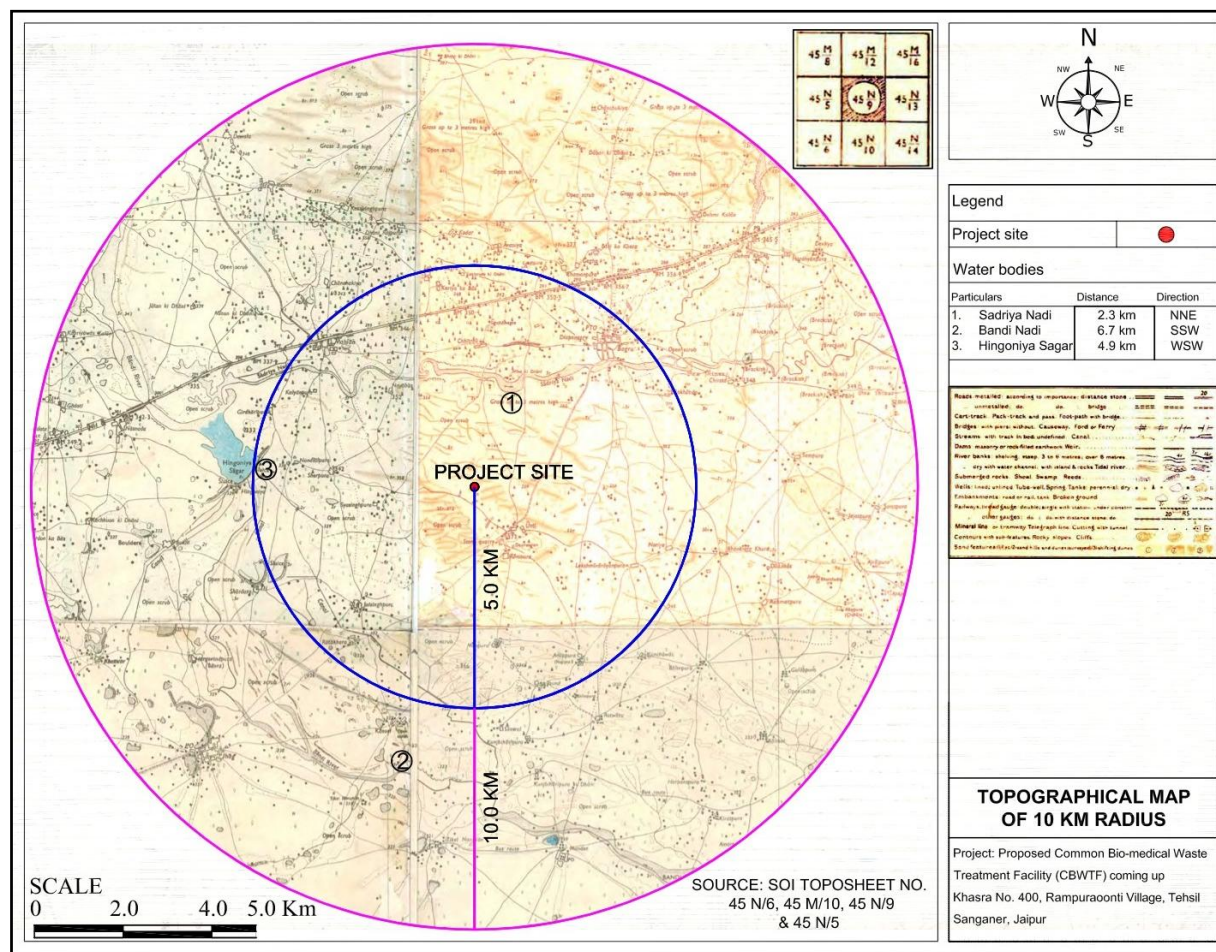



Figure 3.1: Toposheet showing Study Area

3.2.2 Brief Description Of Baseline Studies

The baseline status of the project environment is described section wise for better understanding of the broad-spectrum conditions. Field monitoring studies to evaluate the baseline status of the project site has been carried out during the period of Dec 2021 to Feb 2022 covering winter season. The reports are enclosed as **Annexure**.

Table 3.1: Brief description of Baseline studies

Particular	Description
Study period:	
Period of baseline	Dec 2021 to Feb 2022 (winter season)

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

Particular	Description
Study area	10 kms
Components of baseline	Methodology
<ul style="list-style-type: none"> Land Environment Micro-meteorology Air Environment Water Environment Noise Environment Biological Environment Socio-economic Environment 	Primary survey & secondary sources

3.2.3 Locations of monitoring stations

Eight monitoring stations including site were selected for monitoring of ambient air, noise, ground water & soil. Four monitoring stations were selected for sampling of Surface Water. The monitoring stations were selected on the basis of surface influence, demographic influence and meteorological influence. The list of monitoring locations is given in table below:

Table 3.2: List of monitoring locations

Monitoring stations	Distance	Direction	Coordinates
Project Site	-	-	26°46'41.91"N 75°30'50.95"E
Chhitrali	3.2	N	26°48'25.99"N 75°30'55.69"E
Bagru	4.3	NE	26°48'25.84"N 75°32'40.20"E
Rampura	1.7	SSE	26°46'7.03"N 75°31'20.23"E
Syosinghpura	2.2	WSW	26°46'26.65"N 75°29'28.65"E
Sherpura	3.2	W	26°46'53.08"N 75°28'52.33"E
Nayabas	2.8	NW	26°47'51.31"N 75°29'40.19"E
Nariya	4.7	ESE	26°45'56.53"N 75°33'29.39"E
Sadriya Nadi(Up Stream)	2.3	W	26°47'50.23"N 75°31'19.56"E
Sadriya Nadi(Dn Stream)	2.5	N	26°47'59.04"N 75°30'57.68"E

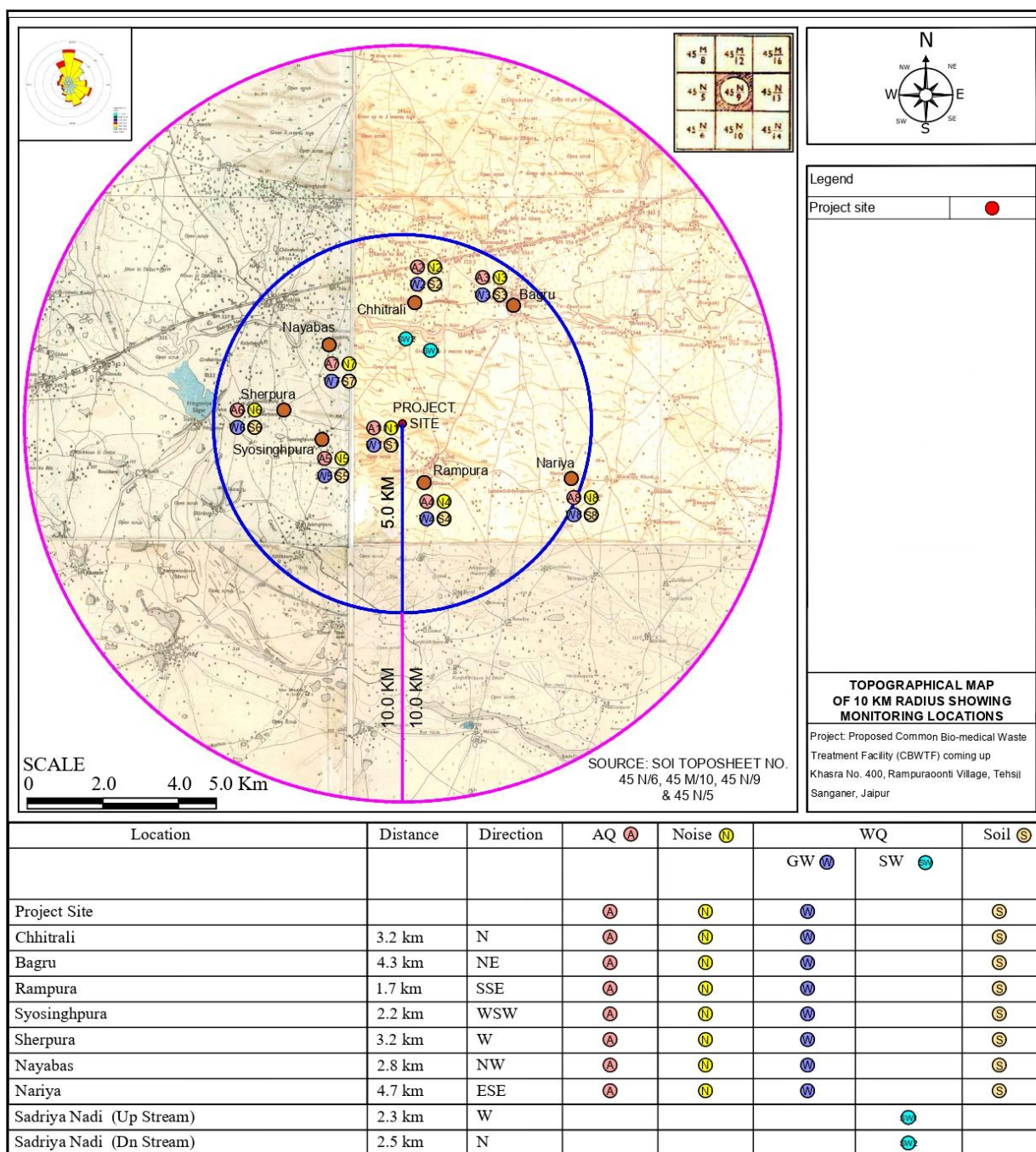


Figure 3.2: Toposheet showing sampling location of monitoring stations

3.2.4 Monitoring Methodology

Reconnaissance survey was conducted and sampling locations were identified on the basis of:

- Predominant wind directions in the study area
- Existing topography, location of surface water bodies like ponds, canals and rivers;
- Location of villages/towns/sensitive areas
- Areas which represent baseline conditions.

The field observations are used to:


- Evaluate the environmental impacts through modeling techniques;
- Identify extent of negative impacts on community/natural resources; and
- Identify mitigation measures and monitoring requirements.

The study also provides framework and institutional strengthening for implementing the mitigation measures. Field studies have been conducted during premonsoon season (Dec 2021 to Feb 2022) to determine existing conditions of various environmental attributes.

The monitoring details and scope of work are outlined in Table below:

Table 3.3: Environmental Attributes and Frequency of Monitoring

S. No.	Environmental Attribute	Parameters	Frequency of monitoring
1.	Ambient Air Ambient air quality monitoring (24 hourly), twice a week.	PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, Pb, O ₃ , NH ₃ , Benzene, Benzo(a) pyrene, Arsenic, Nickel	8 locations 24 hourly samples Twice a week for 1 season (3 months,)
2.	Water quality (Ground & Surface water) sampling,	Physical, chemical & biological parameters	Once in seasons; 11 locations (8 GW + 4 SW)
3.	Noise Level (Ambient & work zone)	Noise levels monitoring dB(A)	8 locations Noise level monitoring (day & night time), once in a season
4.	Land use Pattern	Identification & classification of land use using satellite imagery	Land use& land Cover mapping, followed by site visit of the

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

			study area for ground truthing
5.	Geology and hydrogeology	Data collected during field survey and from secondary sources	Once in study period
6.	Ecology	Existing terrestrial and aquatic flora and fauna	Through 10 km radial study of the core & buffer zone; data collected through field visits & secondary data sources viz. DFO.
7.	Socio-economic Data	Socio-economic characteristics of the impact zone	10 km radial study of the core & buffer zone; data collected through field visits & secondary data review.
8.	Soil quality	Physical & chemical parameters	8 locations; once in a season

3.3 LAND ENVIRONMENT

3.3.1. Land Use pattern study

- **Objective**

- To develop land use & land cover map using geographical coordinates of the project area.
- To describe the present Land Use of study area
- To assess the impact of the project on existing land use of the project area.
- To suggest measures for conservation and sustainable use of land.

- **Study Area**

The project site present in Jaipur district of Rajasthan and total project area is 4.0 Acres (16188 sq.m) The proposed project is coming up at Khasra No. 400, Village Rampuraooti, Tehsil Sanganer Jaipur Rajasthan.


	Gaurang Environmental Solutions Pvt. Ltd	Page 3.7
	Report Ref: : GESPL_430/2021/ EIA/225	Rev No. 00



Figure. 3.3: Map showing Agro-climatic regions of Rajasthan


• Data & Methodology

Data of Indian Remote Sensing Satellite RESOURCESAT-2 (LISS IV MX) digital FCC (False Color Composite) which has a spatial resolution of 5.8 m, which is good enough for Level-IV classification, has been used for preparation of Land use & Land cover thematic map of study area. Satellite image procured from National Remote Sensing Centre; Hyderabad has been used for preparation of base layer data like roads, railways, village name and for geo-referencing of satellite imagery.

Spatial observations: - Spatial measurements were made with the help of hand held GPS to get the spatial coordinated along with type of land use.

The raw LISS IV spectral information's was collected in the three bands as detailed below:

- Band 1: Green region, 0.52 μm – 0.59 μm
- Band 2: Red region, 0.62 μm – 0.68 μm ; and
- Band 3: Near infrared region, 0.77 μm – 0.86 μm

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

Methodology

- Preliminary/ Primary Data Collection of the Study Area
 - Satellite data procurement
 - Secondary Data Collection
 - Master Plan/Site Layout
 - GPS Coordinates of Project site boundary
- Processing of satellite data using ERDAS Imagine and preparation of LULC maps by digital image processing (DIP) technique.
 - Enhancement of the Satellite Imagery
 - Base Map Layer Creation (Roads, Railway, Village Names and others Secondary data etc.)
 - Data analysis and classification using Digital Interpretation Techniques.
 - Ground truthing or Field Verification.
 - Error Fixing / Reclassification
 - Final Map Generation

A hybrid technique involving visual interpretation and digital image processing has been employed to generate Land use & Land cover map of the study area. The land use & land cover details of the lease area are given in Table 3.4:


3.3.2. Land use land cover

The LULC map of the study area of proposed distillery project is depicted below in Fig 3.3 and the FCC image from where the LULC map has been prepared is shown in Fig 3.4. Fig 3.6 depicts the Vegetative Index map showing the dense vegetation of the study area.

The landuse/Land cover classes as mentioned in above table is further described in details as below :-

Table 3.4:- landuse/Land cover

S.No.	Level - I	Level - III	Area (Sq.km.)	Area (%)
1	Built-Up	Built-up/core urban/peri-urban	23.19	7.38
		Village/hamlets/dispersed		

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

		house hold		
		Industrial mine/quarry		
2	Agriculture Land	Crop Land	109.77	34.94
		Fallow Land	79.28	25.24
3	Water Bodies	Reservoir/Tanks	7.2	2.29
		River/Stream/Drain		
4	Waste Land	Barren rocky	94.71	30.15
		Salt affected		
		Open Scrub/dense Scrub		

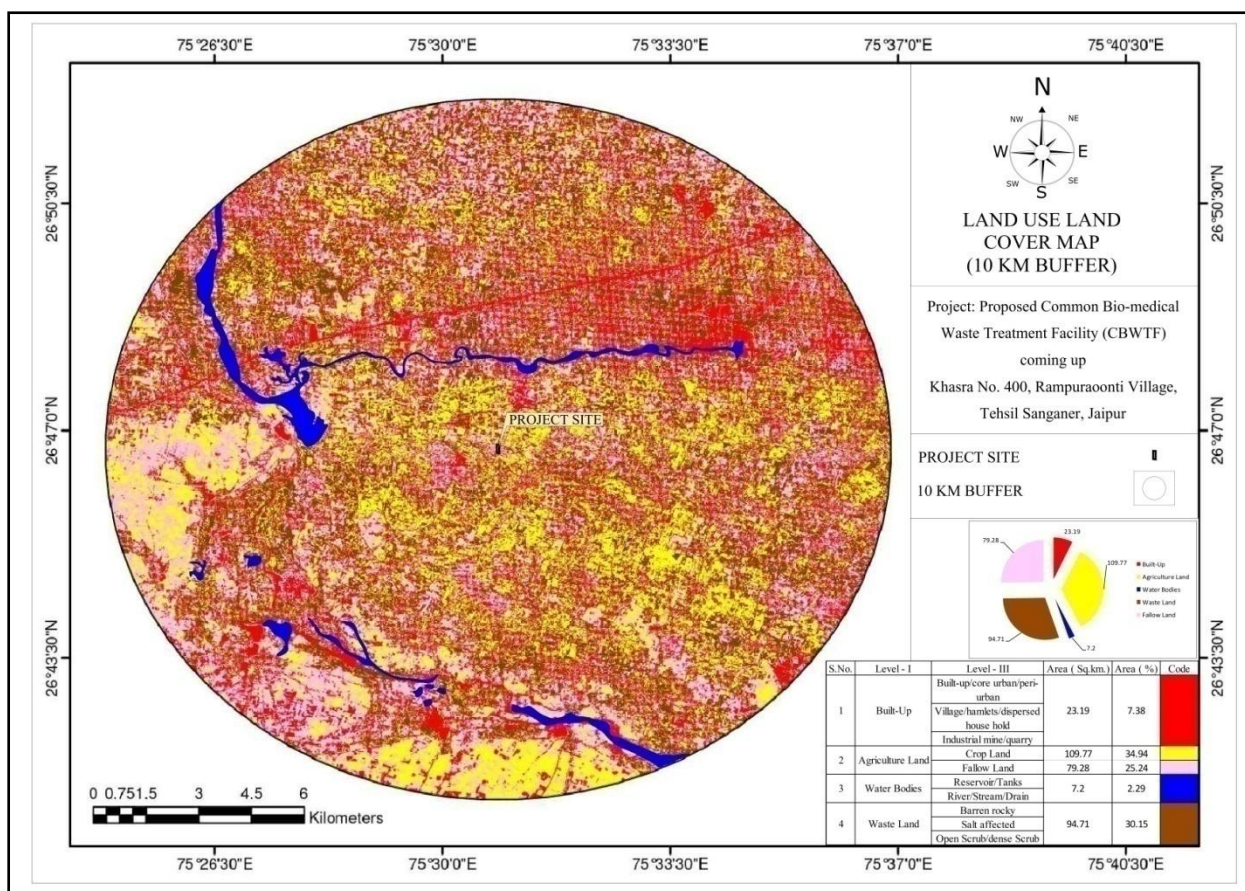


Figure. 3.4: Landuse/ Land cover Map of Study area

3.3.3. Observations of LULC data:

The landuse/land cover classes as mentioned in above table is further described in details as below –

- Built-up Land** has geographical area with a total of 23.19 sq. km which is 7.38% of the total study area. This landuse term is primarily used for Rural and Urban settlement, it is an area of human habitation developed due to non-agricultural use and that has a cover of buildings, transport and communication, utilities in association with that.
- Crop land** covers only 25.24 % of the total geographical area in the study area which is 109.77 sq. km.
- Fallow Land** covers approx 3.7 % of the total geographical area in the study area which is 79.28 sq. km.
- Water bodies covers 2.29% of the total geographical area which is 7.2 sq.Km .

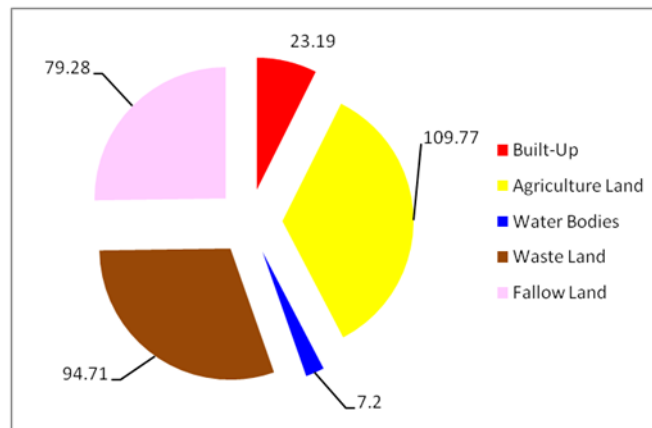


Figure 3.5: Chart showing the landuse distribution

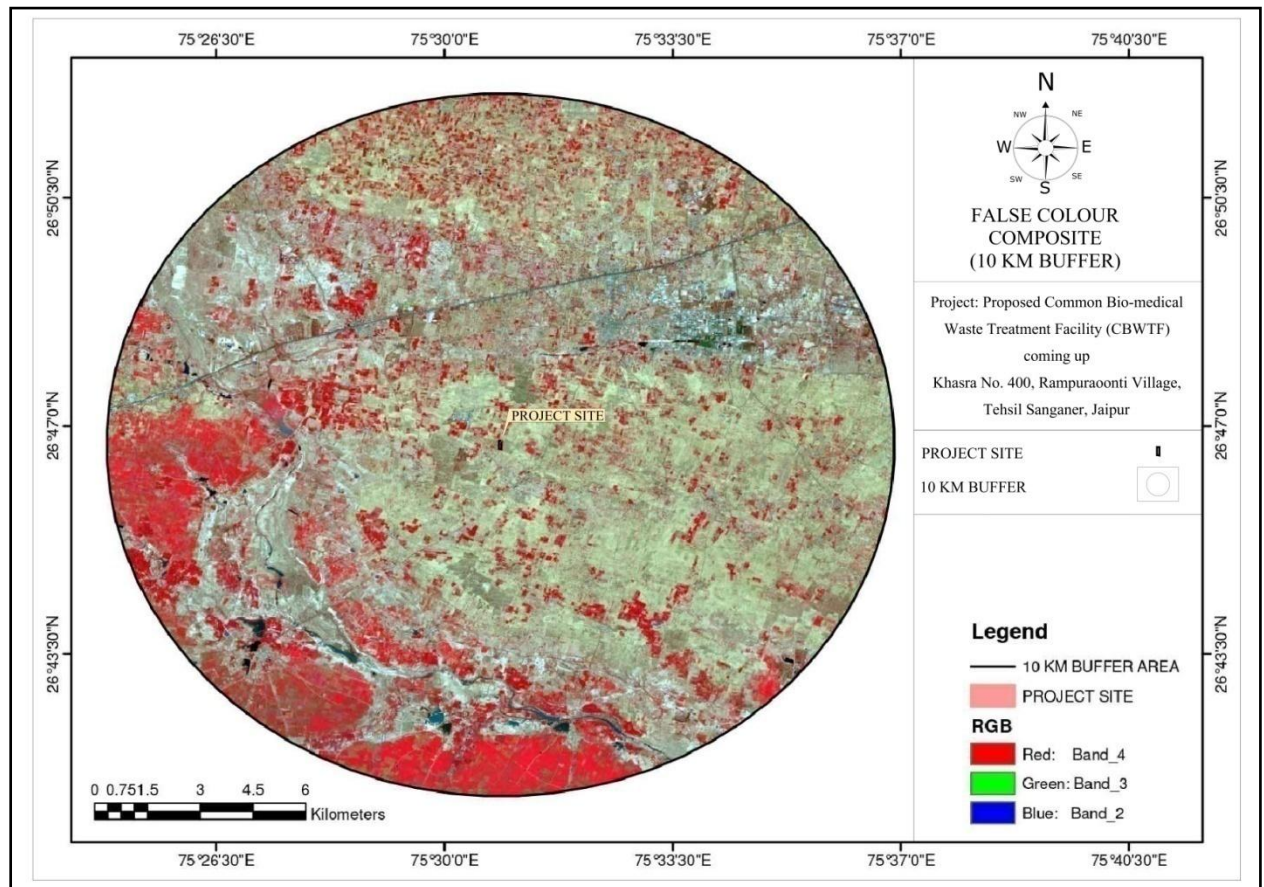



Figure 3.6 : False Colour Composite map

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

3.4 SEISMICITY OF THE AREA

SEISMICITY OF THE AREA

Bureau of Indian Standards [IS-1893 (Part-1): 2002], has grouped the country into four seismic zones viz. Zone-II, III, IV and V. Of these, Zone V is the most seismically active region, while zone II is the least. The Modified Mercalli (MM) intensity scale, which measures the impact of the earthquakes on the surface of the earth, broadly associated with various zones is as follows:

Table 3.5:-Seismic Zones in India

S.No	Seismic Zone	Risk	Intensity on Modified Mercalli (MM) Scale
1.	Zone – II	Low Risk Zone	VI & below
2.	Zone – III	Moderate Risk Zone	VII
3.	Zone – IV	High Risk Zone	VIII
4.	Zone – V	Very High-Risk Zone	IX & above
<i>Source: NIDM</i>			

The project lies in the district Jaipur of Rajasthan which is categorized as Zone – II (Low risk zone)

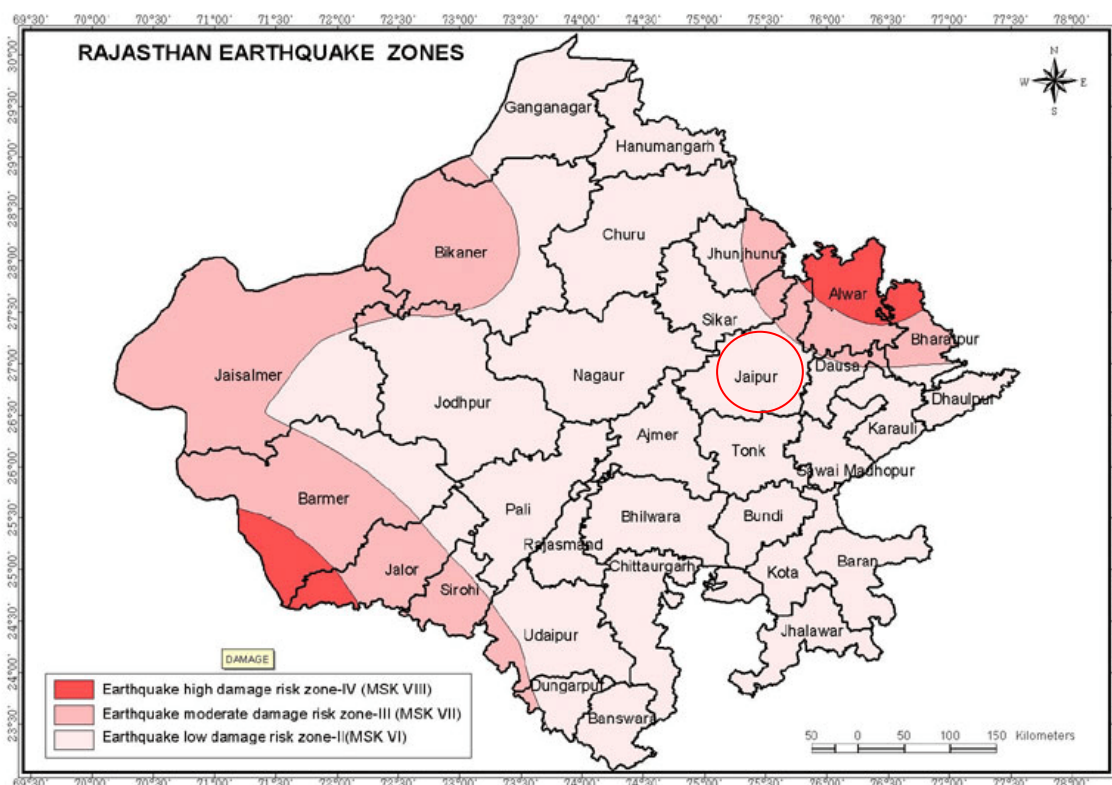


Figure 3.7: Seismic Zones of Rajasthan

3.5 FLOOD ZONATION OF THE AREA

Flood hazard zonation of the area

As per the “Vulnerability Atlas – 2nd Addition; Peer Group, MoH & UPA; based on digitized data of SOI, GOI; Flood Atlas, Task Force Report, C.W.C., GOI” the project site does not fall under “area liable to flood”. Figure shown below depicts Flood Hazard Zones.

Though most parts of Rajasthan receive scanty rainfall, the State has a history of floods and inundations. River Berach is the main river existing in the 10 km radius of the project area. The flood zonation map of Rajasthan is shown in the fig 3.7

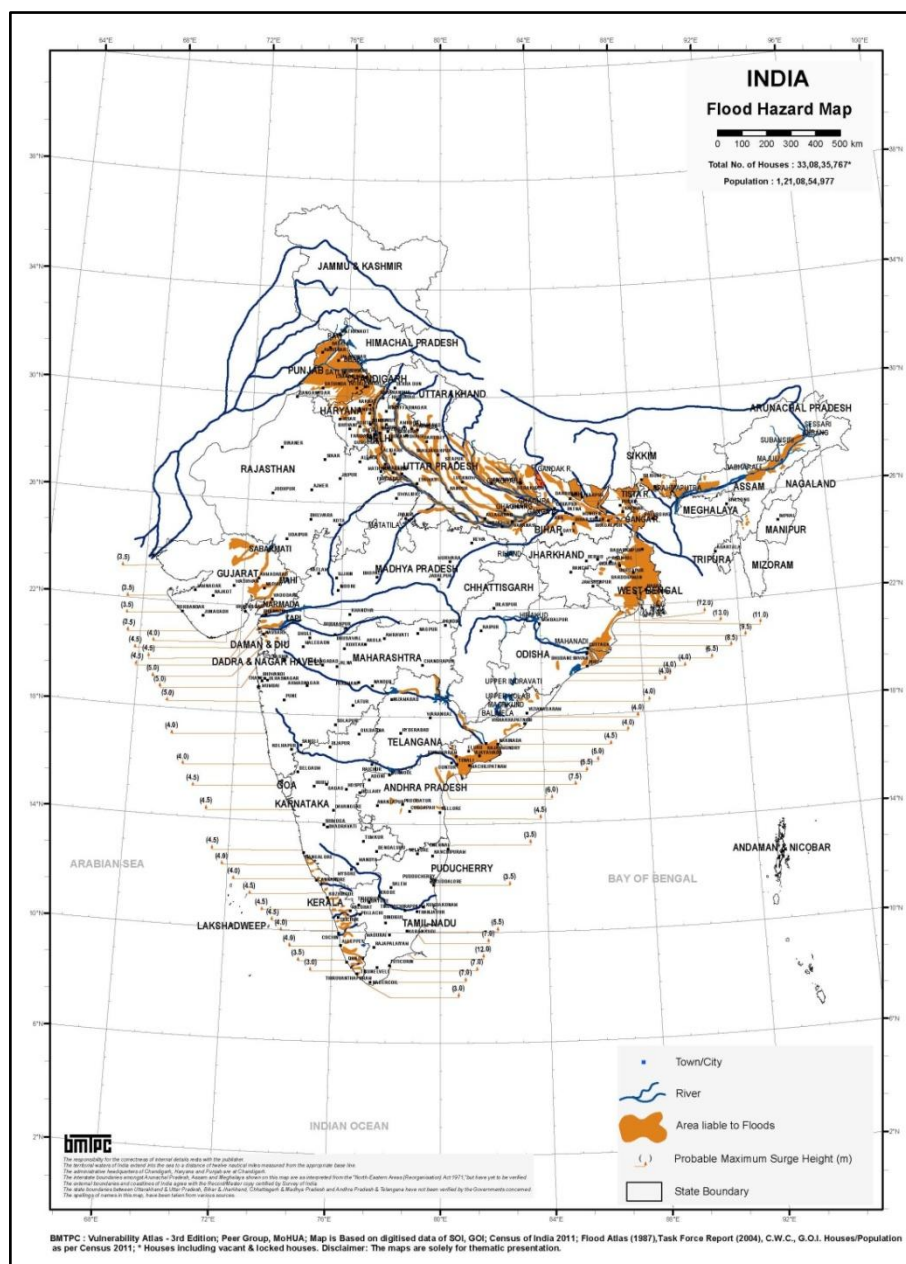


Figure 3.8: Flood zonation map

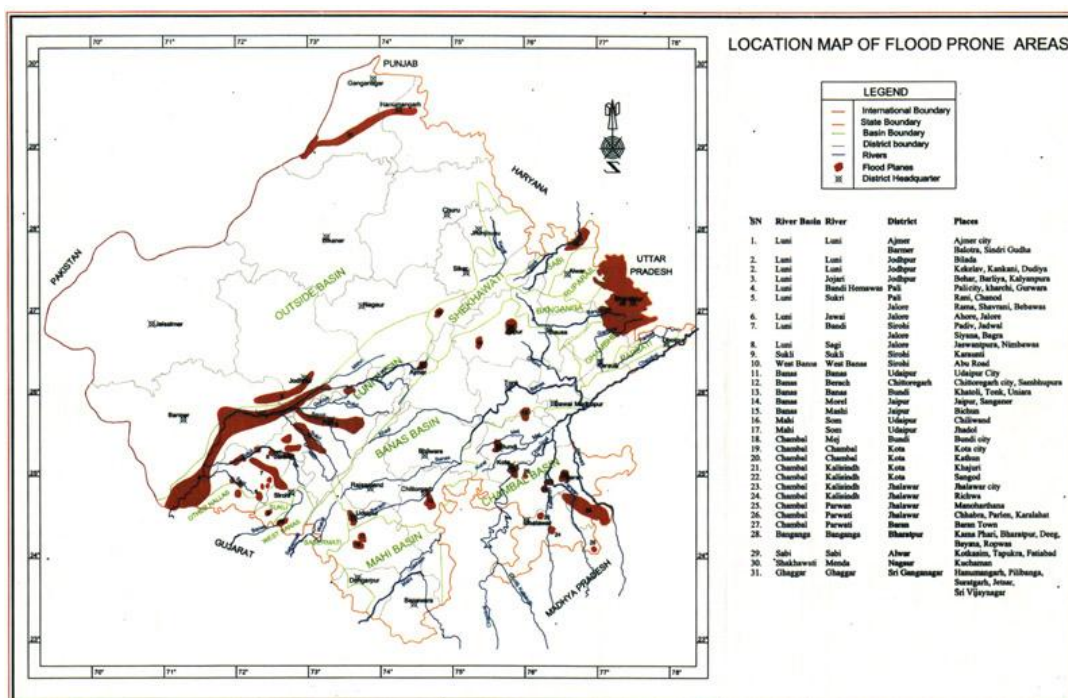


Figure 3.9: Flood zonation map

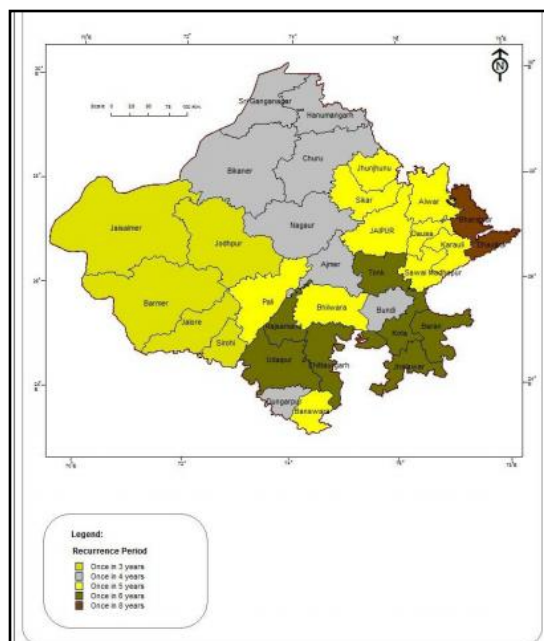



Figure 3.10: Reoccurrence period of Flood in Rajasthan


 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

3.6 Topography & Drainage Pattern

Buffer area

The North-West and South-West parts of the area mapped are barren plains covered by a thick mantle of alluvium and windblown sand, lying at an elevation of about 350.52 m above MSL. There are a few isolated hillocks towards west, south-west and north of the area. In central and south-eastern parts of the area consist of a closely packed system of hill ranges trending in a north-east-south-west direction and separated by narrow and broad valleys dotted with minor hillocks. The conspicuous hill ranges rising to the heights of 788.8 and 655.32 m, are composed of hard quartzites, while the low hillocks are formed of the soft quartzite, gritty quartzites, etc.

The Bandi (13.07 km towards WSW), Sadaria (1.4 km towards South), Nevata talav (10.6 km towards E direction) and Hingoniya Sagar Dam (11.36 km towards WSW) and tributaries of the Dhund River form the main drainage of the area. The area fed by numerous smaller nalas originating in the hill ranges in the monsoon. These nalas flow in general to South and South-West directions. The average ground elevation of the study area is 354 m from mean sea level. There are no major nalah and river.

	Gaurang Environmental Solutions Pvt. Ltd	Page 3.17
	Report Ref: : GESPL_430/2021/ EIA/225	Rev No. 00

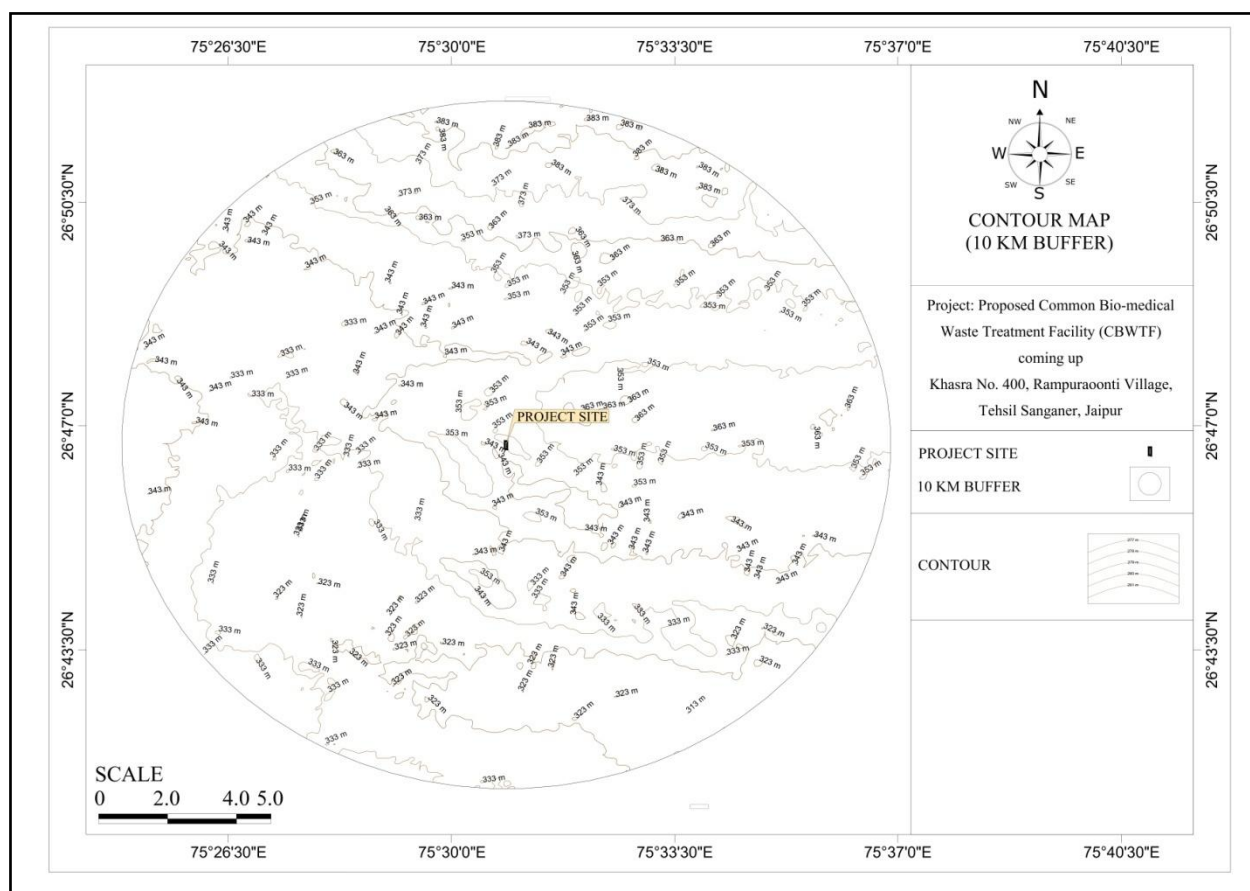


Figure3.11: Contour Map


Core Zone:

The project site is a part of the Survey of India Toposheet No. 45 N/9. The terrain is mostly flat without much variation and has an average altitude of 313 m above MSL. Intensity of land use will undergo change as construction works including installation of plant shed; admin building etc. are required for the project.

3.7 HYDRO-GEOLOGICAL

Hydrogeology

Gneisses and schists of Bhilwara Super Group are the oldest rock types overlain by quartzites, schists, conglomerates, dolomitic limestone etc. belonging to Alwar and Ajabgarh Groups of Delhi Super Group along with granite, pegmatite and amphibolite intrusives of Post Delhi age. Hard rocks in major parts of the district are covered by Quaternary fluvial and aeolian deposits

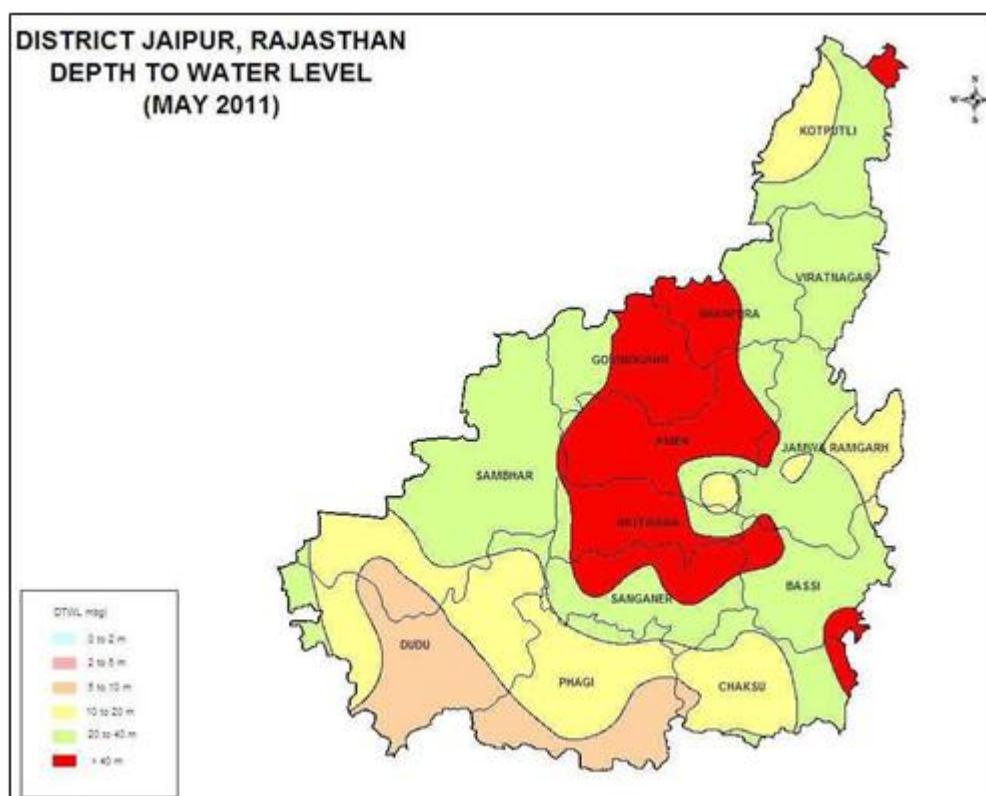
 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

mainly composed of sand, silt, clay, gravel and kankar. Alluvial thickness is less in southern and southwestern parts of the district i.e. in Naraina, Sakhun, Dudu, Mozamabad, Phagi, Chaksu areas etc. Alluvial thickness between 90 and 100m has been observed at Chomu, Jairampura, Nangal Bharra, Dhaunauta areas whereas its thickness over 100m has been found at Risani village (104 m).

Groundwater in the district occurs both in unconsolidated Quaternary formations and consolidated formations of Bhilwara and Delhi Super Groups and also Post Delhi Granites. In greater part of the district, alluvial deposits comprising of mainly fine sand and silt serve as potential aquifers in addition to gravel zones as encountered at Sanganer, Ambabari, Bajaj Nagar (Jaipur city) and Shahpura, Dhanauta, Nayan, Kalyanpur, Mohana and Chandalai. Groundwater at shallow depth occurs under water table condition and under semi-confined conditions at depth.

Depth to Water Level (Pre monsoon)

During pre monsoon period (May, 2011), depth to water levels varied from 7.08 mbgl at Dawach in Sambhar block to 84.00 mbgl at Chomu in Govindgarh block (Figure 3.8). Deeper water levels of more than 40 mbgl were recorded in the central part of district covering most parts of Govindgarh, Shahpura Amer, Jothwara and Sanganer blocks. Shallow water level less than 10 mbgl has been recorded in the southwestern part of the district mostly in the blocks of Dudu and Phagi.

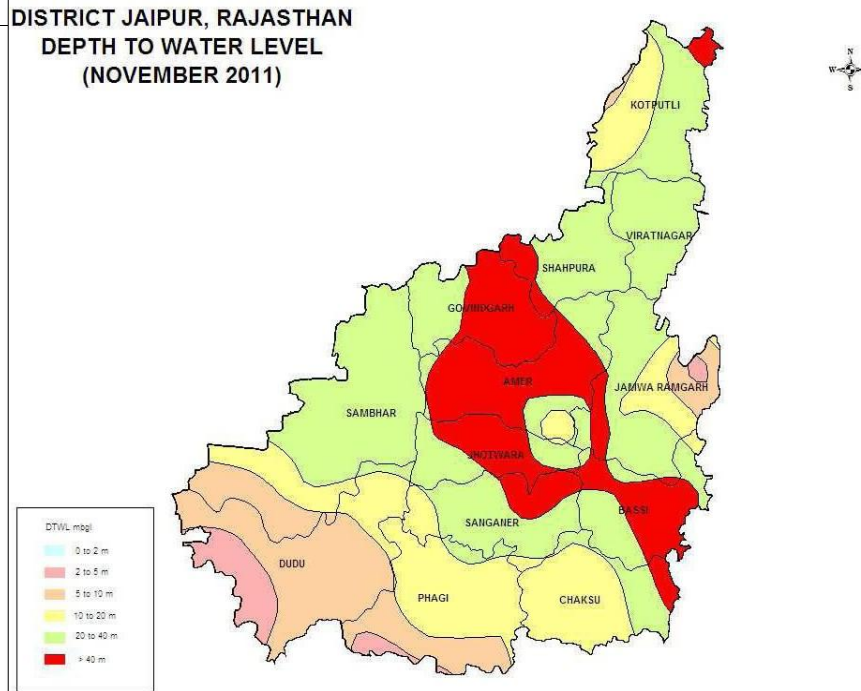


Source: CGWB Publication

Fig. 3.12: Depth of water level pre Monsoon (May 2011)

Depth to Water Level – Post monsoon

During post monsoon period (November, 2011), depth to water level varied from 4.15 mbgl at Rasala, Jamwa Ramgarh block to 82.8 mbgl at Chiomu, Govindgarh block. Water levels more than 40 mbgl were observed in the central parts of the district covering blocks of Govindgarh, Amer, Jotwara, Sanagner and Bassi (Figure 3.9).

**DISTRICT JAIPUR, RAJASTHAN
DEPTH TO WATER LEVEL
(NOVEMBER 2011)**


Source: CGWB Publication


Fig. 3.13: Depth of water level Post Monsoon (Nov. 2011)

Water Level Fluctuations

Comparison of water level data of Pre and Post-monsoon (May and November, 2011) has indicated that there has been rise of more than 4 m in water level in the most part of the district.

Water quality:

The quality of water is fresh in the project premises as revealed by Hydro inventory of June, 2018. The ground water quality in terms of TDS ranges between 1000 to 1200 mg/liters in studied area. Chemical analysis of water sample reveals that ground water of the site area has slightly higher TDS. However, some parameters are also exceeding desirable limits of IS: 10500 drinking water norms. Hence, the water requires suitable filtration treatment before putting to use for human consumption.

	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

Status of Ground Water Development

Development of ground water in the Sanganer Block is mainly through dug wells, Hand Pumps – India Mark-II and Tube wells.

Table 3.6: Status of Ground Water Development


S. No	Particular	Details
1	Net annual GW availability	34.5092 MCM
2	Existing Ground Water Draft for all uses	105.3994 MCM
3	Stage of GW development	305.42 %
4	Area Type	Notified – Over Exploited
5	Fresh water requirement for the project	75KLD

3.8 CLIMATE AND RAINFALL

The study area is belong to semi-arid region, the climate in the area is varies from extremely hot in the summer months to pleasant and cool weather in the winter months. The temperature during the summer months varies between 32 degree C to 45 degree C. Rainfall plays a major role in groundwater availability. Almost 90% of the total annual rainfall is received during the southwest monsoon. The mean annual rainfall of last 10 years (2009 to 2018) for the nearest rain gauge station –Sanganer is about 687 mm based on WRD data (Table -3.10).

Table 3.7 : Rain fall data at Sanganer Rain gauge Station

Years	Rainfall (mm)	Rainy Days
2012	907	33
2013	757	35
2014	607	40
2015	512	32
2016	544	32
2017	649	36
2018	785	33
2019	953	34
2020	617	39

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

2021	625	32
<i>Average</i>	696	35

Source: Water resource Department (WRD)

3.8.1. Micro-meteorology

The atmosphere is the medium in which air pollution is transported away from the source. Meteorology influences the way air pollution is dispersed, including wind direction and wind speed, type of terrain and heating effects. Atmospheric stability affects pollution released from ground level and elevated sources differently.

The ambient air quality with respect to the study zone around the proposed project site forms the baseline information. The various sources of air pollution in the region are traffic, urban and rural activities. This will also be useful for assessing the conformity to standards of the ambient air quality during operation. This section describes the selection of sampling locations, methodology adopted for sampling, analytical techniques and frequency of sampling. The results of monitoring carried out for study period from octo Dec2019 representing winter season.

Methodology

The methodology adopted for monitoring surface observations is as per the standard norms laid down by Bureau of Indian Standards (IS: 8829) and India Meteorological Department (IMD). The data on meteorological parameters in the study area were monitored for the period Dec 2021 to Feb 2022. The data was monitored from an automated weather-monitoring station. The instrument was located to allow free exposure to atmosphere all through the study period. The summary of meteorological data is given in Table below:

The summary of meteorological data is given in **Table 3.9**.


 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

Table 3.8: Meteorological data

Period	Temperature (°C)		Wind Speed (km/hr)	R. Humidity (%)		Rain fall (mm)	Predominant wind direction
	Min	Max	Average	Min	Max	(mm)	
December	5.3	25.6	1.9	12.4	81.9	0.0	North to South
January	4.3	27.3	2.5	12.1	87.5	0.0	
February	5.7	28.6	5.6	11.8	94.9	0.0	

Wind Pattern

Wind speed and direction data recorded during the study period is useful in identifying the influence of meteorology on the air quality of the area.

Based on the meteorological data obtained from the region, percentage frequencies of wind in 16 directions have been computed from the recorded data during the study period to plot wind rose. Fig. 3.14 represents the summary of the wind pattern.

The winds were predominantly recorded from N closely followed by NW direction during the season. Average wind speed for the period is 1.99 m/s.

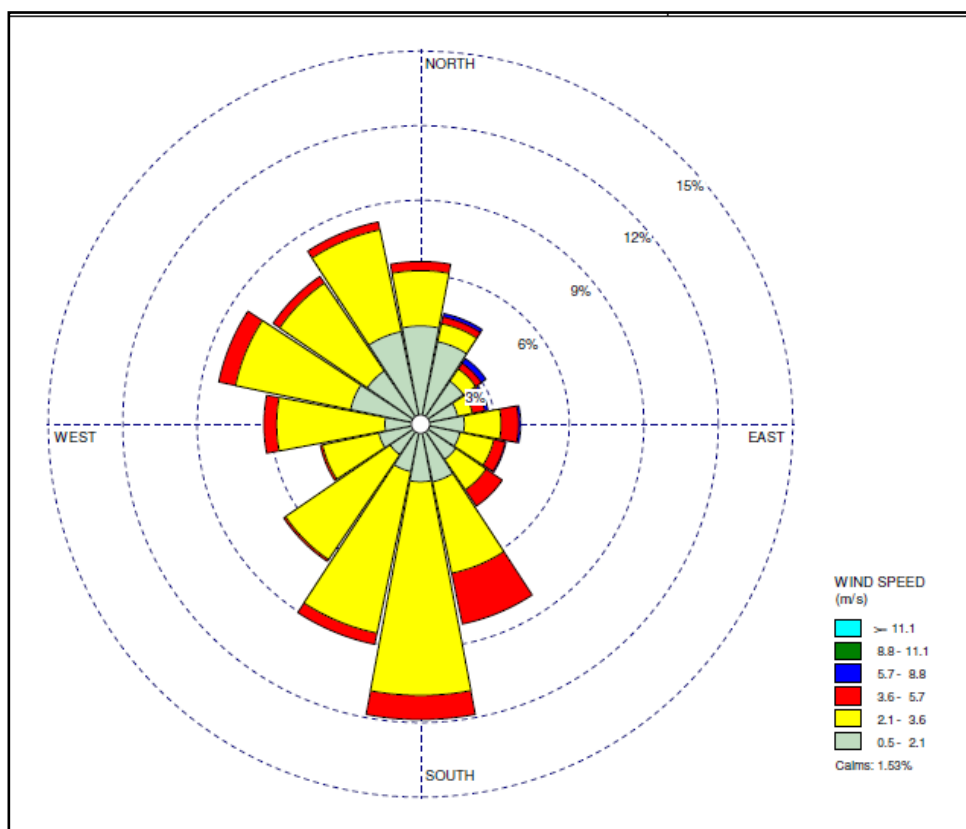



Figure 3.14: Wind Rose Diagram

3.9 Air Environment

The ambient air quality with respect to the study area of 10 km radius around the study area forms the baseline information. The various sources of air pollution in the region are dust rising from unpaved roads, domestic fuel burning, vehicular traffic, agricultural activities, other industries, etc.

The prime objective of baseline air quality monitoring is to assess existing air quality of the area. This will also be useful in assessing the conformity to standards of the ambient air quality during the operations.

The baseline status of the ambient air quality has been assessed through scientifically designed ambient air quality network. The design of monitoring network in the air quality surveillance program has been based on the following considerations:

	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

3.9.1. Methodology for Air Monitoring

The monitoring has been carried out at a frequency of two samples per week at each of Ten locations, adopting a continuous 24-hours continuous scheme for Particulate Matter, Sulphur Dioxide and Nitrogen Dioxide, Lead, Ozone, Ammonia, Benzene, Benzo(a) pyrene, arsenic and Nickel except CO for one hour.


To collect the samples, Envirotech Make Calibrated Respirable Dust Samplers (RDS-APM 460 BL) along with Gaseous attachment and Fine Particulate Matter (FPS-APM 550) were used. The instruments were well capable of drawing air at a flow rate of 1 to 1.3 m³/min with very little pressure drop for RDS and the impactor system of FPS is designed to operate at an air flow rate of 1m³/hr. Filter papers (8"x10" GF for PM₁₀ and 46.2 dia. PTFE for PM_{2.5}) were used for the collection of PM₁₀ and PM_{2.5}. SO₂ was collected by drawing air at a flow-rate of 0.5 liters per minute (lpm) through an absorbing solution i.e., Sodium tetrachloromercurate (TCM) (West and Gaeke Method) and NO_x was collected by drawing air at a flow rate of 0.4 lpm through the mixture of absorbing solutions i.e. sodium hydroxide and sodium arsenite (Jacobs and Hochheiser Method). Carbon Monoxide samples were collected on 1 hourly base in Mylar bags and analyzed by Non-Dispersive Infra-Red Spectroscopy (NDIR). This is to allow a comparison with the present revised standards mentioned in the latest Gazette Notification of the Central Pollution Control Board (November 2009).


3.9.2. Frequency and Parameters for Sampling

Monitoring for 8 numbers of locations within 10 km radius from the project site has been done. Sampling and analysis was carried out as per CPCB, IS 5182 & EPA and instrument operation manual for the parameters PM_{2.5}, PM₁₀, SO₂, NO_x & CO, Pb, O₃, NH₃, Benzene, Benzo(a)pyrene, As and Ni. Frequency of sampling was twice a week during study period.

Table 3.9: Monitored Parameters and Frequency of Sampling

S.No	Parameters	Sampling Frequency	Monitoring period
1.	PM ₁₀	24 hourly sample once a week	Dec 2021-Feb2022
2.	PM _{2.5}	24 hourly sample once a week	

	Gaurang Environmental Solutions Pvt. Ltd	Page 3.26
	Report Ref: : GESPL_430/2021/ EIA/225	Rev No. 00

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

S.No	Parameters	Sampling Frequency	Monitoring period
3.	Sulphur dioxide (SO ₂)	24 hourly sample once a week	
4.	Oxides of Nitrogen (NO _X)	24 hourly sample once a week	
5.	Carbon Monoxide (CO)	24 hourly sample once a week	

3.9.3. Instrument Used


- Respirable Dust Sampler with attachment for gaseous Pollutants, Environment APM 460BL.
- Fine Particulate Matter (FPM) Sampler, APM 550
- Dry and Wet Bulb Thermometer.
- Sound Level Meter Model SL – 4010
- Micro Meteorological Station Model EnviroWm 251
- Global Positioning System (GPS)

3.9.4. Air monitoring sampling locations:

Ambient air quality monitoring is done to determine the general background concentration levels. Locations are selected on the basis of dominant wind direction and sensitive places. The same is shown in tabular form and also in key plan given below.

Table 3.10: Air monitoring locations

Monitoring stations	Distance	Direction	Coordinates
Project Site			26°46'41.91"N 75°30'50.95"E
Chhitrali	3.2	N	26°48'25.99"N 75°30'55.69"E
Bagru	4.3	NE	26°48'25.84"N 75°32'40.20"E
Rampura	1.7	SSE	26°46'7.03"N 75°31'20.23"E
Syosinghpura	2.2	WSW	26°46'26.65"N 75°29'28.65"E
Sherpura	3.2	W	26°46'53.08"N 75°28'52.33"E
Nayabas	2.8	NW	26°47'51.31"N 75°29'40.19"E
Nariya	4.7	ESE	26°45'56.53"N 75°33'29.39"E

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3


3.9.5. Presentation of AAQ Data

Various statistical parameters like average, maximum and minimum values have been computed from the observed raw data for all the AAQ monitoring stations. The results of monitoring carried out for study period from October to December 2019. The parameters have been studied and determined quantitatively through planned monitoring. Respirable dust sampler FPS (APM) of ENVIROTECH make, Respirable Dust Sampler (APM 460 BL) of ENVIROTECH make, Gaseous sampler of ENVIROTECH make, Model APM 850 were used for monitoring of Ambient Air quality at all the identified locations. The summary of these results for each location representing pre-monsoon season are presented in Table 3.12. The results are compared with the standards prescribed by Central Pollution Control Board (CPCB) for industrial and rural /residential zone

Table 3.11: Summary of Ambient Air Quality Results


S. No.	Sampling Location		Parameters												
			PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	HC	TOC (µg/m)	HF (µg/m ³)	HCL (µg/m ³)	H ₂ SO ₄ (µg/m ³)	Cd (ng/m ³)	Hg (ng/m ³)	VOCs (ng/m ³)
1.	Project Site - A1	Average	66.29	34.20	12.85	17.50	1.13	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Minimum	60.53	30.69	11.76	16.85	0.76	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Maximum	79.82	39.27	14.75	19.5	1.48	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		98 th % ile	79.08	39.10	14.53	19.21	1.43	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
2.	Chhitrali (A2)	Average	62.95	31.74	12.55	16.78	0.81	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Minimum	59.25	29.73	11.55	15.67	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Maximum	78.45	38.14	13.88	18.36	1.29	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		98 th % ile	77.21	37.11	13.83	18.31	1.22	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
3.	Bagru (A3)	Average	68.92	28.87	7.70	11.39	0.79	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Minimum	63.12	24.46	5.84	9.45	0.58	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Maximum	73.32	32.81	9.78	13.61	1.32	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		98 th %ile	73.12	32.69	9.63	13.32	1.28	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
4.	Rampura(A 4)	Average	69.94	28.31	8.06	11.99	0.85	ND	<1.0	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Minimum	66.21	25.02	6.28	9.62	0.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Maximum	75.28	32.04	9.31	14.75	1.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		98 th % ile	74.87	31.69	9.28	14.67	1.37	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
5.	Syosinghp	Average	70.01	34.65	8.41	13.40	0.82	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1




 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

S. No.	Sampling Location		Parameters												
			PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	HC	TOC (µg/m	HF (µg/m ³)	HCL (µg/m ³)	H ₂ SO ₄ (µg/m3)	Cd (ng/m ³)	Hg (ng/m ³)	VOCs (ng/m ³)
	ra (A-5)	Minimum							<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
			64.26	27.72	6.51	10.43	0.49	ND							
		Maximum	76.14	45.97	10.46	16.48	1.22	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		98 th % ile							<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
			75.16	44.86	10.46	15.91	1.22	ND							
6.	Sherpura(A6)	Average	57.17	21.14	10.14	11.82	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Minimum	53.4	19.21	9.74	10.96	0.35	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Maximum	65.8	24.77	10.65	15.4	0.54	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		98 th % ile	65.38	24.61	10.65	14.81	0.54	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
7.	Nayabas(A7)	Average	62.14	24.00	10.26	14.01	1.14	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Minimum	55.41	22.65	9.58	12.45	0.35	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Maximum	70.61	27.58	11.3	16.39	1.75	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		98 th % ile	70.09	27.24	11.27	16.15	1.75	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
8.	Nariya(A8)	Average	66.36	38.65	13.87	18.74	0.47	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Minimum	59.28	31.56	9.23	15.62	0.39	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		Maximum	74.65	45.12	18.56	20.31	0.58	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
		98 th % ile	73.18	44.52	17.74	20.17	0.58	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
NAAQ STANDARDS			100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³	2 mg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³



 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

S. No.	Sampling Location		Parameters												
			PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO _x (µg/m ³)	CO (mg/m ³)	HC	TOC (µg/m)	HF (µg/m ³)	HCL (µg/m ³)	H ₂ SO ₄ (µg/m ³)	Cd (ng/m ³)	Hg (ng/m ³)	VOCs (ng/m ³)

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural
	Promoter : Instromedix Waste Management Pvt. Ltd

3.9.6. Observations

Respirable Particulate Matter (PM₁₀)

A maximum value of 79.82 µg/m³ was observed at project site and minimum value of 53.4 µg/m³ was observed at the Sherpura. The average values were observed to be in the range of 57.17 µg/m³ to 70.01 µg/m³. All the values were well within the prescribed limit of CPCB.

Particulate Matter (PM_{2.5}):

A maximum value of 45 µg/m³ was observed at Syosinghpur and minimum value of 19.21 µg/m³ was observed at Nayabas. The average values were observed to be in the range of 34.09 µg/m³ to 43.23 µg/m³. All the values were well within the prescribed limit of CPCB.

Sulphur Dioxide (SO₂)


Maximum concentration of SO₂ is observed to be 18.5 µg/m³ at Nariya & minimum value of 5.84 µg/m³ observed at Bagru. The average values were observed to be in the range of 7.70 µg/m³ to 13.87 µg/m³. All the values are well within the prescribed limit of CPCB.

Nitrogen Dioxide (NO₂)

Maximum concentration of NO₂ is observed to be 20.31 µg/m³ at the Nariya & minimum value of 9.45 µg/m³ were observed at Bagru. The average values were observed to be in the range of 17.41 µg/m³ to 25.86 µg/m³. All the values were well within the prescribed limit of CPCB.

3.9.7. Interpretation of Ambient Air Quality data

Based on comparison study of results for tested parameters with NAAQS, it is interpreted that ambient air quality of studied locations is good as all the results are well within the permissible limits as prescribed by CPCB. Considering the same proper air pollution equipments will be used for the proposed project.

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

3.10 Water Environment

3.10.1. Water quality

Ground water resources and surface water in the study area have been studied for assessing the water environment and evaluate anticipated impact of the project. Understanding the water quality is essential in preparation of Environmental Impact Assessment and to identify critical issues with a view to suggest appropriate mitigation measures for implementation.

The purpose of this study is to:

- Assess the water quality characteristics for critical parameters;
- Evaluate the impacts on agricultural productivity, habitat conditions, recreational resources and aesthetics in the vicinity; and
- Predict impact on water quality by this project and related activities

The information required has been collected through primary surveys and secondary sources


3.10.2. Methodology

Monitoring locations were finalized on the basis of the following aspects:-

- Drainage pattern;
- Tube wells (utilized for drinking water purposes)
- Surface water (if any) in study area; and

Water samples were collected in Pre-sterilized sampling container & chemical and metals analysis was carried out as per standard methods for water and surface water Analysis, published by AWWA, APHA, etc.

The analytical techniques adopted for the testing the water presented below in **Table 3.6.**

	Gaurang Environmental Solutions Pvt. Ltd	Page 3.33
	Report Ref: : GESPL_430/2021/ EIA/225	Rev No. 00


	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3


Table 3.12

Analytical Protocol followed for Water Quality Monitoring and Analysis

S. No.	Parameter	Protocol Followed	Detection Limit
1.	pH	IS:3025 (Part-11)	2
2.	Total Hardness (as CaCO ₃), mg/l	IS:3025 (Part-21)	6.6
3.	Iron (as Fe), mg/l	IS:3025 (Part-53)	0.3
4.	Chlorides (as Cl), mg/l	IS:3025 (Part-32)	1
5.	Fluoride (as F), mg/l	IS:3025 (Part-23)	0.1
6.	Total Dissolved solids, mg/l	IS:3025 (Part-16)	25
7.	Magnesium (as Mg), mg/l	IS:3025 (Part-46)	10
8.	Calcium (as Ca), mg/l	IS:3025 (Part-40)	1
9.	Copper (as Cu), mg/l	IS:3025 (Part-42)	0.01
10.	Manganese as Mn, mg/l	IS:3025 (Part-35)	0.01
11.	Phenolic Compounds (as C ₆ H ₅ OH), mg/l	IS:3025 (Part-43)	0.001
12.	Mercury (as Hg), mg/l	IS:3025 (Part-48) Mercury Analyzer	0.001
13.	Cadmium (as Cd), mg/l	IS:3025 (Part-41)	0.002
14.	Selenium (as Se), mg/l	IS:3025 (Part-56)/IS 15303	0.01
15.	Arsenic (as As), mg/l	IS:3025 (Part-37)	0.01
16.	Cyanide (as CN), mg/l	IS:3025 (Part-27)	0.002
17.	Lead (as Pb), mg/l	IS:3025 (Part-47)	0.01
18.	Zinc (as Zn), mg/l	IS:3025 (Part-49)	0.2
19.	Chromium (as Cr ⁺⁶), mg/l	IS:3025 (Part-52)	0.01
20.	Alkalinity (as CaCO ₃), mg/l	IS:3025 (Part-23)	0.5
21.	Aluminium (as Al), mg/l	IS:3025 (Part-55)	0.01

Table 3.13: Primary Water Quality Criteria for Designated-Best-Use-Classes

Designated-Best-Use	Category	Criteria Description
Drinking Water Source without conventional treatment but after disinfection	A	Total Coliforms Organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved Oxygen 6mg/l or more Biochemical Oxygen Demand 5 days 20°C 2mg/l or less
Outdoor bathing	B	Total Coliforms Organism MPN/100ml shall be 500 or less

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3


(Organized)		pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Propagation of Wild life and Fisheries	D	pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	pH between 6.0 to 8.5 Electrical Conductivity at 25°C micro mhos/cm Max.2250 Sodium absorption Ratio Max. 26 Boron Max. 2mg/l
	Below-E	Not Meeting A, B, C, D & E Criteria
<i>Source: CPCB</i>		

3.10.3. Water Sampling Locations

Water samples were collected from eight locations for Ground water. Surface water sample was collected from three locations. These samples were taken as grab samples and were analyzed for various parameters to compare with the standards as prescribed for drinking water (IS: 10500). The water sampling locations are shown in table. 3.15 below:

Table 3.14: Location of ground water sampling

Monitoring stations	Distance	Direction	Coordinates
Project Site			26°46'41.91"N 75°30'50.95"E
Chhitrali	3.2	N	26°48'25.99"N 75°30'55.69"E
Bagru	4.3	NE	26°48'25.84"N 75°32'40.20"E
Rampura	1.7	SSE	26°46'7.03"N 75°31'20.23"E
Syosinghpura	2.2	WSW	26°46'26.65"N 75°29'28.65"E
Sherpura	3.2	W	26°46'53.08"N 75°28'52.33"E

 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural		
	Promoter : Instromedix Waste Management Pvt. Ltd		Chapter 3

Nayabas	2.8	NW	26°47'51.31"N 75°29'40.19"E
Nariya	4.7	ESE	26°45'56.53"N 75°33'29.39"E

3.10.4. Presentation of Results

The analytical results of water samples are given in Table No. for the ground water samples. The quality of ground water samples were compared with IS: 10500 standards.



 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

Table 3.15: Ground water analysis result of the study area


Ground Water										
S. No	Parameter	Unit	Project site (GW 1)	Chhitrali (GW2)	Bagru (GW 3)	Rampura (GW4)	Syosinghp ura (GW5)	Sherpura (GW6)	Nayabas (GW7)	Surwal (GW 8)
1	pH	-	7.36	7.52	7.24	7.63	7.71	7.39	7.60	7.22
2	EC	ms/μs	2458	2269	2198	2471	2415	2715	2140	2613
3	Color	Hazen	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4	Odours	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity	NTU	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
7	TDS	mg/l	1580	1456	1411.1	1586.3	1550.4	2715	1373.0	1677.5
8	Aluminum (as Al)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9	Total Ammonia	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
10	Anionic surface Detergents(as MBAS)	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
11	Barium (as Ba)	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
12	Boron (as B)	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
13	Calcium (as Ca)	mg/l	128.50	126.39	124.91	132.63	128.05	120.95	127.32	124.71



 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

14	Chloramines (as Cl ₂)	mg/l	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
15	Chloride (as Cl)	mg/l	312.66	305.41	298.75	325.71	302.69	287.38	268.41	281.25
11	Copper (as Cu)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
12	Fluoride (as F)	mg/l	1.57	1.57	1.54	1.72	1.64	1.51	1.48	1.93
13	Free Residual Chlorine	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
14	Iron (as Fe)	mg/l	0.260	0.250	0.259	0.265	0.241	0.262	0.272	0.284
15	Magnesium (as Mg)	mg/l	70.36	66.07	75.19	92.06	64.58	74.92	66.47	63.21
16	Manganese (as Mn)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
17	Mineral Oil	mg/l	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
18	Nitrate (as NO ₃)	mg/l	21.40	20.94	21.35	24.91	24.76	21.93	24.63	19.76
19	Selenium (as Se)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
20	Silver (as Ag)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Sulphate (as SO ₄)	mg/l	164.2	158.9	162.7	153.8	157.9	154.7	158.1	154.2
22	Sulphide(as H ₂ S)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
23	Alkalinity (as Ca CO ₃)	mg/l	380.0	367.0	381.0	472.0	362.0	401.3	481.0	425.0
24	Total Hardness (as CaCO ₃)	mg/l	612.0	589.0	623.0	712.0	587.0	612.0	593.0	573.0
25	Zinc (as Zn)	mg/l	0.256	0.254	0.259	0.283	0.261	0.273	0.262	0.242
26	Phenolic Compound as (C ₆ H ₅ OH)	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL



 INSTROMEDIX	Project : Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Promoter : Instromedix Waste Management Pvt. Ltd	Chapter 3

27	Cadmium (as Cd)	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
28	Cyanide (as CN)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
29	Lead (as Pb)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
30	Mercury (as Hg)	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
31	Molybdenum (Mo)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
32	Nickel (as Ni)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
33	Polynuclear Aromatic	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
34	Polychlorinatedbiphenyl	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
35	Arsenic (as As)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
36	Total Chromium (as Cr)	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Table 3.16: Surface water results

S. N o.	Parameter	Unit	SadriyaNadi - Upstream(SW1)	SadriyaNadi Downstream(S W2)
1	pH (at 25 ⁰ C)	---	7.35	7.68
2	Temperature	⁰ C	18.0	20.0
3	Turbidity	NTU	4.2	6.8
4	Electric Conductivity @ 25 ⁰ C	µS/cm	380	420
5	Sulphate (SO ₄)	mg/l	12.0	23.0
6	Nitrate (NO ₃)	mg/l	2.56	4.01
7	Total Hardness (as CaCO ₃)	mg/l	164.0	210.0
8	Chloride (as Cl)	mg/l	28.0	38.8
9	Fluoride (as F)	mg/l	0.18	0.24
10	COD (as O ₂)	mg/l	21.0	36.0
11	Iron (as Fe)	mg/l	0.24	0.27
12	Dissolve Oxygen	mg/l	7.8	6.2
13	Total Dissolved Solid	mg/l	242	270
14	BOD (3 days at 27 ⁰ C)	mg/l	8.8	10.2
15	Calcium (as Ca)	mg/l	36.5	45.8
16	Magnesium (as Mg)	mg/l	17.4	23.1
17	Arsenic (as As)	mg/l	BDL	BDL
18	Lead (as Pb)	mg/l	BDL	BDL
19	Copper (as Cu)	mg/l	BDL	BDL
20	Zinc (as Zn)	mg/l	BDL	BDL
21	Manganese (as Mn)	mg/l	BDL	BDL
22	Total Chromium (as Cr)	mg/l	BDL	BDL
23	Sodium (as Na)	mg/l	21.8	32.5
24	Potassium (as K)	mg/l	1.16	1.80
25	Total Alkalinity (as CaCO ₃)	mg/l	158	194
26	Phosphate (as P)	mg/l	0.16	0.23
27	Nitrite (as NO ₂)	mg/l	0.110	0.15

28	Total Suspended Solid	mg/l	8.8	12.0
29	Faecal Coliform	MPN/100 ml	1.0×10^3	0.85×10^3
30	Total Coliform	MPN/100ML	1.2×10^3	0.96×10^3

3.10.5. Observations

Ground Water

- During the study period, pH values observed were in the range of 7.36 to 7.71
- Total dissolved solids in the range of 1411.1 mg/l to 2715 mg/l
- Calcium values observed were in the range of 120.95 mg/l to 128.50 mg/l.

Surface Water

- During the study period, pH values observed were in the range of 7.35 to 7.68 with total dissolved solids in the range of 242 mg/l to 270 mg/l and the hardness values observed were in the range of 164 mg/l to 210 mg/l. The dissolved oxygen values are in between 6.2 mg/l to 7.8 mg/l, while the BOD levels are in the range of 8.8 to 10.2 mg/l and the COD values were in range 21mg/l to 36mg/l.

3.11 Soil Quality

Soil may be defined as a thin layer of earth's crust which serves as a natural medium for the growth of plants. It is unconsolidated mineral matter that has been subjected to and influenced by genetic and environmental factors, such as parent material climate organism and physiochemical action of wind, water and sunlight all acting over a long period of time. Soil differs from the parent materials in the morphological, physical, chemical and biological properties.

For studying soil quality of the region, a sample was collected to assess the existing soil conditions in and around the project area.

The sample was collected by ramming a core-cutter into the soil up to a depth of 90 cm. The present study on the soil quality establishes the baseline characteristics and identifies the

incremental concentrations if any, due to the proposed project. The objective of the sampling is:

- To determine the baseline soil characteristics of the study area;
- To determine the impact of proposed activity on soil characteristics; and
- To determine the impact on soils more importantly from agricultural productivity point of view.

The soil sample was collected from three different depths viz. 30 cm, 60 cm and 90 cm. The samples was then packed in a polythene plastic bag and sealed.

3.11.1 Data generation methodology

For studying soil profile of the region, sampling locations were selected to assess the existing soil conditions in and around the plant area representing various land use conditions. The physical, chemical and heavy metal concentrations were determined.

The present study of the soil profile establishes the baseline characteristics and this will help in future identification of the incremental concentrations if any, due to the operation of the CBWTF project.

3.11.2 Locations of Soil Analysis

Eight locations in and around the proposed project were selected for soil sampling. The details of the monitoring locations are given in **Table No. 3.2 (d)**. At each location, soil samples were collected from three different depths viz. 30 cm, 60 cm and 90 cm below the surface and are homogenized. This is in line with IS: 2720 and IS: 9497 and Hand book of Method in Environmental Studies by S.K. Maiti. The homogenized samples were analyzed for physical and chemical characteristics. The samples have been analyzed as per the established scientific methods for physico-chemical parameters.


	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

Table 3.17: Locations of Soil Analysis


Monitoring stations	Distance	Direction	Coordinates
Project Site			26°46'41.91"N 75°30'50.95"E
Chhitrali	3.2	N	26°48'25.99"N 75°30'55.69"E
Bagru	4.3	NE	26°48'25.84"N 75°32'40.20"E
Rampura	1.7	SSE	26°46'7.03"N 75°31'20.23"E
Syosinghpura	2.2	WSW	26°46'26.65"N 75°29'28.65"E
Sherpura	3.2	W	26°46'53.08"N 75°28'52.33"E
Nayabas	2.8	NW	26°47'51.31"N 75°29'40.19"E
Nariya	4.7	ESE	26°45'56.53"N 75°33'29.39"E

3.11.3 Presentation of results

The analytical results of soil samples are given in **Table No.3.2**

Table 3.18: Soil analysis results

S. No	parameters	Unit	Project Site	Chhitrali	Bagru	Rampura	Syosinghpura	Sherpura	Nayabas	Nariya
1	pH	-	7.15	7.41	7.27	7.53	7.70	7.38	7.18	7.81
2	Conductivity (µmhos/cm)	µ/S	458.0	426.0	501.0	537.0	498.0	398.0	412.0	524.0
3	Sodium (as Na)(mg/kg)	%	160.21	154.37	162.41	156.84	162.75	154.67	165.87	160.75
4	Water holding capacity (%)	%	34.76	32.98	38.75	35.91	37.42	32.85	34.96	37.24
5	Potassium (as K)(mg/kg)	g/cc	98.24	94.62	97.32	94.26	89.57	86.24	92.74	94.83
6	Calcium (as Ca)(mg/kg)	%	251.60	261.74	256.19	264.07	272.31	249.64	257.26	262.75
7	Magnesium (as Mg)(mg/kg)	%	68.40	62.91	60.34	62.85	59.26	63.08	61.93	58.93
8	SAR	%	0.76	0.70	0.73	0.76	0.68	0.72	0.69	0.70
9	CEC (meq/100gm)	%	2.54	2.48	2.62	2.81	2.74	2.95	2.85	2.56

	Gaurang Environmental Solutions Pvt. Ltd	Page 3.43
	Report Ref: : GESPL_430/2021/ EIA/225	Rev No. 00


1	Available	%	14.08	13.81	14.21	13.69	14.23	14.68	13.98	14.23
0	Phosphorus(as P),(mg/kg)	Kg /Ha	1.69	1.52	1.65	1.72	1.86	1.52	1.62	1.71
	Organic Matter (%)									
1	Porosity (% by mass)	%	42.80	38.69	40.24	41.05	37.42	39.87	40.76	41.85
1	Permeability (cm/hr)	%	1.78	1.70	1.81	1.76	1.68	1.59	1.64	1.94
2	Total Kjeldahl Nitrogen %	kg /ha	0.0212	0.0211	0.0212	0.0213	0.0212	0.0213	0.0210	0.0212
1	Available Cadmium (as Cd) (mg/ kg)	%	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)
1	Available Chromium (as Cr) (mg/ kg)	%	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)
	Available Arsenic (as As) (mg/ kg)	kg/ha	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)
1	Available Nickel (as Ni) (mg/ kg)	%	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)	BDL (<0.1)
16	Zinc (as Zn) (mg/ kg)	%	5.34	5.28	5.36	5.42	5.29	5.40	5.29	5.37
17	Copper (as Cu) (mg/ kg)	%	26.10	25.63	25.71	26.09	24.63	25.81	24.76	24.85
18	Texture									
a	Sand (% by mass)	%	65.00	64.00	63.00	65.00	63.00	62.00	62.00	63.00
b	Clay (% by mass)	%	18.00	19.00	19.00	18.00	19.00	18.00	18.00	19.00
c	Silt (% by mass)	%	17.00	17.00	18.00	17.00	18.00	20.00	20.00	18.00

Table 3.19: Standard Soil Classification

S. No.	Soil Test	Classification
1.	Ph	<4.5 Extremely acidic 4.51- 5.50 Very strongly acidic 5.51-6.00 moderately acidic 6.01-6.50 slightly acidic

		6.51-7.30 Neutral 7.31-7.80 slightly alkaline 7.81-8.50 moderately alkaline 8.51-9.0 strongly alkaline 9.01 very strongly alkaline
2.	Salinity Electrical Conductivity (Mmhos/cm) (1ppm = 640 Mmho/cm)	Up to 1.00 Average 1.01-2.00 harmful to germination 2.01-3.00 harmful to crops (sensitive to salts)
3.	Organic Carbon (%)	Up to 0.2: very less 0.21-0.4: less 0.41-0.5 medium 0.51-0.8: on an average sufficient 0.81-1.00: sufficient >1.0 more than sufficient
4.	Nitrogen (Kg/ha)	Up to 50 very less 51-100 less 101-150 good 151-300 Better >300 sufficient
5.	Phosphorus (Kg/ha)	Up to 15 very less 16-30 less 31-50 medium 51-65 on an average sufficient 66-80 sufficient >80 more than sufficient

Source: Hand Book of Agriculture, Indian Council of Agricultural Research

	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

3.11.4 Observations:

- Texture of the soil samples is generally sandy.
- Bulk density of soil samples were in range of 1.6 gm/cc to 1.71 gm/cc.
- pH of the soil samples ranged from 7.64 to 8.85.

3.12. Noise Environment

The environmental assessment of noise from the project activity and vehicular traffic can be undertaken by taking into consideration various factors like potential damage to hearing, physiological responses, annoyance and general community responses.


The impact of noise sources on the communities depend on the following:

- Characteristics of noise sources (instantaneous, intermittent or continuous in nature). It can be observed that steady noise is not as annoying as one which is continuously varying in loudness;
- The time of day at which noise occurs, for example high noise levels at night in residential areas are not acceptable because of sleep disturbance; and
- The location of the noise source, with respect to noise sensitive land use, which determines the loudness and period of exposure.

The main objective of noise monitoring in the study area is to establish the baseline noise levels, and assess the impact of the total noise expected to be generated by the construction and operation of the project activity around it.

3.12.1 Identification of Sampling Locations

A preliminary reconnaissance survey has been undertaken to identify the major noise generating sources in and around the proposed plant site area. Noise at different noise generating sources has been identified based on the activities in the village area and ambient noise due to traffic.

	Gaurang Environmental Solutions Pvt. Ltd	Page 3.46
	Report Ref: : GESPL_430/2021/ EIA/225	Rev No. 00

The noise monitoring has been conducted for determination of ambient noise levels at eight locations in the study area for the study. The noise levels at each location were recorded for 24 hours. The details of noise monitoring locations in eight areas are given in above **Table No.3.22**

Table 3.20: Locations of Noise Monitoring

Monitoring stations	Distance	Direction	Coordinates
Project Site			26°46'41.91"N 75°30'50.95"E
Chhitrali	3.2	N	26°48'25.99"N 75°30'55.69"E
Bagru	4.3	NE	26°48'25.84"N 75°32'40.20"E
Rampura	1.7	SSE	26°46'7.03"N 75°31'20.23"E
Syosinghpura	2.2	WSW	26°46'26.65"N 75°29'28.65"E
Sherpura	3.2	W	26°46'53.08"N 75°28'52.33"E
Nayabas	2.8	NW	26°47'51.31"N 75°29'40.19"E
Nariya	4.7	ESE	26°45'56.53"N 75°33'29.39"E

3.12.2 Method of Monitoring

Noise levels are more annoying in the night time particularly in the residential areas. The environmental impact of noise can have several effects varying from annoyance to hearing loss depending on loudness of noise levels. The monitoring for noise levels were done in 8 locations keeping considering the population and traffic of the area. The locations are depicted in **Table 3.23**

3.12.3 Presentation of Results

The noise level recorded in the study area is given in Table 3.23.

Table 3.21: Noise level monitoring results

S. No.	Sampling Location	Date Of Sampling	PARAMETER	
			L _{day}	L _{night}
1.	N-1 Project Site	02/12/2021	58.4	41.2
2.	N-2 Chhitrali	04/12/2021	52.5	40.6
3.	N-3 Bagru	06/12/2021	50.5	37.8
4.	N-4 :Rampura	08/12/2021	53.2	39.0
5.	N-5 Syosinghpura	10/12/2021	54.2	40.6
6.	N-6 Sherpura	12/12/2021	52.7	36.5
7.	N-7 Nayabas	14/12/2021	50.9	38.3
8.	N-8 Nariya	16/12/2021	53.6	38.8

Table 3.22: Noise Level as Per CPCB Norms

S. No.	Category of Area	Noise LevelLeq. dB (A)	
		Day time	Night time
1.	Industrial area	75	70
2.	Commercial area	65	55
3	Residential area	55	45
4	Silence Zone	50	40

Note:


1. Day time is reckoned in between 6 a.m. and 9 p.m.

2. Night time is reckoned in between 9 p.m. and 6 a.m.

3. Silence zone is referred as areas upto 100 meters around such premises as hospitals, educational institutions and courts. The Silence zones are to be declared by the Competent Authority.

Use of vehicular horns, loudspeakers and bursting of crackers shall be banned in these zones.

Mixed categories of areas should be declared as one of the four above mentioned categories by the Competent Authority and the corresponding standards shall apply.

	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

3.12.4. Observations

Ambient noise levels were measured at 8 locations around the proposed project site. Minimum and maximum noise levels recorded during the day time were from 58.4 dB and 50.5dB respectively and Minimum and maximum level of noise during night time was 36.5 dB and 41.2 dB respectively.

3.13. Socio-Economic Environment


The broad objectives of the socio-economic impact assessment are as follows:

- To study the socio-economic status of the people living in the study area of the Common Bio-Medical Waste Treatment Facility (CBWTF).
- To assess the impact on socio-economic environment due to Proposed Common Bio-Medical Waste Treatment Facility (CBWTF).
- To assess the impact of the project on State Gross Domestic Product (SGDP)
- To evaluate the community development measures proposed to be taken up by the project proponent, if any.
- To suggest Community Development measures needs to be taken for the study area.

3.13.1. Methodology

The methodology adopted for impact assessment is as follows:

- The details of the activities and population structure have been obtained from Census 2011 and analyzed.
- Primary data was collected by a door-to-door survey in urban area and household's living therein. The data collected during the above survey was analyzed to evaluate the prevailing socio-economic profile of the area.
- Based on the above data, impacts due to construction operation on the community have been assessed and recommendations for further improvement have been made.

	Gaurang Environmental Solutions Pvt. Ltd	Page 3.49
	Report Ref: : GESPL_430/2021/ EIA/225	Rev No. 00

3.13.2. Study Area Description

The study area, also known as impact area has been defined as the sum total of core area/project area and buffer area with a radius of 10 Kilometers from the periphery of the core area/project is. The study area includes all the land marks both natural and manmade falling herein.

3.13.3. Concept & Definition

a) **Study Area:** The study area, also known as impact area has been defined as the sum total of core area/project area and buffer area with a radius of 10 Kilometers from the periphery of the core area/project is. The study area includes all the land marks both natural and manmade falling herein.

b) **Household:** A group of persons who normally live together and take their meals from a common kitchen are called a household. Persons living in a household may be related or unrelated or a mix of both. However, if a group of related or unrelated persons live in a house but do not take their meals from the common kitchen, then they are not part of a common household. Each such person is treated as a separate household. There may be one member households, two member households or multi-member households.

c) **Sex ratio:** Sex ratio is the ratio of males to females in a population. It is expressed as number of females per 1000 males.

d) **Literates:** All persons aged 7 years and above who can both read and write with understanding in any language are taken as literate. It is not necessary for a person to have received any formal education or passed any minimum educational standard for being treated as literate. People who are blind but can read in Braille are also treated as literates.

e) **Literacy rate:** Literacy rate of population is defined as the percentage of literates to the total population aged 7 years and above.

f) **Labour Force:** The labour force is the number of people employed and unemployed in a geographical entity. The size of the labour force is the sum total of persons employed and unemployed. An unemployed person is defined as a person not employed but actively

seeking work. Normally, the labour force of a country consists of everyone of working age (around 14 to 16) and below retirement (around-65) that are participating workers, that is people actively employed or seeking employment. People not counted under labour force are students, retired persons, stay-at home parents, people in prisons and discouraged workers.

g) Work: Work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. The work may be part time or full time or unpaid work in a farm, family enterprise or in any other economic activity.

h) Worker: All persons engaged in 'work' are defined as workers. Persons who are engaged in cultivation or milk production even solely for domestic consumption are also treated as workers.

i) Main Workers: Those workers who had worked for the major part of the reference period (i.e. 6 months or more) are termed as Main Workers

j) Marginal Workers: Those workers who did not work for the major part of the reference period (i.e. less than 6 months) are termed as Marginal Workers

k) Work participation rate: The work participation rate is the ratio between the labour force and the overall size of their cohort (national population of the same age range). In the present study the work participation rate is defined as the percentage of total workers (main and marginal) to total population.

3.13.4. Legislative and Regulatory Considerations

To review laws and regulations governing the project's implementation and the access of poor and excluded groups to goods, services and opportunities provided by the project. In addition, review the enabling environment for public participation and development planning. SIA should build on strong aspects of the legal and regulatory systems to facilitate program implementation and identify weak aspects while recommending alternative arrangements.

3.13.5. SOCIAL IMPACT ASSESSMENT

Social Impact Assessment (SIA) is an instrument used to analyze social issues and solicit stakeholder views for the design of projects. SIA helps in making the project responsive to social development concerns, including options that enhance benefits for poor and vulnerable people while mitigating risk and adverse impacts. It analyzes distributional impacts of intended project benefits on different stakeholder groups, and identifies differences in assets and capabilities to access the project benefits. The scope and depth of SIA should be determined by the complexity and importance of issues studied, taking into account the skills and resources available. SIA should include studies related to involuntary resettlement, compulsory land acquisition, impact of imported workforces, job losses among local people, damage to sites of cultural, historic or scientific interest, impact on minority or vulnerable groups, child or bonded labour, use of armed security guards. However, SIA may primarily include the following:

➤ SOCIAL ISSUES

SIA provides baseline information for designing social development strategy. The analysis should determine the key social and Institutional issues which affect the project objectives; identify the key stakeholder groups in this context and determine how relationships between stakeholder groups will affect or be affected by the project; and identify expected social development outcomes and actions proposed to achieve those outcomes.

➤ AGRICULTURE IMPACT

The agricultural activities are seen in the areas where there is sufficient soil cover. The buffer zone will remain undisturbed and no adverse impact is envisaged

3.13.6. STRATEGY TO ACHIEVE SOCIAL DEVELOPMENT OUTCOMES

Identify the likely social development outcomes of the project and propose a social development strategy, including recommendations for institutional arrangements to achieve them, based on the findings of the social assessment. The social development strategy could include measures that:

- ❖ strengthen social inclusion by ensuring inclusion of both poor and excluded groups as well as then intended beneficiaries in the benefit stream, offer access to opportunities created by the project empower stakeholders through their participation in design and implementation of the project, their access to information, and their increased voice and accountability (i.e. a participation framework); and
- ❖ Enhance security by minimizing and managing likely social risks and increasing the resilience of intended beneficiaries and affected persons to socioeconomic shocks.

3.13.7. POPULATION

Jaipur city is governed by Municipal Corporation and is situated in Rajasthan State. As per provisional reports of Census India, population of Jaipur in 2011 is 3,046,163; of which male and female are 1,603,125 and 1,443,038 respectively.

The villages in the study area are indirectly impacted as there is no rehabilitation and resettlement required. The study area is of 10.0 km from the project location. The list of villages falling in the study area is 60 villages; the segregation is present in **Error!**

Reference source not found. into the following manner:

- i. 2 villages area are falling are from 0.0 km to 2.0 km radius boundary
- ii. 15 villages area are falling are from 2.0 km to 5.0 km radius boundary
- iii. 13 villages area are falling are from 5.0 km to 7.0 km radius boundary
- iv. 30 villages area are falling from 7.0 km to 10.0 km radius boundary

The villages in the 10.0 km of the study area from the project site are given in **Error!**

Reference source not found..

S. No	0 to 2 km	S. No.	2 to 5 km	S. No	5 to 7 km	S. No.	7 to 10 km
1	Rampura Unti	1	Bagru Rawan	1	Dewala	1	Achanchukya
2	Shyosinghpura	2	Chhitroli	2	Kesrisingh Pura	2	Ghegha
		3	Mahlan	3	Chan Chukaya	3	Awaniya

		4	Kalyansar	4	Hingoniya	4	Kodar
		5	Girdharipura	5	Kansel	5	Jharna
		6	Nandlalpura	6	Sanwal	6	Kapriyawas Kalan
		7	Sherpura	7	Kunj Biharipura	7	Garoti
		8	Sawai Jaisinghpura	8	Koonchyawas	8	Nasnota
		9	Chhardara	9	Bheempura	9	Gadota
		10	Rata Khera	10	Rotwara	10	Shyosingpura Basri
		11	Jhund	11	Bhankrota Khurd	11	Bookni
		12	Anoppura	12	Chirota	12	Govindpura @ Basra
		13	Lakshminarayanp ura	13	Chimanpura	13	Khatwar
		14	Narwariya			14	Shriniwaspura
		15	Bagru (M)			15	Jhag
						16	Mandor
						17	Teekel Narukan
						18	Raithal
						19	Harbanshpura
						20	Madanpura @ Katariya Ka Bas
						21	Hariharpura
						22	Suratpura
						23	Ajairajpura
						24	Lakhawas
						25	Hasampura
						26	Palri Parsa
						27	Narsinghpura @ Dadiya
						28	Hardhyanpura

						29	Dahmi Khurd
						30	Dahmi Kalan

**Sources: Census of India, 2011*

Population

In the study area, there are 14774 households of which 3.43 % household's falls in 0 to 2 km, 49.93% household's in 2 to 5 km , 11.62% household's in 5 to 7 km and 35.01% household's in 7 to 10 km respectively. The total population falling in the project area is 91980 of which 3.56 % resides within 0 to 2 km, 48.74% are in 2 to 5 km , 11.70% are in 5 to 7 km and 36.00 % in 7 to 10 km. The total male population consists of 51.62 % and female population accounts to be 48.38 % of the total population. The sex ratio of the 10.0 km study area is 937 females over thousand males. There are approx 4 to 6 members in a family. The 0-6 population comprises of 14.49% of the total population of the study area. The sex ratio of 0-6 population is 870 females over thousand males. **Error! Not a valid bookmark self-reference.** shows the population, household data of the villages falling within 10.0 km from the study area. Figure 3.15 23 and Figure3.16 24 shows the sex ratio of total population and 0-6 population within the study area.

Table 3.23 Population & Literate

K.M.	No_HH	TOT_P	TOT_M	TOT_F	P_06	M_06	F_06	P_SC	M_SC	F_SC	P_ST	M_ST	F_ST	P_LIT	M_LIT	F_LIT	P_ILL	M_ILL	F_ILL
0 to 2	507	3278	1674	1604	471	248	223	835	414	421	154	83	71	1945	1200	745	1333	474	859
2 to 5	7377	44831	23341	21490	6585	3562	3023	10576	5469	5107	1692	868	824	27207	16482	10725	17624	6859	10765
5 to 7	1717	10760	5557	5203	1520	815	705	1981	1010	971	228	121	107	6302	3902	2400	4458	1655	2803
7to 10	5173	33111	16911	16200	4755	2502	2253	6124	3148	2976	2216	1122	1094	19040	11781	7259	14071	5130	8941
Total	14774	91980	47483	44497	13331	7127	6204	19516	10041	9475	4290	2194	2096	54494	33365	21129	37486	14118	23368

*HH- Household; Pop- Population

*Source: Census of India, District Handbook 2011

Table 3.24 Total & Main Work Participation

K.M.	TOT_	TOT_	TOT_	MAIN	MAIN	MAIN	MAIN	MAIN	MAIN	MAIN	MAIN	MAIN	MAIN	MAIN_H	MAIN_	MAIN_	MAIN_	MAIN_
	WORK_	WORK_	WORK_	WORK_	WORK_	WORK_	-	-	-	-	-	-	-	H_M	HH_F	OT_P	OT_M	OT_F
	P	M	F	P	M	F	CL_P	CL_M	CL_F	AL_P	AL_M	AL_F	HH_P					
0 to 2	1572	793	779	1129	735	394	607	408	199	100	21	79	16	3	13	406	303	103
2 to 5	15944	11216	4728	12316	9857	2459	2846	1654	1192	327	251	76	966	722	244	8177	7230	947
5 to 7	4725	2712	2013	3517	2459	1058	2272	1416	856	308	226	82	45	32	13	892	785	107
7 to 10	14106	8309	5797	10409	7211	3198	5889	3461	2428	692	374	318	134	99	35	3694	3277	417
Total	36347	23030	13317	27371	20262	7109	11614	6939	4675	1427	872	555	1161	856	305	13169	11595	1574

*Source: Census of India, District Handbook 2011



Table 3.25 Marg & Non Work Participation

K.M.	MARG WORK _P	MARG WORK _M	MARG WORK _F	MARG _CL_P	MARG _CL_M	MARG _CL_F	MARG _AL_P	MARG _AL_M	MARG _AL_F	MARG _HH_P	MARG _HH_M	MARG _HH_F	MARG _OT_P	MARG _OT_M	MARG _OT_F	NON_W ORK_P	NON_W ORK_M	NON_W ORK_F
0 to 2	443	58	385	195	22	173	97	7	90	2	0	2	149	29	120	1706	881	825
2 to 5	3628	1359	2269	1219	440	779	1010	153	857	65	25	40	1334	741	593	28887	12125	16762
5 to 7	1208	253	955	425	67	358	521	97	424	48	18	30	214	71	143	6035	2845	3190
7 to 10	3697	1098	2599	927	230	697	1458	465	993	31	18	13	1281	385	896	19005	8602	10403
Total	8976	2768	6208	2766	759	2007	3086	722	2364	146	61	85	2978	1226	1752	55633	24453	31180

*Source: Census of India, District Handbook 2011

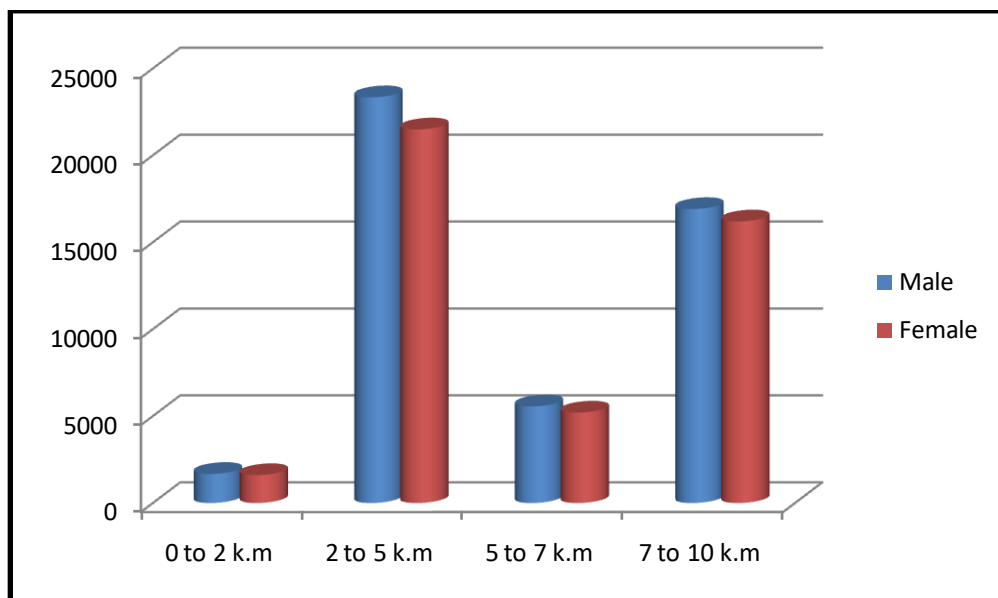


Figure 3.15 Sex Ratio of Total Population within 10.0 km from Project Site

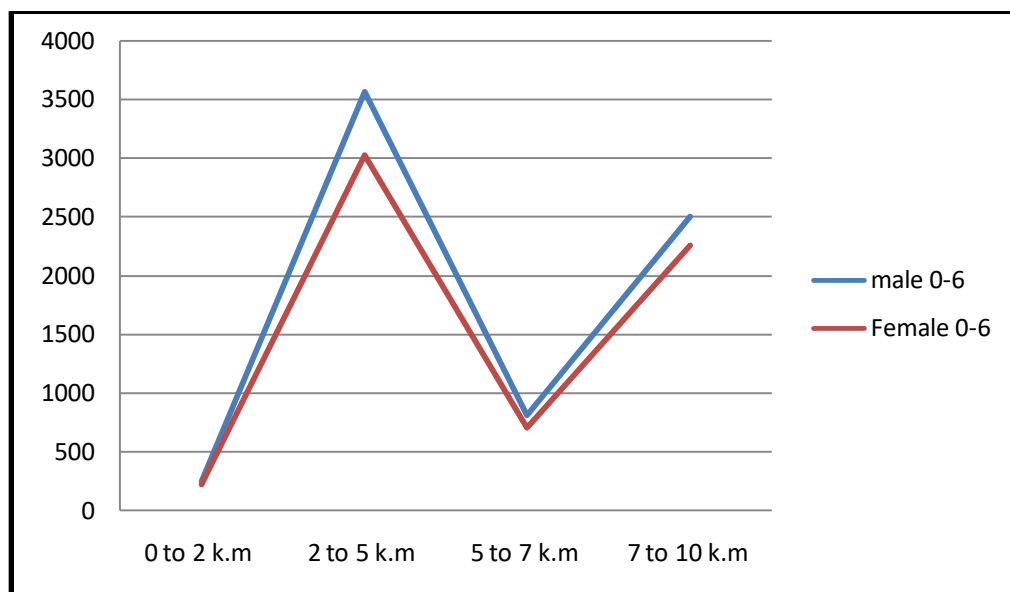


Figure3.16 Sex Ratio of 0-6 Population within 10.0 km from Project Site

SOCIAL STRUCTURE

In the study area, Schedule Caste population is 21.22% which is 19516 of the total



population. The males are 21.15% of the total male population and females account for 21.29% of the total female population. The sex ratio of Schedule Caste is 944 females over thousand males.

In the study area, Schedule Tribe population is 4.66% which is 4290 of the total population. The males are 4.62 % of the total male population and females account for 4.71 % of the total female population. The sex ratio of Schedule Tribe is 955 females over thousand males. Table 1.2 shows the Social Stratification of Schedule Caste and Schedule Tribe in the project study area. **Error! Reference source not found.** shows the social stratification in the project area. **Error! Not a valid bookmark self-reference.** shows the sex ratio of SC & ST in the project area segregated in the 10.0 km.

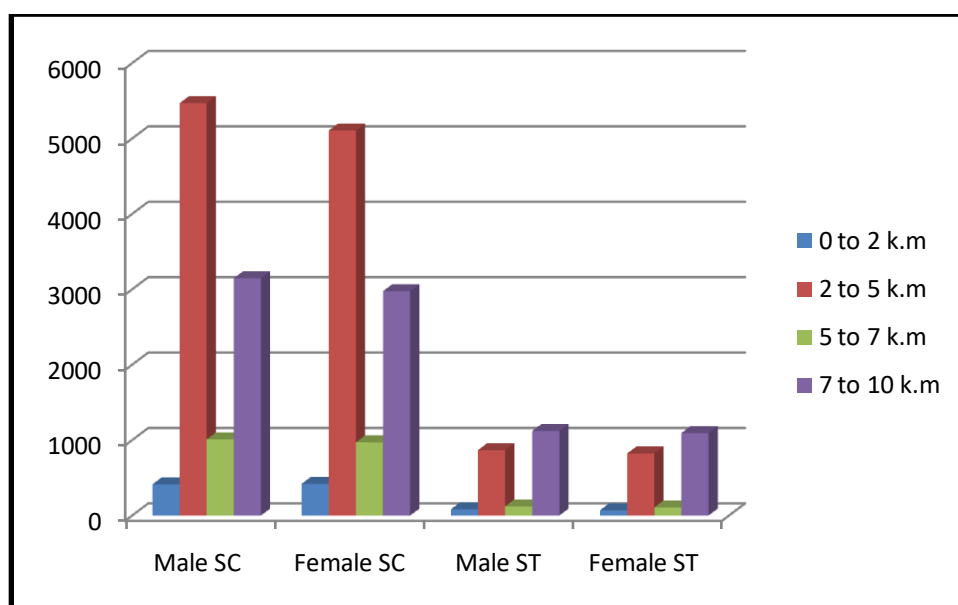


Figure3.17 Sex Ratio (ST / SC) within 10.0 km of the study area

LITERACY STATUS OF THE STUDY AREA

Persons aged seven years and above, who can both read and write with understanding in any language are considered as literates. In the study area the literate person's are 54494, which

is 59.25% of the total population. The male literates are 70.27% of the total male population and female literates are 47.48% of the total female population. The illiterate population of the study area is 40.75%, the male illiteracy population is 29.73% and female illiteracy population is 52.52% with respect to the male and female population respectively. Table 3.23 presents the literate population of the study area. Figure 3.18 shows the literacy rate in the study area.

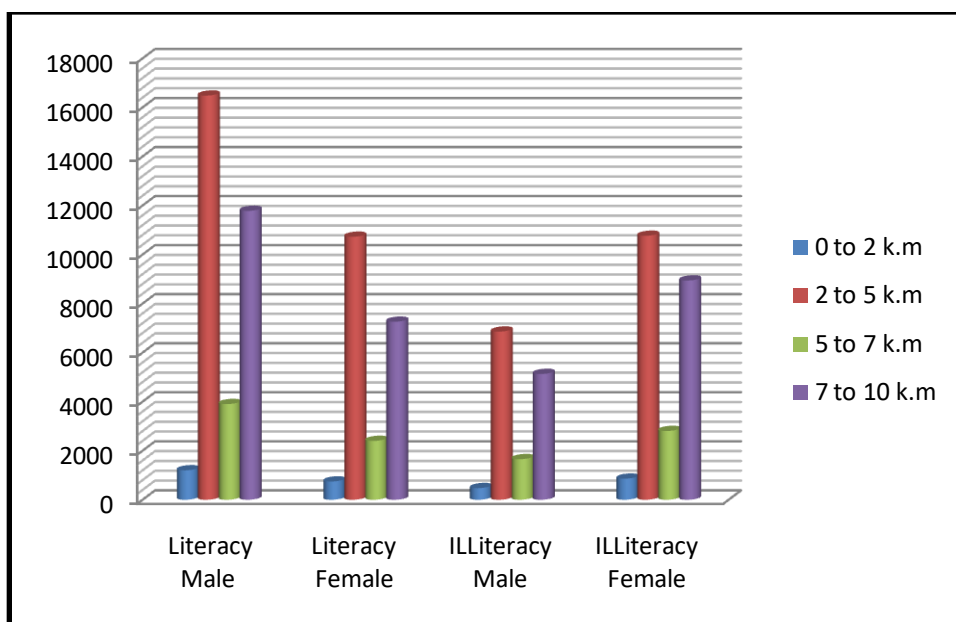


Figure 3.18 Males & Female Literacy Rate

Worker's Profile & Occupational Structure

The work participation in the study area is 36347 which account to be 39.52% of the total population. The male work participation is 48.50% with respect to male population and female work participation accounts to be 29.93% with respect to female population in the study area. **Error! Reference source not found.** shows the gender wise distribution of work participation in the study area. **Error! Reference source not found.** shows the Total work participation population over the total population and

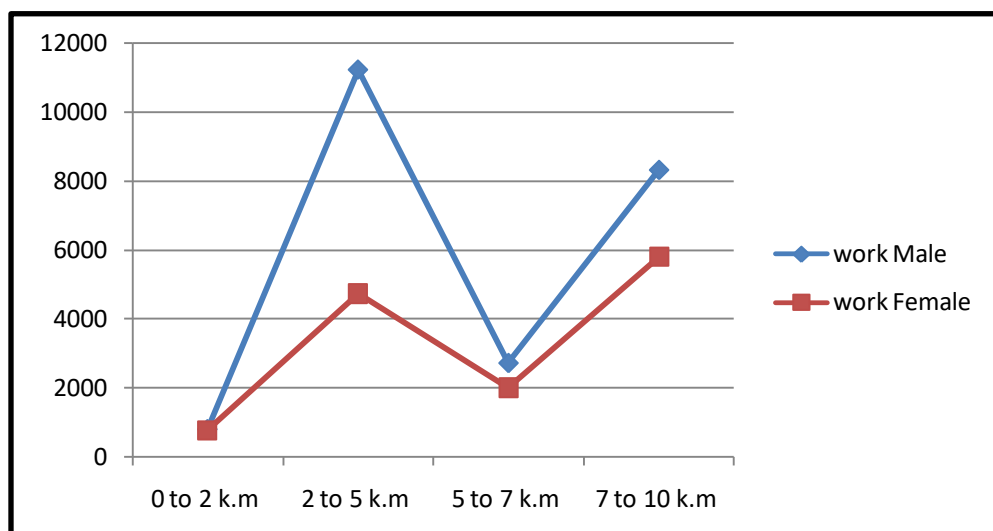


Figure 3.20 Work Participation of Males & Females

presents the total male & female work participation.

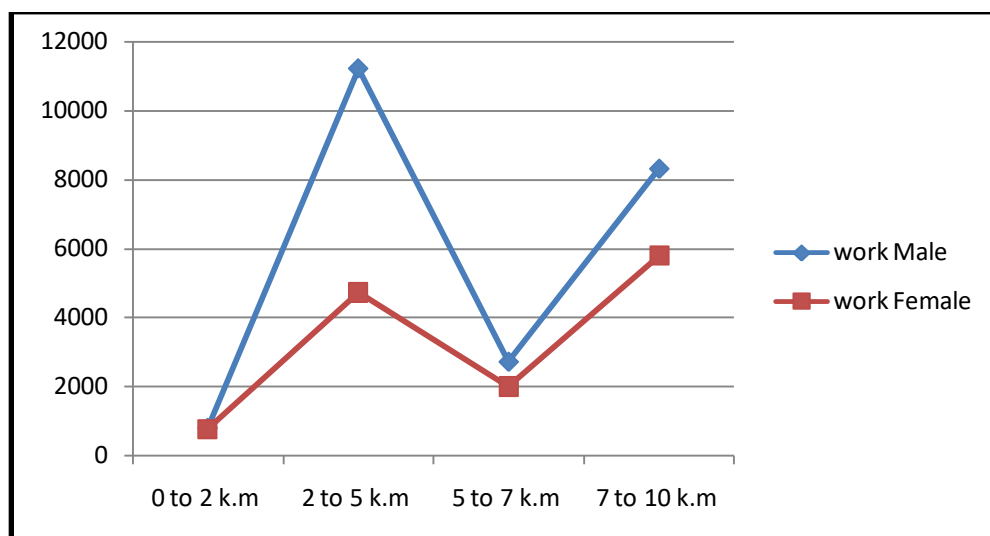



Figure 3.20 Work Participation of Males & Females

The main work participation is 29.76% and marginal work participation is 9.76% of the total working population. Further analysis of data has revealed that there exists total male dominance of 42.67% in main work participation. Marginal work participation shows total female and total male dominance which is 13.95% while marginal male work participation is 5.83%. Table 3.23 & 3.24 presents the main and marginal work participation of the study

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

area population.

Dependent Population

Based on total number of workers in the study area the overall dependency ratio has been worked out at 153.1%. Of this 108.52% is in the 0-2 km, while 181.18% is seen in the 2 to 5 km and , 5 to 7km has 127.72% of dependency rate and 7 to 10 km has 134.73% of dependency rate. This indicates that unemployment situation in the study area is far from satisfactory. Table 3.26 shows the dependent population in the study area.


Table 3.26 Dependent Populations


Km	Non Workers	Total workers	Dependency Rate
0 to 2	1706	1572	108.52
2 to 5	28887	15944	181.18
5 to 7	6035	4725	127.72
7 to 10	19005	14106	134.73
Total	55633	36347	153.1

Methodology

The methodology used for the primary survey is interview method in group discussions. Structured interview method is used to collect data regarding the awareness and opinion from the sample selected of the various socio- economic sections of the community. Structured interviews involve the use of a set of predesigned questionnaire that includes fixed and alternative questions. The questions mainly includes the parameters such as income, employment and working conditions, housing, food, clothing, water supply, sanitation, health, energy, transportation and communication, education, environment and pollution to assess the quality of life of that particular region and general awareness and opinion of the respondents about the project.

Socio-economic survey was conducted in nearby villages within the study area located in all directions with reference to the project site. Socio-economic survey done with group discussion, Government regulatory official and locals. The respondents were asked for their awareness/opinion about the project and their opinion about the impacts of the project, which is an important aspect of

	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.4
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

socio-economic environment, viz. job opportunities, education, health care, transportation facility and economic status.



The salient observations recorded during survey in the study area: According to survey record, the latest feature about survey area is described below:

The study area is provided with various kinds of infrastructural facilities being the nearest to the Jaipur city. Bagru town is also a Municipal Corporation area is also full of several schools, colleges, private technical institutes, hospitals and other medical institutes. Jaipur being the nearest city is approachable through govt and private buses. Bagru and its nearby areas are a budding place for development for many real estate agencies and in recent times many educational & medical centers are mushrooming in these rural areas being the outskirts of Jaipur.



	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.5
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02




Focus Group Discussion-


Focus Group Discussion Observations are conducted with the likely impacted stakeholders, given as below:


Components	Description
Social set up	<ul style="list-style-type: none"> Joint families prevail with one kitchen in the house. In some households there are 2 or more kitchens under one roof. Mostly male dominated society. Villagers are generally Hindus in the study area along with some people following Jainism. Among the Hindus around 80-90% of people belong to General caste and 10-15% are SCs and only 1-5 % of people are STs. Types of castes are as follows: <ul style="list-style-type: none"> ✓ General caste –Brahmins & Rajputs ✓ OBC castes –Kumawats, Mali, Jats ✓ SCs- Gawaria, Balai, Chamar, Regar, Chhipaa. ✓ STs- Meena, Dhanka, Garasi, Saharia, Koli Dhor. However the ST percentage is very low. STs are involved in some govt. jobs as drivers and in clerk positions. Some women headed ST households in Rampura Unti and

Components	Description
	<p>Shyosinghpura are financially poor. The women of these households are involved in the local educational institutions as helper, daily labourer. Educated ladies are working as Junior or midlevel teachers in the private schools in nearby areas.</p> 
Property Structure	<p>People in the area live in Pucca houses. The houses consist of some elongated rooms, living or drawing rooms and an open courtyard. Most of all the houses have cattle shed like in the below picture where they keep their buffaloes and another animals.</p> 
Education	<p>Due to the urban development and project activities in the study and nearby areas many educational institutions have established. Most of the villages have a primary school following education institutions</p>


	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3


Components	Description
	<p>have been observed during site visit. In the villages namely in Rampura Unti there are two schools 8th and 12th standard. For higher education the locals mainly study in Jaipur.</p>   <ul style="list-style-type: none"> • Rajkiya Uchch Madhyamik Vidyalaya ,Rampura Unti ,Jaipur 


	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.8
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

Components	Description
Occupational Structure/Economic Condition	<ul style="list-style-type: none"> The villagers in the study area are Farmers, small scale businessmen, contract/daily laborers or small farmers. Around 41.2% are Cultivators while 10.1 % are agricultural laborers and about 44% of population is among whom 18% are women. Among these other workers –few work in the nearby industries in RIICO Industrial area, some of the people work as daily laborers in the construction sites nearby or in any other industries or shops in Jaipur also, rest of them are in govt or private regular jobs. In Bagru many people are involve in household tying & dyeing work and block printing on clothes which are exported and sold to local market. There is a huge demand of these block prints in fashion world. Milk production is also a major part of the business. Farmers grow Bajra, Jowar, Wheat, Pulses especially Moong, vegetables like Pea, Tomato, Brinjals etc. Tubewell is used to irrigate the crops. Some farmers have Kishan Credit cards to avail loan from Govt grameen Banks under Kishan Awas Vikas Yojna. The farmers have buffaloes in their house. Some people sell the milk at the market and earn their living.
Health and Medical Facilities	<ul style="list-style-type: none"> The medical facilities in the area are moderate. Only 1 sub centre are there in Rampura unti and Shyosingpura. However Govt hospitals are there in Bagru along with many private clinics and hospitals. No qualified doctors are there as informed by the Sarpanch in the village. Only 1 ANP sits on periodic basis in the sub-centre. During extreme condition of health or emergencies people has to approach to the hospitals in Bagru or in Jaipur. Anaganwadi centre helps Infants, Children and Women health problems.

	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.9
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02

Components	Description
	
Agricultural Facilities	<p>Major crops in the study area are Maize and Jowar in Kharif season and Wheat and Mustard in the Rabi season. Pulses, Groundnut and vegetables are some of the major food products grown in the city.</p> 
Drinking water	<ul style="list-style-type: none"> • Drinking water facility consists of handpumps, tubewells and tap water from Panchayat tanks. • The government hand pumps in many villages do not work properly. • Moreover the groundwater in many villages is contaminated having high TDS causing skin allergies, abnormal brain growth, and stunted

Components	Description
	<p>growth etc problems in the surrounding area.</p> 
Transportation	<ul style="list-style-type: none"> • The proposed project area is located along the national Highway of NH-8 and Jaipur is only 24.5 km away. NH-11C connects Bagru to NH-8. • Frequent buses are there from Jaipur and private buses are also there. Most of the people have own 2 wheelers and some of them have four wheelers also to travel to Jaipur. • But interior roads in the villages are not maintained properly. Potholes on the roads and many roads remain kutcha in the interior villages of Rampura Unti, Shyosingpura etc.
Electricity	<p>All the villages in the study area are electrified. As the information received from Panchayat office the substation is located in Bagru. 24 hrs of power supply is there in the villages.</p>

3.14. Biological Environment

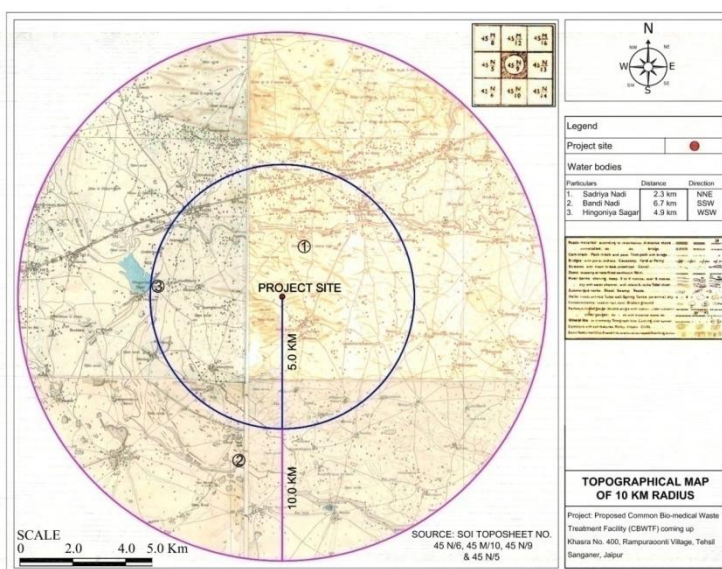
BIODIVERSITY STUDY

Biodiversity study of the proposed project area was carried out to understand the status of predominant floral and faunal groups *i.e.* trees, shrubs, herbs, grasses, herpetofauna, avifauna and mammals. To collect data and information on specific components of the ecological system and pertinent issues widely used standard scientific methods were adopted.

The objectives of the present study were as follows:

- To identify the floral and faunal diversity,
- To assess nature and distribution of the vegetation in the area,
- To identify the endangered species of flora and fauna, if any
- To prepare conservation plan for Schedule I fauna , if any

Study Area:-



Project Location Toposheet (10 Km)



Photographs Showing the Core zone of the project site

a. Methodology

Extensive literature review was carried out to indentify the representative spectrum of threatened species, population and ecological communities listed by IUCN, WCMC, ZSI, BSI and Indian wild Life Protection act, 1972. Biodiversity study of the ARL infratech “Proposed CBWTF Jaipur Rural Rajasthan, was carried out to understand the status of predominant floral and faunal groups i.e. trees, shrubs, herbs, grasses, herpetofauna, avifauna and mammals.


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

Table: 1 Methods used for study of flora & fauna

Taxa	Sampling Methods
Plants	Quadrat sampling and enumeration
Butterflies	Transect, Visual encounter survey
Amphibians	Visual encounter survey (search)
Reptiles	Visual encounter survey (search)
Birds	Point count, opportunistic observation
Mammals	Tracks and signs, and visual encounter survey

Fauna:

i. Avifauna


Species search and census: Standard methods were followed to survey the avifauna. Point count method was followed for counting the birds. Opportunistic surveys were also carried out with respect to avifaunal checklist. Identification by calls was also made for species which were not directly encountered or were hidden in the vegetation or canopy. Secondary data collected from the literature was also included in the present given list.


ii. Herpetofauna

Amphibians and reptiles recorded during area searches were identified by visual characteristics. Aquatic searches involved examining each type of aquatic habitat.

iii. Mammals


Presence of mammals was documented by using both direct sightings and indirect evidences i.e. animal burrows/holes, scats, pellets, droppings and tracks Opportunistic sightings were also included. Circular Plots were used to search indirect evidences.


	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.14
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

The data collected in the field was analyzed for secondary parameters such as density, frequency and abundance following standard phyto-sociological methods. Shannon-Wiener diversity index (Shannon and Wiener, 1963) was calculated for all life forms as follows:

Table 2: Estimation of phyto-sociological parameters	
	Frequency (%) = (No. of quadrats of occurrence of the species X 100) / Total No. of quadrats sampled
	Abundance = Total No. of individuals of the species / No. of quadrats of Occurrence
	*Density = Total No. of individuals of the species / Total No. of quadrats sampled
	Relative Frequency = (Frequency of the given species X 100) / Sum of all frequencies
	Relative Density = (Density of the given species X 100) / Sum of all densities
	Relative Abundance = (Abundance of species X 100) / Sum of all abundances
	Basal Area = $(GBH)^2 / 4\pi$
	Dominance = Total Basal Area / Total area sampled
	Relative Dominance = (Dominance of given species X 100) / Dominance of all species
	Important Value Index (I.V.I.) = Relative Density + Relative Frequency + Relative Dominance
Note: *Density refers to the number of individuals per unit area of a site.	

	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.15
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

STATISTICAL ANALYSIS:

Shannon-Wiener diversity index (Shannon and Wiener, 1963) was calculated for all life forms following:

Shannon- Wiener Information Function: $D = -\sum p_i \ln p_i$


Where: i = an index for the number of species sampled, $p_i = n_i/N$ =percentage of species i in the entire sample (N) of individuals, and \ln = natural log. Multiply the percentage (or proportion) of each species in the sample times the natural log of that same value, sum the products across all species, and then multiply by minus 1.


OBERVATION:

BIODIVERSITY PROFILE OF THE CORE ZONE (PROJECT SITE)

Plants reported from Core Zone (Project site)

S.No.	Common name	Vernacular Name	Family	Habit
1.	Babool	<i>Acacia nilotica</i>	Fabaceae	Tree
2.	Kumththa	<i>Accaica Senegal</i>	Fabaceae	Tree
3.	Beri	<i>Ziziphus nummularia</i>	Rhamnaceae	Shrub
4.	Keemp	<i>Leptadenia pyrotechnica</i>	Apocynaceae	Shrub
5.	Ker	<i>Capparis decidua</i>	Capparaceae	Shrub
6.	Aak	<i>Calotropis procera</i>	Gentianales	Shrub
7.	Sharpunkha	<i>Tephrosia purpurea</i>	Fabaceae	Shrub
8.	Satyanashi	<i>Argemone mexicana</i>	Papaveraceae	Herb
9.	Choti Kateri	<i>Solanum surattense</i>	Solanaceae	Herb
10.	Bui	<i>Aerva tomentosa</i>	Amaranthaceae	Herb
11.	Sarpankha	<i>Tephrosia purpurea</i>	Fabaceae	Herb
12.	Gokharu	<i>Tribulus terrestris</i>	Zygophyllaceae	Herb

	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.16
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02

	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

13.	Kumru	<i>Tridax procumbens</i>	Asteraceae	Herb
-----	-------	--------------------------	------------	------



Acacia nilotica



Accaica Senegal





Calotropis procera



Solanum surattense

Observed common flora in the core zone

	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.17
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

Avifauna

A total of 5 species were recorded in the core zone (Project site) during the field survey. The dominant species was Jungle Babbler (*Turdoides striatus*) and Indian Robin (*Saxicoloides fulicaata*).

Mammalia

A total of 2 species were observed in the core zone (Project site) during the field survey. i.e. five striped palm squirrel (*Funambulus pennantii*) and common house rat (*Rattus rattus*).

Mammalian Species Recorded In Core Zone

S. No.	Vernacular Name	Scientific Name	Family	Category	
				Status (IWPA)	IUCN
1	Five striped palm squirrel	<i>Funambulus pennantii</i>	Sciuridae	IV	LC
2	Common House rat	<i>Rattus rattus</i>	Muridae	V	LC

Amphibian


No species was reported during the field survey.

Reptiles

Only one species was observed in the core zone (Project site) during the field survey. i.e Oriental Garden Lizard. (*Calotes versicolor*).

Reptiles recorded in core zone

S.No.	Vernacular Name	Scientific Name	Family	Category	
				Status	IUCN

	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.18
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02

				(IWPA)	
1	Oriental Garden Lizard	<i>Calotes versicolor</i>	Agamidae	-	-



Northern palm squirrel



Oriental garden lizard



Indian robin



House sparrow

Observed common fauna in the core zone

BIODIVERSITY PROFILE OF THE BUFFER ZONE

(10 km radius from the Periphery of the project site)

Flora:

List of floral species recorded in the Buffer Zone

Trees			
S.No.	Vernacular Name	Scientific name	Family
1.	Ronjh	<i>Acacia leucopholea</i>	Fabaceae
2.	Babool	<i>Acacia nilotica</i>	Fabaceae
3.	Kumthha	<i>Acacia senegal</i>	Fabaceae
4.	Bael	<i>Aegle marmelos</i>	Rutaceae
5.	Siris	<i>Albizia lebbek</i>	Mimosaceae
6.	Neem	<i>Azadirachta indica</i>	Meliaceae
7.	Kachnar	<i>Bauhinia purpurea</i>	Leguminosae
8.	Amaltash	<i>Cassia fistula</i>	Caesalpiniaceae
9.	lasoda	<i>Cordia dichotoma</i>	Boraginaceae
10.	Shesham	<i>Dalbergia sissoo</i>	Fabaceae
11.	Gulmohar	<i>Delonix regia</i>	Caesalpiniaceae
12.	Kunali/khairi	<i>Dichrostachys cinerea</i>	Mimosaceae
13.	Safeda/ Sugandhapatra	<i>Eucalyptus globulus</i>	Myrtaceae
14.	Bargad	<i>Ficus benghalensis</i>	Moraceae



15.	Pipal	<i>Ficus religiosa</i>	Moraceae
16.	Subabul	<i>Leucaena leucocephala</i>	Fabaceae
17.	Kankera	<i>Maytenus emarginata</i>	Celastraceae
18.	Shahtoot	<i>Morus alba</i>	Moraceae
19.	Khajoor	<i>Phoenix sylvestris</i>	Arecaceae
20.	Jangle Jalebi	<i>Pithecellobium dulce</i>	Fabaceae
21.	Karanj	<i>Pongamia pinnata</i>	Fabaceae
22.	Khejari	<i>Prosopis cineraria</i>	Mimosaceae
23.	Jamun	<i>Syzygium cumini</i>	Myrtaceae
24.	Imli	<i>Tamarindus indica</i>	Fabaceae
25.	Rohida	<i>Tecomella undulata</i>	Bignoniaceae
26.	Sagon	<i>Tectona grandis</i>	Lamiaceae
27.	Ber	<i>Ziziphus mauritiana</i>	Rhamnaceae

Shrubs

S.No.	Vernacular Name	Scientific name	Family
1	Aakra	<i>Calotropis gigantea</i>	Asclepiadaceae
2	Aak	<i>Calotropis procera</i>	Asclepiadaceae
3	Kair	<i>Capparis decidua</i>	Capparaceae
4	Behaya	<i>Ipomoea carnea</i>	Convolvulaceae




5	Kaner	<i>Nerium oleander</i>	Apocynaceae
6	Nag phani	<i>Opuntia elatior</i>	Cactaceae
7	Vilayati babool	<i>Prosopis juliflora</i>	Mimosaceae
8	Arandi	<i>Ricinus communis</i>	Euphorbiaceae
9	Kans	<i>Saccharum spontaneum</i>	Poaceae
10	Munjh	<i>Saccharum munja</i>	Poaceae
11	Jharberi	<i>Ziziphus nummularia</i>	Rhamnaceae
12	Champa	<i>Plumeria alba</i>	Apocynaceae
13	Dandathor	<i>Euphorbia caducifolia</i>	Euphorbiaceae

Herbs

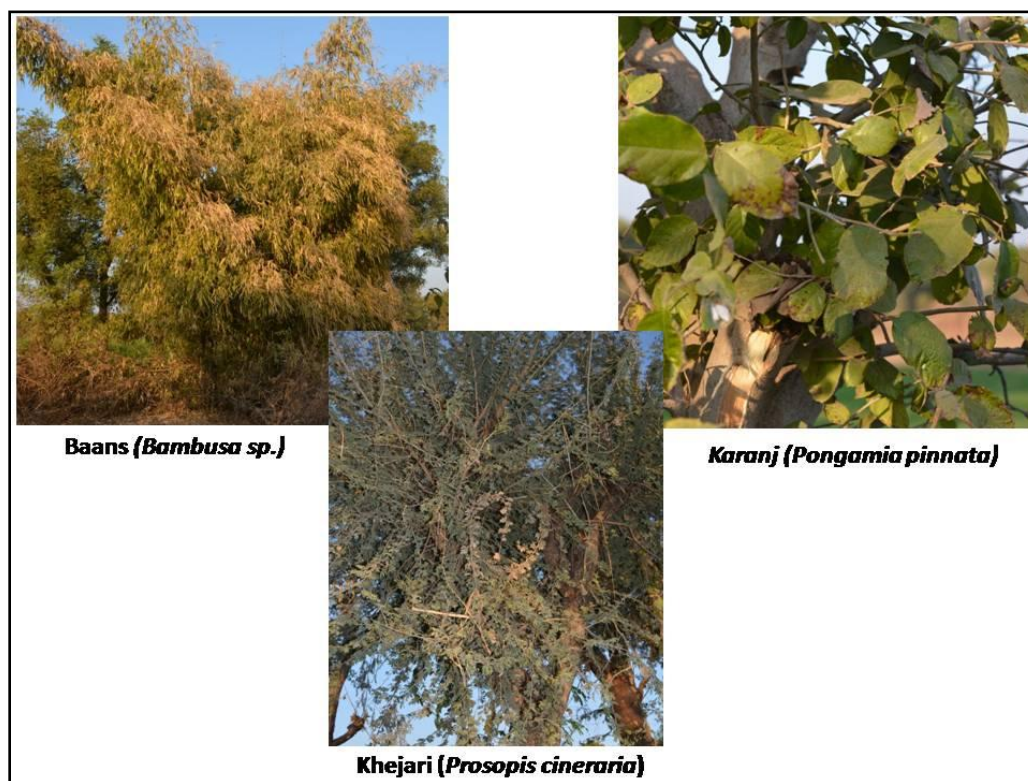
1	Bui	<i>Aerva tomentosa</i>	Amaranthaceae
2	Pili Kantili	<i>Argemone mexicana</i>	Papaveraceae
3	Kala bhangra	<i>Anisomeles indica</i>	Lamiaceae
4	Jangli chaulai	<i>Amaranthus spinosus</i>	Amaranthaceae
5	Latjira	<i>Achyranthes aspera</i> subsp. <i>argentea</i>	Amaranthaceae
6	Latjira	<i>Achyranthes aspera</i>	Amaranthaceae
7	Muktajhuri	<i>Acalypha indica</i>	Euphorbiaceae
8	Punarnava	<i>Boerhavia diffusa</i>	Nyctaginaceae
9	Purple-Leaf Button Weed	<i>Borreria ocymoides</i>	Rubiaceae
10	Survali	<i>Celosia argentea</i>	Amaranthaceae


11	chitraa	<i>Citrullus colocynthis</i>	Cucurbitaceae
12	Jakhiya, Safed hulhul	<i>Cleome gynandra</i>	Cleomaceae
13	Kankus	<i>Commelina forskalei</i>	Commelinaceae
14	Ban Tulsi	<i>Croton bonplandianum</i>	Euphorbiaceae
15	kachari	<i>Cucumis melo ssp. agrestis</i>	Cucurbitaceae
16	Dhatura	<i>Datura metel</i>	Solanaceae
17	Latmahuria	<i>Digera muricata</i>	Amaranthaceae
18	Motha	<i>Cyperus rotundus</i>	Cyperaceae
19	Unthkanta	<i>Echinops echinatus</i>	Asteraceae
20	Oldman'S Cap	<i>Polycarpaea corymbosa</i>	Caryophyllaceae
21	Gulpankhi	<i>Polygala erioptera</i>	Polygalaceae
22	Laptuna	<i>Setaria verticillata</i>	Poaceae
23	Baraira (bala)	<i>Sida acuta</i>	Malvaceae
24	Khareti	<i>Sida rhombifolia</i>	Malvaceae
25	Asiatic witchweed	<i>Striga asiatica</i>	Scrophulariaceae
26	Marigold	<i>Tagetes minuta</i>	Asteraceae
27	Yellow Bell	<i>Tecoma gaudichaudi</i>	Bignoniaceae
28	Sarphonk	<i>Tephrosia purpurea</i>	Fabaceae
29	Sarapunkha	<i>Tephrosia villosa</i>	Fabaceae
30	Peeli Kaner	<i>Thevetia peruviana</i>	Apocynaceae

31	Ashvagandha	<i>Withania somnifera</i>	Solanaceae
32	Badi Dudhi	<i>Euphorbia hirta</i>	Euphorbiaceae
33	Sunflower	<i>Helianthus annus</i>	Asteraceae
34	Gokhru	<i>Indigofera cordifolia</i>	Fabaceae
35	Nili	<i>Indigofera linnaei</i>	Fabaceae
37	Raimuniya	<i>Lantana camera</i>	Verbenaceae
38	Tikiokra	<i>Melochia corchorifolia</i>	Sterculiaceae
39	jharasi	<i>Mollugo pentaphylla</i>	Molluginaceae
40	shankhapushpi	<i>Evolvulus alsinoides</i>	Convolvulaceae
42	Dudhi	<i>Sonchus oleraceus</i>	Asteraceae
43	Damanpaper	<i>Oldenlandia corymbosa</i>	Rubiaceae
44	Gajar Ghas	<i>Parthenium hysterophorus</i>	Asteraceae
45	Bada gokhru	<i>Pedaliium murex</i>	Pedaliaceae
46	Bilari	<i>Mukia maderaspatana</i>	Cucurbitaceae
47	Ashwagandha	<i>Withania somnifera</i>	Solanaceae
Grass			
1	Jhuhi ghas	<i>Alysicarpus monilifer</i>	Fabaceae
2	Bristle grass	<i>Aristida adscensionis</i>	Poaceae
3	Doob ghas	<i>Cynodon dactylon</i>	Poaceae
4	Sheda Grass	<i>Dichanthium annulatum</i>	Poaceae
5	Makra	<i>Dactyloctenium aegyptium</i>	Poaceae

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

6	Panghas	<i>Eragrostis japonica</i>	Poaceae
7	Small stink grass	<i>Eragrostis minor</i>	Poaceae
8	Chinese Love Grass	<i>Eragrostis unioloides</i>	Poaceae
9	Asian crab grass	<i>Digitaria bicornis</i>	Poaceae
10	jangli-jowar	<i>Sorghum halepense</i>	Poaceae
12	Okrich (Mauritania).	<i>Sporobolus helvolus</i>	Poaceae
13	Thread Sprangletop	<i>Leptochloa panicea</i>	Poaceae
14	Indian Cupscale Grass	<i>Sacciolepis indica</i>	Poaceae



 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

Dhak Palash Tesu
(*Butea monosperma*)



Nest of Baya weaver
(*Ploceus philippinus*)

Thor
(*Euphorbia caducifolia*)





Jharberi (*Ziziphus nummularia*)



Babool (*Acacia nilotica*)

Common Flora observed in the buffer zone of the study area

	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.26
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

Fauna:

Totally 32 species of the birds belonging to 21 families were recorded from the buffer zone of the study area. A Schedule I species, *Pavo cristatus* (Indian peafowl) was reported from the buffer zone (forest and other habitats) located close vicinity of the human habitation / villages. For the same, conservation plan is given at the end of this chapter. All the bird species reported from the study area enlisted in the following table:

List of Avifauna Recorded in Buffer Zone

S.No.	Common Name	Scientific name	Family	Status (IWPA 1972)
1.	Red-wattled lapwing	<i>Vanellus cinereus</i>	Charadriidae	No mention
2.	Baya weaver	<i>Ploceus philippinus</i>	Ploceidae	Schedule IV
3.	Grey francolin	<i>Francolinus pondicerianus</i>	Phasianidae	Schedule IV
4.	Indian peafowl	<i>Pavo cristatus</i>	Phasianidae	Schedule I
5.	Common hoopoe	<i>Upupa epops</i>	Upupidae	No mention
6.	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Schedule IV
7.	White-throated kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Schedule IV
8.	Green bee-eater	<i>Merops orientalis</i>	Meropidae	No mention
9.	Lesser coucal	<i>Centropus bengalensis</i>	Cuculidae	Schedule IV
10.	Rose-ringed parakeet	<i>Psittacula krameri</i>	Psittacidae	Schedule IV
11.	House swift	<i>Apus affinis</i> sub sp.	Apodidae	No mention

	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.27
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02

		<i>affinis</i>		
12.	Rock Pigeon	<i>Columba livia</i>	Columbidae	Schedule IV
13.	Laughing dove	<i>Streptopelia senegalensis</i>	Columbidae	Schedule IV
14.	Eurasian Collared dove	<i>Streptopelia decaocto</i>	Columbidae	Schedule IV
15.	Red Collared dove	<i>Streptopelia tranquebarica</i>	Columbidae	Schedule IV
16.	Long-tailed shrike	<i>Lanius schach</i>	Laniidae	No mention
17.	Southern grey shrike	<i>Lanius meridionalis</i>	Laniidae	No mention
18.	House crow	<i>Corvus splendens</i>	Corvidae	Schedule V
19.	Black drongo	<i>Dicrurus macrocercus</i>	Dicruridae	Schedule IV
20.	White-bellied drongo	<i>Dicrurus caerulescens</i>	Dicruridae	Schedule IV
21.	Indian robin	<i>Saxicoloides fulicata</i>	Turdinae	No mention
22.	Brahminy starling	<i>Sturnus pagodarum</i>	Sturnidae	Schedule IV
23.	Asian Pied starling	<i>Sturnus contra</i>	Sturnidae	Schedule IV
24.	Common myna	<i>Acridotheres tristis</i>	Sturnidae	Schedule IV
25.	Bank myna	<i>Acridotheres ginginianus</i>	Sturnidae	Schedule IV
26.	Wire-tailed swallow	<i>Hirundo smithii</i>	Hirundinidae	No mention

27.	White-eared bulbul	<i>Pycnonotus leucotis</i>	Pycnonotidae	Schedule IV
28.	Red-vented bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Schedule IV
29.	Large grey babbler	<i>Turdoides malcolmi</i>	Timaliinae	Schedule IV
30.	Jungle babbler	<i>Turdoides striatus</i>	Timaliinae	Schedule IV
31.	Purple sunbird	<i>Nectarinia asiatica</i>	Nectariniidae	Schedule IV
32.	House sparrow	<i>Passer domesticus</i>	Passerinae	Schedule IV




Rose-ringed Parakeet
(*Psittacula krameri*)



Bank Myna
(*Acridotheres ginginianus*)



Black Drongo
(*Dicrurus macrocercus*)

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

Common birds recorded in the study area



White-breasted Kingfisher
(Halcyon smyrnensis)




Green bee-eater
(Merops orientalis)


Jungle babbler
(Argya striata)
List of mammalian species recorded in Buffer Zone

S. No.	Vernacular Name	Scientific Name	Family	Status (IWPA)
1.	Mongoose	<i>Herpestes edwardsi</i>	Herpestidae	II
2.	Five stripped palm squirrel	<i>Funambulus pennantii</i>	Sciuridae	IV
3.	Common House rat	<i>Rattus rattus</i>	Muridae	V
4.	Grey Musk Shrew	<i>Suncus murinus</i>	Soricidae	--
5.	Indian Hare	<i>Lepus nigricollis</i>	Leporidae	IV
6.	Indian field mouse	<i>Mus booduga</i>	Muridae	V
7.	Common Fox	<i>Vulpes bengalensis</i>	Canidae	II
8.	Nilgai	<i>Boselaphus tragocamelus</i>	Bovidae	III

List of amphibian species recorded in Buffer Zone

	Gaurang Environmental Solutions Pvt. Ltd.	Page 3.31
	Report Ref: GESPL_275/2019/EIA/130	Rev No. 02

S. No.	Vernacular Name	Scientific Name	Family
1.	Indian Bullfrog	Hoplobatrachus tigerinus	Ranidae
2.	Indian Skipper frog	Euphlyctis cyanophlyctis	Ranidae


List of reptiles recorded in Buffer Zone

S.No.	Vernacular Name	Scientific Name	Family	Status (IWPA)
1.	Common House Gecko	<i>Hemidactylus frenatus</i>	Gekkonidae	No mention
2.	Oriental Garden Lizard	<i>Calotes versicolor</i>	Agamidae	No mention
3.	Yellow-Bellied House Gecko	<i>Hemidactylus flaviviridis</i>	Agamidae	No mention
4.	Indian sand boa	<i>Eryx johnii</i>	<u>Boidae</u>	Schedule IV
5.	Common Rat Snake	<i>Ptyas mucosus</i>	Colubridae	Schedule II
6.	Cobra	<i>Naja Naja</i>	Elapidae	Schedule IV
7.	-	<i>hemidactylus brookii</i>	Gekkonidae	No mention

Butterflies recorded in Buffer Zone


S.no.	Species	Scientific Name	Family
1.	Common Rose	<i>Atrophaneura aristolochiae</i>	Papilionidae
2.	Plain Orange Tip	<i>Colitis eucharis</i>	Pieridae



 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 3

3.	Plain Tiger	<i>Danaus chrysippus</i>	Nymphalidae
4.	Common Grass Yellow	<i>Eurema hecabe</i>	Pieridae
5.	Blue Pansy	<i>Junonia orithya</i>	Nymphalidae
6.	Lime Butterfly	<i>Papilio polymnestor</i>	Papilionidae

A total of 06 species of butterflies were recorded during the field survey. Among the species plain tiger as the dominant species.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

CHAPTER-4

ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

4.1. INTRODUCTION

This chapter presents identification and appraisal of various impacts from the proposed CBWTF in the study area based on the inventory of pollution sources as well as the baseline environmental setting described in **Chapter 3** of the EIA report.


The impacts have been assessed for the proposed CBWTF assuming that the pollution due to the existing activities of the surrounding regions of the proposed CBWTF project area has already been covered under baseline environmental monitoring.


The proposed CBWTF is likely to create impact on the environment in two distinct phases:

- During the construction phase which may be regarded as temporary or short term; and
- During the operation phase which would have long term effects.

The construction and operation of the proposed project comprises various activities each of which may have an impact on some or other environmental parameters. Various impacts during the construction and operation phase on the environment parameters have been studied to estimate the impact on the environment and are discussed briefly below and elaborated in the subsequent sections.

Mitigation measures at the source level and an overall management plan at the study area level are elicited so as to improve the supportive capacity of the study area and also to preserve the assimilative capacity of the receiving bodies.

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.1
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

4.2. IMPACTS DURING CONSTRUCTION PHASE

This includes the impact on the following environmental attributes related to leveling of site, construction of plants and other related structures and other related equipment.


- Land use
- Soil quality
- Air quality
- Water resources and quality and
- Noise levels
- Socio economics;
- Terrestrial ecology;
- Biology;
- Traffic load and;
- Infrastructural facilities.


4.2.1. Impact on Land use

The proposed project site having an area of 16188 sq. m (4.0 acres) is leased by Nagar Nigam Jaipur, Greater for 20 years to M/s E Instromedix Waste Management Pvt. Ltd for setting up a Common Bio-medical Waste Treatment Facility (CBWTF). Hence, there is no additional land acquisition process and no R & R issues involved in the proposed project. The land consists of scattered vegetation.

4.2.2. Impact on Soil

The proposed CBWTF will be established in 16188 sq. m (4.0 acres) at Khasra No. 400, village Rampuraooti, Tehsil Sanganer, Jaipur, Rajasthan. The land consists of scattered vegetation. Potential impacts on soil during the construction phase are during the site clearing and earth work. The natural soil profile and horizon sequences may be disturbed which could cause the natural functioning of soils in terms of a growth medium and habitat for fauna and flora to cease. Disturbance of the natural soil profile and horizon sequences reduce soil fertility and function, and potential soil pollution would occur, if backfill material is mixed with contaminated material. Changes to the physical, chemical and

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.2
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

biological properties of the soil due to stockpiling and subsequent mixing of soil layers during handling in construction phase shall also envisaged.

Mitigation measures for construction impacts to soil include;

- Establishing specific procedures for soils handling and storage with the objective of maintaining the physical and chemical properties of stock piled soils for use in green belt development;
- Reducing or preventing erosion by scheduling activities to avoid heavy rainfall periods (i.e., during the dry season), and
- Modifying or suspending activities during extreme rainfall and high winds to the extent practical.
- The topsoil layer (0-900 mm) should therefore be stockpiled and may not be used for the construction of wall embankments etc.


4.2.3. Impact on Air Quality


The emissions anticipated to emanate from the CBWTF are expected to include pollutants such as PM, NO_x, SO₂, and CO. However PM is expected to be the most prevalent emissions, which will largely originate from fugitive sources during construction.

The major sources of air pollution during the construction phase are vehicular movement and construction equipment. The fugitive emissions of particulate matter (PM) are likely to be associated with land clearing, ground excavation, cut and fill operations (i.e., earth moving). It is anticipated that the dust emissions will vary from day to day, depending on the level of activity, the specific operations, and the prevailing meteorological conditions. The impacts will be localized in nature and the areas outside the project boundary are not likely to have any adverse impact with respect to ambient air quality.

Fugitive emissions during construction phase can be mitigated by:

- a) Using covers and/or control equipment (water suppression);
- b) Minimizing dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content;
- c) Dust suppression techniques, such as applying water or non-toxic chemicals to minimize dust from vehicle movements;

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.3
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

- d) Managing emissions from mobile sources through regular maintenance;
- e) Speed limits on paved and unpaved roads; and
- f) Progressive re-vegetation.

4.2.4. Impact on Water Resources and Quality

Water requirement will be met from bore wells during period of the construction. Impact on water quality during construction phase may be due to non-point discharges of solids from soil loss and sewage generated from the construction work force stationed at the site. Further, the construction in the project will be more related to mechanical fabrication, assembly and the erection, hence the water requirements would be small. Temporary sanitation facilities (septic tanks and soak pits) will be set up for disposal of sanitary sewage generated by the work force as per the prevailing labor laws. Since, most of the construction work force will constitute of floating population, the demand for water and sanitation facilities will be small and temporary and it will be managed by providing drinking water facility and sanitation facilities at the site during construction phase.

The overall impact on water environment during construction phase due to proposed plant is likely to be short term and insignificant.


4.2.5. Impact on Noise Levels


The construction at the CBWTF project site, including earthworks and erection of various structures will extend from 6 to 12 months only.

During the construction phase the noise impact will be high at the nearest sensitive receptors being adjacent from the site for the duration of the construction phase if no mitigation measures are taken.

Total construction noise generation is a complex combination of a number of different machines and vehicles operating together. The major sources of noise during the construction phase are vehicular traffic, construction equipment like dozers, scrapers, concrete mixers, cranes, pumps, compressors, pneumatic tools, saws, vibrators etc. The operation of equipment will generate noise ranging between 85-90 dB (A) near source.

Mitigation measures to reduce the possible noise impact during the construction phase of the proposed project are:

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.4
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

- a) Proper design and maintenance of silencers on diesel-powered construction equipment;
- b) Systematic maintenance of all forms of equipment
- c) Training of personnel to adhere to operational procedures that reduce the occurrence and magnitude of individual noisy events; and
- d) Acoustic screens are constructed, of such a height as to effectively act as a noise barrier.


4.3. IMPACTS DURING OPERATIONAL PHASE


The activities related to the operational phase have varying impacts on the environment and are also considered for impact assessment for the following attributes:

- Topography and drainage
- Land use;
- Soil quality;
- Solid waste;
- Air quality;
- Water resources and quality;
- Noise levels;
- Socio economics;
- Terrestrial ecology;
- Biology;
- Traffic load; and
- Infrastructural facilities.

4.3.1 Impact on Topography and Drainage

This is a proposed unit. The study area is characterized by a relatively plain with an elevation upto 356 meters a MSL. For this proposed CBWTF project, no surface drainage is required to be modified / diverted; as such no disturbance shall be caused to the natural drainage system. The nearest water body is at a distance of approximately 2.3 km towards NNE. Hence, the impact on the topography and drainage of the core zone will be insignificant.

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.5
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

4.3.2 Impact on Land use and Land Environment

➤ Impact on Land use

No definite additional impacts to land use occur during the operational phase. The land use details are given in **Table-4.1**

Table No. 4.1 Land Use Details


S. No.	Particulars	Area (sq. m)	%
1	Plant Area	4856.40	30
2	Paved area	1942.56	12
3	Open area	2913.84	18
4	Road area	647.52	4
5	Green area	5827.68	36
	Total	16,188	100

➤ Land Environment

Waste such as incineration ash generated in the process of incineration shall be stored in a separate area under the shed so as to avoid entry of rain water during the monsoon and for easy collection and in case, incineration ash is hazardous in nature and the same should be disposed through authorized TSDF.

4.3.3 Impact on Soil Environment & Mitigation

Land environment in the area has potential for contamination arising out of biomedical waste contamination with soil accidentally or during transport and handling but it happens very rarely. As a result of this there is no contamination of the soil due to the waste handling & treatment and hence the impacts due to the facility on the land environment are negligible. The impact is confined to the CBWTF area only. Due care is taken for minimum damage of top soil. The greenbelt plantation will act as an effective barrier for control of dust.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

The following management measures shall be adopted:


- The green belt shall be integrated with the existing plantation and locally available and sustainable species only shall be chosen for plantation;
- Entire CBWTF is aesthetically landscaped and as much as feasible natural gradient is maintained.
- There is minimum concreting of the top surfaces such that there is a scope for maximum ground water recharge due to rainfall.

4.3.4 Impact of Solid Waste & Mitigation

The wastes will be generated from the CBWTF including hazardous waste during operation phase & their treatment/disposal methods are given below:

Table No. 4.2: Waste generation & disposal

S. No	Treated Waste Category	Treatment and Disposal Options
1	Plastic waste after disinfection and shredding	Plastic waste will not be sent to land fill sites. Treated plastic waste is sent to registered or authorized recyclers.
2	Disinfected sharps (including needles and syringes)	Autoclaving followed by shredding & encapsulation in metal container or cement concrete and sent for final disposal to designated concrete waste sharp pit.
3	Incineration ash	Incineration ash will be temporarily stored in ash pit at site & then final disposal through authorized treatment, storage and disposal facility (TSDF).
4	Other treated solid wastes like glass waste	Autoclaving and then sent for recycling
5	Oil and Grease	Incineration
6	ETP Sludge	Incineration after drying in sludge drying beds or removal of moisture content using filter press
7	Hazardous waste	Disposal through TSDF located nearby following the manifest as per hazardous and other waste (Management and Transboundary Movement) Rules.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

Mitigation measures

This waste shall be sent to nearest TSDF as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

- All the solid waste generated shall be stored on the concrete flooring having catchment garland drains for collecting the rainwater spilled through it. Garland drains are connected to ETP.

4.3.5 AIR POLLUTION MITIGATION MEASURES

Impact & Mitigation

The following activities cause impact on air quality during the operations of CBWTF

Table No. 4.3: Operation Activity, Impact & Mitigation Measures

S. No.	Aspect	Impact	Mitigation Measures
1.	Transportation of bio-medical waste to the facility from member industry	Generation of dust and emission of HC & CO.	<ul style="list-style-type: none"> ○ Maintenance of roads, ○ Water sprinkling for dust suppression ○ Properly covered vehicles for transportation ○ Use of PUC Certified vehicles ○ Regular & preventive maintenance of vehicles.
2.	Bio-medical waste storage, stabilization, handling etc.	Particulate matter emissions & odour generation	<ul style="list-style-type: none"> ○ Standard operating procedures shall be followed. ○ Waste shall be segregated in color-coded bags as per rules stored in covered area as per Bio-medical rules. ○ Waste treated & disposed off within 48 hours.
3.	Incinerator operations	Generation of PM, NO _x , HCl, CO, TOC, dioxin & furan	<ul style="list-style-type: none"> • Adequate APCS shall be installed like Bag Filter, Scrubbers, Mist eliminator, rapid quencher, dioxin & furan control system & stack of 30 m height.

S. No.	Aspect	Impact	Mitigation Measures
			<ul style="list-style-type: none"> To prevent reformation of dioxins by rapidly lowering the flue gas temperatures, particularly from 500 °C to less than 200 °C by adopting rapid quenching A wet alkaline scrubber will be provided to remove HCl emissions. Caustic soda solution shall be injected in wet alkaline scrubber for neutralization/removal of HCl.
4.	ETP operations	Generation of Odour	Development of green belt & landscaping with selection of plant species for odor suppression
5.	Operation of DG set	Generation of NO _x , PM & CO emissions	<ul style="list-style-type: none"> D.G set shall be used as back-up power source. Adequate Stack Height shall be provided for proper dispersion of air pollutants.

Proposed Mitigation Measures


i. Air emission & control measures

The main sources of air pollution from the proposed facility will be the incinerator and DG. The sources of air pollution are as below:

➤ Point Source

- Incinerator facility: Emissions of PM, SO₂, NO_x, HCl, HF, CO, VOCs from stack. In case of improper quenching, emission of dioxins/furans are also envisaged.
- DG Sets: Emissions of PM, SO₂, NO_x & CO from stack. These emissions are not continuous as DG sets are used only as emergency power back-up.

The facility is equipped with appropriate air pollution control devices for reducing the pollutants and also a stack of adequate height (30 m) is provided for proper dispersion of the air pollutants as per CPCB guidelines.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

➤ **Line Source**

Particulate Matter emissions from movement of vehicles carrying waste material on paved roads & vehicular emissions like SPM, CO & HCs from exhaust of the vehicles are generated.

Only vehicles with PUC certification will be allowed. Covered vehicles are deployed for transportation.

Fugitive Emissions & Control

Fugitive emissions are generated from storage & handling area of waste.

Suitable control measures are taken to control the fugitive emission during loading/unloading, storage and handling of waste.

Odour control & mitigation measures are detailed in Chapter IV of this report.

Dioxin & Furans Generation & its Control

Dioxin and furans are generated due to incomplete combustion of Polychlorinated Biphenyls & Polyvinyl Chloride in Incinerator.

The CBWTF is equipped with an adequate Air pollution control system to control release of these pollutants in the environment. Regular monitoring of Dioxin and Furans will be done to limit its emissions to 0.1 ng TEQ/Nm³.


Air pollution control devices


a. For incinerator

Air pollution controlling equipment will be installed for final flue gasses trapping. Quencher followed by Venturi scrubber with droplet separator followed by Mist eliminator will be provided as pollution controlling system. Details of the same are given below:

i. Quencher:

Hot gases will be cooled near to the saturation level in the quenching system. If not cooled, the hot gas stream will evaporate a large portion of the scrubbing liquor, adversely affecting collection efficiency and damaging scrubber internal parts. Cooling

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.10
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

the gases will reduce the temperature and therefore, the volume of gas, increases the overall efficiency of the Air Pollution Control Devices in the incinerator.


ii. Wet Scrubber (Venturi)

A wet scrubber is an air pollution control device that removes PM and acid gases from waste gas streams of stationary point sources. The pollutants are removed primarily through the impaction, diffusion, interception and/or absorption of the pollutant onto droplets of liquid. The liquid containing the pollutant is then collected for disposal. There are numerous types of wet scrubbers which remove both acid gas and PM.

iii. Venturi Scrubbers

A venturi scrubber has a “converging-diverging” flow channel. In this type of system the cross-sectional area of the channel decreases then increases along the length of the channel. The narrowest area is referred to as the “throat”. In the converging section, the decrease in area causes the waste gas velocity and turbulence to increase. The scrubbing liquid (water diluted lean NaOH Stream) is injected into the scrubber slightly upstream of the throat or directly into the throat section. The scrubbing liquid is atomized by the turbulence in the throat, improving gas-liquid contact. The gas-liquid mixture then decelerates as it moves through the diverging section, causing additional particle-droplet impacts and agglomeration of the droplets. The liquid droplets are then separated from the gas stream in an entrainment section, usually consisting of a cyclonic separator and mist eliminator.

PM collection efficiencies of venturi scrubber is higher than any other scrubbers. High gas velocities and turbulence in the venturi throat result in high collection efficiencies, ranging from 70% to 99% for particles larger than 1 µm in diameter and greater than 50% for submicron particle

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.11
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

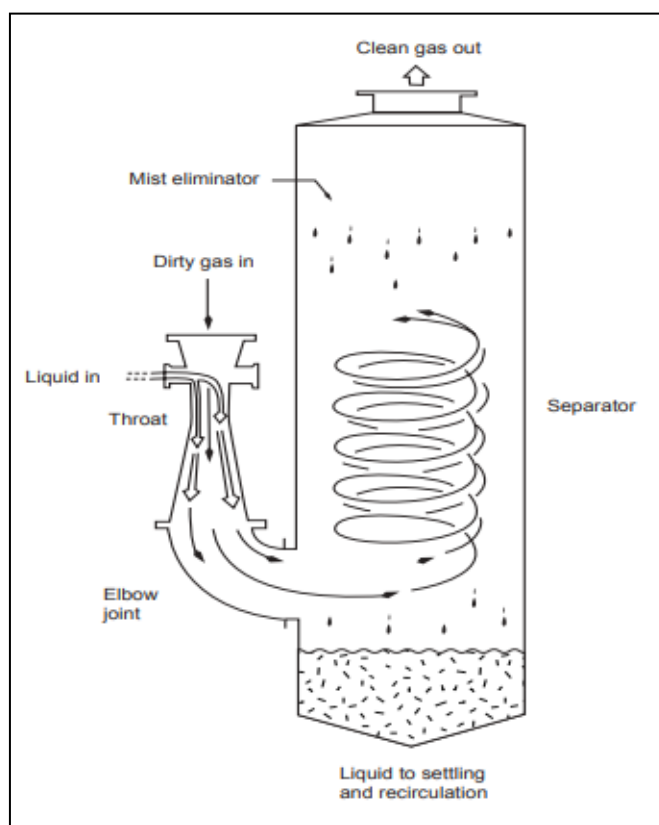


Figure 4.1: Venturi Scrubber with Cyclone Separator and Mist Eliminator

iv. Droplet Separator

The flue gases will then enter tangentially into the droplet separator, which will be of cyclonic type. By the action of centrifugal force, the larger droplets present in flue gases will settle down. The droplet separator will be manufactured out of Mild Steel Rubber lined. A Mild Steel Rubber lined water re-circulation tank of suitable capacity will be provided.

v. Mist eliminator

After passing through the venturi section, the scrubbing liquid and waste gas enters a collection chamber that separates the entrained liquid-PM droplets from the waste gas. A portion of the droplets settle via gravity to the bottom of the chamber. The droplets (mist) which remain entrained in the waste gas are generally removed with a mist eliminator. An outlet is located at the bottom of the collection chamber to drain the

liquid-PM waste from the chamber. Mist eliminators remove between 90% and 99% of the liquid droplets from the waste gas stream.

Waste Liquid Collection and Disposal

Spent scrubber liquid drains from the bottom of the chamber to the recirculation tank. The effluent is in the form of slurry with high solids content. This effluent will be treated in the ETP of the facility along with the other effluent. The remaining solid or sludge is land filled.

Auxiliary Equipment (ID fan)

An ID fan is generally required to make up for pressure lost in a low energy venturi system. The ID fan is placed downstream to avoid pitting of the fan blades.

Stack

Minimum 30 meters stack height above the ground has been proposed with the necessary monitoring facilities as per requirement of monitoring of ‘general parameters’ as notified under the Environment (Protection) Act, 1986 and in accordance with the Central Pollution Control Board Guidelines of Emission Regulation Part-III. Technical details of stack in given below:


Table No. 4.4: Technical details of Stack attached with Incinerator

Incinerator								
S. No.	Particulars	Capacity	Fuel Consumption (lt/hr)	Fuel	Stack Height (m)	Stack Dia. (m)	Stack Exit Velocity (m/s)	Stack Exit Temp (°K)
1.	Incinerator	300 kg/hr	80 lt/hr	HSD	30 m	0.35	35	

For DG set

Table No. 4.5: Technical details of Stack attached with DG set

DG set								
S. No.	Particulars	Capacity	Fuel Consumption (lt/hr)	Fuel	Stack Height (m)	Stack Dia. (m)	Stack Exit Velocity (m/s)	Stack Exit Temp

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

								(°K)
1.	DG Set x 1 No.	160 kVA	32 lt/hr	HSD	3.5 m	0.15	41	350

Stack height calculation:

$$H = h + 0.2 \times \sqrt{KVA}$$

H = Total height of stack in meter

h = Height of the building in meters where the generator set is installed

KVA = Total generator capacity of the set in KVA

$$= h + 0.2 \times \sqrt{160}$$

$$= h + 0.2 \times 12.64$$


$$= h + 2.5$$


Safe stack height of 3.5 m will be provided.

- Water sprinkler will be provided at coal stack pit and ash disposal area to control fugitive emission.
- Work zone area including internal roads in the plant will be asphalted or concreted.
- Water spraying system will be installed for regular spraying of water on road and work zone to minimizing fugitive dust emission.

Impact of Odour on Air Quality

Odour sensation is induced by inhaling airborne volatile organics or inorganic, which may or may not have toxic effects. Partial putrefaction of the waste produces obnoxious odorous volatile organic and inorganic substances which spoils the aesthetic environment for human beings. The people who reside nearby CBWTF disposal site to a major extent experience the odour problem. However, the site and surroundings belong to Municipal Corporation and there is no habitat present or likely to come more vicinity of site (1.0km). Odour is typically generated if the bio medical waste is not timely treated.

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.14
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4


Mitigation Measures


- During transportation, the containers will be covered in order to prevent exposure of public to odours and contamination.
- Waste collecting vehicles, containers and store rooms will be washed on daily basis.
- Ensuring that the waste collected is disposed off as per the CPCB guidelines*
- Masking agents/Neutralizers/Inhibitors –Inhibit the growth of sulphate reducer – Counter actants such as Ecosorb and Xorbent without affecting stabilization of CBWTF*
- The bio-medical waste will be treated within 48 hours.
- Prevent unauthorized entry of person and stray animals*
- Closed cabin vehicles will be used for the collection and transportation of bio-medical wastes.
- Masks will be provided to workers to avoid health issues due to odour.
- Adequate green belt will be developed. (spp. Like Devil's Tree (Alstonia scholaris), Chameli, Raat ki raani, Champa etc. has been proposed to control odour).
- Good housekeeping practices will be followed.
- Dilutions of odourant by odour counter action or neutralize by spraying Ecosorb (organic and biodegradable chemical) around odour generation areas at regular intervals.
- Preventing high odorous gas formation & mapping rapid gas generation from sources*

***Ref: CBCB Guidance document on odour management no. CUPS/86/2017-18**

Impact of off-Site Traffic on Air Quality

The CBWTF approximately requires around 10 vehicles for transportation of the bio medical waste. Adequate road transport facility is already available in the area which is sufficient to cater the needs of excess vehicular movement. Hence the incremental ground level concentrations from the facility will be negligible.

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.15
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

4.3.6 Impact on Water Resources and Quality

Water consumption and waste water treatment

The consumption of water for the proposed CBWTF will be 10 KLD. The same will be sourced from ground water. No changes in water bodies or the land surface affecting drainage or run-off are envisaged. No disturbance is envisaged for water courses.

Wastewaters including vehicle and container washing, floor washing, incineration, recycling plants shall be treated at ETP. The domestic wastewater will be sent to septic tank followed by soak pit for the safe guard of water environment. The treated waste water shall be continuously recirculated to fulfill water requirement of APCDs.

Effluent generation from the CBWTF is about 5.2 KLD Effluent generated will be treated in effluent treatment plant (ETP).

Treated water is reused/ recycled in processes i.e., scrubbing and greenbelt. Zero discharge condition of waste water is being maintained. Hence there will not be any discharge of effluent to water body or to the land.

The schematic flow diagram of the ETP is shown in **Figure-4.2**

Table No. 4.6: Characteristics of the Treated Waste Water

S. No.	Parameters	Value
1.	pH	6.5-9
2.	Suspended solids	<100
3.	Oil & Grease	<10
4.	BOD	<30
5.	COD	<250
6.	Bio-assay test	90 % survival of fish after 96 hours in 100 % effluent

** All concentration values are in mg/l excepting that of pH*

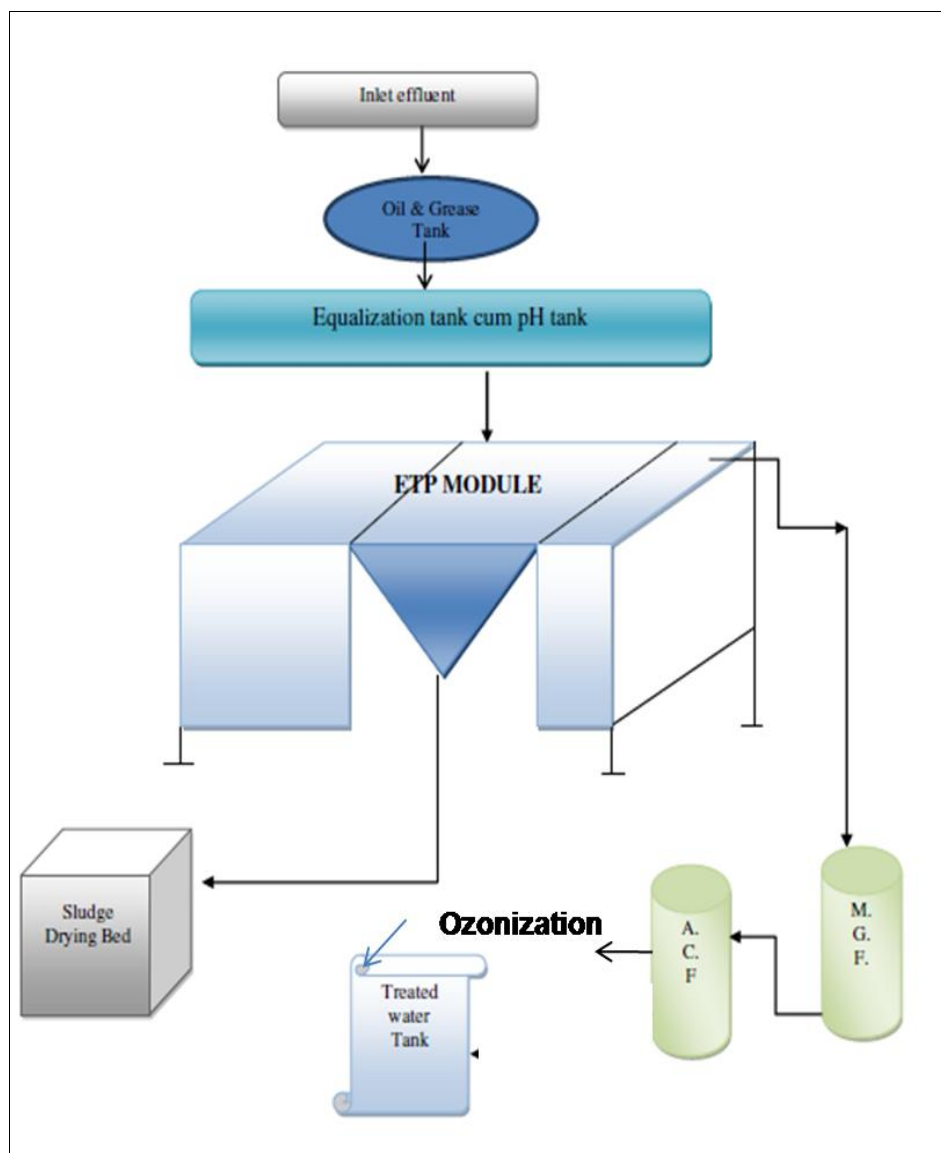


Figure 4.2: Schematic Flow Diagram of the ETP

➤ **Rain Water Collection and Storm Water Management**

The CBWTF makes proper utilization of rainwater by collecting the rain water by appropriate rain water-collecting mechanism. Roof water is collected by adopting proper treatment (O & G Trap), the collected water is used for various uses (dust suppression, floor washings, greenbelt, etc.).


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

Table No. 4.7: Calculation for Rain Water collection

S. No.	Type of Structure/ Surface	Area [A] (Sq. m.)	Run off Coefficient[C]	Intensity of rainfall [I] (m/hour)	Total Recharge [Q= CIA] (m ³ / annum)
1.	Roof top area	4856.40	0.85	0.696	2873.04
Grand Total					2873.04

Total Rain Water Flow : 2873.04 m³ /annum

Considering 35 days rainfall,

Average Runoff volume : 82 m³

Storage of 2 days is considered : 164 m³

Volume of u/g tank : 90 m³ (5 x 6 x 3)

Total no. of rain water harvesting tank required : Total run-off volume/volume of each tank
: 1.8 say 2 Nos.

The rain water collected will be stored in 2 underground water tanks of volume 64 m³ each after pre-treatment through filter plant. The same will be later reused for vehicle washing, gardening purposes.

4.3.7 Impact On Geology And Hydrogeology

Area	Aspects	Impacts	Mitigation measures
GEO	Topography The area is flat terrain, the major slope of the study area is E to W.	Minor and short term impact in the construction phase	Soil conservation plan given Minor change –no natural problem. Concrete floor will be proposed for chemical handling in project premise
	Geomorphology No river flow in the study area.	No Change in geomorphology	The clay bed proposed for more safety for chemical handling.
	Soil cover:- the area is covered with alluvium soil.	Fertile Soil will be moved in construction phase – fertile soil loss	Safety measures given

	Seismic zone =Zone =II	No impact.	
HG	<p>Aquifer – porous media –alluvium soil</p> <p>Ground water used</p> <p>Stage Of Water Development May be changed</p> <p>Chemical Hazard possible</p> <p>STP Discharge possible</p> <p>GW Problem</p> <p>Storm Water May be possible</p> <p>Chemicals</p> <p>Make diseases in human being and animals</p> <p>i. OE category area</p>	<ul style="list-style-type: none"> • GW Contamination easily possible • Direct Impacts • Direct impact • Minor impacts • Chemical Seepage may be possible, and GW contaminate by chemical , when the GW used for drinking by animal and human, they make diseases and use for farming the soil contaminate and farm product have chemicals ,which will used and diseases may be possible • Zero discharge- no impacts • GW contamination, hence diseases occurred, who used it. • OE area, its impacts directly presents 	<p>Rain water harvesting suggested inside.</p> <p>Piezometer well proposed for indentify the contamination products and GW quality study</p> <p>Proper channelized drainage system suggest to collect the rain/storm water collection</p> <p>Proper STP/ETP system advised</p> <p>Concrete floor will be proposed for chemical handling in project premise</p> <p>The clay bed proposed for more safety for chemical handling</p>

4.3.8 IMPACT ON NOISE LEVELS

The major source of noise generating source during the operation phase of the CBTWF are incinerator, diesel generator set, shredder, pumps and compressors. The average noise emitted from these equipment's are given below in the **Table-4.8**.


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

Table No. 4.8: Average Noise Emitted From equipment

S. No	Equipment	Noise (dBA)
1	Incinerator	80
2	Diesel generator	75
3	Compressor	70
4	Pumps	65
5	Shredder	75

Noise mitigation measures

Adequate measures for noise control, at the design stage shall be taken such as keeping high noise generating equipment's like pumps, motors, etc., on anti-vibration pads, closed rooms and regular maintenance as suggested by the manufacturer. Some of the mitigation measures proposed is as below

- Noise level specification of the various equipment's as per the Occupational Safety and Health Association (OSHA) standards.
- Providing suitable enclosures (adequate insulation) to minimize the impact of high noise generating sources.
- Employees will be provided with PPE like ear plugs, helmets, safety shoes, etc.

Development of greenbelt all along the boundary and along the roads within the Project

4.3.9 IMPACTS ON SOCIO-ECONOMICS

The CBWTF project has the employment of 16 persons including skilled & un-skilled workers. The project helps in generation of the indirect employment as well. This is a positive socio-economic development for the region. There is a marginal general up-liftment of standard of living in the region.

The socio economic impact during the operational phase is given below:

IMPACT ON COMMUNITY DEMOGRAPHICS

S. No	Identification of effects of existing:	Predict (adverse/ favorable) impacts and magnitude estimates	Mitigation measures. In numbers

1	The core zone is in the presently in Village Rampura unti .	No habitation in the core zone. Hence no habitation is lost. Locals will be given employment.	Rest rooms/recovery rooms will be provided to local workers to avoid tiresome commuting to their houses.
2	The nearest habitations in the study area are : Rampura Unti 1.14 km South East Shyosinghpura 2.00 km South West	The habitation comprises of industrial household workers. The predominant wind direction is largely from North to North West, and in this direction the habitations are beyond 3.0 km hence, the habitation will be negligibly affected of any possible sound /odour/ emissions as the unit operates in an eco-friendly silent/ CBWTF unit extractive processing of all major process.	As suggested ornamental plantation will be done in nearby villages. It help to reduce the minimal impact on the villages.
3.	Existing Long term and stable employment opportunities: 10 approx Staff including Skilled, semi skilled and unskilled workforce.	The expansion project is long term and large scale and stable employment generating project, aims to bring in additional opportunities for income & employment. There will be temporary employment at the construction phase also provided to local people.	Local people will be trained and given employment in the post construction phase: A minimum of approx. Rs. 0.50 Crore# of direct money incomes could be generated by the local people in the region through the Industrial operations.
4.	Health impacts – on mental, physical, and social well being.	Health camps will be organized from time to time so that the proposed project does not	Expectations in Fair pay, employee care, social responsibility


		adversely affect mental, physical and social well-being.	commitment etc. will be timely met. Health camps will be organized from time to time.
5.	Loss/gain of culture and religion: It is clearly stated in as per the Human Rights, that the obligation of States is to promote universal respect for, and observance of, culture & religion.	The proposed project will follow universal respect for, and observance and protection of, human rights and fundamental freedoms for all.	The expansion will promote neither selective, nor relative, but universal respect through contribution in various festivities, equal observance and protection among employees and societies at large in all social commitment activities.
6.	Proper treatment And disposal of all wastes generated from the plant would be adopted in the area.	According to the proposed project, the treatment of common bio-medical waste will be done with new technology.	This will not have a negative impact on the people and the environment.

4.3.10 IMPACT ON TRAFFIC

The impact of the traffic is assessed on the basis of adequacy of the existing road network. The project has an additional approximately 10 bio-medical waste collection vehicle only. Therefore, the impact on traffic is negligible on the existing road network.

4.3.11 Biological Environment

The baseline flora and fauna has been depicted in Chapter-3. There are no reserved forests, wildlife corridors and wildlife sanctuary in 10 km area around the plant boundary. No loss

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

of forest resource is envisaged due to the project. The impacts on flora are briefly described in the following sections:

Impacts and Mitigation Measures:


There is no development without impacts however efforts should be done to mitigate them through proper management strategy. Though the proposed project site is already located in the declared industrial area the some project activities impacted upon few environmental parameters which are linked with the biodiversity of the surrounding area. In this regard, special attention should be given towards the air pollution and gaseous pollution. Therefore, this situation needs mitigation, which must be more of Eco-management, where plants (greenbelt) play an important role. Presently, though the study on the existing status and predicted likely impacts on ambient air quality are well within the limit it is very crucial to maintain and manage the permissible level of air components within the project environ for a longer period. Keeping all these things in the made, the following impacts have been predicated and for these mitigation measures have been suggested through green belt development in the management plan. Mainly three impacts have been visualized due to the project on the surrounding biological attributes and which are described below,


Impact 1: Impact on the flora-fauna of the core zone (site preparation phase)

Evaluation:

- Existing vegetation will be cleared during the site preparation phase: floral species will be lost / affected during site preparation activities.
- Habitat loss due to loss of vegetation: Core zone is reported with the some common floral and faunal species which will be affected during site preparation activities.

Mitigation: All the species reported from the core zone are common and generally found in wide variety of habitats of the urban ecosystem of the study area. Buffer zone of the study area possess similar habitats like core zone, so some birds and small mammals species will shift temporarily. However, proposed green belt will help to recall the

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.23
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

existing biodiversity (particularly birds and small mammals) and also improve the habitat status for additional species of the study area. So looking towards the area of the site there will be no significant adverse impact on the existing biodiversity.

Impact 2: Impact on the flora-fauna of the buffer zone (operation phase)

Evaluation:

- Dust particles dispersal towards the surrounding vegetation and agriculture land due to project activities (*major impact*)
- Impact of noise on the faunal species (particularly on avifauna and small mammals) due to vehicle movement (*minor impact*)
- Impact of gaseous pollution on surrounding vegetation and agriculture due to different project activities and vehicles (minor impact)


Mitigation: Development of multi layer plantation (green belt) around the proposed project will help to mitigate dust, noise and gaseous pollution of the project area. Species suggested in the greenbelt development are mainly dust capturing, some are helpful in gas absorption and noise supersession also. Details about green belt development have been described under the section “*green belt development*” of this report.


Impact 3: Impact on the threatened species

Evaluation:

- Three Schedule-I faunal species have been reported from the study area. Peacock was directly sighted from the villages in the buffer zone.

Mitigation: Peacock was sighted from villages (details of the location are given in the conservation plan). Apart from forest area, Peacock is also associated with the village adjacent habitats, so village level plantation has been suggested under “Peacock Conservation Plan” which will help to improve habitat and population status of this species.

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.24
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 4

LIST OF SUGGESTED PLANTATION:

For greenbelt coverage, local native species of plantations will be developed. List of trees proposed to be included for the development of greenbelt & avenue plantation are given in **Table 4.9**


Table 4.9: List of plant species recommended for greenbelt development


Plant species for Core zone (Within the project site premises)

S. No	Scientific Name	Local Name	Number of Plant
1.	<i>Polyalthia longifolia</i>	Ashok	150
2.	<i>Cassia fistula</i>	Amaltas	150
3.	<i>Delonix regia</i>	Gulmohar	150
4.	<i>Azadirachta indica</i>	Neem	60
5.	<i>Dalbergia Sissoo</i>	Shisham	150
Total			660

Conclusion

All the floral and faunal species reported from the core zone are common and widely distributed in the buffer zone also. So, it can be stated that the proposed project and associated activities are unlikely to influence any floral and faunal components significantly provided that the suggestions / recommendations in this report are implemented. Strict implementations of EMP / mitigation measures are required to ensure that the biodiversity of the study area should not impacted negatively.

	Gaurang Environmental Solutions Pvt. Ltd	Page 4.25
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur City	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 5

Chapter 5

Analysis of Alternative Technology and Site

5.1. Introduction

The identification of alternatives forming part of the EIA process, inter alia pursues the legal principle of best practicable environmental options and by implication to minimize the effect of the generation of waste on the environment. The alternatives that form part of this EIA process include the consideration of technology alternatives, site selection criteria and a “No-go” alternative.

5.2. Analysis of Alternative Technology and Site


Analysis of Site


For establishing a Common Bio Medical Waste Management & Treatment Facility:

- 1) The Land should not be within notified industrial area
- 2) The Land should not be less than 1 acre
- 3) All the infrastructure should have proper spacing
- 4) No environmentally sensitive area in 500m radius of project site.

Location criteria for CBWTF projects located outside Notified Industrial Estate as per the provisions of Bio-Medical Waste Management Rules, 2016 and subsequent amendments 2018,2019 & Revised guidelines for establishment of CBWTF by CPCB are provided below in Table 5.1.

Table-5.1 Site Analysis

	Gaurang Environmental Solutions Pvt. Ltd.	Page 5.1
	Report Ref: GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur City	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 5

Parameter	Criteria	Observation
Minimum plot area	1 acre	4 acre plot area (>1 acre)
Sensitivity	No sensitive places within 500 m	None within 500 m radius
Habitation – Notified habituated area	Should not be within 500 m	None

The CBWTF facility is coming up at Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur, Rajasthan. No alternative site was examined for the project, since the project site meets the location criteria of CPCB. *The land for the development of common biomedical waste treatment facility is allotted by the municipal council*

5.3. Technology Alternatives


It should be noted that technologies develop continuously, particularly as it relates to waste management. The CBWTF is based on bio medical waste streams, volumes and need for recovery, recycling, treatment and/or incineration etc. The project in itself would be an alternative to landfill through the establishment of sustainable facility which would manage each incoming waste stream optimally in terms of the waste hierarchy.


The CBWTF project will use oil fired Incinerator, Shredder & Autoclave for treatment of biomedical waste.

5.3.1. Incineration/Plasma Pyrolysis

Incineration is a controlled combustion process where waste is completely oxidized and harmful microorganisms present in it are destroyed/ denatured under high temperature. The guidelines for "Design & Construction Requirements of Bio-medical Waste Incinerators" by CPCB from time to time shall be followed for selecting/or augmenting the incinerators.

Plasma Pyrolysis is an alternate to incinerator, Plasma Pyrolysis treatment technology can be installed for disposal of bio-medical waste categories as per BMW Rules wherein destruction of bio-medical waste is similar to incineration can be achieved. In case of plasma pyrolysis, waste is treated at high temperature under controlled condition to form gases like methane, hydrogen and carbon monoxide which are subjected to combustion (oxidation) in secondary chamber. In the plasma pyrolysis process waste is converted into small clinker which can be

	Gaurang Environmental Solutions Pvt. Ltd.	Page 5.2
	Report Ref: GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur City	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 5


disposed in secured landfills. M/s Instromedix Waste Management Pvt. Ltd has adopted Incineration technology for the project.


Table 5.2: Different Technologies used in the treatment of Biomedical waste are as under:-

S. No	Performance Parameter	Incineration	Pyrolysis
1.	Availability (%)	92	85
2.	Service Life (yrs)	30+	20
3.	Max Fuel Moisture (%)	40-50	10
4.	Potential	<ul style="list-style-type: none"> • Energy recovery from organic wastes • Small footprint • Only long-term solution for large cities/municipalities 	<ul style="list-style-type: none"> • Treats & destroys semi-volatile organic compounds (SVOCs), fuels, and pesticides in soil. • Able to recover much more value from waste compared to mass burn incineration.
5.	Limitations	<ul style="list-style-type: none"> • High investment and operating cost • Strong opposition from the public/stakeholders • Skilled operators are required 	<ul style="list-style-type: none"> • Risk of creating products of incomplete combustion, including dioxins and furans. • Use pre-sorted or processed waste as feedstock.
6.	Types	<ul style="list-style-type: none"> • Moving Grate • Fluidized Bed • Rotary Kiln 	<ul style="list-style-type: none"> • Fixed bed reactors and batch reactors • Fluidized bed reactors • Spouted bed reactor • Rotary kiln reactor • Microwave assisted reactors • Plasma reactors • Solar Rectors

Table 5.3: Comparison between the different technologies of Incinerator:


S.	Performance	Moving Grate	Fluidized Bed	Rotary Kiln
----	-------------	--------------	---------------	-------------


	Gaurang Environmental Solutions Pvt. Ltd.	Page 5.3
	Report Ref: GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur City	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 5

No	Parameter			
1.	Pros	<ul style="list-style-type: none"> • Adequate tender competition • Larger unit capacity • less land requirement • Relatively robust for mixed MSW treatment • No requirement of pre- treatment 	<ul style="list-style-type: none"> • More intense heat and mass transfer • Minimal mechanical moveable parts • Less wearing and lower relevant O&M costs 	<ul style="list-style-type: none"> • Long retention time • Favorable to treat hazardous waste • Flexible in feedstock e.g., solid and liquid wastes
2.	Cons	<ul style="list-style-type: none"> • Excess air requirement • Higher flue gas volume • High ash production 	<ul style="list-style-type: none"> • Limited track record for mixed MSW application • Smaller unit capacity • larger land requirement • Requirement of pre-treatment • Less robust for mixed MSW treatment 	<ul style="list-style-type: none"> • Limited track record for mixed MSW application/ a supplier key retreated from market • High O&M costs due to technical problems encountered for mixed MSW treatment such as erosion of the refractory materials, plastics deposition and clinkering • Smaller unit capacity • Larger land requirement • Less robust for mixed MSW treatment

5.3.2. Autoclaving/Hydroclaving


	Gaurang Environmental Solutions Pvt. Ltd.	Page 5.4
	Report Ref: GESPL_430/2021/EIA/225	Rev No. 00


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur City	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 5

Autoclaving is a low-heat thermal process where steam is brought into direct contact with waste in a controlled manner and for sufficient duration to disinfect the wastes as stipulated under the Bio-medical Waste Management Rules. For ease and safety in operation, the system should be horizontal type and exclusively designed for treatment of bio-medical waste. For optimum results, pre-vacuum based system is preferred against the gravity type system. It shall have tamper-proof control panel with efficient display and recording devices for recording critical parameters such as time, temperature, pressure, date and batch number etc. as required under the Bio Medical Waste Management Rules, 2016.

Hydroclaving is similar to that of autoclaving except that the waste is subjected to indirect heating by applying steam in the outer jacket. The waste is continuously tumbled in the chamber during the process.

Instromedix Waste Management Pvt. Ltd will be using Autoclaves to disinfect the wastes as stipulated under the Bio-medical Waste Management Rules, 2016 & subsequent amendment 2018 & 2019.

	Gaurang Environmental Solutions Pvt. Ltd.	Page 5.5
	Report Ref: GESPL_430/2021/EIA/225	Rev No. 00

	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 6

Chapter: 6

Environmental Monitoring Program

6.0 Environment Monitoring Program

This chapter presents the details of environmental monitoring, schedule, institutional arrangements for pollution control, cost for environmental protection measures and details of greenbelt development for the proposed project.


6.1 Environment Monitoring


Regular monitoring of the various environmental parameters is necessary to evaluate the effectiveness of the management programme so that the necessary corrective measures can be taken in case there are some drawbacks in the proposed programme. Since environmental quality parameters at work zone and surrounding area are important for maintaining sound operating practices of the project in conformity with environmental regulations, the post project monitoring work forms part of Environmental Monitoring Program. Environmental Monitoring Program will be implemented once the project activity commences.

Environmental Monitoring Program includes:

- 1) Environmental surveillance
- 2) Analysis and interpretation of data
- 3) Preparation of reports to support environmental management system and
- 4) Organizational set up responsible for the implementation of the programme.

Environmental Monitoring will be taken up for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by SEIAA and Consent issued by the State Pollution Control Board. Compliance of same will be submitted to respective authorities on regular basis.

	Gaurang Environmental Solutions Pvt. Ltd.	Page 6.1
	Report Ref: GESPL_430/2021/EIA /225	Rev No. 00

	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 6

The main objectives of environmental monitoring are:

- To assess the change in the environmental conditions;
- To monitor the effective implementation of mitigation measures;
- To facilitate compliance with applicable acts, regulations and guidelines;
- To recognize that social responsibility and environmental management are among the highest corporate priorities;
- To assign clear accountability and responsibility for environmental protection and social responsibility to management and employees;
- To facilitate environmental and social planning throughout the project life cycle;
- To provide a process for achieving targeted performance levels;
- To provide appropriate and sufficient resources, including training, to achieve targeted performance levels on an on-going basis; and
- Evaluate environmental performance and social responsibility against environmental and other policies, objectives and targets and seek improvement where appropriate.


The attributes, which merit regular monitoring, are specified underneath:

- Air quality;
- Water and wastewater quality;
- Noise levels;
- Soil quality; and
- Ecological preservation and afforestation.

The post project monitoring to be carried out at the industry level is discussed below:

6.1.1 Monitoring and Reporting Procedure

Regular monitoring of important and crucial environmental parameters is of immense importance to assess the status of environment during plants operation. With the knowledge of baseline conditions, the monitoring programme can serve as an indicator for any deterioration in environmental conditions due to operation of the plants and suitable mitigatory steps could be taken in time to safeguard the environment. Monitoring is as important as that of control of pollution since the efficiency of control

	Gaurang Environmental Solutions Pvt. Ltd.	Page 6.2
	Report Ref: GESPL_430/2021/EIA /225	Rev No. 00

measures can only be determined by monitoring. The following routine monitoring programme would therefore be implemented.

The environmental attributes shall be monitored as given below:

Operation Phase

During operational stage period air emissions from incinerator, DG set and other process if any, wastewater characteristics, ash generation quantity, etc. are monitored. The following attributes which merit regular monitoring based on the environmental setting and nature of project activities are listed below:

- Point Source emissions and ambient air quality in nearby villages;
- Groundwater Levels and ground water quality;
- Water & wastewater quality & quantity;
- Solid waste characterization
- Soil quality;
- Noise levels (equipment and machinery noise levels, occupational exposures
- ambient noise levels); and
- Ecological preservation and afforestation

The generic environmental measures that need to be undertaken during project operation stage are given in the following Table 6.1

Table 6.1: Environmental Monitoring

S. No.	Potential Impact	Action to be Followed	Parameters for Monitoring	Frequency of Monitoring
1.	Air Emissions	Stack emissions from Incinerator	Particulate matter, Nitrogen Oxides (NO and NO ₂), CO, SO ₂	As Per Requirement Of SPCB/once in three months
			Dioxin & furans	Once in a year
		Stack emissions from incinerator & DG sets.	PM, SO ₂ , NO _x , CO, HC	Twice in a year or as per requirement of
		AAQ within the project	NAAQ Standards,	SPCB



S. No.	Potential Impact	Action to be Followed	Parameters for Monitoring	Frequency of Monitoring
		premises and adjacent areas (3 places at 120°) to be monitored. All vehicles to be PUC certificate.	Vehicle logs to be maintained.	
2.	Noise	Noise generated from plant & machinery	Spot Noise Level recording;	Periodic during operation phase Once in month by third party
3.	Wastewater Discharge (leachate)	Compliance to wastewater discharge standards	pH, SS ,Oil & Grease , BOD, COD, Oil& grease, Bio-assay test (Heavy metals if required)	Daily at regular Intervals Once in a month by third party
4.	Solid waste/ Hazardous waste	Check compliance to HOWR 2016 rules	Quality & quantity monitoring	Periodically /CPCB norms.
5.	Ground water quality	Monitoring ground water quality, around plant site and piezometers	Comprehensive monitoring as per IS 10500 Groundwater level BGL	Periodically & as per CPCB norms.
6.	Flora & Fauna	Vegetation, greenbelt / green cover envelopment	No. of plants, species	Once a year
7.	Soil Quality	Checking & Maintenance of good soil quality around	Physico-chemical parameters and metals.	Once a year
8.	Health	Employees and migrant labour health check ups	Periodical health checkups & vaccination programmes as per rules & guidelines	As per rules & guidelines

Online Pollutant Monitoring:

On-line monitoring system/flue gas analyzer will be attached with the incinerator for flue gas analysis.

The following parameters will be continuously monitored (online monitoring)

- Temperature (primary & secondary temperature)
- CO
- CO₂
- O₂

The following parameters will be monitored once in three months:

PM, HCl, NO₂, Hg & compounds and combustion efficiency.

Dioxin & Furan monitoring will be done once a year or as per requirement of SPCB.

6.2 Implementation Schedule of Mitigation Measures

The mitigation measures as delineated will be implemented so as to reduce the impact on environment due to the operations of the plant.

Table- 6.2: Implementation Schedule

S. No	Recommendations	Time Requirement (Months)	Immediate	Progressive	Depending on the discretion of the management of the plant
1	Air pollution control Measures	Before beginning of operations of facility	*	--	--
2	Water Pollution Control Measures	Before beginning of operations of facility	*	--	--
3	Noise Control Measures	Before beginning of operations of facility	*	--	--
4	Ecological Preservation and Upgradation	Stage-wise implementation	*	*	--

Note (*) indicates implementation of recommendations

6.3 Monitoring Schedule – Operation Phase

Regular Monitoring of all the environmental parameters viz, air, water, noise and soil as per the formulated program based on CPCB and MoEF&CC guidelines will be carried out every year in order to detect any changes from the baseline status.

S. No.	Description	Schedule Of Monitoring
1.	Air Quality	Quarterly except Monsoon season
2.	Water Quality (Surface and Ground Water)	Once in a season for all four seasons in a year.
3.	Noise Level	Six monthly
4.	Soil Quality	Yearly
5.	Socio-economic Condition	Once in 3 Years
6.	Plantation Monitoring	Once in a season,

6.3.1 Pollution Monitoring Facilities

Incinerator stack, DG set stack should have provision of platform and port hold to stack sampling meeting MOEF&CC standards with necessary power supply point. Environmental laboratory shall have equipment/instruments to analyze air and wastewater parameters.

6.3.2 Pollution Monitoring Facilities

It is proposed that voluntary reporting of environmental performance with reference to the EMP should be undertaken. The environmental monitoring cell shall co-ordinate all monitoring program at site and data thus generated shall be regularly furnished to the State regulatory agencies. The frequency of reporting shall be on six monthly bases to the state PCB officials and to Regional office of MoEF&CC. The Environmental Audit reports shall be prepared for the entire year of operations and shall be regularly submitted to regulatory authorities.

Chapter-7

Additional Studies

7.1. INTRODUCTION

Industrial activities including process, production, storage, handling, transportation and operational practices presents levels of hazards to workforce, population and environment at large due to accidents, spills, leaks etc. These accidents results in personal and financial loss. The assessment of the threat posed, its control and prevention through good design, management and operational controls is of primal importance. Events like the Bhopal tragedy have emphasized the need to address both on-site and off-site safety. It is against this background that the various Section and Rules under the Environment Protection Act, 1986, the Factories Act, 1948 and other Acts specify the requirements for a safe and reliable working of an industry. These require carrying out various studies and analysis to assess and mitigate hazards prevalent in the factory in line with the above goal of safe and reliable working. These are more commonly known as “Risk Assessment Studies” Risk assessment refers to the technical, scientific assessment of the nature and magnitude of risk and uses a factual base to define the health effects of exposure of individuals or populations or ecological receptors to hazardous contaminants and situations. This chapter explains the basis of Risk Assessment and its objectives.

7.2. Public Consultation

The EIA report is at draft stage for the submission of Public hearing/Consultation.

7.3. Risk Assessment and Hazards

A risk is an integrated assessment of likelihood and severity of an undesired event. Risk assessment is the determination of quantitative or qualitative estimate of risk related to a well-defined situation and a recognized hazard. Risk Assessment aims at assessing the effects of hazards on the local environment and personnel at the hazard.

➤ **Risk and Hazard Analysis**

Risk analysis provides severity of harm from particular type of hazard and follows an extensive hazard analysis. It involves the identification and assessment of risks the neighboring population or environment is exposed to as a result of hazards present.

Hazard analysis involves the identification and quantification of the various hazards (unsafe conditions) that exist in the CBWT facility. On the other hand, risk analysis deals with the identification and quantification of risks, the plant equipment and personnel are exposed to, due to accidents resulting from the hazards present in the complex.

➤ **Scope of Present Study**

The principal objective of the present risk assessment study is to identify and quantify the major hazards and the risks associated with the various operations of the CBWTF project which may lead to emergency consequences affecting the employees of the facility, public safety and health. Based on this information, an emergency preparedness is developed to mitigate the consequences:

- a) Identification of the biological, chemical, electrical, thermal and mechanical hazards associated with the facility and the auxiliary operations;
- b) Short-listing of the major accident scenarios with potential off-site consequences for consequence analysis; and
- c) Development of an emergency preparedness plan for the mitigation of consequences.

➤ **Hazard Identification**

Identification of hazards is of primary significance in the analysis, in presence of any analysis involves the identification and quantification of the various hazards (unsafe conditions) that exist in the CBWTF project.

The bio medical management activity includes the storage, processing, recycling, treatment of bio medical waste through incineration, autoclaving, shredding and sharp pit.

Typical methods for hazard identification employed are:

- a) Identification of hazardous substances based on Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 of Government of India as amended there after
- b) Identification of hazardous segments of the process and storage units and
- c) Bio-Medical Waste Management Rules, 2016.

Hazardous substances at a common bio medical waste treatment facility may be classified as:

- a) Infectious biological hazards
- b) Flammable substances
- c) Unstable substances and
- d) Toxic substances

➤ **Hazard Assessment and Evaluation**

Infectious Biological Hazards

The waste handlers at CBWTF are at immediate risk of needle-stick injuries and exposure to toxic or infectious materials. As per World Health Organization, a person who experiences one needle stick injury from a needle used on an infected source patient has risks of 30%, 1.8%, and 0.3% respectively of becoming infected with HBV, HCV and HIV.

The hazardous nature of bio medical waste may be due to one or more of the following characteristics:

- a) contains infectious agents
- b) Genotoxic
- c) Contains toxic or hazardous chemicals or pharmaceuticals
- d) Radioactive and
- e) Contains sharps.

All individuals exposed to bio medical waste are potentially at risk, including those within health care facility that generate hazardous waste, and those outside these sources who either handle such waste or are exposed to it as a consequence of careless management.

➤ **Hazards from infectious waste and sharps**

Infectious waste may contain any of a great variety of pathogenic microorganisms. Pathogens in infectious waste may enter the human body by a number of routes:

- a) through a puncture, abrasion, or cut in the skin
- b) through the mucous membranes
- c) inhalation and
- d) ingestion

Concentrated cultures of pathogens and contaminated sharps (particularly hypodermic needles) are probably the waste items that represent the most acute potential hazards to health. Sharps may not only cause cuts and punctures but also infect these wounds if they are contaminated with pathogens. Because of this double risk of injury and disease transmission sharps are considered as a very hazardous waste class.

The principal concerns are infections that may be transmitted by subcutaneous introduction of the causative agent, e.g. viral blood infections. Hypodermic needles constitute an important part of the sharps waste category and are particularly hazardous because they are often contaminated with patient's blood.

➤ **Hazards from pharmaceutical waste**

Many of the chemicals and pharmaceuticals used in the health-care establishments are hazardous (e.g. toxic, genotoxic, and corrosive, flammable, reactive, explosive, and shock-sensitive). These substances are commonly present in small quantities in the health-care waste; larger quantities may be found when unwanted or outdated chemicals and pharmaceuticals are disposed of. They may cause intoxication, either by acute or by chronic exposure, and injuries, including burns.

Intoxication can result from absorption of a chemical or pharmaceutical through the skin or the mucous membranes, or from inhalation or ingestion. Injuries to the skin, the eyes, or the mucous membranes of the airways can be caused by contact with flammable, corrosive, or reactive chemicals (e.g. formaldehyde and other volatile substances).

Physical Hazards

- a) Noise
- b) Extreme temperature
- c) Vibration

Mechanical Hazards

- a) Trucks and transport vehicles
- b) Scaffolding and portable ladders
- c) Impact by tools, sharp edged tools
- d) Failure of machinery and equipment

- e) Poor maintenance of machinery and equipment
- f) Structural failure

The possible hazard sources, reason and place effect in the project are provide below in Table below

Table 7.1: Hazard Source, Impact and Control Measures

S. No.	Possible Hazard	Source / Reason	Impact	Control measure
1	Geo-hazard	Natural disaster	Earthquake (zone II)	Emergency response, education and training and earthquake protection structure as per IS 1893:2002
2	Biological	Bio medical waste bags received from the generators	Infection	Use appropriate personal protective equipment like gloves, mask
3	Physical and flammable	Incinerator	Fire, explosion, burn, extreme temperature	<ul style="list-style-type: none"> • Fully Automatic PLC & SCADA Control • Emergency Local Stop • Fire Extinguisher (CO₂) • PPE • Emergency provision • for Fire Brigade from • outside source
4	Physical and flammable	Autoclave	Fire and extreme temperature	PPE
5	Physical (Noise)	Shredder	Loss of hearing	PPE
6	Mechanical	Building / structural collapse	Injury, death	Regular inspection to check corrosion in the steel structure. Regular maintenance of building and structure

7	Flammable (Diesel)	Diesel storage area	Fire	Emergency provision of Fire Extinguisher(CO ₂)
---	-----------------------	---------------------	------	---

Based on the preliminary hazard analysis, the following conclusions are made:

The biological hazards can be prevented if proper personal protective equipment were used and necessary precautions were taking during the collection, transport and handling of the bio medical waste.

The electrical and mechanical hazards present in the various sections of the plant do not lead to any emergency consequences. They will be mostly localized;

The internal explosion hazard for the incinerator is unlikely to lead to any major consequences owing to the built-in fail-safe protective system;

The fire hazard is minimal as the storage quantity of diesel is restricted to only 100 litres at the site.

From the above table it can be inferred that HSD tanks does not (with capacity less than 1 T) attract rules 2(e)(iii), 5 and 6(1)(a) and 7-15, as the stored quantities are less than that of the stipulated threshold quantities.

7.3.1. Maximum Credible Accident Analysis

Hazardous substances may be released as a result of failures or catastrophes, causing possible damage to the surrounding area. This chapter deals with the question of how the consequences of the release of such substances and the damage to the surrounding area can be determined by means of models.

A disastrous situation is generally due to outcome of fire, explosion or toxic hazards in addition to other natural causes, which eventually lead to loss of life, property and ecological imbalance.

Major hazards posed by hazardous chemical storages can be identified taking recourse to MCA Analysis. MCA analysis encompasses certain techniques to identify the hazards and calculate the consequent effects in terms of damage distances of heat radiation, toxic releases, vapor cloud explosion, etc. A host of probable or potential accidents of the major units in the complex arising due to use, storage and handling of the hazardous materials are examined to establish their credibility. Depending upon the effective hazardous attributes and their impact on the event, the maximum effect on the surrounding environment and the

respective damage caused can be assessed. Various models for calculating the physical effects of the incidental release of hazardous substances are detailed subsequently. First, attention is paid to the factors, which are decisive for the selection of the models to be used in a particular situation, after which the various effect models are discussed.

7.4. Disaster Management Plan

Disasters

A disaster is a catastrophic situation in which suddenly, people are plunged into helplessness and suffering and as a result need protection, clothing, shelter, medical and social care and other necessities of life.

Disasters can be divided into two main groups. In the first, the disasters are resulting from natural phenomena like earthquakes, volcanic eruptions, storm surges, cyclones, tropical storms, floods, avalanches, landslides, and forest fires. The second group includes disastrous events occasioned by man, or by man's impact upon the environment.

There can be no set criteria for assessing the gravity of a disaster in the abstract since this depends to a large extent on the physical, economic and social environment in which it occurs. What would be considered a major disaster in a developing country, ill equipped to cope with the problems involved, may not mean more than a temporary emergency elsewhere. However, all disasters bring in their wake similar consequences that call for immediate action, whether at the local, national or international level, for the rescue and relief of the victims. This includes the search for the dead and injured, medical and social care, removal of the debris, the provision of temporary shelter for the homeless food, clothing and medical supplies, and the rapid re-establishment of essential services.

7.4.1. Objectives of Disaster Management Plan [DMP]

The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities. For effective implementation of the Disaster Management Plan, it should be widely circulated and personnel training through rehearsals/drills.

The Disaster Management Plan shall reflect the probable consequential severalties of the undesired event due to deteriorating conditions or through 'Knock on' effects. Further the management shall be able to demonstrate that their assessment of the consequences uses good supporting evidence and is based on currently available and reliable information, incident data from internal and external sources and if necessary the reports of out side agencies.

To tackle the consequences of a major emergency inside the factory or immediate vicinity of the factory, a Disaster Management Plan has to be formulated and this planned emergency document is called "Disaster Management Plan".

The objective of the Industrial Disaster Management Plan is to make use of the combined resources of the plant and the outside services to achieve the following:

1. Minimize damage to property and the environment;
2. Initially contain and ultimately bring the incident under control;
3. Identify any dead;
4. Provide for the needs of relatives;
5. Provide authoritative information to the news media;
6. Secure the safe rehabilitation of affected area; and
7. Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the Emergency.
8. Effect the rescue and medical treatment of casualties;
9. Safeguard other people;

In effect, it is to optimize operational efficiency for rescue, rehabilitation and render medical help and to restore normalcy.

7.5. EMERGENCIES

General and Industrial Emergencies

The emergencies that could be envisaged in the plant and tank farm are as follows:

1. A situation of fire;
2. Explosion;
3. Structural failures;

4. Contamination of food/water; and
5. Sabotage/Social disorder.

7.5.1. Emergency Organization

As per the General Organization chart, General Manager (Plant) is designated as the Site Controller. The Senior Managers are designated as Incident Controller. All the Incident Controllers would be reporting to the Site Controller.

All the staff at the CBWTF report to Incident Controller in an event of emergency. This team is responsible for controlling the incidence with the personnel under their control. Shift In charge is the reporting officer, who would bring the incidence to the notice of the Incidence Controller and Site Controller. The team co-ordinates during eventualities and responsible for fire fighting, rescue, rehabilitation, transport and provide essential and support services. For this purposes, Security In charge, Personnel Department, Essential services personnel are engaged. All these personnel are designated as Key personnel.

In the event of power or communication system failure, some of staff members in the office/plant offices are drafted and their services would be utilized as messengers for quick passing of communications.

7.5.2. Emergency Communication

Whoever notices an emergency situation such as fire, growth of fire, leakage etc. informs his immediate superior and appraises the Site Controller. Site Controller verifies the situation from the Incident Controller of that area or the Shift In charge and takes a decision about an impending On Site Emergency. Simultaneously, the emergency warning system is activated on the instructions of the Site Controller.

7.5.3. Emergency Responsibilities

The responsibilities of the key personnel are appended below:



7.5.4.Site Controller

On receiving information about emergency he rushes to Emergency Control Center / Administration Office (ECC) and takes charge of ECC and the situation and:

- Assesses the magnitude of the situation on the advice of incident Controller and decides;
- Whether the effected area needs to be evacuated;
- Whether personnel who are at assembly points need to be evacuated;
- Declares Emergency and orders for operation of emergency siren;
- Organizes announcement by public address system about location of emergency;
- Assesses which areas are likely to be affected, or need to be evacuated or are to be alerted;
- Maintains a continuous review of possible development and assesses the situation in consultation with Incident Controller and other Key Personnel as to whether shutting down the plant or any section of the plant required and if evacuation of persons is required;
- Directs personnel for rescue, rehabilitation, transport, fire, brigade, medical and other designated mutual support systems locally available, for meeting emergencies;
- Controls evacuation of affected areas, if the situation is likely to go out of control or effects are likely to go beyond the premises of the factory, informs to District Emergency Authority, Police, Hospital and seeks their intervention and help;
- Informs Inspector of Factories, Deputy Chief Inspector of Factories, PCB and other statutory authorities;
- Gives a public statement if necessary;
- Keeps record of chronological events and prepares an investigation report and preserves evidence; and
- On completion of On Site Emergency and restoration of normalcy, declares all clear and orders for all clear warning.

7.5.5. Incident Controller

- Assembles the incident control team;
- Directs operations within the affected areas with the priorities for safety to personnel, minimize damage to the plant, property and environment and minimize the loss of materials;
- Directs the shutting down and evacuation of plant and areas likely to be adversely affected by the emergency;
- Ensures that all key personnel help is sought;
- Provides advice and information to the Fire and Security Officer and the Local Fire Services as and when they arrive;
- Ensures that all non-essential workers/staff of the affected areas evacuated to the appropriate assembly points, and the areas are searched for casualties;
- Has regard to the need for preservation of evidence so as to facilitate any inquiry into the cause and circumstances which caused or escalated the emergency;
- Co-ordinates with emergency services at the site;
- Provides tools and safety equipments to the team members;
- Keeps in touch with the team and advise them regarding the method of control to be used; and
- Keeps the Site Controller of Emergency informed of the progress being made.

7.5.6. Emergency Coordinator-Medical, Mutual Aid, Rehabilitation, Transport and Communication

In the event of failure of electric supply and thereby internal telephone, sets up communication point and establishes contact with the ECC.

- Organizes medical treatment to the injured and if necessary shifts the injured to nearby hospitals.
- Mobilizes extra medical help from outside, if necessary.
- Maintains first aid and medical emergency requirements.
- Makes sure that all safety equipment is made available to the emergency team.
- Assists Site Controller with necessary data and to coordinate the emergency activities.

- Assists Site Controller in updating emergency plan, organizing mock drills verification of inventory of emergency facilities and furnishing report to Site Controller.
- Maintains liaison with Civil Administration.
- He is in liaison with Site Controller/Incident Controller.
- Ensure transportation facility.
- Ensures availability of necessary cash for rescue/rehabilitation and emergency expenditure.
- Controls rehabilitation of affected areas on discontinuation of emergency.
Makes available diesel/petrol for transport vehicles engaged in emergency operation.
-

7.5.7. Emergency Coordinator-Essential Services

- He assists the site controller and incident controller.
- Maintains essential services like diesel generator, water, fire extinguisher, power supply for lighting.
- He plans alternate facilities in the event of power failure, to maintain essential services such as lighting, refrigeration plant etc.
- He organizes separate electrical connections for all utilities and emergency services so that in the event of emergency or fires, essential services and utilities are not affected.
- Gives necessary instructions regarding emergency electrical supply, isolation of certain sections etc. to shift in-charge and electricians.
- Ensures availability of adequate quantities of protective equipment and other emergency materials, spares etc.

7.5.8. General Responsibilities of Employees during an Emergency

During an emergency, it becomes more enhanced and pronounced when an emergency warning is raised, the workers if they are in-charge of Incinerator shall adopt safe and emergency shut down and attend any prescribed duty as essential employee. If no such responsibility is assigned, he shall adopt a safe course to assembly point and await instructions. He shall not resort to spread panic. On the other hand, he must assist emergency personnel towards objectives of DMP.

7.5.9. Emergency Facilities

➤ Emergency Control Center (ECC) / Administration Office

Administration office is identified as Emergency Control Center. It has external Telephone, Fax and Telex facility. All the Site Controller/ Incident Controller Officers, Senior Personnel are located here. Also, it is an appropriate place. Various other materials that are to be maintained in the ECC are:

The following information and equipment are provided at the ECC:

- Telephone and telephone directories;
- First aid box;
- Safe contained breathing apparatus;
- Fire suit/gas tight goggles/gloves/helmets;
- Hand tools, wind direction/velocities indications;
- Emergency lamp/torch light/batteries;
- Hazard chart;
- Emergency shut-down procedures;
- Nominal roll of employees;
- List of key personnel, list of essential employees, list of Emergency Co-ordinators;
- Duties of key personnel;
- Address with telephone numbers and key personnel, emergency coordinator, essential employees; and
- Important address and telephone numbers including Government agencies, neighboring industries and sources of help, outside experts, chemical fact sheets population details around the factory.

➤ Assembly Point

In view of the size of plant, Administration office & main gate is ear marked as assembly points. Depending upon the location of hazard, the assembly points are to be used. The same assembling points can be considered during emergencies in future. Designated persons would take charge of these assembly points and mark presence of the people assembling at the point. Department & shift wise, list of employees, are available at these points and roll call is taken by the designated person.

➤ **Emergency Power Supply**

Plant facilities are connected to Diesel Generator and are placed in auto mode. Thus plants lighting, administrative building and other auxiliary services are connected to emergency power supply. In all the sections, flame proof type emergency lamps are provided.

➤ **Fire Fighting Facilities**

First aid and firefighting equipment suitable for emergency are maintained in each section in the plant.

➤ **Emergency Medical Facilities**

Gas masks and general first aid materials for dealing with chemical burns, fire burns etc. are maintained in the in the emergency control room. Private medical practitioners help would be sought. Government hospital is approached for emergency help.

Apart from plant first aid facilities, external facilities are augmented. Names of Medical Personnel, Medical facilities in the area are prepared and updated. Necessary specific medicines for emergency treatment of Burns patients and for those affected by toxicity are maintained.

Breathing apparatus and other emergency medical equipment are provided and maintained. The help of nearby industrial management's in this regard is taken on mutual support basis. First aid center with trained First Aid Assistants is available round the clock. Besides this, Government Hospital nearby is also consulted in case of emergency.

Chapter 8: Project benefits

8.1 INTRODUCTION

The Bio-Medical Waste Management Rules, 2016 under the aegis of Environment (Protection) Act, 1986. In the service of a huge population, these hospitals are generating “Bio-Medical Wastes” that are incompatible with the environment. These wastes need professional attention for effective management as the infectious nature of the waste can cause irreparable damage to the human health and the environment. It has become imperative to monitor and control the management and handling of these wastes.

The concern about disposal of infectious wastes generated by the hospitals is increasing rapidly due to the fear of the spread of viruses such as Acquired Immune Deficiency Syndrome (AIDS) and Hepatitis B. These wastes (bio-medical wastes generated from health care establishments) present a high risk of causing potential damage to the human health and the environment by way of spreading. To prevent the spread of such infectious wastes that finds its genesis in bio-medical wastes (from hospitals, clinics, laboratories, dispensaries etc.) a scientific approach is required. It is essential that professionally trained personnel should handle the wastes and that the wastes should be disposed scientifically.

At the same time they permit the Hospitals to dispose of their Bio-medical wastes in safe & secured manner. It has been made mandatory by the government to dispose of waste in systematic and scientific disposal way and pollution control boards have been asked to ensure it. For systematic & scientific disposal of Bio-medical wastes, a facility has to be developed where care is to be taken to avoid any negative effects on the environment. Similar is the case with Hazardous waste and E-waste.

The people residing in the nearby areas will be benefited directly and indirectly as well. It is anticipated that the proposed plant will provide benefits for the locals in two phases i.e. during construction phase as well as during operational phase of the plant. In appropriate treatment and disposal of bio-medical waste contributes to environmental pollution, uncontrolled incineration causes air pollution, dumping in nallas, tanks and along the riverbed causes water pollution and unscientific land filling cause soil pollution.

The proper bio-medical waste management will help to control no social diseases(hospital acquired infections), reduce HIV/AIDS, sepsis, and hepatitis transmission from dirty needles and other improperly cleaned / disposed medical items, control zones (diseases passed to humans through insects, birds, rats and other animals),prevent illegal repacking and resale of contaminated needles, cut cycles of infection and avoid negative long-term health effects like cancer, from the environmental release of toxic substances such dioxin, mercury and others.

8.2 OPERATIONAL PHASE:

8.2.1 Employment:


During the operational phase, about 25 people will be employed. Considering a family size of 5 persons, there is a likelihood of benefit to about 125 persons. Local people will be given employment based on their skills. The proposed project would add to the better scope for indirect employment.

8.2.2 Education:

The project will help in improving the educational infrastructure under EMP for the local people. This will help in improving the educational status of the area.

8.3 SOCIO AS EMP:

An amount of Rs.3.5 lacs (1% of the total project cost) will be spent under EMP as Socio for the betterment of society. Based on the above-mentioned amount certain activities under government welfare schemes will be undertaken under EMP in the nearby Government School. This cost will be applied in 3 subsequent years (as mentioned in the above table) in the above mentioned activities.


 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 9

Chapter-9

Environment Cost & Benefit Analysis

9.0 Introduction

The proposal involves Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraonti Village, Tehsil Sanganer, Jaipur, Rajasthan. Environmental Cost Benefit Analysis has not been recommended at the scoping stage, and has therefore not been carried out.

	Gaurang Environmental Solutions Pvt. Ltd.	Page 9.1
	Report Ref: GESPL_430/2021/EIA/225	Rev No. 00

Chapter 10: EMP

10.0 Introduction

The Environment Management Plan (EMP) is a site-specific plan developed to ensure that all necessary measures are identified and implemented in order to protect the environment and comply with environmental legislation.

Preparation of environmental management plan is required for formulation, implementation and monitoring of environmental protection measures during and after commissioning of projects. The plans should indicate the details as to how various measures have been or are proposed to be taken including cost components as may be required.

The proposed project is a Common Bio-medical Waste Treatment Facility (CBWTF) coming up Khasra No. 400, Rampuraoonti Village, Tehsil Sanganer, Jaipur, (Rajasthan) over an Plot area of 16188 sq. m (1.6188 Ha).

10.1 Components of EMP

Following elements are the major components of Environment Management Plan:

Commitment and policy: The project strives to provide and implement the environment management plan that incorporates all issues related to air, land and water.

Planning: This head Includes identification of environmental impacts, legal requirements and setting of environmental objectives.

Implementation: This comprises of resources available to the developers, accountability of contractors, training of operational staff associated with environmental control facilities and documentation of measures to be taken.

Measurement and evaluation: This includes monitoring, corrective actions and record keeping.



Following elements are included during installation and operating stages of the project:

- Air Pollution Control and management
- Water Pollution & control
- Storm Water Management
- Noise control and Management
- Hazardous and solid waste management
- Plantation, landscaping and land management
- Environmental Management Plan

10.2 Environment Management During Construction Phase

10.2.1. Air Environment

Air quality around the project will be marginally impacted during the installation phase. Various activities especially related to loose material likely to generate dust that will adversely impact the air quality of the surrounding area of the project site. Following measures shall be taken to minimize such impacts:

All the loose material either stacked or transported shall be provided with suitable covering such as tarpaulin.

Water sprinkling shall be done at the locations where dust generation is anticipated.

To minimize the occupational health hazard, proper mask shall be provided to the workers who will be engaged in dust generation activity.

10.2.2. Water Environment

During construction/installation phase of the proposed project the services required like water supply and sewage facilities will be arranged on a temporary basis and the same will be maintained without any adverse impact on the environment. The water required for curing and other purpose will be arranged on temporary basis through tankers.

During the installation period, run-off from site shall not be allowed to stand (water logging) or enter into the roadside or nearby drain. Adequate measures shall be taken to collect such run-off and either shall be reused or disposed off at the designated water

disposal location. Approx 0.8 KLD of waste water will be generated through laborers which will be discharged through septic tank via soak pit.

10.2.3.Noise Environment

During the installation stage, expected noise levels shall be in the range of 85-100 dB, which will decrease with increase in distance. Hence all the activities shall be carried out during the daytime. There will be some noise generation due to the traffic movement carrying construction material, which is only a temporary phenomenon and can be managed by properly managing the movement of vehicular traffic so that the ambient air quality with respect to the noise is not affected. To prevent the occurrence of any occupational hazard, earmuff/earplug shall be given to the workers working around and operating/plant machinery emitting high noise levels. Use of plant or machinery shall be strictly prohibited during night. Careful planning of machinery operation and scheduling of operations shall be done to minimize such impacts.

10.2.4.Solid Waste Management

During the construction/installation, whatever quantity of construction waste is generated shall be stacked and disposed off at the designated disposal site and care shall be taken to ensure that temporary stacking and transportation shall not cause any disturbance to the surrounding environment. Muck and slurry generated will be used as backfilling material to raise overall soil levels in nearby areas.

At site it will be handled manually and by tractor trolley. All proper safety measures shall be adopted by the workers handling the waste.

All attempts would be made to stick to the following measures.

- All construction waste shall be stored within the site itself. A proper screen will be provided so that the waste does not get scattered.
- Attempts will be made to keep the waste segregated into different heaps as far as Possible so that their further gradation and reuse is facilitated.
- Materials, which can be reused for purpose of construction, leveling, making roads/pavement will also be kept in separate heaps from those which are to be sold or land filled.

10.3 Environment Management During Operation Phase

10.3.1. Air Environment

The potential sources of air pollution are PM, SO₂, NO_x, CO, VOCs from incinerator, DG Set, Vehicular movement etc.

➤ Emission from Incinerator and its management

Air pollution control devices will be installed for final flue gas trapping. The unit will further bring down the pollution level in emission within specified limits as will be set out by the pollution control board. Low sulphur content fuel will be used in incineration to reduce SO₂ emission. To control emissions from incinerator of 300 kg/hr, adequate stack height of 30 m above ground level, quencher followed by Venturi scrubber with droplet separator followed by mist eliminator has been provided as APCS. The PM, SO₂, NO_x, HCl, Dioxins & Furane emission are reduced by scrubber. A lean concentration of NaOH solution and water is used to neutralize the flue gases/solutions. Stack monitoring is done on regular basis for NO_x, SO₂ and PM parameters.

The air pollution control system for incinerator is water based. The air pollution control device which is provided for control of the emissions generated from incineration complies with standards for Dioxins and Furans.

Quencher

Hot gases are cooled to near the saturation level in the quenching system. If not cooled, the hot gas stream evaporates a large portion of the scrubbing liquor, adversely affecting collection efficiency and damaging scrubber internal parts. If the gases entering the scrubber are too hot, some liquid droplets may evaporate before they have a chance to contact pollutants in the exhaust stream, and others may evaporate after contact, causing captures particles to become restrained. Cooling the gases reduce the temperature and therefore, the volume of gases; increase the overall efficiency of the Air Pollution Control devices in the incinerator.

➤ **Emission from DG set and its management**

For mitigation of impacts of air pollution, a stack of height 3.5 m above roof level shall be Provided for D.G. set & periodical stack monitoring will be done for environmental Pollutants. The minimum height of stack to be provided with D G set is calculating by using the following formula:-

$$\begin{aligned}
 H &= h + 0.2 \times \sqrt{\text{KVA}} \\
 &= 0 + 0.2 \times \sqrt{160} \\
 &= 2.52 \text{ m}
 \end{aligned}$$

Minimum stack height of 3.5 m will be provided.

H = total height of stack in meter

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

KVA = Total generator capacity of the set in KVA

➤ **Vehicular pollution control & its Management**

For transportation of biomedical waste, 10 vehicles are used. Air pollution is anticipated due to activities like handling of biomedical waste, transfer points of biomedical waste and movement of vehicles.

For effective prevention and control of fugitive emissions following measures are adopted:

- Enclosures to be provided for all the loading and unloading operations, if possible.
- Fully enclosed transfer points.
- Sprinkling of water to control airborne dust.
- Maintenance of air pollution control equipment is done regularly.
- PPEs for workers.
- Green belt development.

10.3.2. Water Environment

The total water requirement for the proposed project is 14 KLD. The daily fresh water requirement for the project is 8.34 KLD which will be met through Ground water and Recycled water demand is 5.66 KLD.



Source of waste water generation

Both domestic and industrial waste water will be generated from the project. Approx 0.8 KLD domestic waste water will be generated that will be routed to STP tank and Approx 5.2 KLD industrial waste water will be generated and the same will be treated in the ETP of capacity 10 KLD.

Management

- The sewage will be disposed to modular STP of capacity 1KLD.
- Waste water generated in plant premises will be treated in ETP (10 KLD) & reused within the process & other project activities.
- Online flow meters will be installed at inlet and outlet of the ETP.
- Monitoring of inlet and outlet quality of wastewater.
- Records of wastewater generation and reuse/disposal quantity will be maintained.
- Records for recycled treated wastewater will be maintained.
- ETP sludge will be disposed off by treating in in-house incinerator & ash to approved Landfill site.
- Proper housekeeping will be adopted to prevent spillages and contaminated surface runoff going to storm water drains.

10.3.3. Noise Environment

Sources of Noise Generation

The main sources of noise generation are movement of vehicles carrying waste, waste treatment operations & operation of DG set.

Management

All vehicles (drivers) entering into the project will be informed to maintain speed limits, and not blow horns unless it is required.

Necessary personal protective equipment like earmuffs/ear plugs will be provided to the workers working near noise generating equipment and it will be ensured that workers use the PPEs regularly. Regular maintenance of the equipment will be carried out as per the schedule given by suppliers.

The noise pollution management measures are given below

- Vehicles trips during daytime only.
- Records of vehicle movement, their trips scheduling and prescribed speed limits will be maintained.
- Periodic and preventive maintenance and cleaning of vehicles will be done regularly so as to reduce noise levels.
- For all the noise generating equipment in Incineration Plant including DG sets etc., acoustic enclosures will be provided wherever feasible.
- Regular use of PPEs (ear Plugs and Ear Muffs) to reduce impact on health are being/will be made compulsory while working near the noise generating equipments.
- Records of preventive maintenance activity for all the equipments in Incineration Plant, scheduled cleaning and maintenance of the plant etc. will be done.
- Periodic and preventive maintenance and cleaning of equipments will be regularly done so the noise levels are reduced.
- Plantation & greenbelt development to reduce noise levels.


10.3.4. Land Environment

- Treated waste water will be utilized for plantation after ensuring norms specified by pollution control board & storage areas will be properly lined & washing water collected properly to ensure mitigation of any adverse impact on soil and ground water.
- Hazardous waste will be stored temporarily & disposed off as per guidelines.
- Impervious flooring shall be provided wherever storage & handling of bio-medical & hazardous waste will be done in the CBWTF premises.

10.3.5. Odour Control

The mitigation measures being adopted & proposed to minimize and control odor are as follows:

- Closed cabin vehicles will be used for the collection and transportation of bio-medical wastes.
- The bio-medical waste will be treated within 48 hours.


	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 10

- Waste collecting vehicles, containers and store rooms will be washed on daily basis.
- Ensuring that the waste collected is disposed off as per the CPCB guidelines.
- Masking agents/Neutralizers/Inhibitors –Inhibit the growth of sulphate reducer – Counteract ants such as Ecosorb and Xorbent without affecting stabilization of CBWTF.
- Prevent unauthorized entry of person and stray animals.
- Masks will be provided to workers to avoid health issues due to odour.
- Adequate green belt will be developed. (spp. Like Devil's Tree (*Alstoniascholaris*), Chameli, Raatkiraani, Champa etc. has been proposed to control odour).
- Good housekeeping practices will be followed.
- Dilutions of odourant by odour counter action or neutralize by spraying Ecosorb (organic and biodegradable chemical) around odour generation areas at regular intervals.
- Preventing high odorous gas formation & mapping rapid gas generation from sources.

10.3.6. Solid & Hazardous Waste Management

Municipal solid waste generated at the site will be disposed off to municipal waste department. Domestic waste will be routed to Modular STP of capacity 1KLD.

Waste generated at site including hazardous waste will be stored & disposed off as per rules & guidelines. Incinerator ash will be temporarily stored in ash pit at site before being sent to authorize land fill site. Plastic waste after disinfection & shredding will be sent to authorized recyclers, Shredded sharp waste after encapsulation in metal container or cement concrete will be sent for final disposal to designated concrete waste sharp pit, glass waste will be sent to recyclers.

	Gaurang Environmental Solutions Pvt. Ltd.	Page 10.8
	Report Ref: GESPL_430/2021/EIA/225	Rev No. 00

10.3.7.Green Belt Development

Green belt with properly selected plant species can serve as a useful buffer to contain the menace of pollution from the different sources. As a control measure of atmospheric pollution, as a barriers noise generated in the plant premises and to utilize the wastewater generated as treated effluent, it is recommended to develop green belt around the periphery of the plant, along the road side and other area available for the plantation.

Guidelines for plantation

The plant species identified for greenbelt development are planted using pitting technique. The pit size will be either 45 cm x 45 cm x 45 cm or 60 cm x 60 cm x 60 cm. bigger pit size is considered at marginal and poor quality soil. Soil used for filling the pit is mixed with well decomposed farm yard manure or sewage sludge at the rate of 2.5 kg (on dry weight basis) and 3.6 kg (on dry weight basis) for 45cm x 45 cm x 45 cm and 60 cm x 60 cm x 60 cm size pits respectively. The filling of soil is completed at least 5-10 days before actual plantation. Healthy sapling of identified species is planted in each pit with the commencement of monsoon. Provision for regular and liberal watering during the summer period during the commissioning stage of the plant is arranged from the local available resources. The authorities responsible for plantation also make adequate measures for the protection of the saplings.

While making choices of plant species for cultivation in green belts, weightage has been given to the natural native species, bio climatic condition, plants which can be grown as per normal horticultural practices.

Plant species identified for greenbelt development, considering the bio-climatic and soil condition.

Recommended Plants for Green Belt Development

Greenbelt is an effective mode of control of air pollution, where green plants form a surface capable of absorbing air pollutants and forming a sink of pollutants. Leaves with their vast area in a tree crown, sorbs pollutants on their surface, thus effectively reduce pollutant concentration in the ambient air. Often the adsorbed pollutants are incorporated



in the metabolic pathway and the air is purified. Plants grown to function as pollution sink are collectively referred as greenbelts.

An important aspect of a greenbelt is that the plants are living organism with their varied tolerance limit towards the air pollutants. A green belt is effective as a pollutant sink only within the tolerance limit of constituent plants. Planting few, known pollutant sensitive species along with the tolerant species within a green belt however, do carry out an important function of indicator species.

Apart from function as pollution sink, greenbelt would provide other benefit like aesthetic improvement of the area and providing suitable habitats for birds and animals.

Selection of Plants for Green Belts

The main limitation for plants to function as scavenger of pollutants are, plant's interaction to air pollutants, sensitivity to pollutants, climatic conditions and soil characteristics. While making choice of plants species for cultivation in green belts, due consideration is given to the natural factor of bio- climate. Xerophytes plants are not necessarily good for greenbelts; they with their sunken stomata can withstand pollution by avoidance but are poor absorber of pollutants. Character of plants mainly considered for affecting absorption of pollutant gases and removal of dust particle are as follows:

For absorption of gases:

- Tolerance towards pollutants in question, at concentration, that are not too high to be instantaneously lethal
- Longer duration of foliage
- Freely exposed foliage
- Adequate height of crown
- Openness of foliage in canopy
- Big leaves(long and broad laminar surface)
- Large number of stomatal apertures

For removal of suspended particular matter

- Height and spread of crown.
- Leaves supported on firm petiole
- Abundance of surface on bark and foliage
- Roughness of bark
- Abundance of auxiliary hairs
- Hairs or scales on laminar surface
- Protected Stomata

Table No 10.1: Fragrant Plant Species Suggested for Odor Suppression

S. No	Scientific Name	Local Name	Number of Plant
1.	<i>Polyalthia longifolia</i>	Ashok	25
2.	<i>Pongamia Pinnata</i>	Karanj	25
3.	<i>Plumeria alba</i>	Champa	25
4.	<i>Dalbergia Sissoo</i>	Shisham	25
Total			100

10.3.1 Plantation Technique and Care

Plantation Technique

Following basic procedures need to be followed for greening the area.

- Plantation of tree species required approx. 1 m³ pit for soil enrichment
- Pit should be filled with imported soil with 3:1:1 the ratio of sand, silt and farm yard manure
- Procure well grown saplings of recommended species from the nearby Forest Department nursery
- Make 1m diameter ring bund around the planted saplings for water retention
- Watering of sapling is species specific, therefore watering need to be done once in 2 or 3 days for a period of two years
- Soil work and weeding need to be done once in a two months



10.3.8. Monitoring Protocol

- The plantations need to be managed by regular watering, soil enrichment work, applying manure, weeding and provide proper protection.
- Replacement of sapling (replanting) required whenever mortality occurs in the plantation during the growth stage.
- Plantation requires after care for a period of minimum five years till the saplings attain matured tree stage.
- Any damage to the developed greenbelt due to any natural or cattle activity should be redeveloped and maintained by the agency.

10.4. Environmental Management Cell

In order to maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will be complied as per conditions. For this individual authorities will take decision to formulate an Environment Policy of the industry and constitute an Environmental Management Cell and committed to operate the project with the objectives mentioned in approved Environment Policy. The System of reporting of NC/violation of any Environmental law/Policy will be as per quality management system. The internal audit will be conducted on periodic basis and any non-conformities/violation to environment law will be closed and discussed in Management Review Meeting of Board of Director/Partners.

10.4.1. Organizational Structure

The Plant Manager will look after all environmental issues and ensure compliance with Environmental Clearance conditions/SPCB norms. Manager will report to the Lessee directly and discuss the non-compliance if so any. An immediate solution will be arrived to ensure compliance with norms.

10.4.2. Responsibilities of Environmental Management Cell

The department shall be the nodal agency to co-ordinate and provide necessary services on environmental issues during construction and operation of the project. This environmental group is responsible for implementation of environmental management plan, interaction




with the environmental regulatory agencies, reviewing draft policy and planning. This department interacts with MoEF, Central Pollution Control Board (CPCB) and other environment regulatory agencies. The department shall also interact with local people to understand their problems and to formulate appropriate community development plan.

10.5. Environmental Budget

The in order to comply with the environmental protection measures as suggested in the above sections, the project management has made budgetary provision for environmental protection and safety measures. The total capital cost towards EMP is Rs. 131.5 Lac and the recurring cost will be Rs. 16.4 Lac. The annual expenditure to be incurred on plantation, maintenance, monitoring and analysis of ambient air, effluent water and soil etc as shown in **Table 10.2**.

Table 10.2: Annual Expenditure of Environmental Protection Measures

S. No.	Pollution control system	Cost(Rs. Lac)	Recurring Cost (Rs. Lac)
1.	Air pollution control measures Including online monitoring system	100	10
2.	Water pollution	10	3
3.	Environment monitoring	-	1
4.	Occupational Health (PPE)	2.5	1
5.	Green Belt	10	1
6.	Rain water collection tanks	6	0.40
7.	EMP (socio economic)	3	-
Total		131.5	16.4

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

CHAPTER-11

SUMMARY & CONCLUSION

11.1. INTRODUCTION

Instromedix Waste Management Pvt. Ltd proposes a Common Bio-Medical Waste Treatment Facility (CBWTF) established at Khasra No. 400, Village Rampuraooti, Tehsil Sanganer Jaipur, Rajasthan. The project covers an area of approximately 16188 sq. m (1.6188 Ha).


The project involves development of Common Bio Medical Waste Treatment Facility which is categorized under Item 7 (d) (a) of the Schedule-Gazette Notification dated 17.04.2015.


The project site has been owned Instromedix Waste Management Pvt. Ltd for establishing a Common Bio Medical Waste Treatment Facility (CBWTF) in Jaipur Rajasthan. This is a plain land area. The site is well connected by road network, power supply and other necessary facilities required for CBWTF.

11.2. PROJECT DESCRIPTION

11.2.1. Project Details

S. No.	Particulars	Details
1.	Project	Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural
2.	Site Address	Khasra No. 400, Rampuraooti Village, Tehsil Sanganer Jaipur
3.	Promoter	Instromedix Waste Management Pvt. Ltd
4.	Plot area (sq. m.)	16188 sq. m (1.6188 Ha)
5.	Greenbelt & Plantation Area	5827.68 sq. m (36 %)
6.	Geographical Coordinates	1.26°46' 38.79"N 75°30'49.69"E 2.26°46'46.28"N 75°30'50.57"E 3.26°46'46.03"N 75°30'53.00"E

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.1
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11


S. No.	Particulars	Details																					
		4.26°46'38.26"N 75°30'52.10"E																					
7.	Project capacity	As under:- <table border="1"> <thead> <tr> <th>Particular</th><th>Capacity</th><th>Nos.</th></tr> </thead> <tbody> <tr> <td>Incinerator</td><td>300 kg/hr</td><td>1</td></tr> <tr> <td>Autoclave</td><td>100 Kg/Hour</td><td>1</td></tr> <tr> <td>Shredder</td><td>100Kg/Hour</td><td>1</td></tr> <tr> <td>Ash Pit</td><td>-</td><td>1</td></tr> <tr> <td>Sharp Pit</td><td>-</td><td>1</td></tr> <tr> <td>Effluent Treatment Plant</td><td>10 KLD</td><td>1</td></tr> </tbody> </table>	Particular	Capacity	Nos.	Incinerator	300 kg/hr	1	Autoclave	100 Kg/Hour	1	Shredder	100Kg/Hour	1	Ash Pit	-	1	Sharp Pit	-	1	Effluent Treatment Plant	10 KLD	1
Particular	Capacity	Nos.																					
Incinerator	300 kg/hr	1																					
Autoclave	100 Kg/Hour	1																					
Shredder	100Kg/Hour	1																					
Ash Pit	-	1																					
Sharp Pit	-	1																					
Effluent Treatment Plant	10 KLD	1																					
8.	Areas catered	Health care facilities located in Jaipur (rural) & Dausa Districts of Rajasthan.																					
9.	Healthcare units	Health care units, Jaipur (Rural) : 661 nos. Health care units, Dausa : 379 nos.																					
10.	No of beds	8392 nos.																					
11.	Estimated Biomedical waste	3200 Kg/day Approx																					
14.	Project cost	Rs. 3.50 Crore																					


11.2.2. Waste Water Generation

Approximately 5.2 KLD water effluents will be generated from all sources such as Venturi Scrubber, Floor Washing, Vehicle/ Container Washing etc. and the same is treated in ETP and after treatment the treated water is recycled and reused in the Quencher as well in Air Pollution Control Device (Venturi Scrubber).

11.2.3. Air Emission & Air Pollution Control Measures Details

The sources of air pollution from the proposed project are particulate matter, nitrogen oxides, sulphur dioxide, Carbon monoxide, etc. The facility is provided with appropriate air pollution control device (Venturi Scrubber) for reducing the pollutants and also a stack height is provided for proper dispersion of the air pollutants. Adequate stack height will be provided to each D.G. set (3.5 m) and Incinerator (30 m).

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.2
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

11.2.4. Solid Waste Generation & Disposal

Solid waste generated during the biomedical waste treatment process and wastewater treatment process is mainly ash and sludge which is generated depending upon the hydraulic load. Municipal solid wastes generated from the proposed project are estimated to be 4 kg/day. Sludge will be disposed in secured landfill. The disinfected plastic waste will be sent for recycling to registered recycler.

11.3. DESCRIPTION OF THE ENVIRONMENT

11.3.1. Introduction

The baseline environmental quality of Air, water, soil, noise, socioeconomic status and ecology has been assessed in the period of December 2021 to February 2022 in the study area of 10 km radial distance from the project site.

11.3.2. Environmental Setting

Particulars	Details
Nearest Village	❑ Rampura : 1.7 Km towards SSE
Nearest Town/City	❑ Bagru : 4.2 Km towards NE
Nearest Railway Station	❑ Bobas Junction : 13.9 km towards NNW
	❑ Jaipur Junction : 31.3 km towards ENE
Nearest Highway	❑ NH 48 : 4.2 Km towards NNW
	❑ Bagru - Jhag Road : 1.1 Km towards SE
Nearest Airport	❑ Jaipur International Airport : 29.0 Km towards ENE
River	❑ Sardiya Nadi : 2.3 Km towards NNE
	❑ Hingoniya Sagar : 4.9 km towards WSW
	❑ Bandi Nadi : 6.7 Km towards SSW
RF/ PF/ Wildlife Sanctuary, national Park, Elephant Corridor, Tiger Reserve etc	None Within the 15 kms radius of the project site.

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

11.3.3. Base Line Data

Baseline study was carried out during December 2021 to February 2022.

➤ **Ambient Air Quality**

○ **Respirable Particulate Matter (PM₁₀)**

A maximum value of 79.82 µg/m³ was observed at project site and minimum value of 53.4 µg/m³ was observed at the Sherpura. The average values were observed to be in the range of 57.17 µg/m³ to 70.01 µg/m³. All the values were well within the prescribed limit of CPCB.

○ **Particulate Matter (PM_{2.5}):**


A maximum value of 45 µg/m³ was observed at Syosinghpur and minimum value of 19.21 µg/m³ was observed at Nayabas. The average values were observed to be in the range of 34.09 µg/m³ to 43.23 µg/m³. All the values were well within the prescribed limit of CPCB.


○ **Sulphur Dioxide (SO₂)**

Maximum concentration of SO₂ is observed to be 18.5 µg/m³ at Nariya & minimum value of 5.84 µg/m³ observed at Bagru. The average values were observed to be in the range of 7.70 µg/m³ to 13.87 µg/m³. All the values are well within the prescribed limit of CPCB.

○ **Nitrogen Dioxide (NO₂)**

Maximum concentration of NO₂ is observed to be 20.31 µg/m³ at the Nariya & minimum value of 9.45 µg/m³ were observed at Bagru. The average values were observed to be in the range of 17.41 µg/m³ to 25.86 µg/m³. All the values were well within the prescribed limit of CPCB.

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.4
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

➤ **Water Quality Monitoring**

- During the study period, pH values observed were in the range of 7.36 to 7.71
- Total dissolved solids in the range of 1411.1 mg/l to 2715 mg/l
- Calcium values observed were in the range of 120.95 mg/l to 128.50 mg/l.

11.3.4. Surface Water

- During the study period, pH values observed were in the range of 7.35 to 7.68 with total dissolved solids in the range of 242 mg/l to 270 mg/l and the hardness values observed were in the range of 164 mg/l to 210 mg/l. The dissolved oxygen values are in between 6.2 mg/l to 7.8 mg/l, while the BOD levels are in the range of 8.8 to 10.2 mg/l and the COD values were in range 21mg/l to 36mg/l.

➤ **Background Noise Level**


Ambient noise levels were measured at 8 locations around the proposed project site. Minimum and maximum noise levels recorded during the day time were from 58.4 dB and 50.5dB respectively and Minimum and maximum level of noise during night time was 36.5 dB and 41.2 dB respectively.


➤ **Soil Quality**

- Texture of the soil samples is generally sandy.
- Water holding capacity of soil samples were in range of 32.85 % to 38.75 %.
- pH of the soil samples ranged from 7.7 to 7.81.

➤ **Socio Economic Study**

In the study area, there are 14774 households of which 3.43 % household's falls in 0 to 2 km, 49.93% household's in 2 to 5 km , 11.62% household's in 5 to 7 km and 35.01% household's in 7 to 10 km respectively. The total population falling in the project area is 91980 of which 3.56 % resides within 0 to 2 km, 48.74% are in 2 to 5 km , 11.70% are in 5 to 7 km and 36.00 % in 7 to 10 km. The total male population

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.5
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

consists of 51.62 % and female population accounts to be 48.38 % of the total population. The sex ratio of the 10.0 km study area is 937 females over thousand males. There are approx 4 to 6 members in a family. The 0-6 population comprises of 14.49% of the total population of the study area. The sex ratio of 0-6 population is 870 females over thousand males.

➤ **Biological Environment**

Within the study area of 10 km radius of the project site, there is no any reserve forest and protected forest from project site.

○ **Floral Diversity of the Study Area**


The tree species commonly occurring in the study area were Desi babul, Khejari, Neem and Shisham, etc. Among the tree, approx 27 species of trees were seen and no rare or endangered flora was observed.

○ **Faunal Biodiversity of the Study Area**

For the documentation of the faunal biodiversity of the study area with respect to birds, reptiles, amphibians, and butterfly species, a detailed survey had been conducted. Schedule-I fauna was observed in the Buffer zone of the study area.

11.4. Anticipated Environmental Impacts & Mitigation Measures

Due to this facility, there is minor increment in the air pollution due to the air emissions like PM, SO₂, NO_x from the stack attached to incinerator facility. Entire liquid waste water generated from the facility is treated through ETP and treated water is used in the development of internal green belt to follow zero discharge concept. Biomedical waste, generated from a number of healthcare units, is imparted necessary treatment to reduce adverse effects that this waste may pose. The treated waste may finally be sent for disposal in a landfill or for recycling purposes.

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.6
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

 INSTROMEDIX	Project: Proposed Common Bio-medical Waste Treatment Facility (CBWTF), Jaipur Rural	
	Proponent: Instromedix Waste Management Pvt. Ltd	Chapter 11

The solid waste at the CBWTF would be ash from incinerator, sludge from ETP and mercury waste from bio medical waste. All these waste would be sent to the nearest TSDF.

11.5. Environmental Monitoring Programme

Regular monitoring of environmental parameters like air, water, noise and soil as well as performance of pollution control devices and safety measures in the facility proper environmental management is carried out periodically as recommended for proper environmental management.

11.6. Additional Studies

Risk Assessment


The management is very much aware of their obligation to protect all persons at work and others in the neighborhood that may be affected by an unfortunate and unforeseen incidence occurring at the CBWTF. Any hazard either to employees or others arising from activities at the facility shall, as far as possible, be handled by the management of the company and prevented from spreading any further.

11.7. ENVIRONMENTAL MANAGEMENT PLAN

The management team is very much concerned about environmental issues. All the environmental components are looked out. Mitigation of environmental impacts has to be implemented according to the suggestions and is monitored regularly to prevent any lapse.

11.8. CONCLUSION

Company is committed to implement all the pollution control measures to protect the surrounding Environment. Projects like this certainly improve the living standard of local people. The implementation of this project definitely improves the physical and social infrastructure of the surrounding area.

	Gaurang Environmental Solutions Pvt. Ltd	Page 11.7
	Report Ref: : GESPL_430/2021/EIA/225	Rev No. 00

Disclosure of Consultants[#] Engaged

Name of the Project : Proposed common Biomedical waste treatment facility, Jaipur Rural Location : Khasra No. 400, Rampuraaonti Village, Tehsil Sanganer Jaipur Rajasthan Promoter : Instromedix Waste Management Pvt. Ltd		
Nature of consultancy	Name and address of the Consultant/expert	Approvals, if any from (NABL/DGMS/IBM/ NRBPT/MOEF/CPCB/others etc)*, give reference
EIA/ EMP Organization	Gaurang Environmental Solutions Pvt. Ltd. #102, SNG, Shri Ratna Apartment near Tambi petrol pump, Peetal factory, Jhotwara road, Jaipur-302016 E-mail :gaurangenviro@gmail.com	NABET /EIA/2023/RA0192 Dated 01.02.2021 valid upto 19.01.2023.
Env. Coordinator	Ms. Pooja Bunker	
FAE-LU	Mr. Vinod Kumar Verma	
FAE-AP	Ms. Ginni Barotia	
FAE-AQ	Mr. Mallikarjuna Murthy Guttula	
FAE-WP	Ms. Pooja Bunker	
FAE-SC	Mr. Pradyumna Arvind Deshpande	
FAE-EB	Dr. Yati Kacchawa Dr. Mahendra Singh (TM)	
FAE-NV	Mr. Mallikarjuna Murthy Guttula	
FAE-SE	Ms. Gajendra Sing Rathore	
FAE-HG	Mr. Vidya Bhushan Trivedi	
FAE_GEO	Mr. Vidya Bhushan Trivedi	
FAE-RH	Ms. Ginni Barotia	
FAE-SHW	Ms. Ginni Barotia Ms. Pooja Bunker (BMW)	
Environmental Monitoring & analysis	Noida Testing Laboratories GT-20, Sector-117, Noida, Gautam Buddh Nagar, Uttar Pradesh, India	
Hydro geological study	Gaurang Environmental Solutions Pvt. Ltd. #102, SNG, Shri Ratna Apartment near Tambi petrol pump, Peetal factory, Jhotwara road, Jaipur-302016	

	E-mail : gaurangenviro@gmail.com	
Soil investigation	--	
Mining plan	NA	
Rainwater Harvesting	Gaurang Environmental Solutions Pvt. Ltd. #102, SNG, Shri Ratna Apartment near Tambi petrol pump, Peetal factory, Jhotwara road, Jaipur-302016 E-mail : gaurangenviro@gmail.com	
Risk Assessment	Gaurang Environmental Solutions Pvt. Ltd. #102, SNG, Shri Ratna Apartment near Tambi petrol pump, Peetal factory, Jhotwara road, Jaipur-302016 E-mail : gaurangenviro@gmail.com	
Architectural Plan	-	
Services (STP/ETP design) etc.	-	
Others, such as project consultants etc.	-	

* Only Govt./Statutory Approvals to be mentioned. Put NA where not applicable. Add brief resume where required.
#RQPs (for 'B2"category mines projects) to submit copy of valid document of Central/State Govt.

I hereby accept all the liabilities and obligations associated with the working and results of the above organizations
submitted herein with the report

Note:- The Consultant should submit the Accreditation letter from NABET regarding approval of sectors and experts.

State Level Environment Impact Assessment Authority, Rajasthan
Room No. 11, Aravalli Bhawan, Jhalana Institutional Area, Jaipur.
E-mail; seiaams2021@gmail.com

F1 (4)/SEIAA/SEAC-Raj/Sectt/Project / Cat. 7(da) (20119)/2021-22

Dated: **21 FEB 2022**

To,

M/s Instromedix Waste Management Pvt. Ltd., Add.- 4th Floor, 402, Gaurav tower, Malviya Nagar, Jaipur (Raj.) Email - lipl.jpr@instromedix.net

Sub:- Terms of Reference (ToR) for the Proposed common biomedical waste treatment facility coming up at, Khasra No. 400, Add.- Rampuraooti, Tehsil- Sanganer, Distt.- Jaipur (Raj.)
(**Proposal No- 69277**).


Ref: Your application dated: 10.01.2022

Name of Consultant:- Gaurang Environmental Solutions PVT. Ltd., Add.- #102, SNG, Shri Ratna Apartment, Near Tambi Petrol Pump, Peetal Factory, Jhotwara Road, Jaipur
Email- gaurangenviro@gmail.com.

Sir,

Apropos above. Your project proposal was considered in the 5B.07 meeting of SEAC held on 18-20, January. The PP has applied for Terms of Reference (ToR) for the Proposed common biomedical waste treatment facility coming up at, Khasra No. 400, Add.- Rampuraooti, Tehsil- Sanganer, Distt.- Jaipur (Raj.) (**Proposal No- 69277**). having Total Plot area of 16188 sq.mt. The cost of proposed project is 3.5 crores. The total water requirement for proposed project is 14 KLD (Fresh water:8.34 KLD). The source of water is ground water. DCF (WL), Jaipur Development Authority , municipal corporation, Jaipur Greater has leased land to Instromedix Waste Management Pvt. Ltd for establishment and operation of CBWTF in 16188 sqm land on DBOOT basis vide lease deed dated 20.10.2021. DCF (WL), Jaipur dated 02.12.2021 has stated that the distance of Jamwaramgarh wildlife sanctuary from the project is 53.97 Km and 52.97 km from ESZ of sanctuary. DCF, TP, Sariska vide letter dated 25.11.2021 has stated that the project is outside 10 Kms from the boundary of Critical Tiger Habitat and outside the ESZ of Sariska Tiger Reserve. DCF (WL), Zoo Jaipur vide letter dated 28.12.2021 has stated that the distance of project from Nahargarh wildlife sanctuary is 33.50 Km and 31.50 Km from ESZ of sanctuary. The PP has stated that the project does not involve approval under the Forest (Conservation) Act 1980 and Wildlife (protection) Act 1972 and that there is no litigation pending against the project. The PP has submitted affidavit dated 08.01.2022 where in it is stated that there has been no violation of the EIA Notification 2006.

The matter was considered in 5.08rd meeting of SEIAA held on 14th to 16.02.2022 and the Authority has decided to issue ToRs mentioned in Annexure "A" as per the recommendation of SEAC.


(P.K. Upadhyay)
Member Secretary,
SEIAA, Rajasthan.

Terms of Reference (ToR) for the Proposed common biomedical waste treatment facility coming up at, Khasra No. 400, Add.- Rampuraointi, Tehsil- Sanganer, Distt.- Jaipur (Raj.) (Proposal No- 69277).

General ToR:

1. The validity period of this ToR letter would be for a period of four years from the date of dispatch of the ToR letter.
2. The study area will comprise 10 km zone around the project from periphery.
3. Examine and provide details relating the impact on infrastructure like water supply, storm water drainage, sewerage power, etc., and the disposal of treated/raw wastes from the park on land/water body and into sewerage system.
4. Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna. Ambient Air quality should be determined by measuring the concentration of parameters like P.M.2.5, P.M.10, SO₂, NO_x according to the latest standards prescribed by CPCB. Site-specific meteorological data should also be collected. The location of the monitoring stations (minimum 6) should be justified. Date wise collected baseline AAQ data should form part of EIA and EMP report. The monitoring shall be carried out by CPCB/NABL/ MOEF/GoR approved laboratory and copy of the analysis report should be submitted.
5. Study the socio-economic conditions of the project area and its surroundings and their impact on the project design and operation.
6. Study the existing flora and fauna of the area and the impact of the project on them should be submitted along with detailed listing of vegetation.
7. Study the hydrological and geo-hydrological conditions of the project area. Include a contour plan indicating slopes and showing drainage pattern and outfall.
8. Examine and submit details about the resettlement and rehabilitation of project-affected persons in the nearby villages, in accordance with the national resettlement and rehabilitation policy.
9. Submit development strategy of the area.
10. Provide relevant Elevation and conceptual plan of the area.
11. Storm water drainage details and outfall may be described. Rainwater harvesting proposals should be made with due safeguards for ground water quality Maximize recycling of water and utilization of rainwater.
12. Water balance taking into account the population projection residents and the sources of water using the reduced water consumption as given in the Manual on norms and standards for EC of large construction projects. Also give water requirements for DG sets, air conditioning system etc. Commitment regarding availability of requisite quantity of water from the competent authority. Also provide account of reuse and re-circulation of effluents.
13. Provide water supply system design (taking care of the dual plumbing).
14. Budgetary provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as health facility, sanitation facility, fuel for cooking, along with safe drinking water, medical camps, and toilets for women, crèche for

infants. The housing may be in the form of temporary structures to be removed after the completion of the project.

15. Details regarding Occupational health impact of the project should be provided. Health study in the surrounding area be carried out covering information regarding prevailing diseases, mortality rate etc. Health and Safety Plan should be prepared and submitted.
16. Examine soil characteristics, topography, rain fall pattern and soil erosion. Ground water recharge pits to be suitably proposed as per MoEF guidelines.
17. Application of renewable energy/alternate energy, such as solar energy, wind energy may be described. Quantify the amount of non conventional energy used, day light utilization, solar component etc
18. Risk assessment and disaster management plan be prepared which should include flood fighting with cost estimation and relevant budgetary provision.
19. Detailed fire fighting plan along with the locations and capacity of the water hydrants.
20. Identification of recyclable wastes and waste utilization arrangements may be made.
21. Explore possibility of generating biogas from decomposable wastes. Provide details and capacity of organic converters. Provide locations and size of composting area
22. Arrangements for hazardous waste management (if any) may be described.
23. Give electrical design including various loads, DG, transformer selection etc. Provide details of the DG sets also giving details of Eco- friendly DG sets.
24. Common facilities for waste collection, treatment, recycling and disposal (all effluent, emission and refuse including MSW, biomedical and hazardous wastes).
25. Traffic management and circulation plan including parking and loading/unloading areas may be described. Traffic survey should be carried out on weekdays and weekend.
26. Make provision of green belt as a measure for mitigation of dust and noise and buffer between habitation and industry.
27. EMP should include technical and institutional aspects for pre-treatment by constituent units and cost of EMP should be properly worked out and appropriate funds should be allocated.
28. Use of local building materials should be described. The provisions of Fly Ash Notification should be kept in view.
29. Green belt should be developed in 33% of total area landscape plan green belts and open spaces may be described. Provide a horticulture plan with percentage of green cover given, type of plantation taking into account both local species and biodiversity.
30. Environmental Management Plan should be accompanied with Environmental Monitoring Plan and environmental cost and benefit assessment.
31. Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan.
32. The P.P. will carry out proper Socio-economic survey of the villages situated in the study area. Based upon its findings and keeping in view the felt needs of local populations, the P.P. will provide adequate budget for carrying out CER activities. The proposal should contain provision for toilets for girls in near by schools.
33. A voluntary commitment of the Social responsibility activities to be undertaken by the project proponent is to be given and the budgeted amount proposed for such activity will be kept. Refer enclosed annexure -1
34. Provide for conservation of resources, energy efficiency and use of renewable sources of energy in the light of ESBC code.
35. Make assessment of any regulatory measure in view of the environmental and social impacts of the project (such as unauthorized development around the township).

36. Any litigation pending against the project and /or any direction /order passed by any Court of Law against the project, if so, details thereof.
37. The P.P. should ensure compliance of the order of the Hon'ble Rajasthan High Court, Jodhpur, in D. B. Civil writ petition no. 1536 of 2003 in the matter of Abdul Rahman vs State of Rajasthan and others and submit detail report.
38. The impact of the project on land use including change of course of water, if any should be given. Also Impact on topography, drainage, agricultural fields, cattle fields, wildlife, water logging leading to water borne diseases, if any. It may also be shown whether it will lead to change of watercourse of the river. Modelling exercise should also be carried out through an expert agency to show the change in river flow dynamics, if any.
39. Details of construction activity including date of starting of construction work and investment incurred till date along with photographs and in case of industries / mining, the quantity of products produced so far, should be essentially mentioned by the PP / Consultant.
40. A separate chapter on compliance to the environmental clearance conditions and / or the NOC / consent from the Rajasthan State Pollution Control Board should be submitted. The testing/ verification undertaken for the compliance should be from the recognized environmental laboratory.
41. Used filter papers (Air monitoring) along with photographs of the site showing Air / Water sampling / monitoring activity / equipment used at each station should be submitted. Original copies of analysis report of all the relevant data referred in the documents should be enclosed.
42. Public Hearing: The PP shall get the Public hearing conducted in terms of the OM dated 16.3.2018 of the MoEF & CC. After preparing the draft EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006 and as amended), the proponent shall get the public hearing conducted (strictly following the procedure laid down in the Appendix IV of the Amendment Notification dt. 01.12.2009 and MoEF circular no. J-15012/29/2010/IA. II (M) dt. 19.04.2010). In this regard due care would be taken in (i) deciding the venue of public hearing (at the project site or in its closed proximity, to ensure widest possible public participation), (ii) forwarding the Draft EIA Reports with Executive Summary Reports and notice for hearing to various authorities / offices, specifically to Urban Local Bodies/ Panchayati Raj. Institutions (i.e Zila Parishad, Panchayat Samiti & Gram Panchayat)/ Development Authorities (i.e. U.I.T., J.D.A. etc.), (iii) adequate publicity regarding date, place and time of public hearing among local public, (iv) recording requisite "certificate" at the end of public hearing proceedings / report and (v) displaying the report in the office of Gram Panchayat, Zila Parishad, Collectorate etc. After completing the public hearing process as described above, the proponent shall take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006 and amendments made thereafter.
43. Following information regarding the work order/agreement issued by the P.P. to the consultant (Accredited from QCI/ NABET for proposed project Sector) should be submitted:-
 - a. Dispatch No. of the work order/agreement.
 - b. Date of issue of work order.
 - c. Date of start of air/water/other monitoring work (as applicable)
 - d. Postal address/ Email Address/ Fax Number/ Mobile Number and Landline Number of the P.P.

Points included in TOR as per MoEF circular no. J-11013/41/2006-IA.II(I)-Pt. dt. 19.05.2011 regarding Corporate Environmental Responsibility.

1. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
2. Does the Environment Policy prescribed for standard operating process/procedures to bring into focus any infringement/deviation/violation of the Environmental or forest norms /conditions? If so, it may be detailed in the EIA report.
3. What is the hierarchical system or administrative order of the company to deal with the Environmental issues and for ensuring compliance with the EC conditions? Details of this system may be given.
4. Does the company have a system of reporting of non-compliances/violations of Environmental norms to the Board of Directors of the company and /or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.

Specific ToRs applicable in the cases of violation in terms of the Notification dated 14.3.2017 and 8.3.2018 and OMs dated 30.5.2018, 4.7.2018 of the MoEF & CC:

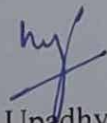
1. The PP/Consultant is required to give details of violations of the EIA notification through affidavit in the specified format.
2. The PP shall undertake assessment of ecological damage, remediation plan and natural and community resource augmentation plan. Such plan shall be prepared as an independent chapter in the Environment Impact Assessment report. The report shall be prepared by the accredited consultant. The collection and analyses of data for assessment of ecological damage, preparation of remediation plan and natural and community resource plan shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986 or an environmental Laboratory, accredited by the National Accreditation Board for Testing and Calibration Laboratories or a Laboratory of the Council of Scientific and Industrial Research Institution working in the field of environment.
3. The PP shall prepare EMP. The Environment Management Plan shall comprise remediation plan and natural and community resource augmentation plan corresponding to ecological damage assessed and economic benefit derived due to violation.
4. The PP shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the State Pollution Control Board and the PP shall deposit the bank guarantee prior to the grant of Environmental Clearance and which shall be released after successful implementation of the remediation plan and natural and community resource augmentation plan and after recommendation by Regional Office of the Ministry, State Level Expert Appraisal Committee and approval of SEIAA.
5. The PP who has committed violation of the EIA Notification dated 14.09.2006 shall be governed by the public consultation in the parent notification as per the directions dated

14.3.2018 of the Hon'ble Madras High Court in the matter of WIVIP Nos. 3361 and 3362 of 2018 and WMP No. 3721 of 2018 in WP No. 11189 of 2017 and the Office Memorandum dated 16.3.2018 of the MoEF & CC GoI.

The validity period of this ToRs letter would be for a period of four years from the date of issue of ToR letter.

In the final EMP report, compliance of points of ToRs should be reported point wise in a statement of three columns as indicated below:-

S. No	Items in the letter of the ToRs	Reply / Response by the PP
-------	---------------------------------	----------------------------


(P.K. Upadhyay)
Member Secretary,
SEIAA, Rajasthan.

Point Wise Compliance to the ToR:

The point wise compliance of the conditions mentioned in the ToR is detailed as under:-

Table: 1.4: Compliance of ToR

S. No	Items in the letter of the ToRs	Reply/Responses by the PP
1.	The validity period of this ToR letter would be for a period of four years from the date of dispatch of the ToR letter.	Point No.1 is noted and complied.
2.	The study area will compromise 10 km zone around the project from periphery.	The content of para 2 are noted and followed.
3.	Examine and provide details relating the impact on infrastructure like water supply, storm water drainage, sewerage power etc., and the disposal of treated/raw wastes from the park on land/water body and into sewerage system.	The same is complied with. Project details are Elaborated in chapter 2.
4.	Collection of one season (non-monsoon) primary baseline data on ambient air quality, water quality, noise level, soil and flora and fauna. Ambient Air quality should be determined by measuring the concentration of parameters like P.M.2.5, P.M.10, SO ₂ , NO _x according to the latest standards prescribed by CPCB. Site-specific meteorological data should also be collected. The location of the monitoring stations (minimum 6) should be justified. Date wise collected baseline AAQ data should form part of EIA and EMP report. The monitoring shall be carried out by CPCB/NABL/MOEF/GoR approved laboratory and copy	Baseline environmental study for the environmental parameters of ambient air, noise level, soil and flora and fauna for one season has been done (December 2021 -February 2022) from MoEF& CC and NABL Accredited laboratory. Detailed description of baseline data is elaborated in chapter 3 and baseline reports along with MoEF& CC and NABL Accredited certificate is enclosed as Annexure XII .

	of the analysis report should be submitted.	
5.	Study the socio-economic conditions of the project area and its surroundings and their impact on the project design and operation.	Likely socio-economic conditions of the project area and its surroundings are elaborated in the chapter 3 and their impact on the project design and operation are elaborated in the Chapter 4.
6.	Study the existing flora and fauna of the area and the impact of the project on them should be submitted along with detailed listing of vegetation.	Details relating the Study of the existing flora and fauna of the area and the impact of the project on them has been submitted along with detailed listing of vegetation are elaborated in the Chapter 3 & 4.
7.	Study the hydrological and geo-hydrological conditions of the project area. Include a contour plan indicating slopes and showing drainage pattern and outfall.	Details relating the hydrological and geo-hydrological conditions of the project area, Including a contour plan indicating slopes and showing drainage pattern and outfall are elaborated in the Chapter 3. Contour plan enclosed as Annexure
8.	Examine and submit details about the resettlement and rehabilitation of project-affected persons in the nearby villages, in accordance with the national resettlement and rehabilitation policy.	There is no resettlement and rehabilitation of project-affected persons as the project land is developed land duly allotted for the residential project.
9.	Submit development strategy of the area	The proposed project is a common biomedical waste treatment facility for Jaipur Rural.
10.	Provide relevant elevation and conceptual plan of the area	Conceptual plan details have been mentioned chapter-2 and layout plan is enclosed as Annexure XVI .
11.	Storm water drainage details and outfall may be described. Rainwater harvesting proposals should be made with due safeguards for ground water quality Maximize recycling of water and utilization of rainwater.	The project is a common biomedical waste treatment facility for Jaipur Rural. Thus, rain water harvesting is not recommended, whoever rain water collection has been proposed, details of the same is given in chapter 4.

12.	Water balance taking into account the population projection residents and the sources of water using the reduced water consumption as given in the Manual on norms and standards for EC of large construction projects. Also give water requirements for D. G sets, air conditioning system etc. Commitment regarding availability of requisite quantity of water from the competent authority. Also provide account of reuse and re-circulation of effluents.	Detailed water requirement along with the water balance are elaborated in chapter 2.
13.	Provide water supply system design (taking care of the dual plumbing)	The project is a proposed common biomedical waste treatment facility, Jaipur Rural. Layout plan is enclosed as Annexure XVI .
14.	Budgetary provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as health facility, sanitation facility, fuel for cooking, along with safe drinking water, medical camps, and toilets for women, crèche for infants. The housing may be in the form of temporary structures to be removed after the completion of the project.	Budgetary provision for construction labor within the site is enclosed as Annexure IX .
15.	Details regarding Occupational health impact of the project should be provided. Health study in the surrounding area be carried out covering information regarding prevailing diseases, mortality rate etc. Health and Safety Plan should be prepared and submitted.	The same is complied with. Details regarding Occupational health impact of the project are enclosed in Chapter-4 .

16.	Examine soil characteristics, topography, rain fall pattern and soil erosion. Ground water recharge pits to be suitably proposed as per MoEF guidelines.	Details of soil characteristics, topography, and rain fall pattern and soil erosion of the project are enclosed in Chapter-3 & 4.
17.	Application of renewable energy/alternate energy, such as solar energy, wind energy may be described. Quantify the amount of non conventional energy used, day light utilization, solar component etc.	The project is a proposed common biomedical waste treatment facility, Solar energy will be used for the external lighting purpose.
18.	Risk assessment and disaster management plan be prepared which should include flood fighting with cost estimation and relevant budgetary provision.	Risk assessment and disaster management plan be prepared which should include flood fighting with cost estimation and relevant budgetary provision are enclosed in Chapter-7.
19.	Detailed fire fighting plan along with the location and capacity of water hydrants.	Details of fire fighting plan is given in the Chapter 7.
20.	Identification of recyclable plan along with the location and capacity of the water hydrants.	Recyclable and waste utilization arrangements are enclosed in Chapter-2.
21.	Explore possibility of generating biogas from decomposable wastes. Provide details and capacity of organic converters. Provide locations and size of composting area.	The project is itself a waste management facility.
22.	Arrangement for hazardous waste management (if any) may be described.	Proper management for the hazardous waste will be done.
23.	Give electrical design including various loads, DG, transformer selection etc. Provide details of the D.G sets also giving details of Eco- friendly D.G sets.	Details of electrical design including various loads, DG, transformer selection etc given in chapter 2.
24.	Common facilities for waste collection, treatment, recycling and disposal (all effluent, emission and refuse including MSW, biomedical and hazardous wastes).	Approx 4 kg/day will be generated from the project which will be effectively managed as per the Solid Waste Management Rules, 2016.

25.	Traffic management and circulation plan including parking and loading/unloading areas may be described. Traffic survey should be carried out on weekdays and weekend.	Traffic management and circulation plan including parking and loading/unloading areas is given in Layout plan and the same is enclosed as Annexure XVI .
26.	Make provision of green belt as a measure for mitigation of dust and noise and buffer between habitation and industry.	5827.68 sq. m. (36%) is under Green Belt has been developed under this earmarked area. Landscape plan is enclosed as Annexure XVII .
27.	EMP should include technical and institutional aspects for pre-treatment by constituent units and cost of EMP should be properly worked out and appropriate funds should be allocated.	EMP of technical and institutional aspects for pre-treatment by constituent units and cost of EMP are described in Chapter-10 .
28.	Use of local building materials should be described. The provisions of Fly Ash Notification should be kept in view.	Description of Local building material used in Chapter-5 . Fly ash has been used as a building material for this project.
29.	Green belt should be developed in 33% of total area landscape plan green belts and open spaces may be described. Provide a horticulture plan with percentage of green cover given, type of plantation taking into account both local species and biodiversity.	Total green area of 5827.68sq.m (36%) Landscape plan is enclosed as Annexure XVII .
30.	Environmental Management Plan should be accompanied with Environmental Monitoring Plan and environmental cost and benefit assessment.	Environmental Management Plan is elaborated in Chapter 10 .
31.	Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan.	Environmental Monitoring Plan for both construction and operation phases is given in chapter 6 and EMP for both construction and operation phase are described in Chapter-10 .

32.	The P.P. will carry out proper Socio-economic survey of the villages situated in the study area. Based upon its findings and keeping in view the felt needs of local populations, the P.P. will provide adequate budget for carrying out CER activities. The proposal should contain provision for toilets for girls in nearby schools.	Details of Socio-economic survey in Chapter-3 & 4.
33.	A voluntary commitment of the Social responsibility activities to be undertaken by the project proponent is to be given and the budgeted amount proposed for such activity will be kept. Refer enclosed Annexure -1.	Social responsibility activities to be undertaken by the project proponent are given in Chapter 8.
34.	Provide for conservation of resources, energy efficiency and use of renewable sources of energy in the light of ECBC code.	The same is not applicable as the project is a common biomedical waste treatment facility.
35.	Make assessment of any regulatory measure in view of the environmental and social impacts of the project (such as unauthorized development around the township).	The same is complied with. The environmental and social impacts of the project is enclosed in Chapet-4
36.	Any litigation pending against the project and /or any direction /order passed by any Court of Law against the project, if so, details thereof.	None, affidavit stating the same has been provided.
37.	The P.P. should ensure compliance of the order of the Hon'ble Rajasthan High Court, Jodhpur, in D. B. Civil writ petition no. 1536 of 2003 in the matter of Abdul Rahman vs State of Rajasthan and others and submit detail report.	Point Noted and complied with.
38.	The impact of the project on land use	10 km Land use map is provided in Chapter-3

	including change of course of water, if any should be given. Also Impact on topography, drainage, agricultural fields, cattle fields, wildlife, water logging leading to water borne diseases, if any. It may also be shown whether it will lead to change of watercourse of the river. Modeling exercise should also be carried out through an expert agency to show the change in river flow dynamics, if any.	Impact of project on Land, topography, drainage, agricultural fields, cattle fields, wildlife, water logging leading to water borne diseases were studied and enclosed in Chapter-3 & 4.
39.	Details of construction activity including date of starting of construction work and investment incurred till date along with photographs and in case of industries / mining, the quantity of products produced so far, should be essentially mentioned by the PP / Consultant.	Not applicable as it is a greenfield common biomedical waste treatment plant.
40.	A separate chapter on compliance to the environmental clearance conditions and / or the NOC / consent from the Rajasthan State Pollution Control Board should be submitted. The testing/ verification undertaken for the compliance should be from the recognized environmental laboratory.	The project is a new project there no environmental granted earlier, thus the content of para 40 are not applicable.
41.	Used filter papers (Air monitoring) along with photographs of the site showing Air / Water sampling / monitoring activity / equipment used at each station should be submitted. Original copies of analysis report of all the relevant data referred in the documents should be enclosed.	Copy of analysis reports are enclosed as Annexure XII.

42.	<p>Public Hearing: The PP shall get the Public hearing conducted in terms of the OM dated 16.3.2018 of the MoEF& CC. After preparing the draft EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006 and as amended), the proponent shall get the public hearing conducted (strictly following the procedure laid down in the Appendix IV of the Amendment Notification Dt. 01.12.2009 and MoEF circular no. J-15012/29/2010/IA.II(M) dt. 19.04.2010). In this regard due care would be taken in (i) deciding the venue of public hearing (at the project site or in its closed proximity, to ensure widest possible public participation), (ii) forwarding the Draft EIA Reports with Executive Summary Reports and notice for hearing to various authorities / offices, specifically to Urban Local Bodies/ Panchayati Raj. Institutions (i.e Zila Parishad, Panchayat Samiti & Gram Panchayat)/ Development Authorities (i.e. U.I.T., J.D.A. etc.), (iii) adequate publicity regarding date, place and time of public hearing among local public, (iv) recording requisite “certificate” at the end of public hearing proceedings / report and (v) displaying the report in the office of Gram Panchayat, Zila Parishad, Collectorate etc. After completing the public hearing process as described above, the proponent shall take</p>	The report is submitted for the public consultation.
-----	---	--

	further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006 and amendments made thereafter.	
43.	<p>Following information regarding the work order/agreement issued by the P.P. to the consultant (Accredited from QCI/ NABET for proposed project Sector) should be submitted:-</p> <ol style="list-style-type: none"> Dispatch No. of the work order/agreement. Date of issue of work order. Date of start of air/water/other monitoring work (as applicable) Postal address/ Email Address/ Fax Number/ Mobile Number and Landline Number of the P.P. 	The same is noted and will be followed.
Points included in TOR as per MoEF circular no. J-11013/41/2006-IA.II (I)-Pt. dt. 19.05.2011 regarding Corporate Environmental Responsibility.		
1.	(a) Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.	Instromedix Waste Management Pvt. Ltd has a well laid Environment Policy approved by its Board of Directors.
2.	(b) Does the Environment Policy prescribed for standard operating process/procedures to bring into focus any infringement/deviation/violation of the Environmental or forest norms /conditions? If so, it may be detailed in the EIA report.	Organization chart is enclosed as Annexure VII.
3.	What is the hierarchical system or administrative order of the company to deal	Organization chart is enclosed as Annexure VII.

	with the Environmental issues and for ensuring compliance with the EC conditions? Details of this system may be given.	
4.	Does the company have a system of reporting of non-compliances/violations of Environmental norms to the Board of Directors of the company and /or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.	Organization chart is enclosed as Annexure VII .

Specific ToR applicable in the cases of violation in terms of the notification dated 14.03.2017 and 08.03.2018 and OM 30.5.2018, 04.07.2018 of the MoEF& CC.

1.	The PP/Consultant is required to give details of violations of the EIA notification through affidavit in the specified format.	Not applicable as it is a greenfield common biomedical waste treatment plant.
2.	The PP Shall undertake assessment of ecological damage, remediation plan and natural and community resource augmentation plan. Such plan shall be prepared as an independent chapter in the EIA report. The report shall be prepared by the accredited consultant. The collection and analyses of data for assessment of ecological damage, preparation of remediation plan and natural and community resource plan shall be done by an environmental laboratory duly notified under the Environment (protection) Act, 1986 or an environmental laboratory, accredited by the National Accreditation board for testing and calibration laboratories	

	or a laboratory of the council of scientific and industrial research institution working in the field of environment.	
3.	The PP shall prepare EMP. The Environment management plan shall comprise remediation plan and natural and community resources augmentation plan corresponding to ecological damage assessed and economic benefit derived due to violation.	Not applicable as it is a greenfield common biomedical waste treatment plant.
4.	The PP shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resources augmentation plan with the State pollution control board and the PP shall deposits the bank guarantee prior to the grant of environmental clearance and which shall be released after successful implementation of the remediation plan and natural and community resources augmentation plan and after recommendation by region office of the ministry, state level expert appraisal committee and approval of SEIAA.	Not applicable as it is a greenfield common biomedical waste treatment plant.
5.	The PP who has committed violations of the EIA notification dated 14.09.2006 shall abide by the directions dated 14.03.2018 of the Hon'ble Madras high court in the matter of WIVIP Nos. 3361 and 3362 of 2018 and WMP No. 3721 of 2018 in WP No. 11189 of 2017 and the OM dated 16.03.2018 of the MoEF& CC GoI.	Not applicable as it is a greenfield common biomedical waste treatment plant.

1.1.1 DETAILS OF REGULATORY COMPLIANCES:

Details of regulatory compliances (limited to Environment, safety and/or required by SEAC/EAC/ MoEF&CC) with respect to the project are as under:

S. No.	Regulatory compliance	Compliance Status	Remarks
1.	Land Documents	Total 18.30 Ha land has been allotted to Nagar Nigam Jaipur, Greater by Jaipur Development Authority out of which 4.0 Ha has been allotted to Instromedix Waste Management Pvt. Ltd for the development of common biomedical waste treatment Plant, The proposed project is coming up on land admeasuring 16188 sq. m (1.61 Ha) out of 4.0 Ha land vide lease deed 20.10.2021.	
2.	Distance certificate	Certificate from Deputy conservator of forest has been obtained for <ul style="list-style-type: none"> • Nahargarh WLS : 33.5 km • Jamwa Ramgarh WLS: 53.97 km • Sariska Tiger Reserve :None within 10 km 	
3.	Consent to Establish	Consent to Establish has been obtained vide letter from RSPCB dated 24.01.2022.	



Instromedix waste management Pvt. Ltd.
(Formerly known as : Hosmedic Healthcare Projects Consultants Pvt. Ltd.)

4th Floor, 402, Gaurav Tower, Malviya Nagar, Jaipur - 302017
M : 9772133777, 8875929212 E-mail : lipl.jpr@instromedix.net

Ref: IWMPL/CTF/11/01/21-22

Dated: 01/11/2021

TO WHOM SOEVER IT MAY CONCERN

Subject: Authorization Letter for EC of CBWTF Project

This is to certify that I, Pradeep Kumar Acharjee (Director), M/s Instromedix Waste Management Pvt Ltd do hereby authorized to Mr. Sohan Choudhary (Manager, Operations) to deal with all government department & as a Authorized Signatory for CBWTF Project related documentation and his attested signature is mentioned below.

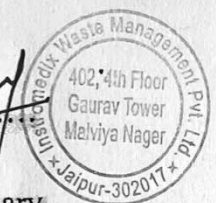
For Instromedix Waste Management Pvt Ltd
For INSTROMEDIX WASTE MANAGEMENT PVT. LTD.

Director/Authorised Signatory

Pradeep Kumar Acharjee
(Director)

Signature.....

Mr. Sohan Choudhary
(Manager, Operation)



(Attested by)



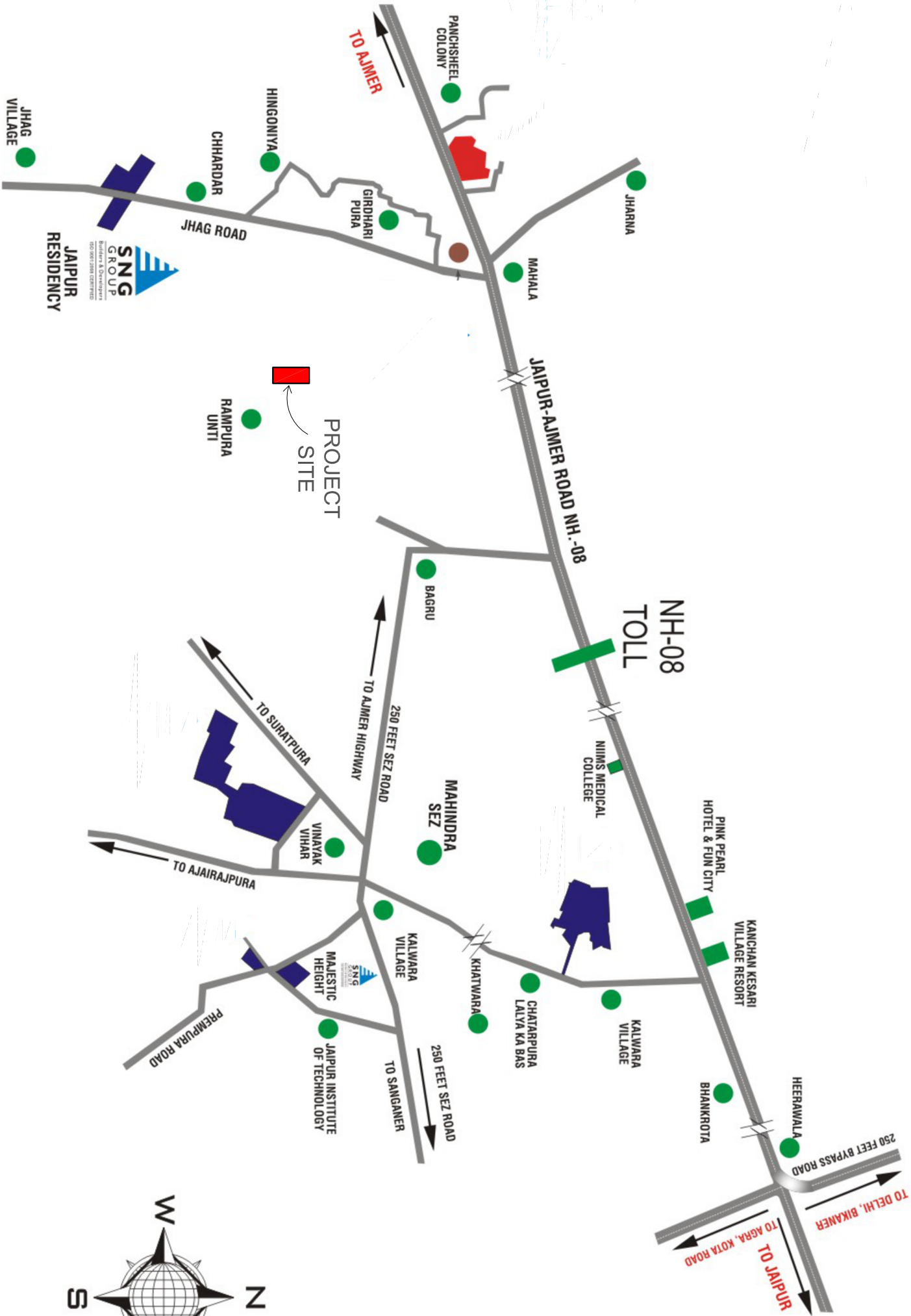
Pradeep Kumar Acharjee

H.O. : A5-A6, PRAGATI CHAMBERS, RANJIT NAGAR, COMMERCIAL COMPLEX, NEW DELHI - 110 008

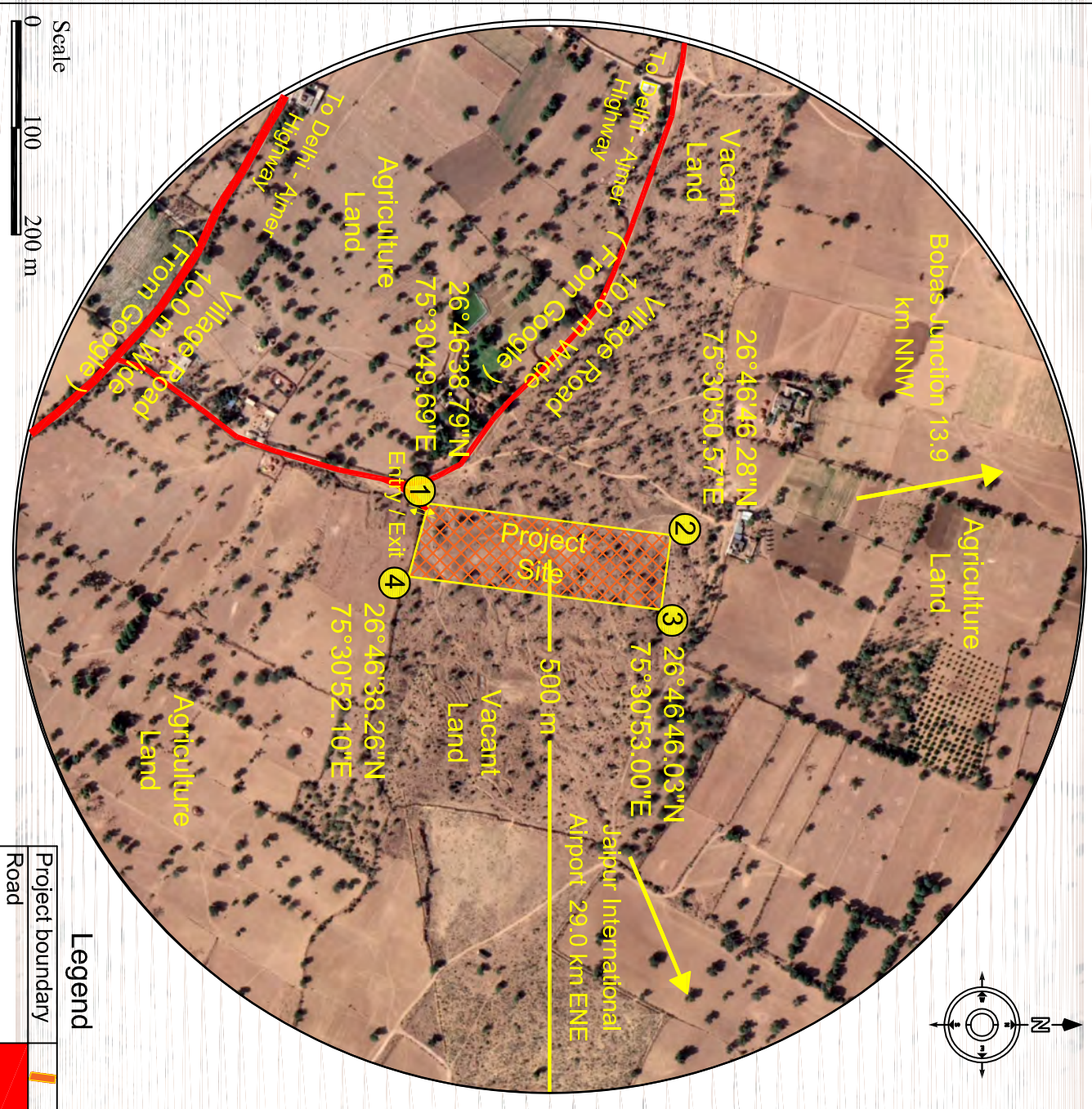
Phone : 011-25704965-67, 011-25707558, M : 9711203605

Fax : +91-11-47504962, E-mail : info@instromedix.net

CIN No. : U74999DL2015PTC284852



GOOGLE SNAPSHOT SHOWING SITE & SURROUNDING FEATURES



P.T.O. 2

क्रमांक 10125 दिनांक 10/10/20
 मुद्रांक का मूल्य 500/- वास्ते 150/-
 क्रेता का नाम श्री राजकुमार बनी
 पिता/पति का नाम श्री राजकुमार बनी
 निवास स्थान राजपुर (राज.)
 क्रेता के हस्ताक्षर



राजस्थान स्टांप अधिनियम 1993 के अन्तर्गत स्टांप सही पर प्रभावी अधिभार	
1. अत्यंत मूल्य आवश्यकता सुविधाओं हेतु (धारा 3-क)-10% कागज	2. गैर और सहायी मूल्य के दायित्व और शर्तों हेतु (धारा 3-ख)-प्राथमिक आवश्यकता पूर्व मान्य शिप अवधारणों के निमित्त हेतु-25% कागज
प्रस्तावित स्टांप वैधता	कुल रकम

श्री राजकुमार बनी
 ला. नं. 58/97 (स्टांप विक्रेता)
 नगर निगम (मुख्यालय) के पास
 टोंक रोड, जयपुर (राज.)

2. The Municipal Corporation Jaipur Greater has full right to cancel the allotment at any time of entrepreneur violates any regulations of the contract. Entrepreneur shall pay of Rs. 16188/- as lease amount in advance every year, failing to which suitable action shall be taken including cancellation of lease deed.
3. Entrepreneur shall arrange for electricity, water & inside road etc. at his own cost. However, road and electric line shall be provided by the concerned ULB i.e., The Municipal Corporation Jaipur Greater upto plan side only for approach. Entrepreneur shall make arrangement for Tube well at his own Cost, if required.
4. Entrepreneur must construct Rain Water Harvesting System in the Plant for recharging Ground Water Table.
5. No building or land tax shall be charged from the entrepreneur on the plant installed for the purpose.
6. Entrepreneur shall use the said land for establishment of CBWTF only & it shall neither be sold nor mortgaged for any purpose in any case.
7. After completion of lease period, Entrepreneur shall hand over the possession of land to The Municipal Corporation Jaipur Greater without any delay if he fails to do so the Municipal body shall have full right to take over the possession without any prior intimation. The expenses incurred on taking possession of land in case of cancellation of contract shall be recoverable from the promoter as outstanding land revenue.
8. Entrepreneur shall make all necessary arrangement to develop plants inside, outside & all around the plan site at his own cost & after completion of the lease period. These shall be the property of Municipal Body. Entrepreneur shall develop greenery inside and outside the Plant premises.
9. The entrepreneur shall have to abide the rules & regulations, guidelines of central government/State Government issued from time to time.
10. The entrepreneur shall not enter into any other business other than the work entrusted to him by Govt. of Rajasthan/concerned Local Body within the premises of his operation.
11. The entrepreneur shall have to follow the rules and regulations of Government of India and State Government whenever they are enforced and shall adhere to all laws of land, statutory regulations and instructions issued by authorities from time to time.
12. In case of cancellation of Authorization permission from RSPCB/CPCB/MOEF&CC/NGT Order in non-compliance of guidelines or in case of cancellation of MOU/Agreement signed in between Municipal Corporation Jaipur Greater and M/s Instromedix Waste Management Pvt. Ltd., the lease deed shall assume to be suo-motto cancelled.

For Instromedix Waste Management Pvt. Ltd.

SK Choudhary
Authorized Signatory

उपायुक्त (आयोजना)
नगर निगम, जयपुर

13. District Level Committee/State Level Committee, as applicable, shall have full right to rescind the contract in case promoter defaults or fail to perform the contract/agreement by way of not fulfilling the terms and conditions of the contract or has changed the land use of the land allotted to him for the purpose or the land remains unused for more than 6 months. In such case, contractor shall have to hand over back the vacant possession of the land within 3 months to the Urban Local Body from the date of issue of the notice. In case, the promoter fails to hand over the possession of the land, the concerned local body shall immediately take over the possession treating further occupations as encroachment.
14. CBWTF Plant (Common Biomedical Waste Treatment Facility) shall remain functional at Khoriropada until the Contractor obtains Consent to Operate (CTO) for new allocated location/site.
15. Letter regarding Land Allotment at Khasra No. 400, Rampuraonti Village, Tehsil Sanganer, Jaipur from Jaipur Development Authority by the reference no. एफ ()जविप्रा/उपा./जोन-11/डी-1536 dated 03.08.2021 shall be the part of this agreement.

Details of land are as follows:

Total area of allotted land: 1.6188 Hectares (Out of 4.0 hectares allotted by JDA to NNGJ) in locality Khasra No. 400, Rampuraonti Village, Tehsil Sanganer, Jaipur. (Khasra Map Attached.)

Signed by
Shri.....

Commissioner/Secretary
Representative of
Jaipur Development
Authority

In presence of :

Deputy Commissioner
Zone 11
witness on behalf of
Jaipur Development
Authority

Signed by
Shri.....

Commissioner
Representative of
Nagar Nigam Greater
Jaipur

In presence of :

Deputy Commissioner
Revenue (II)
witness on behalf of
Nagar Nigam Greater
Jaipur

Signed by
Shri.....

Representative of
M/s. Instromedix Waste
Management Pvt. Ltd.
Jaipur

In presence of :

Witness on behalf of
M/s. Instromedix Waste
Management Pvt. Ltd.
Jaipur



Instromedix Waste Management Pvt. Ltd.
(Formerly known as : Hosmedic Healthcare Projects Consultants Pvt. Ltd.)

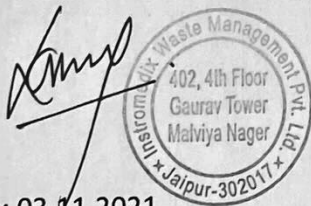
4th Floor, 402, Gaurav Tower, Malviya Nagar, Jaipur - 302017
M : 9772133777, 8875929212 E-mail : lipi.jpr@instromedix.net

LIST OF DIRECTORS

This is to certify that INSTROMEDIX WASTE MANAGEMENT PRIVATE LIMITED, a company formed and registered under Companies Act, 1956 with Corporate Identity No. U74999DL2015PTC284853 having registered office at A-5, A-6 Pragati Chambers, Ranjit Nagar Commercial Complex, New Delhi – 110008 has the following Director as on date.

S. No.	Name	Father's Name	Address	DIN
01	Mr. Pradeep Kumar Acharjee	Late G K Acharjee	C – 674, Sarita Vihar, New Delhi – 110 076	00564355
02	Mrs. Anterpreet Kaur Gulshan	Mr. Harvender Singh	EC-2, Inderpuri, New Delhi – 110 012	01189849

For Instromedix Waste Management Pvt Ltd



Date: 03.11.2021

Place: Jaipur

H.O. : A5-A6, PRAGATI CHAMBERS, RANJIT NAGAR, COMMERCIAL COMPLEX, NEW DELHI - 110 008

Phone : 011-25704965-67, 011-25707558, M : 9711203605

Fax : +91-11-47504962, E-mail : info@instromedix.net

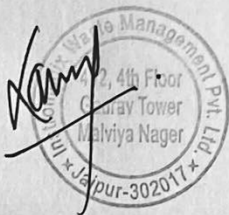
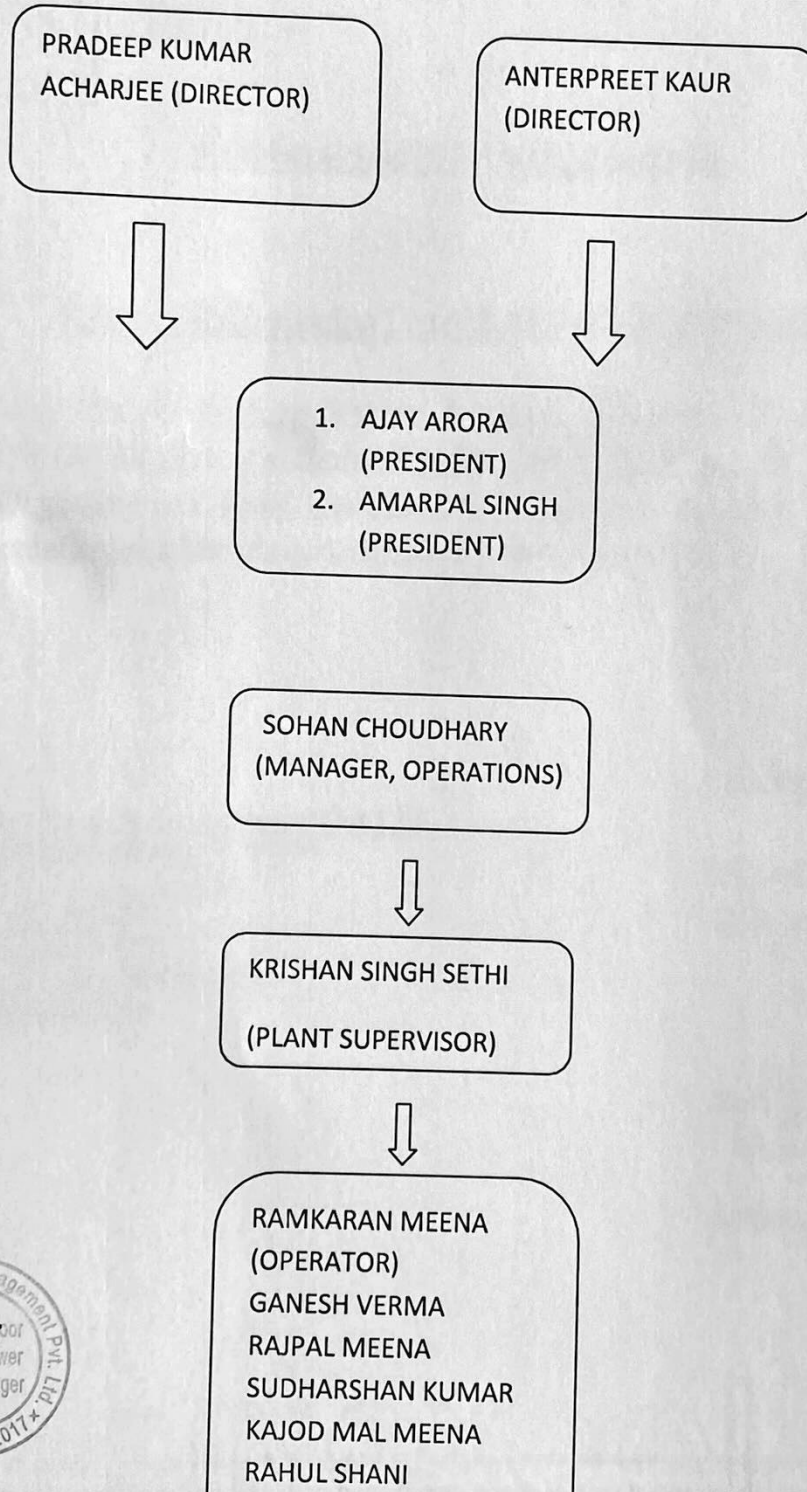
CIN No. : U74999DL2015PTC284853



Instromedix Waste Management Pvt. Ltd.
(Formerly known as : Hosmedic Healthcare Projects Consultants Pvt. Ltd.)

4th Floor, 402, Gaurav Tower, Malviya Nagar, Jaipur - 302017
M : 9772133777, 8875929212 E-mail : lipl.jpr@instromedix.net

INSTROMEDIX WASTE MANAGEMENT PVT LTD
ORGANIZATION CHART
(Organizational Structure for the proposed Project)





पर वन
औषधि योजना

कार्यालय उप वन संरक्षक (वन्यजीव), चिडियाघर, जयपुर

Phone: 0141-2617319

E-mail: dcfwl.zoo.forest@rajasthan.gov.in

क्रमांक एफ(0)सर्वे/जू/2021-22/

3248

दिनांक :- 28.12.21

निमित्त,

क्षेत्रीय अधिकारी,
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल
जयपुर।

विषय:- Regarding authenticated distance certificate of the National Park/wildlife Sanctuary seeking Enviromental Clearance under the provisions of the Enviromental Impact (EIA) Notification, 2006 within 10 km from the proposed a common Bio-medical Waste Treatment Facility (CBWTF) promoted by M/s Insmedix Waste Management pvt. Ltd. at Khasra no. 400 Rampuraoonti Village, Tehsil Sanager Jaipur Rajasthan.

संदर्भ:- M/s Instromedix Waste Management Pvt. Ltd के पत्र दिनांक 24.11.2021 के क्रम में।

महोदय,

उपरोक्त विषय में M/s Instromedix Waste Management Pvt. Ltd के पत्र दिनांक 24.11.2021 प्राप्त हुआ है जिसके क्रम में नाहरगढ़ वन्यजीव अभयारण्य एवं ईको सेन्सिटिव जोन से दूरी की सूचना क्षेत्रीय वन अधिकारी नाहरगढ़ अभयारण्य के पत्रांक 481 दिनांक 23.12.2021 के अनुसार (नाहरगढ़ अभयारण्य एवं पारिस्थितिकी संवेदी जोन की अधिसूचना की GPS की KML अनुसार) निम्नानुसार है।

S. No.	Observation	Reply		
		Pillar No.	Longitude	Latitude
1	Longitude and Latitude of the Proposed project.	1	75 30 49.69	26 46 38.79
		2	75 30 50.57	26 46 46.28
		3	75 30 53.00	26 46 46.03
		4	75 30 52.10	26 46 38.26
2	Distance of the Proposed project from boundary of Nahargarh Wildlife Sanctuary.	33.500 K.m. Approx.		
3	Distance of the Proposed project from boundary of Jamwamgarh Wildlife Sanctuary.	Not related to this office		
4	Distance of the Proposed project from boundary of Sariska Wildlife Sanctuary.	Not related to this office		
5	Distance of the Proposed project from Boundary of Sariska Tiger Reserve	Not related to this office		
6	Distance of the Proposed project from boundary of Critical Tiger Habitat.	Not related to this office		
7	Distance of the Proposed project from Eco- Sensitive Zone of Nahargarh Wildlife Sanctuary	31.500 K.m.Approx.		
8	Distance of the Proposed project form Eco- sensitive Zone of Jamwaramgarh Wildlife Sanctuary	Not related to this office		
9	Distance of the Proposed project from from Buffer Zone of Sariska Wildlife Sanctuary/ Sariska Tiger Reserve/ Critical Tiger habitat or any other forest area where mining activites cannot be carried out.	Not related to this office		

भवदीय

(अजय चिलौडा)

उप वन संरक्षक (वन्यजीव),
चिडियाघर, जयपुर

क्रमांक एफ()सर्वे/जू/2021-22/

दिनांक :-

प्रतिलिपि:- अति. प्रधान मुख्य वन संरक्षक एवं मुख्य वन्यजीव प्रतिपालक, राजस्थान जयपुर को सूचनार्थ प्रेषित है।

उप वन संरक्षक (वन्यजीव),
चिडियाघर, जयपुर

कार्यालय उप वन संरक्षक, वन्यजीव जयपुर

कोलडिपो परिसर, पानीपेच झोटवाडा रोड, जयपुर

क्रमांक: एफ () FCA/उवसवजी/2021-22/ 4887

दिनांक : 2.12.21

निमित्त:-

M/s Instromedix Waste Management Pvt. Ltd.,
A5-A6, Pragati Chambers, Ranjit Nagar,
Commercial complex, New delhi- 110008

विषय :- Regarding issuance of Certificate stating distance of proposed a Common Bio-medial Waste Treatment Facility (CBWTF) at Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur, from Jamwaramgarh Wildlife Sanctuary and ESZ of Jamwaramgarh Wildlife sanctuary.

सन्दर्भ :- Reference To your proposal letter no. GHPL/2021-22 recieved dated 30.11.2021

महोदय,

उपरोक्त विषयान्तर्गत संदर्भित पत्र के माध्यम से मैसर्स इन्स्ट्रोमेडिक्स वेस्ट मैनेजमेन्ट प्रा०. लि०., जिला जयपुर द्वारा आवेदन प्रस्तुत कर proposed a Common Bio-medial Waste Treatment Facility (CBWTF) at Khasra No. 400, Rampuraooti Village, Tehsil Sanganer, Jaipur के सम्बन्ध में जमवारामगढ अभ्यारण्य से दूरी के सम्बन्ध में रिपोर्ट चाही है। अतः फर्म द्वारा प्रस्तुत जी.पी. एस कॉर्डिनेटस् तथा संलग्न प्राप्त प्रोजेक्ट की KML अनुसार जमवारामगढ सेन्चुरी से दूरी संबंधी रिपोर्ट निम्नानुसार है:-

S.No.	Observation	Reply		
		Sr.No.	Longitude	Latitude
1.	Longitude and Latitude of the proposed project.	1	75°30'49.69"E	26°46'38.79"N
		2	75°30'50.57"E	26°46'46.28"N
		3	75°30'53.00"E	26°46'46.03"N
		4	75°30'52.10"E	26°46'38.26"N
3.	Distance of the proposed project from boundary of Jamwamgarh Wildlife Sanctuary.	53.97 Km. (Approx)		
8.	Distance of the proposed project from Eco-sensitive Zone of Jamwaramgarh Wildlife Sanctuary.	52.97 Km. (Approx)		

(सागर पवार, IFS)
उप वन संरक्षक
वन्यजीव जयपुर

कार्यालय उप वन संरक्षक, बाघ परियोजना सरिस्का

क्रमांक एफ()सर्वे/बापस/2021-22/ 10043

दिनांक:- 25.11.2021

निमित्त:-

The Director

M/s Instromedix Waste Management Pvt. Ltd

4th Floor 402, Gaurav Tower, Malviya Nagar, Jaipur- 302017

विषय:- Regarding authenticated distance Certificate of the National Park/ Wildlife Sanctuary Seeking Environmental Clearance under the Provision of the Environmental Impact Assessment (EIA) Notification, 2006 Within 10 Km from the proposed a Common Bio- medical Waste Treatment Facility (CBWTF) promoted by M/s Instromedix Waste Management Pvt. Ltd at Khasra No. 400, Rampuraooti Village, Tehsil Sananger Jaipur , Rajasthan.

संदर्भ:- आपका पत्र दिनांक 24.11.2021

महोदय,

उपरोक्त विषयान्तर्गत आपने संदर्भित पत्र के माध्यम से Common Bio- medical Waste Treatment Facility (CBWTF) promoted by M/s Instromedix Waste Management Pvt. Ltd at Khasra No. 400, Rampuraooti Village, Tehsil Sananger Jaipur , Rajasthan. के निम्न वर्णित जी.पी.एस. कोर्डिनेट के अनुसार दुरी संबंधी रिपोर्ट चाही है:-

Latitude	Longitude
26-46-38.79	75-30-49.69
26-46-46.28	75-30-50.57
26-46-46.03	75-30-53.00
26-46-38.26	75-30-52.10

उक्त प्राप्त जी.पी.एस. कोर्डिनेट के अनुसार वर्णित क्षेत्र, सरिस्का बाघ परियोजना के क्रिटिकल टाईगर हैबिटाट (सी.टी.एच.) की सीमा से 10 किमी की परिधि से बाहर है एवं सरिस्का बाघ परियोजना के ईको संवेदनशील क्षेत्र से बाहर स्थित है।

अतः सूचनार्थ आवश्यक कार्यवाही हेतु प्रेषित है।

भवदीय



(सुदर्शन शर्मा)

उप वन संरक्षक

बाघ परियोजना सरिस्का

BUDGETARY PROVISION FOR LABOURES

S. No	Facilities to be provided for Labourers	Capital Cost	Recurring cost per Annum
1.	Temporary housing facilities for construction workers	Rs.50,000/-	Rs.20,000/-
2.	Sanitation facility <ul style="list-style-type: none">• Separate toilets• Other charges	Rs.20,000/-	Rs.10,000/-
3.	Safe Drinking water	Rs.15,000/-	Rs.30,000/-
4.	Utensils	Rs.20,000/-	-
5.	Fuel for cooking	Rs.10,000/-	Rs.5000/-
6.	First Aid Facility	Rs.10,000/-	Rs. 10,000/-
7.	Medical Examination	-	Rs.20,000/-
Total		Rs.1,25,000/-	Rs.95,000/-

COMPLIANCE TO BMW RULES, 2016

S. No.	Duties of the Operator of a Common Bio-Medical Waste Treatment and Disposal Facility as per BMW Rules, 2016	Action to be taken for compliance
1.	Take all necessary steps to ensure that the bio-medical waste collected from the occupier is transported, handled, stored, treated and disposed of, without any adverse effect to the human health and the environment, in accordance with these rules and guidelines issued by the Central Government or, as the case may be, the central pollution control board from time to time;	<p>The same will be followed as per the rules and guidelines issued by the Central Government.</p> <p>The necessary steps to be taken are as follows:-</p> <p>Transportation:</p> <ul style="list-style-type: none"> • Waste will be transported in fully covered GPS enabled designated vehicles as per CPCB norms. • Vehicles will be properly labelled with the symbol of Biohazard as per the rules and displays the name, address and telephone number of the company. • The vehicles will be provided with the first aid kit to handle emergency situations. • The waste will be treated/disposed within 48 hours. <p>Handling:-</p> <ul style="list-style-type: none"> • Segregated waste from the colour coded bags will be collected in colour coded non-chlorinated bags in their dedicated vehicles. Sharps will be collected in puncture proof containers. • There will be separated cabins for driver/ staff and the bio medical waste. • PPE's to be provided to the drivers and staffs for handling the waste are gloves, masks and shoes to prevent them from any hazardous exposure. <p>Storage:-</p> <ul style="list-style-type: none"> • A separate cabin will be provided to supervise the operation of the equipment and to record

		<p>the waste handling and equipment operation data.</p> <ul style="list-style-type: none"> Two waste storage rooms, one for untreated waste and the other for the treated waste will be attached to the treatment room.
2	Ensure timely collection of bio-medical waste from the occupier as prescribed under these rules;	The bio-medical waste will be collected from the occupier on daily basis as prescribed under the rules.
3	Establish bar coding and global positioning system for handling of bio- medical waste within one year;	The Bar coding system will be adopted and GPS will be established in all collection vehicles.
4	Inform the prescribed authority immediately regarding the occupiers which are not handing over the segregated bio-medical waste in accordance with these rules;	The non-compliance report of the occupiers which do not handover the segregated bio-medical waste in accordance with these rules will be sent to the RSPCB.
5	Provide training for all its workers involved in handling of bio-medical waste at the time of induction and at least once a year thereafter;	Training to all the workers involved in bio-medical waste will be provided at the time of induction and six monthly thereafter.
6	Assist the occupier in training conducted by them for bio-medical waste management;	The same will be complied with.
7	Undertake appropriate medical examination at the time of induction and at least once in a year and immunize all its workers involved in handling of bio-medical waste for protection against diseases, including Hepatitis B and Tetanus, that are likely to be transmitted while handling bio-medical waste and maintain the records for the same;	Medical examinations of the workers will be done regularly as per applicable rules & guidelines.
8	Ensure occupational safety of all its workers involved in handling of bio-medical waste by providing appropriate and adequate personal protective equipment;	<p>The same will be being complied with.</p> <ul style="list-style-type: none"> The Personal Protective Equipment will be provided to the workers. They are enlisted as below:- Regular vaccination will be given to the workers and staff members. Regular health checkup will be provided to the workers.

9	Report major accidents including accidents caused by fire hazards, blasts during handling of bio-medical waste and the remedial action taken and the records relevant thereto, (including nil report) in Form I to the prescribed authority and also along with the annual report;	Proper precautionary measures will be taken for the same. If any such accident happens in future then the same will be reported to the concerned authority as prescribed.
10	Maintain a log book for each of its treatment equipment according to weight of batch; categories of waste treated; time, date and duration of treatment cycle and total hours of operation;	Logbook of each instrument will be maintained.
11	Allow occupier , who are giving waste for treatment to the operator, to see whether the treatment is carried out as per the rules;	All occupiers will be welcome to visit the plant whenever they want with prior permission.
12	Shall display details of authorization, treatment, annual report etc on its web-site;	The same will be complied with.
13	After ensuring treatment by autoclaving or microwaving followed by mutilation or shredding, whichever is applicable, the recyclables from the treated bio-medical wastes such as plastics and glass, shall be given to recyclers having valid consent or authorization or registration from the respective State Pollution Control Board or Pollution Control Committee;	The recyclables from the treated bio-medical wastes such as plastics and glass etc. will be given to recyclers.
14	Supply non-chlorinated plastic coloured bags to the occupier on chargeable basis, if required;	The same will be supplied to small health care units.
15	Common bio-medical waste treatment facility shall ensure collection of biomedical waste on holidays also;	The same will be being complied with. Waste will be also collected on holidays also.
16	Maintain all record for operation of incineration, hydro or autoclaving for a period of five years; and	All the records for operation of incineration & autoclaving will be maintained..

17	Upgrade existing incinerators to achieve the standards for retention time in secondary chamber and Dioxin and Furans within two years from the date of this notification.	<p>The same will be complied with.</p> <ul style="list-style-type: none"> • To reduce the precursors essential for formation of Dioxins & Furans, proper combustion will be ensured in secondary chamber by maintaining minimum temperature of about $1050 \pm 50^{\circ} \text{C}$ and a residence time of at least 2 seconds. • Quenching will be done by using lime slurry. • flue gases will be passed through bag house. • The flue gas will be being treated using adsorption by activated carbon. • Mist eliminator so as to eliminate mist in stack emissions. • ID fans will be being installed. • Stack height of 30mt.will be installed for treated pollutant dispersion.
----	---	--



Head Office (BMW)

Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Doongari, Jaipur-302

Phone: 141-5159600⁰⁰⁴ Fax: 0141-5159697



Registered

File No : F(BMW)/JAIPUR(Sanganer)/6217(1)/2021-2022/5830-5832

Order No : 2021-2022/BMW/6213

Dispatch Date: Jan 24 2022 10:48AM

Unit Id : 116972

M/s Instromedix Waste Management Pvt. Ltd.

**4th Floor, 402, Gaurav Tower, Malviya Nagar, ,
Jaipur**

Sub: Consent to Establish under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981.

Ref: Your application(s) for Consent to Establish dated 04/01/2022 and subsequent correspondence.

Sir,

Consent to Establish under the provisions of section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 (hereinafter to be referred as the Water Act) and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, (hereinafter to be referred as the Air Act) as amended to date and rules & the orders issued thereunder **,is hereby granted** for your **Instromedix Waste Management Pvt. Ltd. plant** situated / proposed at **Khasra No 400, Rampuraooti Village Sanganer Tehsil:Sanganer District:JAIPUR** , Rajasthan under the provisions of the said Act(s). This consent is granted on the basis of examination of the information furnished by you in consent application(s) and the documents submitted therewith, subject to the following conditions:-

- 1** That this Consent to Establish is valid for a period from **04/01/2022** to **31/12/2026 or date of Commencement of production / commissioning of the project or activities whichever is earlier .**
- 2** That this Consent is granted for manufacturing / producing following products / by products or carrying out the following activities or operation/processes or providing following services with capacities given below.





Head Office (BMW)
Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Doongari, Jaipur-302
Phone: 141-5159600⁰⁰⁴ Fax: 0141-5159697

Registered

File No : F(BMW)/JAIPUR(Sanganer)/6217(1)/2021-2022/5830-5832
Order No : 2021-2022/BMW/6213
Unit Id : 116972
Dispatch Date: Jan 24 2022 10:48AM

Particular	Type	Quantity / Capacity
Ash pit	Service	1.00 NO.
ETP	Service	10.00 KLD
INCINERATOR	Service	300.00 KG/HOUR
Sharp pit	Service	1.00 NO.
SHREDDER	Service	100.00 KG/HOUR
Treatment & Disposal of BMW Waste (Auto Clave)	Service	100.00 KG/HOUR

- 3 That in case of any increase in capacity or addition / modification / alteration or change in product mix or process or raw material or fuel the project proponent is required to obtain fresh consent to establish.
- 4 That the control equipment as proposed by the applicant shall be installed before trial operation is started for which prior consent to operate under the provision of the **Water Act and Air Act** shall be obtained. This consent to establish shall not be treated as consent to operate.
- 5 That the quantity of effluent generation and disposal along with mode of disposal for the treated effluent shall be as under:

Type of effluent	Max. effluent generation (KLD)	Quantity of effluent to be recycled (KLD)	Quantity of treated effluent to be disposed (KLD) and mode of disposal
Domestic Sewage	0.800	0.720	0.080 Sludge & Evaporation Loss
Trade Effluent	5.200	4.940	0.260 Sludge & Evaporation Loss





Head Office (BMW)
Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Doongari, Jaipur-302
Phone: 141-5159600⁰⁰⁴ Fax: 0141-5159697

Registered

File No : F(BMW)/JAIPUR(Sanganer)/6217(1)/2021-2022/5830-5832
Order No : 2021-2022/BMW/6213
Unit Id : 116972
Dispatch Date: Jan 24 2022 10:48AM

6 That the sources of air emissions along with pollution control measures and the emission standards for the prescribed parameters shall be as under:

Sources of Air Emissions	Pollution Control Measures	Prescribed	
		Parameter	Standard
D.G. Sets (1 nos)(125KVA)	ACOUSTIC ENCLOSURE , ADEQUATE STACK HEIGHT	--	--
Incinerator(300KG/HR.)	ACOUSTIC ENCLOSURE , VENTURY SCRUBBER	HCL NOx(NO and NO2 expressed as NO2) Total dioxins and furans Particulate Matter Hg and its compounds	50 mg/Nm3 400 mg/Nm3 0.1 ngTEQ/Nm3 at 11 percent O2 50 mg/Nm3 0.05 mg/Nm3

7 That the trade effluent shall be treated before disposal so as to conform to the standards prescribed under the Environment (Protection) Act-1986 for disposal Into Inland Surface Water. The main parameters for regular monitoring shall be as under





Head Office (BMW)

Rajasthan State Pollution Control Board

4, Institutional Area, Jhalana Doongari, Jaipur-302

Phone: 141-5159600⁰⁰⁴ Fax: 0141-5159697

Registered

File No : F(BMW)/JAIPUR(Sanganer)/6217(1)/2021-2022/5830-5832

Order No : 2021-2022/BMW/6213

Dispatch Date: Jan 24 2022 10:48AM

Unit Id : 116972

Parameters	Standards
Total Suspended Solids	Not to exceed 100 mg/l
Oil and Grease	Not to exceed 10 mg/l
Biochemical Oxygen Demand (3 days at 27°C)	Not to exceed 30 mg/l
Bio-assay Test	Minimum 90% survival after 96 hours with fish at 100% effluent
pH Value	Between 6.5 to 9.0
Chemical Oxygen Demand	Not to exceed 250 mg/l

- 8 That the facility shall obtain Environmental clearance from competent authority within 3 months or before commencement of work related to plant, whichever is earlier. A copy of Environmental Clearance shall be submitted to this office, as well as Regional Office.
- 9 That the project proponent shall comply with the provisions of Bio-medical Waste Management Rules, 2016 and guidelines issued by the Central Pollution Control Board (CPCB) from time to time.
- 10 That the project proponent shall comply with the guidelines for Handling, Treatment and Disposal of Waste Generated during Treatment/ Diagnosis/ Quarantine of COVID-19 Patients, issued by CPCB from time to time.
- 11 That this consent to establish is valid for Incinerator (1 no.- 300 kg/hour), Autoclave (1 no. - 100 kg/hour), Shredder (1 no. - 100 kg/hour), ETP (10 KLD), Ash pit (1 no.), Sharp pit/ Encapsulation (1 no.) and DG set (1 no. - 125 KVA).
- 12 That Project Proponent shall obtain consent to operate under the Water Act 1974 and the Air Act 1981 and Authorization under Bio-Medical Waste (Management and Handling) Rules 2016 from the State Board prior to commissioning of the facility.
- 13 That Online Continuous Emission Monitoring System (OCEMS) shall be installed by the facility as per CPCB guidelines with connectivity from RSPCB as well as CPCB.
- 14 That adequate measures shall be taken to prevent odour problem from the facility.
- 15 That GPS system shall be provided with vehicles engaged for transportation of Bio-Medical Waste (BMW) from HCFs to the facility.





Head Office (BMW)

Rajasthan State Pollution Control Board

4, Institutional Area, Jhalana Doongari, Jaipur-302

Phone: 141-5159600⁰⁰⁴ Fax: 0141-5159697

Registered

File No : F(BMW)/JAIPUR(Sanganer)/6217(1)/2021-2022/5830-5832

Order No : 2021-2022/BMW/6213

Dispatch Date: Jan 24 2022 10:48AM

Unit Id : 116972

- 16 That bar coding system shall be implemented for tracking of BMW from its generation to treatment and disposal.
- 17 That one D.G. Set of 125 KVA shall be provided with stack of adequate height as well as acoustic enclosures.
- 18 That the project proponent shall comply with the operating standards of incinerators specified under Bio-medical Waste Management Rules, 2016.
- 19 That adequate air pollution control measures shall be provided with incinerator along with a stack of minimum 30 meters height from ground level so as to meet the prescribed standards as mentioned at S. No. 6.
- 20 That incinerator of specifications in accordance with CPCB guidelines amended from time to time shall be installed.
- 21 That no ground water shall be drawn without prior permission of CGWA.
- 22 That the water flow meters shall be provided and maintained at all suitable points to measure quantity of daily water received, water consumption, waste water generation, waste water treated and treated waste water recycled and utilized for plantation/gardening purposes. Daily record of the same shall be maintained and submitted to the Board.
- 23 That ETP shall be installed prior to commissioning of the facility.
- 24 That ETP treated water shall be utilized for gainful purposes within the premises & zero discharge status shall be maintained from the premises.
- 25 That ETP sludge shall be stored and disposed in accordance with Hazardous Waste Rules.
- 26 That adequately designed Rain Water Harvesting structure shall be provided for prevention and recharge of ground water in and around the area.
- 27 That daily record of BMW received, treated and disposed shall be maintained and submitted to the Board from time to time.
- 28 That used CFLs/FLs should be properly collected and disposed off/sent for recycling as per the prevailing rules/guidelines issued by the regulatory authority. Use of solar panels also may be done to the extent possible.
- 29 That this consent to establish shall be subject to compliance of directions or order passed by National Green Tribunal (NGT)/ court of law in the matter, if any.
- 30 That any incorrect information submitted in the consent application form or declaration shall make the Hospital liable for legal action under section 42 of the Water Act and section 38 of the Air Act.





Head Office (BMW)

Rajasthan State Pollution Control Board

4, Institutional Area, Jhalana Doongari, Jaipur-302

Phone: 141-5159600⁰⁰⁴ Fax: 0141-5159697

Registered

File No : F(BMW)/JAIPUR(Sanganer)/6217(1)/2021-2022/5830-5832

Order No : 2021-2022/BMW/6213

Dispatch Date: Jan 24 2022 10:48AM

Unit Id : 116972

31 That, notwithstanding anything provided hereinabove, the State Board shall have power and reserves its right, as contained **under section 27(2) of the Water Act and under section 21(6) of the Air Act** to review anyone or all the conditions imposed here in above and to make such variation as it deemed fit for the purpose of compliance of the **Water Act and Air Act**.

32 That the grant of this **Consent to Establish** is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the industry/ unit/ project proponent.

33 That the grant of this **Consent to Establish** shall not, in any way, adversely affect or jeopardize the legal proceedings, if any, instituted in the past or that could be instituted against you by the State Board for violation of the provisions of the Act or the Rules made thereunder.

This **Consent to Establish** shall also be subject, beside the aforesaid specific conditions, to the general conditions given in the enclosed Annexure. The project proponent will comply with the provisions of the **Water Act and Air Act** and to such other conditions as may, from time to time, be specified by the State Board under the provisions of the aforesaid Act(s). Please note that, non compliance of any of the above stated conditions would tantamount to revocation of **Consent to Establish** and project proponent / occupier shall be liable for legal action under the the relevant provisions of the said Act(s).

This bears the approval of the competent authority.

Yours Sincerely

Group Incharge[BMW]

(A): Copy To:-

- 1 Regional Officer, Regional Office, Rajasthan State Pollution Control Board, Jaipur (South) for information and necessary action.
- 2 Master File.





Head Office (BMW)
Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Doongari, Jaipur-302
Phone: 141-5159600⁰⁰⁴ Fax: 0141-5159697

Registered

File No : F(BMW)/JAIPUR(Sanganer)/6217(1)/2021-2022/5830-5832

Order No : 2021-2022/BMW/6213

Dispatch Date: Jan 24 2022 10:48AM

Unit Id : 116972

Group Incharge[BMW]



Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021221-01	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

**Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)**

Sampling & Analysis Data

Sample Drawn By	NTL Laboratory	:	Monitoring Period	Dec 2021 - Feb 2022
Sampling Location	Project Site (AQ1)	:	Protocol Used	CPCB Guidelines
Sampling Plan & Procedure	SOP-AAQ/08	:	Sampling Instrument Used	Respirable Dust Sampler (PM ₁₀), Fine Particulate (PM _{2.5}) Sampler

S. No.	Monitoring Date	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	HC	TOC	HF	HCL	H ₂ SO ₄	Cd	Hg	VOCs
1	02.12.2021	79.82	39.27	14.75	19.5	1.12	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
2	04.12.2021	60.58	30.72	11.78	18.88	1.08	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
3	08.12.2021	60.88	35.72	12.28	16.89	1.31	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
4	13.12.2021	61.31	34.77	12.86	17.33	0.96	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
5	20.12.2021	61.01	37.82	11.79	17.93	1.07	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
6	23.12.2021	60.87	33.84	13.18	18.38	0.98	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
7	27.12.2021	60.92	30.86	14.25	17.87	1.12	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
8	29.12.2021	61.06	33.02	12.98	16.86	1.27	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
9	01.01.2022	61.12	36.2	13.79	16.99	1.05	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
10	02.01.2022	60.98	31.02	12.83	17.42	1.32	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
11	06.01.2022	61.35	30.84	13.33	18.11	1.22	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
12	11.01.2022	72.76	37.77	13.95	18.58	0.85	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
13	15.01.2022	73.72	38.89	11.84	17.02	1.48	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
14	18.01.2022	75.1	34.12	12.08	16.93	1.27	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
15	22.01.2022	78.22	38.91	12.04	17.04	1.09	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
16	27.01.2022	75.99	37.93	13.44	16.87	0.97	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
17	02.02.2022	76.13	37.11	14.28	18.24	0.76	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
18	04.02.2022	73.66	30.94	11.93	17.03	1.34	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
19	08.02.2022	71.04	36.72	13.02	16.88	1.15	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
20	13.02.2022	60.75	30.76	12.09	17.08	0.98	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
21	15.02.2022	61.31	31.03	11.97	17.09	1.38	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
22	18.02.2022	60.81	30.86	14.21	17.12	1.36	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
23	20.02.2022	61.1	31.08	12.02	17.15	0.87	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
24	22.02.2022	60.53	30.69	11.76	16.85	1.08	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Min		60.53	30.69	11.76	16.85	0.76	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Max		79.82	39.27	14.75	19.5	1.48	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Avg.		66.29	34.20	12.85	17.50	1.13	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
98 percentile		79.08	39.10	14.53	19.21	1.43	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m³	60 µg/m³	80 µg/m³	80 µg/m³	2 mg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021221-02	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Drawn By NTL Laboratory : **Monitoring Period** Dec 2021 - Feb 2022
Sampling Location Chhitrali(AQ2) : **Protocol Used** CPCB Guidelines
Sampling Plan & Procedure SOP-AAQ/08 : **Sampling Instrument Used** Respirable Dust Sampler (PM₁₀),
Fine Particulate (PM_{2.5}) Sampler

S. No.	Monitoring Date	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	HC	TOC	HF	HCL	H ₂ SO ₄	Cd	Hg	VOCs
1	02.12.2021	59.36	29.8	11.85	15.88	0.64	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
2	04.12.2021	59.26	29.77	12.69	16.36	0.89	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
3	08.12.2021	59.3	29.78	11.7	16.78	0.62	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
4	13.12.2021	78.45	38.14	13.88	18.36	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
5	20.12.2021	59.29	30.25	12.91	17.69	0.67	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
6	23.12.2021	60.31	29.86	11.72	16.72	0.82	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
7	27.12.2021	59.38	30.12	12.68	18.26	0.97	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
8	29.12.2021	59.37	33.87	11.73	16.72	0.87	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
9	01.01.2022	59.42	35.91	12.94	17.84	1.13	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
10	02.01.2022	60.11	32.02	11.78	17.88	0.78	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
11	06.01.2022	59.45	29.76	12.69	17.44	0.86	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
12	11.01.2022	73.36	30.14	11.7	16.76	0.75	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
13	15.01.2022	60.29	33.78	12.68	15.94	0.84	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
14	18.01.2022	68.38	30.22	13.42	16.37	1.29	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
15	22.01.2022	60.37	35.81	13.76	16.58	0.76	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
16	27.01.2022	72.55	31.93	12.85	15.91	0.85	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
17	02.02.2022	75.76	35.85	12.97	15.69	0.77	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
18	04.02.2022	59.46	32.97	13.67	16.74	1.04	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
19	08.02.2022	59.3	30.3	11.84	17.97	0.97	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
20	13.02.2022	65.38	32	13.78	15.83	0.75	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
21	15.02.2022	59.66	29.87	11.84	17.71	0.46	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
22	18.02.2022	60.23	29.94	12.77	15.91	0.77	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
23	20.02.2022	63.12	29.86	11.76	15.77	0.63	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
24	22.02.2022	59.25	29.73	11.55	15.67	0.82	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Min		59.25	29.73	11.55	15.67	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Max		78.45	38.14	13.88	18.36	1.29	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Avg.		62.95	31.74	12.55	16.78	0.81	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
98 percentile		77.21	37.11	13.83	18.31	1.22	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³	2 mg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-021221-03	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Drawn By NTL Laboratory : **Monitoring Period** Dec 2021 - Feb 2022
Sampling Location Bagru(AQ3) : **Protocol Used** CPCB Guidelines
Sampling Plan & Procedure SOP-AAQ/08 : **Sampling Instrument Used** Respirable Dust Sampler (PM₁₀),
Fine Particulate (PM_{2.5}) Sampler

S. No.	Monitoring Date	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	HC	TOC	HF	HCL	H ₂ SO ₄	Cd	Hg	VOCs
1	02.12.2021	63.12	26.41	7.28	11.54	0.58	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
2	04.12.2021	70.95	24.69	9.46	12.98	0.82	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
3	08.12.2021	67.28	28.15	8.11	11.23	0.63	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
4	13.12.2021	68.41	25.46	7.86	10.48	0.69	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
5	20.12.2021	72.69	27.34	5.84	12.36	0.71	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
6	23.12.2021	64.21	30.08	6.21	11.92	0.84	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
7	27.12.2021	70.11	27.16	7.09	10.24	0.98	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
8	29.12.2021	67.95	29.87	8.29	13.61	1.32	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
9	01.01.2022	67.28	32.54	7.61	12.78	0.68	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
10	02.01.2022	72.89	28.95	8.32	11.36	0.75	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
11	06.01.2022	69.46	30.28	9.78	12.41	0.92	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
12	11.01.2022	70.25	26.47	8.46	10.76	0.71	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
13	15.01.2022	67.28	30.56	8.25	12.08	0.65	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
14	18.01.2022	73.32	31.95	6.89	9.45	0.72	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
15	22.01.2022	70.9	29.12	9.02	10.91	0.89	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
16	27.01.2022	68.74	31.34	7.63	11.58	0.64	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
17	02.02.2022	72.61	24.46	6.78	10.73	0.81	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
18	04.02.2022	66.49	28.27	7.49	9.45	0.76	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
19	08.02.2022	70.58	31.49	6.21	10.82	0.71	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
20	13.02.2022	69.21	30.21	7.48	12.09	0.89	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
21	15.02.2022	65.24	28.79	8.72	11.74	0.91	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
22	18.02.2022	72.59	25.43	6.54	9.46	0.58	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
23	20.02.2022	67.15	32.81	7.19	10.84	1.24	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
24	22.02.2022	65.28	30.96	8.35	12.45	0.59	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Min		63.12	24.46	5.84	9.45	0.58	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Max		73.32	32.81	9.78	13.61	1.32	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Avg.		68.92	28.87	7.70	11.39	0.79	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
98 percentile		73.12	32.69	9.63	13.32	1.28	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³	2 mg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-061221-04	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Drawn By NTL Laboratory : **Monitoring Period** Dec 2021 - Feb 2022
Sampling Location Rampura(AQ4) : **Protocol Used** CPCB Guidelines
Sampling Plan & Procedure SOP-AAQ/08 : **Sampling Instrument Used** Respirable Dust Sampler (PM₁₀),
Fine Particulate (PM_{2.5}) Sampler

S. No.	Monitoring Date	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	HC	TOC	HF	HCL	H ₂ SO ₄	Cd	Hg	VOCs
1	06.12.2021	66.54	25.28	8.45	11.24	0.71	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
2	07.12.2021	68.79	30.45	6.28	13.81	0.93	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
3	14.12.2021	67.02	28.12	7.84	11.72	0.85	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
4	15.12.2021	68.21	27.86	8.12	12.68	0.98	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
5	25.12.2021	70.49	25.19	9.24	11.29	1.24	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
6	26.12.2021	72.08	29.72	7.63	10.23	0.62	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
7	30.12.2021	67.12	25.08	9.31	12.41	0.56	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
8	31.12.2021	68.97	30.79	6.98	12.46	0.62	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
9	02.01.2022	70.48	26.42	7.45	11.78	0.74	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
10	03.01.2022	66.96	27.31	7.92	9.62	1.28	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
11	9.01.2022	72.15	29.45	8.15	12.75	0.75	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
12	10.01.2022	74.06	30.11	7.24	10.31	0.71	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
13	19.01.2022	69.34	28.48	8.13	13.86	0.86	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
14	20.01.2022	71.81	26.92	6.52	12.31	0.63	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
15	24.01.2022	68.57	25.14	7.85	14.75	0.59	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
16	25.01.2022	70.12	27.69	8.19	12.62	0.81	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
17	01.02.2022	72.94	29.87	9.18	14.57	1.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
18	02.02.2022	66.21	30.46	8.94	11.54	0.82	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
19	06.02.2022	74.39	31.27	8.56	9.87	0.78	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
20	07.02.2022	75.28	29.48	7.61	11.32	0.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
21	16.02.2022	69.45	32.04	8.76	10.86	1.32	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
22	17.02.2022	66.21	26.45	7.91	13.21	0.94	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
23	23.02.2022	71.59	30.78	8.23	11.95	0.81	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
24	24.02.2022	69.87	25.02	9.02	10.54	0.91	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Min		66.21	25.02	6.28	9.62	0.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Max		75.28	32.04	9.31	14.75	1.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Avg.		69.94	28.31	8.06	11.99	0.85	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
98 percentile		74.87	31.69	9.28	14.67	1.37	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³	2 mg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-061221-05	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Drawn By NTL Laboratory : **Monitoring Period** Dec 2021 - Feb 2022
Sampling Location Syosinghpura(AQ5) : **Protocol Used** CPCB Guidelines
Sampling Plan & Procedure SOP-AAQ/08 : **Sampling Instrument Used** Respirable Dust Sampler (PM₁₀),
Fine Particulate (PM_{2.5}) Sampler

S. No.	Monitoring Date	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	HC	TOC	HF	HCL	H ₂ SO ₄	Cd	Hg	VOCs
1	06.12.2021	67.43	34.32	8.64	13.2	0.85	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
2	07.12.2021	65.68	35.75	7.57	14.45	0.96	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
3	14.12.2021	70.36	37.82	9.46	12.14	0.56	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
4	15.12.2021	64.26	31.57	7.32	12.59	0.49	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
5	25.12.2021	70.12	35.31	10.46	13.46	0.54	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
6	26.12.2021	69.42	32.05	7.47	11.01	0.53	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
7	30.12.2021	72.96	29.65	6.89	10.43	1.13	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
8	31.12.2021	73.87	35.28	8.45	12.13	1.08	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
9	02.01.2022	67.88	27.72	8.37	12.63	1.17	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
10	03.01.2022	65.24	28.52	10.46	15.25	0.56	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
11	9.01.2022	67.6	31.95	8.72	16.48	1.22	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
12	10.01.2022	73.17	37.38	7.84	14.55	0.65	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
13	19.01.2022	68.07	45.97	10.03	14.43	0.68	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
14	20.01.2022	69.66	28.28	9.56	13.94	0.57	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
15	24.01.2022	72.7	32.25	6.51	12.27	0.65	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
16	25.01.2022	71.27	33.56	8.16	12.85	0.77	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
17	01.02.2022	67.02	43.07	7.33	15.25	0.76	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
18	02.02.2022	70.28	35.25	9.76	13.46	0.85	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
19	06.02.2022	74.01	35.01	8.76	12.96	0.65	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
20	07.02.2022	70.13	29.03	9.16	14.91	0.98	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
21	16.02.2022	73.34	43.55	6.72	11.79	0.78	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
22	17.02.2022	76.14	31.04	8.47	14.87	1.18	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
23	23.02.2022	70.38	42.57	9.26	13.93	0.57	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
24	24.02.2022	69.16	34.78	6.53	12.63	1.21	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Min		64.26	27.72	6.51	10.43	0.49	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Max		76.14	45.97	10.46	16.48	1.22	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Avg.		70.01	34.65	8.41	13.40	0.82	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
98 percentile		75.16	44.86	10.46	15.91	1.22	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³	2 mg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-061221-06	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Drawn By NTL Laboratory : **Monitoring Period** Dec 2021 - Feb 2022
Sampling Location Sherpura(AQ6) : **Protocol Used** CPCB Guidelines
Sampling Plan & Procedure SOP-AAQ/08 : **Sampling Instrument Used** Respirable Dust Sampler (PM₁₀),
Fine Particulate (PM_{2.5}) Sampler

S. No.	Monitoring Date	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	HC	TOC	HF	HCL	H ₂ SO ₄	Cd	Hg	VOCs
1	06.12.2021	59.38	20.28	10.56	10.98	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
2	07.12.2021	59.46	20.23	9.75	10.98	0.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
3	14.12.2021	58.47	19.26	10.25	12.02	0.37	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
4	15.12.2021	53.78	22.3	10.36	11.12	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
5	25.12.2021	55.46	20.25	10.11	13.97	0.51	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
6	26.12.2021	53.42	21.61	9.76	10.99	0.48	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
7	30.12.2021	58.34	20.42	10.49	11	0.39	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
8	31.12.2021	57.39	23.28	10.31	11.14	0.46	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
9	02.01.2022	56.32	19.35	9.81	12.16	0.48	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
10	03.01.2022	57.72	19.33	10.21	14.03	0.42	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
11	9.01.2022	53.44	19.22	9.88	11.07	0.48	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
12	10.01.2022	65.8	24.77	10.65	15.4	0.39	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
13	19.01.2022	59.37	19.37	9.87	11.11	0.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
14	20.01.2022	59.42	23.27	10.24	13.08	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
15	24.01.2022	64.89	22.38	10.41	12.07	0.54	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
16	25.01.2022	63.45	24.37	10.65	11.1	0.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
17	01.02.2022	53.54	21.29	10.33	14.12	0.38	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
18	02.02.2022	53.51	19.28	10.59	11.01	0.53	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
19	06.02.2022	56.48	20.35	9.78	10.98	0.48	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
20	07.02.2022	53.56	23.41	9.93	10.97	0.35	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
21	16.02.2022	58.49	24.42	10.11	11.16	0.46	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
22	17.02.2022	53.47	20.47	9.83	11.14	0.54	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
23	23.02.2022	53.54	19.25	9.79	11.12	0.49	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
24	24.02.2022	53.4	19.21	9.74	10.96	0.54	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Min		53.4	19.21	9.74	10.96	0.35	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Max		65.8	24.77	10.65	15.4	0.54	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Avg.		57.17	21.14	10.14	11.82	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
98 percentile		65.38	24.61	10.65	14.81	0.54	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m³	60 µg/m³	80 µg/m³	80 µg/m³	2 mg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011221-07	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Drawn By NTL Laboratory : **Monitoring Period** Dec 2021 - Feb 2022
Sampling Location Nayabas(AQ7) : **Protocol Used** CPCB Guidelines
Sampling Plan & Procedure SOP-AAQ/08 : **Sampling Instrument Used** Respirable Dust Sampler (PM₁₀),
Fine Particulate (PM_{2.5}) Sampler

S. No.	Monitoring Date	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	HC	TOC	HF	HCL	H ₂ SO ₄	Cd	Hg	VOCs
1	01.12.2021	57.36	24.79	9.65	13.54	0.35	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
2	02.12.2021	62.42	22.78	10.35	12.48	1.24	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
3	07.12.2021	69.48	23.73	9.63	14.5	1.67	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
4	08.12.2021	59.72	22.74	10.47	13.63	1.38	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
5	15.12.2021	62.55	26.79	10.65	12.79	0.52	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
6	16.12.2021	66.49	25.81	9.6	15.56	0.43	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
7	23.12.2021	67.43	22.83	10.72	14.46	0.59	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
8	24.12.2021	63.57	22.74	11.21	12.5	1.358	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
9	05.01.2022	61.62	26.76	9.63	13.78	1.4	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
10	06.01.2022	68.51	23.82	10.69	15.63	1.75	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
11	14.01.2022	70.61	27.58	11.3	16.39	1.05	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
12	15.01.2022	64.48	24.86	10.35	15.53	1.25	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
13	21.01.2022	59.23	25.94	9.66	14.21	1.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
14	22.01.2022	55.88	26.83	10.68	12.68	1.36	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
15	27.01.2022	60.3	22.71	9.67	15.72	1.74	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
16	28.01.2022	55.89	22.85	10.3	14.66	1.11	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
17	03.02.2022	56.24	22.92	9.7	12.58	1.52	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
18	04.02.2022	55.76	22.77	9.72	13.84	0.89	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
19	09.02.2022	55.41	22.65	9.58	12.45	0.78	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
20	10.02.2022	62.55	22.94	10.67	15.86	1.72	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
21	17.02.2022	66.49	22.77	10.62	14.72	0.56	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
22	18.02.2022	67.43	22.76	11.24	12.52	1.63	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
23	25.02.2022	63.57	22.83	10.63	13.51	0.68	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
24	26.02.2022	58.32	22.83	9.62	12.73	0.99	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Min		55.41	22.65	9.58	12.45	0.35	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Max		70.61	27.58	11.3	16.39	1.75	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Avg.		62.14	24.00	10.26	14.01	1.14	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
98 percentile		70.09	27.24	11.27	16.15	1.75	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m³	60 µg/m³	80 µg/m³	80 µg/m³	2 mg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Ambient Air Quality Analysis	AAQ-011221-08	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Drawn By NTL Laboratory : **Monitoring Period** Dec 2021 - Feb 2022
Sampling Location Nariya(AQ8) : **Protocol Used** CPCB Guidelines
Sampling Plan & Procedure SOP-AAQ/08 : **Sampling Instrument Used** Respirable Dust Sampler (PM₁₀),
Fine Particulate (PM_{2.5}) Sampler

S. No.	Monitoring Date	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	HC	TOC	HF	HCL	H ₂ SO ₄	Cd	Hg	VOCs
1	01.12.2021	68.64	45.12	11.12	18.32	0.56	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
2	02.12.2021	67.9	38.54	13.65	18.67	0.57	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
3	07.12.2021	71	40.53	16.76	17.89	0.48	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
4	08.12.2021	65.12	38.32	15.76	18.31	0.49	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
5	15.12.2021	67.97	43.21	13.89	15.89	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
6	16.12.2021	65.21	41.78	12.45	15.62	0.53	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
7	23.12.2021	66.87	35.67	16.78	16.09	0.58	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
8	24.12.2021	63.32	37.98	14.67	17.2	0.47	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
9	05.01.2022	71.45	38.54	13.78	19.72	0.56	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
10	06.01.2022	69.43	41	9.23	20.01	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
11	14.01.2022	70.65	43.82	10.67	19.01	0.46	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
12	15.01.2022	69.32	41.88	13.62	19.68	0.43	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
13	21.01.2022	64.21	38.74	14.21	17.92	0.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
14	22.01.2022	74.65	36.78	14.65	18.77	0.39	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
15	27.01.2022	66.76	41.77	16.33	19.93	0.45	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
16	28.01.2022	61.41	34.89	11.93	20.31	0.42	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
17	03.02.2022	64.55	36.22	13.9	18.96	0.39	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
18	04.02.2022	69.34	34.21	14.21	19.32	0.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
19	09.02.2022	61.67	37.12	13.71	19.9	0.4	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
20	10.02.2022	61.89	38.34	13.76	18.91	0.49	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
21	17.02.2022	70.44	36.9	12.89	19.61	0.53	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
22	18.02.2022	62.1	31.56	11.67	19.86	0.41	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
23	25.02.2022	59.28	36.22	14.78	19.8	0.49	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
24	26.02.2022	59.51	38.56	18.56	20.01	0.48	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Min		59.28	31.56	9.23	15.62	0.39	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Max		74.65	45.12	18.56	20.31	0.58	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
Avg.		66.36	38.65	13.87	18.74	0.47	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
98 percentile		73.18	44.52	17.74	20.17	0.58	ND	<0.1	ND	<1.0	<0.1	<0.001	<0.001	<0.1
NAAQS, For 24 hourly monitoring (except CO for Eight hour)		100 µg/m ³	60 µg/m ³	80 µg/m ³	80 µg/m ³	2 mg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Water Quality	W-150222-025	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraaonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received on : 15/02/2022
Sample Drawn By : Laboratory
Sample Quantity : 2.0 Lt.
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Description : Ground Water Collected from Project Site (GW1)

MICROBIOLOGICAL REQUIREMENT

RESULTS				
S.No.	Parameter	Test Method	Results	Required as per IS-10500:2012
1.	<i>Escherichia coli</i>	IS-15185	Absent	Absent/100ml
2.	<i>Coliform Bacteria</i>	IS-15185	Absent	Absent/100ml

ORGANOLEPTIC & PHYSICAL PARAMETERS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Colour	IS-3025(P-04)	<1.0	Hazen	5	15
2.	Odour	IS-3025(P-05)	Agreeable	-	Agreeable	Agreeable
3.	Taste	IS-3025(P-07 & 08)	Agreeable	-	Agreeable	-
4.	Turbidity	IS-3025(P-10)	<1.0	NTU	1	5
5.	pH value	IS-3025(P-04)	7.36	-	6.5-8.5	-
6.	Total Dissolve Solid (TDS)	IS-3025(P-16)	1580	mg/l	500	2000
7.	Conductivity	IS:3025(Part-14)	2458	µmhos/cm	-	-

GENERAL PARAMETERS CONCERNING SUBSTANCES UNDESIRABLE IN EXCESSIVE AMOUNTS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Aluminum (as Al)	IS: 3025 (P- 55)	<0.01	mg/l	0.03	0.2
2.	Total Ammonia	IS: 3025 (P- 34)	<0.10	mg/l	0.5	No Relaxation
3.	Anionic surface Detergents(as MBAS)	Annex K of IS-13428	<0.10	mg/l	0.2	1.0
4.	Barium (as Ba)	IS: 15302	<0.10	mg/l	0.7	No Relaxation
5.	Boron (as B)	IS: 3025 (P- 57)	<0.10	mg/l	0.5	2.4
6.	Calcium (as Ca)	IS: 3025 (P- 40)	128.50	mg/l	75	200
7.	Chloramines (as Cl ₂)	IS: 3025 (P- 26)	<1.00	mg/l	4.0	No Relaxation
8.	Chloride (as Cl)	IS: 3025 (P- 32)	312.66	mg/l	250	1000

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
9.	Copper (as Cu)	IS: 3025 (P-42)	<0.05	mg/l	0.05	1.5
10.	Fluoride (as F)	IS: 3025 (P-60)	1.57	mg/l	1.0	1.5
11.	Free Residual Chlorine	IS: 3025 (P-26)	<0.1	mg/l	0.2	1.0
12.	Iron (as Fe)	IS: 3025(P-52)	0.260	mg/l	1.0	No Relaxation
13.	Magnesium (as Mg)	IS: 3025 (P-46)	70.36	mg/l	30	100
14.	Manganese (as Mn)	Clause 35 of IS 3025	<0.01	mg/l	0.1	0.3
15.	Mineral Oil	Clause 6 of IS: 3025	<0.50	mg/l	0.5	No Relaxation
16.	Nitrate (as NO ₃)	IS: 3025 (P- 34)	21.40	mg/l	45	No Relaxation
17.	Selenium (as Se)	IS: 3025 (P- 56)	<0.01	mg/l	0.01	No Relaxation
18.	Silver (as Ag)	Annex J IS: 13428	<0.05	mg/l	0.1	No Relaxation
19.	Sulphate (as SO ₄)	IS: 3025 (P- 24)	164.2	mg/l	200	400
20.	Sulphide(as H ₂ S)	IS-3025 (P-29)	<0.05	mg/l	0.05	No Relaxation
21.	Alkalinity (as Ca CO ₃)	IS: 3025 (P- 23)	380.0	mg/l	200	600
22.	Total Hardness (as CaCO ₃)	IS: 3025 (P- 23)	612.0	mg/l	200	600
23.	Zinc (as Zn)	IS: 3025 (P- 49)	0.256	mg/l	5.0	15
24.	Phenolic Compound as (C ₆ H ₅ OH)	IS: 3025 (P- 43)	BDL	mg/l	0.001	0.002

Parameters Concerning Toxic Substances:

S. No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Cadmium (as Cd)	IS-3025(P-41)	<0.001	mg/l	0.003	No Relaxation
2.	Cyanide (as CN)	IS-3025(P-27)	<0.01	mg/l	0.05	No Relaxation
3.	Lead (as Pb)	IS-3025(P-47)	<0.01	mg/l	0.01	No Relaxation
4.	Mercury (as Hg)	IS-3025(P-48)	<0.001	mg/l	0.001	No Relaxation
5.	Molybdenum (Mo)	IS-3025(P-2)	<0.05	mg/l	0.07	No Relaxation
6.	Nickel (as Ni)	Annex L of IS-13428	<0.01	mg/l	0.02	No Relaxation
7.	Polynuclear Aromatic	APHA 6440	<0.0001	mg/l	0.0001	No Relaxation
8.	Poly chlorinatedbiphenyl	APHA 6630	<0.0001	mg/l	0.0005	No Relaxation
9.	Arsenic (as As)	IS-3025(P-37)	<0.01	mg/l	0.01	No Relaxation
10.	Total Chromium (as Cr)	Annex J of IS-13428	<0.05	mg/l	0.05	No Relaxation

***Remark – BDL- Below Detection Limit.**

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Water Quality	W-150222-026	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received on : 15/02/2022
Sample Drawn By : Laboratory
Sample Quantity : 2.0 Lt.
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Description : Ground Water Collected from Chhitrali (GW2)

MICROBIOLOGICAL REQUIREMENT

RESULTS				
S.No.	Parameter	Test Method	Results	Required as per IS-10500:2012
1.	<i>Escherichia coli</i>	IS-15185	Absent	Absent/100ml
2.	<i>Coliform Bacteria</i>	IS-15185	Absent	Absent/100ml

ORGANOLEPTIC & PHYSICAL PARAMETERS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Colour	IS-3025(P-04)	<1.0	Hazen	5	15
2.	Odour	IS-3025(P-05)	Agreeable	-	Agreeable	Agreeable
3.	Taste	IS-3025(P-07 & 08)	Agreeable	-	Agreeable	-
4.	Turbidity	IS-3025(P-10)	<1.0	NTU	1	5
5.	pH value	IS-3025(P-04)	7.52	-	6.5-8.5	-
6.	Total Dissolve Solid (TDS)	IS-3025(P-16)	1456	mg/l	500	2000
7.	Conductivity	IS:3025(Part-14)	2269	µmhos/cm	-	-

GENERAL PARAMETERS CONCERNING SUBSTANCES UNDESIRABLE IN EXCESSIVE AMOUNTS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Aluminum (as Al)	IS: 3025 (P- 55)	<0.01	mg/l	0.03	0.2
2.	Total Ammonia	IS: 3025 (P- 34)	<0.10	mg/l	0.5	No Relaxation
3.	Anionic surface Detergents(as MBAS)	Annex K of IS-13428	<0.10	mg/l	0.2	1.0
4.	Barium (as Ba)	IS: 15302	<0.10	mg/l	0.7	No Relaxation
5.	Boron (as B)	IS: 3025 (P- 57)	<0.10	mg/l	0.5	2.4
6.	Calcium (as Ca)	IS: 3025 (P- 40)	126.39	mg/l	75	200
7.	Chloramines (as Cl ₂)	IS: 3025 (P- 26)	<1.00	mg/l	4.0	No Relaxation
8.	Chloride (as Cl)	IS: 3025 (P- 32)	305.41	mg/l	250	1000

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
9.	Copper (as Cu)	IS: 3025 (P-42)	<0.05	mg/l	0.05	1.5
10.	Fluoride (as F)	IS: 3025 (P-60)	1.57	mg/l	1.0	1.5
11.	Free Residual Chlorine	IS: 3025 (P-26)	<0.1	mg/l	0.2	1.0
12.	Iron (as Fe)	IS: 3025(P-52)	0.250	mg/l	1.0	No Relaxation
13.	Magnesium (as Mg)	IS: 3025 (P-46)	66.07	mg/l	30	100
14.	Manganese (as Mn)	Clause 35 of IS 3025	<0.01	mg/l	0.1	0.3
15.	Mineral Oil	Clause 6 of IS: 3025	<0.50	mg/l	0.5	No Relaxation
16.	Nitrate (as NO ₃)	IS: 3025 (P- 34)	20.94	mg/l	45	No Relaxation
17.	Selenium (as Se)	IS: 3025 (P- 56)	<0.01	mg/l	0.01	No Relaxation
18.	Silver (as Ag)	Annex J IS: 13428	<0.05	mg/l	0.1	No Relaxation
19.	Sulphate (as SO ₄)	IS: 3025 (P- 24)	158.9	mg/l	200	400
20.	Sulphide(as H ₂ S)	IS-3025 (P-29)	<0.05	mg/l	0.05	No Relaxation
21.	Alkalinity (as Ca CO ₃)	IS: 3025 (P- 23)	367.0	mg/l	200	600
22.	Total Hardness (as CaCO ₃)	IS: 3025 (P- 23)	589.0	mg/l	200	600
23.	Zinc (as Zn)	IS: 3025 (P- 49)	0.254	mg/l	6.0	15
24.	Phenolic Compound as (C ₆ H ₅ OH)	IS: 3025 (P- 43)	BDL	mg/l	0.001	0.002

Parameters Concerning Toxic Substances:

S. No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Cadmium (as Cd)	IS-3025(P-41)	<0.001	mg/l	0.003	No Relaxation
2.	Cyanide (as CN)	IS-3025(P-27)	<0.01	mg/l	0.05	No Relaxation
3.	Lead (as Pb)	IS-3025(P-47)	<0.01	mg/l	0.01	No Relaxation
4.	Mercury (as Hg)	IS-3025(P-48)	<0.001	mg/l	0.001	No Relaxation
5.	Molybdenum (Mo)	IS-3025(P-2)	<0.05	mg/l	0.07	No Relaxation
6.	Nickel (as Ni)	Annex L of IS-13428	<0.01	mg/l	0.02	No Relaxation
7.	Polynuclear Aromatic	APHA 6440	<0.0001	mg/l	0.0001	No Relaxation
8.	Poly chlorinatedbiphenyl	APHA 6630	<0.0001	mg/l	0.0005	No Relaxation
9.	Arsenic (as As)	IS-3025(P-37)	<0.01	mg/l	0.01	No Relaxation
10.	Total Chromium (as Cr)	Annex J of IS-13428	<0.05	mg/l	0.05	No Relaxation

***Remark – BDL- Below Detection Limit.**

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Water Quality	W-150222-027	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received on : 15/02/2022
Sample Drawn By : Laboratory
Sample Quantity : 2.0 Lt.
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Description : Ground Water Collected from Bagru (GW3)

MICROBIOLOGICAL REQUIREMENT

RESULTS				
S.No.	Parameter	Test Method	Results	Required as per IS-10500:2012
1.	<i>Escherichia coli</i>	IS-15185	Absent	Absent/100ml
2.	<i>Coliform Bacteria</i>	IS-15185	Absent	Absent/100ml

ORGANOLEPTIC & PHYSICAL PARAMETERS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Colour	IS-3025(P-04)	<1.0	Hazen	5	15
2.	Odour	IS-3025(P-05)	Agreeable	-	Agreeable	Agreeable
3.	Taste	IS-3025(P-07 & 08)	Agreeable	-	Agreeable	-
4.	Turbidity	IS-3025(P-10)	<1.0	NTU	1	5
5.	pH value	IS-3025(P-04)	7.24	-	6.5-8.5	-
6.	Total Dissolve Solid (TDS)	IS-3025(P-16)	1411.1	mg/l	500	2000
7.	Conductivity	IS:3025(Part-14)	2198	µmhos/cm	-	-

GENERAL PARAMETERS CONCERNING SUBSTANCES UNDESIRABLE IN EXCESSIVE AMOUNTS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Aluminum (as Al)	IS: 3025 (P- 55)	<0.01	mg/l	0.03	0.2
2.	Total Ammonia	IS: 3025 (P- 34)	<0.10	mg/l	0.5	No Relaxation
3.	Anionic surface Detergents(as MBAS)	Annex K of IS-13428	<0.10	mg/l	0.2	1.0
4.	Barium (as Ba)	IS: 15302	<0.10	mg/l	0.7	No Relaxation
5.	Boron (as B)	IS: 3025 (P- 57)	<0.10	mg/l	0.5	2.4
6.	Calcium (as Ca)	IS: 3025 (P- 40)	124.91	mg/l	75	200
7.	Chloramines (as Cl ₂)	IS: 3025 (P- 26)	<1.00	mg/l	4.0	No Relaxation
8.	Chloride (as Cl)	IS: 3025 (P- 32)	298.75	mg/l	250	1000

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
9.	Copper (as Cu)	IS: 3025 (P-42)	<0.05	mg/l	0.05	1.5
10.	Fluoride (as F)	IS: 3025 (P-60)	1.54	mg/l	1.0	1.5
11.	Free Residual Chlorine	IS: 3025 (P-26)	<0.1	mg/l	0.2	1.0
12.	Iron (as Fe)	IS: 3025(P-52)	0.259	mg/l	1.0	No Relaxation
13.	Magnesium (as Mg)	IS: 3025 (P-46)	75.19	mg/l	30	100
14.	Manganese (as Mn)	Clause 35 of IS 3025	<0.01	mg/l	0.1	0.3
15.	Mineral Oil	Clause 6 of IS: 3025	<0.50	mg/l	0.5	No Relaxation
16.	Nitrate (as NO ₃)	IS: 3025 (P- 34)	21.35	mg/l	45	No Relaxation
17.	Selenium (as Se)	IS: 3025 (P- 56)	<0.01	mg/l	0.01	No Relaxation
18.	Silver (as Ag)	Annex J IS: 13428	<0.05	mg/l	0.1	No Relaxation
19.	Sulphate (as SO ₄)	IS: 3025 (P- 24)	162.7	mg/l	200	400
20.	Sulphide(as H ₂ S)	IS-3025 (P-29)	<0.05	mg/l	0.05	No Relaxation
21.	Alkalinity (as Ca CO ₃)	IS: 3025 (P- 23)	381.0	mg/l	200	600
22.	Total Hardness (as CaCO ₃)	IS: 3025 (P- 23)	623.0	mg/l	200	600
23.	Zinc (as Zn)	IS: 3025 (P- 49)	0.259	mg/l	7.0	15
24.	Phenolic Compound as (C ₆ H ₅ OH)	IS: 3025 (P- 43)	BDL	mg/l	0.001	0.002

Parameters Concerning Toxic Substances:

S. No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Cadmium (as Cd)	IS-3025(P-41)	<0.001	mg/l	0.003	No Relaxation
2.	Cyanide (as CN)	IS-3025(P-27)	<0.01	mg/l	0.05	No Relaxation
3.	Lead (as Pb)	IS-3025(P-47)	<0.01	mg/l	0.01	No Relaxation
4.	Mercury (as Hg)	IS-3025(P-48)	<0.001	mg/l	0.001	No Relaxation
5.	Molybdenum (Mo)	IS-3025(P-2)	<0.05	mg/l	0.07	No Relaxation
6.	Nickel (as Ni)	Annex L of IS-13428	<0.01	mg/l	0.02	No Relaxation
7.	Polynuclear Aromatic	APHA 6440	<0.0001	mg/l	0.0001	No Relaxation
8.	Poly chlorinatedbiphenyl	APHA 6630	<0.0001	mg/l	0.0005	No Relaxation
9.	Arsenic (as As)	IS-3025(P-37)	<0.01	mg/l	0.01	No Relaxation
10.	Total Chromium (as Cr)	Annex J of IS-13428	<0.05	mg/l	0.05	No Relaxation

***Remark – BDL- Below Detection Limit.**

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Water Quality	W-150222-028	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received on : 15/02/2022
Sample Drawn By : Laboratory
Sample Quantity : 2.0 Lt.
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Description : Ground Water Collected from Rampura (GW4)

MICROBIOLOGICAL REQUIREMENT

RESULTS				
S.No.	Parameter	Test Method	Results	Required as per IS-10500:2012
1.	<i>Escherichia coli</i>	IS-15185	Absent	Absent/100ml
2.	<i>Coliform Bacteria</i>	IS-15185	Absent	Absent/100ml

ORGANOLEPTIC & PHYSICAL PARAMETERS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Colour	IS-3025(P-04)	<1.0	Hazen	5	15
2.	Odour	IS-3025(P-05)	Agreeable	-	Agreeable	Agreeable
3.	Taste	IS-3025(P-07 & 08)	Agreeable	-	Agreeable	-
4.	Turbidity	IS-3025(P-10)	<1.0	NTU	1	5
5.	pH value	IS-3025(P-04)	7.63	-	6.5-8.5	-
6.	Total Dissolve Solid (TDS)	IS-3025(P-16)	1586.3	mg/l	500	2000
7.	Conductivity	IS:3025(Part-14)	2471	µmhos/cm	-	-

GENERAL PARAMETERS CONCERNING SUBSTANCES UNDESIRABLE IN EXCESSIVE AMOUNTS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Aluminum (as Al)	IS: 3025 (P- 55)	<0.01	mg/l	0.03	0.2
2.	Total Ammonia	IS: 3025 (P- 34)	<0.10	mg/l	0.5	No Relaxation
3.	Anionic surface Detergents(as MBAS)	Annex K of IS-13428	<0.10	mg/l	0.2	1.0
4.	Barium (as Ba)	IS: 15302	<0.10	mg/l	0.7	No Relaxation
5.	Boron (as B)	IS: 3025 (P- 57)	<0.10	mg/l	0.5	2.4
6.	Calcium (as Ca)	IS: 3025 (P- 40)	132.63	mg/l	75	200
7.	Chloramines (as Cl ₂)	IS: 3025 (P- 26)	<1.00	mg/l	4.0	No Relaxation
8.	Chloride (as Cl)	IS: 3025 (P- 32)	325.71	mg/l	250	1000

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
9.	Copper (as Cu)	IS: 3025 (P-42)	<0.05	mg/l	0.05	1.5
10.	Fluoride (as F)	IS: 3025 (P-60)	1.72	mg/l	1.0	1.5
11.	Free Residual Chlorine	IS: 3025 (P-26)	<0.1	mg/l	0.2	1.0
12.	Iron (as Fe)	IS: 3025(P-52)	0.265	mg/l	1.0	No Relaxation
13.	Magnesium (as Mg)	IS: 3025 (P-46)	92.06	mg/l	30	100
14.	Manganese (as Mn)	Clause 35 of IS 3025	<0.01	mg/l	0.1	0.3
15.	Mineral Oil	Clause 6 of IS: 3025	<0.50	mg/l	0.5	No Relaxation
16.	Nitrate (as NO ₃)	IS: 3025 (P- 34)	24.91	mg/l	45	No Relaxation
17.	Selenium (as Se)	IS: 3025 (P- 56)	<0.01	mg/l	0.01	No Relaxation
18.	Silver (as Ag)	Annex J IS: 13428	<0.05	mg/l	0.1	No Relaxation
19.	Sulphate (as SO ₄)	IS: 3025 (P- 24)	153.8	mg/l	200	400
20.	Sulphide(as H ₂ S)	IS-3025 (P-29)	<0.05	mg/l	0.05	No Relaxation
21.	Alkalinity (as Ca CO ₃)	IS: 3025 (P- 23)	472.0	mg/l	200	600
22.	Total Hardness (as CaCO ₃)	IS: 3025 (P- 23)	712.0	mg/l	200	600
23.	Zinc (as Zn)	IS: 3025 (P- 49)	0.283	mg/l	8.0	15
24.	Phenolic Compound as (C ₆ H ₅ OH)	IS: 3025 (P- 43)	BDL	mg/l	0.001	0.002

Parameters Concerning Toxic Substances:

S. No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Cadmium (as Cd)	IS-3025(P-41)	<0.001	mg/l	0.003	No Relaxation
2.	Cyanide (as CN)	IS-3025(P-27)	<0.01	mg/l	0.05	No Relaxation
3.	Lead (as Pb)	IS-3025(P-47)	<0.01	mg/l	0.01	No Relaxation
4.	Mercury (as Hg)	IS-3025(P-48)	<0.001	mg/l	0.001	No Relaxation
5.	Molybdenum (Mo)	IS-3025(P-2)	<0.05	mg/l	0.07	No Relaxation
6.	Nickel (as Ni)	Annex L of IS-13428	<0.01	mg/l	0.02	No Relaxation
7.	Polynuclear Aromatic	APHA 6440	<0.0001	mg/l	0.0001	No Relaxation
8.	Poly chlorinatedbiphenyl	APHA 6630	<0.0001	mg/l	0.0005	No Relaxation
9.	Arsenic (as As)	IS-3025(P-37)	<0.01	mg/l	0.01	No Relaxation
10.	Total Chromium (as Cr)	Annex J of IS-13428	<0.05	mg/l	0.05	No Relaxation

***Remark – BDL- Below Detection Limit.**

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Water Quality	W-150222-029	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received on : 15/02/2022
Sample Drawn By : Laboratory
Sample Quantity : 2.0 Lt.
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Description : Ground Water Collected from Syosinghpura (GW5)

MICROBIOLOGICAL REQUIREMENT

RESULTS				
S.No.	Parameter	Test Method	Results	Required as per IS-10500:2012
1.	<i>Escherichia coli</i>	IS-15185	Absent	Absent/100ml
2.	<i>Coliform Bacteria</i>	IS-15185	Absent	Absent/100ml

ORGANOLEPTIC & PHYSICAL PARAMETERS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Colour	IS-3025(P-04)	<1.0	Hazen	5	15
2.	Odour	IS-3025(P-05)	Agreeable	-	Agreeable	Agreeable
3.	Taste	IS-3025(P-07 & 08)	Agreeable	-	Agreeable	-
4.	Turbidity	IS-3025(P-10)	<1.0	NTU	1	5
5.	pH value	IS-3025(P-04)	7.71	-	6.5-8.5	-
6.	Total Dissolve Solid (TDS)	IS-3025(P-16)	1550.4	mg/l	500	2000
7.	Conductivity	IS:3025(Part-14)	2415	µmhos/cm	-	-

GENERAL PARAMETERS CONCERNING SUBSTANCES UNDESIRABLE IN EXCESSIVE AMOUNTS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Aluminum (as Al)	IS: 3025 (P- 55)	<0.01	mg/l	0.03	0.2
2.	Total Ammonia	IS: 3025 (P- 34)	<0.10	mg/l	0.5	No Relaxation
3.	Anionic surface Detergents(as MBAS)	Annex K of IS-13428	<0.10	mg/l	0.2	1.0
4.	Barium (as Ba)	IS: 15302	<0.10	mg/l	0.7	No Relaxation
5.	Boron (as B)	IS: 3025 (P- 57)	<0.10	mg/l	0.5	2.4
6.	Calcium (as Ca)	IS: 3025 (P- 40)	128.05	mg/l	75	200
7.	Chloramines (as Cl ₂)	IS: 3025 (P- 26)	<1.00	mg/l	4.0	No Relaxation
8.	Chloride (as Cl)	IS: 3025 (P- 32)	302.69	mg/l	250	1000

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
9.	Copper (as Cu)	IS: 3025 (P-42)	<0.05	mg/l	0.05	1.5
10.	Fluoride (as F)	IS: 3025 (P-60)	1.64	mg/l	1.0	1.5
11.	Free Residual Chlorine	IS: 3025 (P-26)	<0.1	mg/l	0.2	1.0
12.	Iron (as Fe)	IS: 3025(P-52)	0.241	mg/l	1.0	No Relaxation
13.	Magnesium (as Mg)	IS: 3025 (P-46)	64.58	mg/l	30	100
14.	Manganese (as Mn)	Clause 35 of IS 3025	<0.01	mg/l	0.1	0.3
15.	Mineral Oil	Clause 6 of IS: 3025	<0.50	mg/l	0.5	No Relaxation
16.	Nitrate (as NO ₃)	IS: 3025 (P- 34)	24.76	mg/l	45	No Relaxation
17.	Selenium (as Se)	IS: 3025 (P- 56)	<0.01	mg/l	0.01	No Relaxation
18.	Silver (as Ag)	Annex J IS: 13428	<0.05	mg/l	0.1	No Relaxation
19.	Sulphate (as SO ₄)	IS: 3025 (P- 24)	157.9	mg/l	200	400
20.	Sulphide(as H ₂ S)	IS-3025 (P-29)	<0.05	mg/l	0.05	No Relaxation
21.	Alkalinity (as Ca CO ₃)	IS: 3025 (P- 23)	362.0	mg/l	200	600
22.	Total Hardness (as CaCO ₃)	IS: 3025 (P- 23)	587.0	mg/l	200	600
23.	Zinc (as Zn)	IS: 3025 (P- 49)	0.261	mg/l	9.0	15
24.	Phenolic Compound as (C ₆ H ₅ OH)	IS: 3025 (P- 43)	BDL	mg/l	0.001	0.002

Parameters Concerning Toxic Substances:

S. No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Cadmium (as Cd)	IS-3025(P-41)	<0.001	mg/l	0.003	No Relaxation
2.	Cyanide (as CN)	IS-3025(P-27)	<0.01	mg/l	0.05	No Relaxation
3.	Lead (as Pb)	IS-3025(P-47)	<0.01	mg/l	0.01	No Relaxation
4.	Mercury (as Hg)	IS-3025(P-48)	<0.001	mg/l	0.001	No Relaxation
5.	Molybdenum (Mo)	IS-3025(P-2)	<0.05	mg/l	0.07	No Relaxation
6.	Nickel (as Ni)	Annex L of IS-13428	<0.01	mg/l	0.02	No Relaxation
7.	Polynuclear Aromatic	APHA 6440	<0.0001	mg/l	0.0001	No Relaxation
8.	Poly chlorinatedbiphenyl	APHA 6630	<0.0001	mg/l	0.0005	No Relaxation
9.	Arsenic (as As)	IS-3025(P-37)	<0.01	mg/l	0.01	No Relaxation
10.	Total Chromium (as Cr)	Annex J of IS-13428	<0.05	mg/l	0.05	No Relaxation

***Remark – BDL- Below Detection Limit.**

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Water Quality	W-150222-030	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received on : 15/02/2022
Sample Drawn By : **Laboratory**
Sample Quantity : 2.0 Lt.
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Description : Ground Water Collected fromSherpura(GW6)

MICROBIOLOGICAL REQUIREMENT

RESULTS				
S.No.	Parameter	Test Method	Results	Required as per IS-10500:2012
1.	<i>Escherichia coli</i>	IS-15185	Absent	Absent/100ml
2.	<i>Coliform Bacteria</i>	IS-15185	Absent	Absent/100ml

ORGANOLEPTIC & PHYSICAL PARAMETERS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Colour	IS-3025(P-04)	<1.0	Hazen	5	15
2.	Odour	IS-3025(P-05)	Agreeable	-	Agreeable	Agreeable
3.	Taste	IS-3025(P-07 & 08)	Agreeable	-	Agreeable	-
4.	Turbidity	IS-3025(P-10)	<1.0	NTU	1	5
5.	pH value	IS-3025(P-04)	7.39	-	6.5-8.5	-
6.	Total Dissolve Solid (TDS)	IS-3025(P-16)	1743.0	mg/l	500	2000
7.	Conductivity	IS:3025(Part-14)	2715	µmhos/cm	-	-

GENERAL PARAMETERS CONCERNING SUBSTANCES UNDESIRABLE IN EXCESSIVE AMOUNTS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Aluminum (as Al)	IS: 3025 (P- 55)	<0.01	mg/l	0.03	0.2
2.	Total Ammonia	IS: 3025 (P- 34)	<0.10	mg/l	0.5	No Relaxation
3.	Anionic surface Detergents(as MBAS)	Annex K of IS-13428	<0.10	mg/l	0.2	1.0
4.	Barium (as Ba)	IS: 15302	<0.10	mg/l	0.7	No Relaxation
5.	Boron (as B)	IS: 3025 (P- 57)	<0.10	mg/l	0.5	2.4
6.	Calcium (as Ca)	IS: 3025 (P- 40)	120.95	mg/l	75	200
7.	Chloramines (as Cl ₂)	IS: 3025 (P- 26)	<1.00	mg/l	4.0	No Relaxation
8.	Chloride (as Cl)	IS: 3025 (P- 32)	287.38	mg/l	250	1000

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
9.	Copper (as Cu)	IS: 3025 (P-42)	<0.05	mg/l	0.05	1.5
10.	Fluoride (as F)	IS: 3025 (P-60)	1.51	mg/l	1.0	1.5
11.	Free Residual Chlorine	IS: 3025 (P-26)	<0.1	mg/l	0.2	1.0
12.	Iron (as Fe)	IS: 3025(P-52)	0.262	mg/l	1.0	No Relaxation
13.	Magnesium (as Mg)	IS: 3025 (P-46)	74.92	mg/l	30	100
14.	Manganese (as Mn)	Clause 35 of IS 3025	<0.01	mg/l	0.1	0.3
15.	Mineral Oil	Clause 6 of IS: 3025	<0.50	mg/l	0.5	No Relaxation
16.	Nitrate (as NO ₃)	IS: 3025 (P- 34)	21.93	mg/l	45	No Relaxation
17.	Selenium (as Se)	IS: 3025 (P- 56)	<0.01	mg/l	0.01	No Relaxation
18.	Silver (as Ag)	Annex J IS: 13428	<0.05	mg/l	0.1	No Relaxation
19.	Sulphate (as SO ₄)	IS: 3025 (P- 24)	154.7	mg/l	200	400
20.	Sulphide(as H ₂ S)	IS-3025 (P-29)	<0.05	mg/l	0.05	No Relaxation
21.	Alkalinity (as Ca CO ₃)	IS: 3025 (P- 23)	401.3	mg/l	200	600
22.	Total Hardness (as CaCO ₃)	IS: 3025 (P- 23)	612.0	mg/l	200	600
23.	Zinc (as Zn)	IS: 3025 (P- 49)	0.273	mg/l	10.0	15
24.	Phenolic Compound as (C ₆ H ₅ OH)	IS: 3025 (P- 43)	BDL	mg/l	0.001	0.002

Parameters Concerning Toxic Substances:

S. No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Cadmium (as Cd)	IS-3025(P-41)	<0.001	mg/l	0.003	No Relaxation
2.	Cyanide (as CN)	IS-3025(P-27)	<0.01	mg/l	0.05	No Relaxation
3.	Lead (as Pb)	IS-3025(P-47)	<0.01	mg/l	0.01	No Relaxation
4.	Mercury (as Hg)	IS-3025(P-48)	<0.001	mg/l	0.001	No Relaxation
5.	Molybdenum (Mo)	IS-3025(P-2)	<0.05	mg/l	0.07	No Relaxation
6.	Nickel (as Ni)	Annex L of IS-13428	<0.01	mg/l	0.02	No Relaxation
7.	Polynuclear Aromatic	APHA 6440	<0.0001	mg/l	0.0001	No Relaxation
8.	Poly chlorinatedbiphenyl	APHA 6630	<0.0001	mg/l	0.0005	No Relaxation
9.	Arsenic (as As)	IS-3025(P-37)	<0.01	mg/l	0.01	No Relaxation
10.	Total Chromium (as Cr)	Annex J of IS-13428	<0.05	mg/l	0.05	No Relaxation

***Remark – BDL- Below Detection Limit.**

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Water Quality	W-150222-031	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received on : 15/02/2022
Sample Drawn By : Laboratory
Sample Quantity : 2.0 Lt.
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Description : Ground Water Collected from Nayabas (GW7)

MICROBIOLOGICAL REQUIREMENT

RESULTS				
S.No.	Parameter	Test Method	Results	Required as per IS-10500:2012
1.	<i>Escherichia coli</i>	IS-15185	Absent	Absent/100ml
2.	<i>Coliform Bacteria</i>	IS-15185	Absent	Absent/100ml

ORGANOLEPTIC & PHYSICAL PARAMETERS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Colour	IS-3025(P-04)	<1.0	Hazen	5	15
2.	Odour	IS-3025(P-05)	Agreeable	-	Agreeable	Agreeable
3.	Taste	IS-3025(P-07 & 08)	Agreeable	-	Agreeable	-
4.	Turbidity	IS-3025(P-10)	<1.0	NTU	1	5
5.	pH value	IS-3025(P-04)	7.60	-	6.5-8.5	-
6.	Total Dissolve Solid (TDS)	IS-3025(P-16)	1373.0	mg/l	500	2000
7.	Conductivity	IS:3025(Part-14)	2140	µmhos/cm	-	-

GENERAL PARAMETERS CONCERNING SUBSTANCES UNDESIRABLE IN EXCESSIVE AMOUNTS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Aluminum (as Al)	IS: 3025 (P- 55)	<0.01	mg/l	0.03	0.2
2.	Total Ammonia	IS: 3025 (P- 34)	<0.10	mg/l	0.5	No Relaxation
3.	Anionic surface Detergents(as MBAS)	Annex K of IS-13428	<0.10	mg/l	0.2	1.0
4.	Barium (as Ba)	IS: 15302	<0.10	mg/l	0.7	No Relaxation
5.	Boron (as B)	IS: 3025 (P- 57)	<0.10	mg/l	0.5	2.4
6.	Calcium (as Ca)	IS: 3025 (P- 40)	127.32	mg/l	75	200
7.	Chloramines (as Cl ₂)	IS: 3025 (P- 26)	<1.00	mg/l	4.0	No Relaxation
8.	Chloride (as Cl)	IS: 3025 (P- 32)	268.41	mg/l	250	1000

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
9.	Copper (as Cu)	IS: 3025 (P-42)	<0.05	mg/l	0.05	1.5
10.	Fluoride (as F)	IS: 3025 (P-60)	1.48	mg/l	1.0	1.5
11.	Free Residual Chlorine	IS: 3025 (P-26)	<0.1	mg/l	0.2	1.0
12.	Iron (as Fe)	IS: 3025(P-52)	0.272	mg/l	1.0	No Relaxation
13.	Magnesium (as Mg)	IS: 3025 (P-46)	66.47	mg/l	30	100
14.	Manganese (as Mn)	Clause 35 of IS 3025	<0.01	mg/l	0.1	0.3
15.	Mineral Oil	Clause 6 of IS: 3025	<0.50	mg/l	0.5	No Relaxation
16.	Nitrate (as NO ₃)	IS: 3025 (P- 34)	24.63	mg/l	45	No Relaxation
17.	Selenium (as Se)	IS: 3025 (P- 56)	<0.01	mg/l	0.01	No Relaxation
18.	Silver (as Ag)	Annex J IS: 13428	<0.05	mg/l	0.1	No Relaxation
19.	Sulphate (as SO ₄)	IS: 3025 (P- 24)	158.1	mg/l	200	400
20.	Sulphide(as H ₂ S)	IS-3025 (P-29)	<0.05	mg/l	0.05	No Relaxation
21.	Alkalinity (as Ca CO ₃)	IS: 3025 (P- 23)	481.0	mg/l	200	600
22.	Total Hardness (as CaCO ₃)	IS: 3025 (P- 23)	593.0	mg/l	200	600
23.	Zinc (as Zn)	IS: 3025 (P- 49)	0.262	mg/l	11.0	15
24.	Phenolic Compound as (C ₆ H ₅ OH)	IS: 3025 (P- 43)	BDL	mg/l	0.001	0.002

Parameters Concerning Toxic Substances:

S. No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Cadmium (as Cd)	IS-3025(P-41)	<0.001	mg/l	0.003	No Relaxation
2.	Cyanide (as CN)	IS-3025(P-27)	<0.01	mg/l	0.05	No Relaxation
3.	Lead (as Pb)	IS-3025(P-47)	<0.01	mg/l	0.01	No Relaxation
4.	Mercury (as Hg)	IS-3025(P-48)	<0.001	mg/l	0.001	No Relaxation
5.	Molybdenum (Mo)	IS-3025(P-2)	<0.05	mg/l	0.07	No Relaxation
6.	Nickel (as Ni)	Annex L of IS-13428	<0.01	mg/l	0.02	No Relaxation
7.	Polynuclear Aromatic	APHA 6440	<0.0001	mg/l	0.0001	No Relaxation
8.	Poly chlorinatedbiphenyl	APHA 6630	<0.0001	mg/l	0.0005	No Relaxation
9.	Arsenic (as As)	IS-3025(P-37)	<0.01	mg/l	0.01	No Relaxation
10.	Total Chromium (as Cr)	Annex J of IS-13428	<0.05	mg/l	0.05	No Relaxation

***Remark – BDL- Below Detection Limit.**

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Water Quality	W-150222-032	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received on : 15/02/2022
Sample Drawn By : Laboratory
Sample Quantity : 2.0 Lt.
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Description : Ground Water Collected from Nariya (GW8)

MICROBIOLOGICAL REQUIREMENT

RESULTS				
S.No.	Parameter	Test Method	Results	Required as per IS-10500:2012
1.	<i>Escherichia coli</i>	IS-15185	Absent	Absent/100ml
2.	<i>Coliform Bacteria</i>	IS-15185	Absent	Absent/100ml

ORGANOLEPTIC & PHYSICAL PARAMETERS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Colour	IS-3025(P-04)	<1.0	Hazen	5	15
2.	Odour	IS-3025(P-05)	Agreeable	-	Agreeable	Agreeable
3.	Taste	IS-3025(P-07 & 08)	Agreeable	-	Agreeable	-
4.	Turbidity	IS-3025(P-10)	<1.0	NTU	1	5
5.	pH value	IS-3025(P-04)	7.22	-	6.5-8.5	-
6.	Total Dissolve Solid (TDS)	IS-3025(P-16)	1677.5	mg/l	500	2000
7.	Conductivity	IS:3025(Part-14)	2613	µmhos/cm	-	-

GENERAL PARAMETERS CONCERNING SUBSTANCES UNDESIRABLE IN EXCESSIVE AMOUNTS

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Aluminum (as Al)	IS: 3025 (P- 55)	<0.01	mg/l	0.03	0.2
2.	Total Ammonia	IS: 3025 (P- 34)	<0.10	mg/l	0.5	No Relaxation
3.	Anionic surface Detergents(as MBAS)	Annex K of IS-13428	<0.10	mg/l	0.2	1.0
4.	Barium (as Ba)	IS: 15302	<0.10	mg/l	0.7	No Relaxation
5.	Boron (as B)	IS: 3025 (P- 57)	<0.10	mg/l	0.5	2.4
6.	Calcium (as Ca)	IS: 3025 (P- 40)	124.71	mg/l	75	200
7.	Chloramines (as Cl ₂)	IS: 3025 (P- 26)	<1.00	mg/l	4.0	No Relaxation
8.	Chloride (as Cl)	IS: 3025 (P- 32)	281.25	mg/l	250	1000

S.No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
9.	Copper (as Cu)	IS: 3025 (P-42)	<0.05	mg/l	0.05	1.5
10.	Fluoride (as F)	IS: 3025 (P-60)	1.93	mg/l	1.0	1.5
11.	Free Residual Chlorine	IS: 3025 (P-26)	<0.1	mg/l	0.2	1.0
12.	Iron (as Fe)	IS: 3025(P-52)	0.284	mg/l	1.0	No Relaxation
13.	Magnesium (as Mg)	IS: 3025 (P-46)	63.21	mg/l	30	100
14.	Manganese (as Mn)	Clause 35 of IS 3025	<0.01	mg/l	0.1	0.3
15.	Mineral Oil	Clause 6 of IS: 3025	<0.50	mg/l	0.5	No Relaxation
16.	Nitrate (as NO ₃)	IS: 3025 (P- 34)	19.76	mg/l	45	No Relaxation
17.	Selenium (as Se)	IS: 3025 (P- 56)	<0.01	mg/l	0.01	No Relaxation
18.	Silver (as Ag)	Annex J IS: 13428	<0.05	mg/l	0.1	No Relaxation
19.	Sulphate (as SO ₄)	IS: 3025 (P- 24)	154.2	mg/l	200	400
20.	Sulphide(as H ₂ S)	IS-3025 (P-29)	<0.05	mg/l	0.05	No Relaxation
21.	Alkalinity (as Ca CO ₃)	IS: 3025 (P- 23)	425.0	mg/l	200	600
22.	Total Hardness (as CaCO ₃)	IS: 3025 (P- 23)	573.0	mg/l	200	600
23.	Zinc (as Zn)	IS: 3025 (P- 49)	0.242	mg/l	12.0	15
24.	Phenolic Compound as (C ₆ H ₅ OH)	IS: 3025 (P- 43)	BDL	mg/l	0.001	0.002

Parameters Concerning Toxic Substances:

S. No.	Parameter	Test method	Result	Unit	Requirement (Acceptable Limit)	Permissible Limit in absence of alternate source
1.	Cadmium (as Cd)	IS-3025(P-41)	<0.001	mg/l	0.003	No Relaxation
2.	Cyanide (as CN)	IS-3025(P-27)	<0.01	mg/l	0.05	No Relaxation
3.	Lead (as Pb)	IS-3025(P-47)	<0.01	mg/l	0.01	No Relaxation
4.	Mercury (as Hg)	IS-3025(P-48)	<0.001	mg/l	0.001	No Relaxation
5.	Molybdenum (Mo)	IS-3025(P-2)	<0.05	mg/l	0.07	No Relaxation
6.	Nickel (as Ni)	Annex L of IS-13428	<0.01	mg/l	0.02	No Relaxation
7.	Polynuclear Aromatic	APHA 6440	<0.0001	mg/l	0.0001	No Relaxation
8.	Poly chlorinatedbiphenyl	APHA 6630	<0.0001	mg/l	0.0005	No Relaxation
9.	Arsenic (as As)	IS-3025(P-37)	<0.01	mg/l	0.01	No Relaxation
10.	Total Chromium (as Cr)	Annex J of IS-13428	<0.05	mg/l	0.05	No Relaxation

***Remark – BDL- Below Detection Limit.**

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Ambient Noise	N-021221-09	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On : 02/12/2021
Sample description : Ambient Noise
Sampling Location : Project Site (N1)
Sampling Time : 24 hrs
Weather Condition : Normal

RESULTS						
<u>S. No</u>	<u>Test Parameters</u>	<u>Results</u>	<u>Units</u>	<u>Requirement (as per CPCB Guidelines Limits in</u> <u>dB (A) Leq</u>		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	58.4	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	41.2	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Test Report of	Report Code	Date of Issue
Ambient Noise	N-041221-010	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On : 04/12/2021
Sample description : Ambient Noise
Sampling Location : Chhitrali(N2)
Sampling Time : 24 hrs
Weather Condition : Normal

RESULTS						
<u>S. No</u>	<u>Test Parameters</u>	<u>Results</u>	<u>Units</u>	<u>Requirement (as per CPCB Guidelines Limits in</u>		
				<u>dB (A) Leq</u>		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	52.5	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	40.6	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Test Report of	Report Code	Date of Issue
Ambient Noise	N-061221-011	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On : 06/12/2021
Sample description : Ambient Noise
Sampling Location : Bagru(N3)
Sampling Time : 24 hrs
Weather Condition : Normal

RESULTS						
<u>S. No</u>	<u>Test Parameters</u>	<u>Results</u>	<u>Units</u>	<u>Requirement (as per CPCB Guidelines Limits in</u> <u>dB (A) Leq</u>		
1.	L_{day} (6.0 AM TO 10.0 PM)	50.5	dB(A)	Category of Area/ Zone	Day Time	Night Time
				Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	37.8	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Test Report of	Report Code	Date of Issue
Ambient Noise	N-081221-012	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On : 08/12/2021
Sample description : Ambient Noise
Sampling Location : Rampura(N4)
Sampling Time : 24 hrs
Weather Condition : Normal

RESULTS						
<u>S. No</u>	<u>Test Parameters</u>	<u>Results</u>	<u>Units</u>	<u>Requirement (as per CPCB Guidelines Limits in</u>		
				<u>dB (A) Leq</u>		
1.	L_{day} (6.0 AM TO 10.0 PM)	53.2	dB(A)	Category of Area/ Zone	Day Time	Night Time
				Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	39.0	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Test Report of	Report Code	Date of Issue
Ambient Noise	N-101221-013	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On :10/12/2021
Sample description : Ambient Noise
Sampling Location :Syosinghpura(N5)
Sampling Time : 24 hrs
Weather Condition :Normal

RESULTS						
<u>S. No</u>	<u>Test Parameters</u>	<u>Results</u>	<u>Units</u>	<u>Requirement (as per CPCB Guidelines Limits in</u>		
				<u>dB (A) Leq</u>		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	54.2	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	40.6	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Test Report of	Report Code	Date of Issue
Ambient Noise	N-121221-014	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraooti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On :12/12/2021
Sample description : Ambient Noise
Sampling Location :Sherpura(N6)
Sampling Time : 24 hrs
Weather Condition :Normal

RESULTS						
<u>S. No</u>	<u>Test Parameters</u>	<u>Results</u>	<u>Units</u>	<u>Requirement (as per CPCB Guidelines Limits in</u>		
				<u>dB (A) Leq</u>		
1.	L_{day} (6.0 AM TO 10.0 PM)	52.7	dB(A)	Category of Area/ Zone	Day Time	Night Time
				Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	36.5	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Test Report of	Report Code	Date of Issue
Ambient Noise	N-141221-015	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On :14/12/2021
Sample description : Ambient Noise
Sampling Location :Nayabas(N7)
Sampling Time : 24 hrs
Weather Condition :Normal

RESULTS						
<u>S. No</u>	<u>Test Parameters</u>	<u>Results</u>	<u>Units</u>	<u>Requirement (as per CPCB Guidelines Limits in</u>		
				<u>dB (A) Leq</u>		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	50.9	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	38.3	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Test Report of	Report Code	Date of Issue
Ambient Noise	N-161221-016	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Drawn By : Laboratory (N.T.L)
Sample Drawn On :16/12/2021
Sample description : Ambient Noise
Sampling Location :Nariya(N8)
Sampling Time : 24 hrs
Weather Condition :Normal

RESULTS						
<u>S. No</u>	<u>Test Parameters</u>	<u>Results</u>	<u>Units</u>	<u>Requirement (as per CPCB Guidelines Limits in</u>		
				<u>dB (A) Leq</u>		
				Category of Area/ Zone	Day Time	Night Time
1.	L_{day} (6.0 AM TO 10.0 PM)	53.6	dB(A)	Industrial Area	75	70
2.	L_{night} (10.0 PM TO 6.0 AM)	38.8	dB(A)	Commercial Area	65	55
				Residential Area	55	45
				Silence Zone	50	40

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Test Report of	Report Code	Date of Issue
Soil	N-150222-017	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Received On : 15/02/2022
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Project Site**
Analysis Duration : 15/02/2022 to 21/02/2022

Sl. No.	Parameters	Results	Test Method
1.	pH	7.15	IS:2720(Part-26)
2.	Conductivity (µmhos/cm)	458.0	IS:2720(Part-21)
3.	Sodium (as Na)(mg/kg)	160.21	STP/SOIL
4.	Water holding capacity (%)	34.76	STP/SOIL
5.	Potassium (as K) (mg/kg)	98.24	STP/SOIL
6.	Texture	Sand (% by mass)	STP/SOIL
		Clay (% by mass)	STP/SOIL
		Silt (% by mass)	STP/SOIL
7.	Calcium (as Ca)(mg/kg)	251.60	STP/SOIL
8.	Magnesium (as Mg) (mg/kg)	68.40	STP/SOIL
9.	SAR	0.76	STP/SOIL
10.	CEC (meq/100gm)	2.54	STP/SOIL
11.	Available Phosphorus(as P),(mg/kg)	14.08	STP/SOIL
12.	Organic Matter (%)	1.69	STP/SOIL
13.	Porosity (% by mass)	42.80	STP/SOIL
14.	Permeability (cm/hr)	1.78	STP/SOIL
15.	Total Kjeldahl Nitrogen %	0.0212	STP/SOIL
16.	Available Cadmium (as Cd) (mg/ kg)	BDL (<0.1)	US EPA-846
17.	Available Chromium (as Cr) (mg/ kg)	BDL (<0.1)	US EPA-846
18.	Available Arsenic (as As) (mg/ kg)	BDL (<0.1)	US EPA-846
19.	Available Nickel (as Ni) (mg/ kg)	BDL (<0.1)	US EPA-846
20.	Available Zinc (as Zn) (mg/ kg)	5.34	US EPA-846
21.	Available Copper (as Cu) (mg/ kg)	26.10	US EPA-846

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Soil	N-150222-018	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Received On : 15/02/2022
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from Chhitrali
Analysis Duration : 15/02/2022 to 21/02/2022

Sl. No.	Parameters	Results	Test Method
1.	pH	7.41	IS:2720(Part-26)
2.	Conductivity (μmhos/cm)	426.0	IS:2720(Part-21)
3.	Sodium (as Na)(mg/kg)	154.37	STP/SOIL
4.	Water holding capacity (%)	32.98	STP/SOIL
5.	Potassium (as K) (mg/kg)	94.62	STP/SOIL
6.	Texture	Sand (% by mass)	STP/SOIL
		Clay (% by mass)	STP/SOIL
		Silt (% by mass)	STP/SOIL
7.	Calcium (as Ca)(mg/kg)	261.74	STP/SOIL
8.	Magnesium (as Mg) (mg/kg)	62.91	STP/SOIL
9.	SAR	0.70	STP/SOIL
10.	CEC (meq/100gm)	2.48	STP/SOIL
11.	Available Phosphorus(as P),(mg/kg)	13.81	STP/SOIL
12.	Organic Matter (%)	1.52	STP/SOIL
13.	Porosity (% by mass)	38.69	STP/SOIL
14.	Permeability (cm/hr)	1.70	STP/SOIL
15.	Total Kjeldahl Nitrogen %	0.0211	STP/SOIL
16.	Available Cadmium (as Cd) (mg/ kg)	BDL (<0.1)	US EPA-846
17.	Available Chromium (as Cr) (mg/ kg)	BDL (<0.1)	US EPA-846
18.	Available Arsenic (as As) (mg/ kg)	BDL (<0.1)	US EPA-846
19.	Available Nickel (as Ni) (mg/ kg)	BDL (<0.1)	US EPA-846
20.	Available Zinc (as Zn) (mg/ kg)	5.28	US EPA-846
21.	Available Copper (as Cu) (mg/ kg)	25.63	US EPA-846

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Soil	N-150222-019	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Received On : 15/02/2022
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Bagru**
Analysis Duration : 15/02/2022 to 21/02/2022

Sl. No.	Parameters	Results	Test Method
1.	pH	7.27	IS:2720(Part-26)
2.	Conductivity (µmhos/cm)	501.0	IS:2720(Part-21)
3.	Sodium (as Na)(mg/kg)	162.41	STP/SOIL
4.	Water holding capacity (%)	38.75	STP/SOIL
5.	Potassium (as K) (mg/kg)	97.32	STP/SOIL
6.	Texture	Sand (% by mass)	STP/SOIL
		Clay (% by mass)	STP/SOIL
		Silt (% by mass)	STP/SOIL
7.	Calcium (as Ca)(mg/kg)	256.19	STP/SOIL
8.	Magnesium (as Mg) (mg/kg)	60.34	STP/SOIL
9.	SAR	0.73	STP/SOIL
10.	CEC (meq/100gm)	2.62	STP/SOIL
11.	Available Phosphorus(as P),(mg/kg)	14.21	STP/SOIL
12.	Organic Matter (%)	1.65	STP/SOIL
13.	Porosity (% by mass)	40.24	STP/SOIL
14.	Permeability (cm/hr)	1.81	STP/SOIL
15.	Total Kjeldahl Nitrogen %	0.0212	STP/SOIL
16.	Available Cadmium (as Cd) (mg/ kg)	BDL (<0.1)	US EPA-846
17.	Available Chromium (as Cr) (mg/ kg)	BDL (<0.1)	US EPA-846
18.	Available Arsenic (as As) (mg/ kg)	BDL (<0.1)	US EPA-846
19.	Available Nickel (as Ni) (mg/ kg)	BDL (<0.1)	US EPA-846
20.	Available Zinc (as Zn) (mg/ kg)	5.36	US EPA-846
21.	Available Copper (as Cu) (mg/ kg)	25.71	US EPA-846

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Soil	N-150222-020	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Received On : 15/02/2022
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Rampura**
Analysis Duration : 15/02/2022 to 21/02/2022

Sl. No.	Parameters	Results	Test Method
1.	pH	7.53	IS:2720(Part-26)
2.	Conductivity (µmhos/cm)	537.0	IS:2720(Part-21)
3.	Sodium (as Na)(mg/kg)	156.84	STP/SOIL
4.	Water holding capacity (%)	35.91	STP/SOIL
5.	Potassium (as K) (mg/kg)	94.26	STP/SOIL
6.	Texture	Sand (% by mass)	STP/SOIL
		Clay (% by mass)	STP/SOIL
		Silt (% by mass)	STP/SOIL
7.	Calcium (as Ca)(mg/kg)	264.07	STP/SOIL
8.	Magnesium (as Mg) (mg/kg)	62.85	STP/SOIL
9.	SAR	0.76	STP/SOIL
10.	CEC (meq/100gm)	2.81	STP/SOIL
11.	Available Phosphorus(as P),(mg/kg)	13.69	STP/SOIL
12.	Organic Matter (%)	1.72	STP/SOIL
13.	Porosity (% by mass)	41.05	STP/SOIL
14.	Permeability (cm/hr)	1.76	STP/SOIL
15.	Total Kjeldahl Nitrogen %	0.0213	STP/SOIL
16.	Available Cadmium (as Cd) (mg/ kg)	BDL (<0.1)	US EPA-846
17.	Available Chromium (as Cr) (mg/ kg)	BDL (<0.1)	US EPA-846
18.	Available Arsenic (as As) (mg/ kg)	BDL (<0.1)	US EPA-846
19.	Available Nickel (as Ni) (mg/ kg)	BDL (<0.1)	US EPA-846
20.	Available Zinc (as Zn) (mg/ kg)	5.42	US EPA-846
21.	Available Copper (as Cu) (mg/ kg)	26.09	US EPA-846

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Soil	N-150222-021	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Received On : 15/02/2022
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from Syosinghpura
Analysis Duration : 15/02/2022 to 21/02/2022

Sl. No.	Parameters	Results	Test Method
1.	pH	7.70	IS:2720(Part-26)
2.	Conductivity (µmhos/cm)	498.0	IS:2720(Part-21)
3.	Sodium (as Na)(mg/kg)	162.75	STP/SOIL
4.	Water holding capacity (%)	37.42	STP/SOIL
5.	Potassium (as K) (mg/kg)	89.57	STP/SOIL
6.	Texture	Sand (% by mass)	STP/SOIL
		Clay (% by mass)	STP/SOIL
		Silt (% by mass)	STP/SOIL
7.	Calcium (as Ca)(mg/kg)	272.31	STP/SOIL
8.	Magnesium (as Mg) (mg/kg)	59.26	STP/SOIL
9.	SAR	0.68	STP/SOIL
10.	CEC (meq/100gm)	2.74	STP/SOIL
11.	Available Phosphorus(as P),(mg/kg)	14.23	STP/SOIL
12.	Organic Matter (%)	1.86	STP/SOIL
13.	Porosity (% by mass)	37.42	STP/SOIL
14.	Permeability (cm/hr)	1.68	STP/SOIL
15.	Total Kjeldahl Nitrogen %	0.0212	STP/SOIL
16.	Available Cadmium (as Cd) (mg/ kg)	BDL (<0.1)	US EPA-846
17.	Available Chromium (as Cr) (mg/ kg)	BDL (<0.1)	US EPA-846
18.	Available Arsenic (as As) (mg/ kg)	BDL (<0.1)	US EPA-846
19.	Available Nickel (as Ni) (mg/ kg)	BDL (<0.1)	US EPA-846
20.	Available Zinc (as Zn) (mg/ kg)	5.29	US EPA-846
21.	Available Copper (as Cu) (mg/ kg)	24.63	US EPA-846

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Soil	N-150222-022	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Received On : 15/02/2022
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from **Sherpura**
Analysis Duration : 15/02/2022 to 21/02/2022

Sl. No.	Parameters	Results	Test Method
1.	pH	7.38	IS:2720(Part-26)
2.	Conductivity (μmhos/cm)	398.0	IS:2720(Part-21)
3.	Sodium (as Na)(mg/kg)	154.67	STP/SOIL
4.	Water holding capacity (%)	32.85	STP/SOIL
5.	Potassium (as K) (mg/kg)	86.24	STP/SOIL
6.	Texture	Sand (% by mass)	STP/SOIL
		Clay (% by mass)	STP/SOIL
		Silt (% by mass)	STP/SOIL
7.	Calcium (as Ca)(mg/kg)	249.64	STP/SOIL
8.	Magnesium (as Mg) (mg/kg)	63.08	STP/SOIL
9.	SAR	0.72	STP/SOIL
10.	CEC (meq/100gm)	2.95	STP/SOIL
11.	Available Phosphorus(as P),(mg/kg)	14.68	STP/SOIL
12.	Organic Matter (%)	1.52	STP/SOIL
13.	Porosity (% by mass)	39.87	STP/SOIL
14.	Permeability (cm/hr)	1.59	STP/SOIL
15.	Total Kjeldahl Nitrogen %	0.0213	STP/SOIL
16.	Available Cadmium (as Cd) (mg/ kg)	BDL (<0.1)	US EPA-846
17.	Available Chromium (as Cr) (mg/ kg)	BDL (<0.1)	US EPA-846
18.	Available Arsenic (as As) (mg/ kg)	BDL (<0.1)	US EPA-846
19.	Available Nickel (as Ni) (mg/ kg)	BDL (<0.1)	US EPA-846
20.	Available Zinc (as Zn) (mg/ kg)	5.40	US EPA-846
21.	Available Copper (as Cu) (mg/ kg)	25.81	US EPA-846

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Soil	N-150222-023	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Received On : 15/02/2022
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from Nayabas
Analysis Duration : 15/02/2022 to 21/02/2022

Sl. No.	Parameters	Results	Test Method
1.	pH	7.18	IS:2720(Part-26)
2.	Conductivity (µmhos/cm)	412.0	IS:2720(Part-21)
3.	Sodium (as Na)(mg/kg)	165.87	STP/SOIL
4.	Water holding capacity (%)	34.96	STP/SOIL
5.	Potassium (as K) (mg/kg)	92.74	STP/SOIL
6.	Texture	Sand (% by mass)	STP/SOIL
		Clay (% by mass)	STP/SOIL
		Silt (% by mass)	STP/SOIL
7.	Calcium (as Ca)(mg/kg)	257.26	STP/SOIL
8.	Magnesium (as Mg) (mg/kg)	61.93	STP/SOIL
9.	SAR	0.69	STP/SOIL
10.	CEC (meq/100gm)	2.85	STP/SOIL
11.	Available Phosphorus(as P),(mg/kg)	13.98	STP/SOIL
12.	Organic Matter (%)	1.62	STP/SOIL
13.	Porosity (% by mass)	40.76	STP/SOIL
14.	Permeability (cm/hr)	1.64	STP/SOIL
15.	Total Kjeldahl Nitrogen %	0.0210	STP/SOIL
16.	Available Cadmium (as Cd) (mg/ kg)	BDL (<0.1)	US EPA-846
17.	Available Chromium (as Cr) (mg/ kg)	BDL (<0.1)	US EPA-846
18.	Available Arsenic (as As) (mg/ kg)	BDL (<0.1)	US EPA-846
19.	Available Nickel (as Ni) (mg/ kg)	BDL (<0.1)	US EPA-846
20.	Available Zinc (as Zn) (mg/ kg)	5.29	US EPA-846
21.	Available Copper (as Cu) (mg/ kg)	24.76	US EPA-846

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Soil	N-150222-024	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.
Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

Sampling & Analysis Data

Sample Received On : 15/02/2022
Sample Drawn By : Laboratory (NTL)
Sample Description : Soil Sample Collected from Nariya
Analysis Duration : 15/02/2022 to 21/02/2022

Sl. No.	Parameters	Results	Test Method
1.	pH	7.81	IS:2720(Part-26)
2.	Conductivity (μmhos/cm)	524.0	IS:2720(Part-21)
3.	Sodium (as Na)(mg/kg)	160.75	STP/SOIL
4.	Water holding capacity (%)	37.24	STP/SOIL
5.	Potassium (as K) (mg/kg)	94.83	STP/SOIL
6.	Texture	Sand (% by mass)	STP/SOIL
		Clay (% by mass)	STP/SOIL
		Silt (% by mass)	STP/SOIL
7.	Calcium (as Ca)(mg/kg)	262.75	STP/SOIL
8.	Magnesium (as Mg) (mg/kg)	58.93	STP/SOIL
9.	SAR	0.70	STP/SOIL
10.	CEC (meq/100gm)	2.56	STP/SOIL
11.	Available Phosphorus(as P),(mg/kg)	14.23	STP/SOIL
12.	Organic Matter (%)	1.71	STP/SOIL
13.	Porosity (% by mass)	41.85	STP/SOIL
14.	Permeability (cm/hr)	1.94	STP/SOIL
15.	Total Kjeldahl Nitrogen %	0.0212	STP/SOIL
16.	Available Cadmium (as Cd) (mg/ kg)	BDL (<0.1)	US EPA-846
17.	Available Chromium (as Cr) (mg/ kg)	BDL (<0.1)	US EPA-846
18.	Available Arsenic (as As) (mg/ kg)	BDL (<0.1)	US EPA-846
19.	Available Nickel (as Ni) (mg/ kg)	BDL (<0.1)	US EPA-846
20.	Available Zinc (as Zn) (mg/ kg)	5.37	US EPA-846
21.	Available Copper (as Cu) (mg/ kg)	24.85	US EPA-846

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.

CHECKED BY

AUTHORIZED SIGNATORY

Test Report of	Report Code	Date of Issue
Surface Water Quality	SW-150222-033	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received On : 15/02/2022
Sample Description : **Surface Water**
Sample Collected By : Laboratory (NTL)
Sample Quantity : 2.0 Litre
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Location : Collected from Sadriya Nadi -Upstream(SW1)

RESULTS				
S.No.	Parameter	Test Method	Results	Units
1.	pH (at 25 ⁰ C)	IS:3025(Part-11)	7.35	---
2.	Temperature	IS:3025(Part-9)	18.0	⁰ C
3.	Turbidity	IS:3025(Part-10)	4.2	NTU
4.	Electric Conductivity @25 ⁰ C	IS:3025(Part-14)	380	μS/cm
5.	Sulphate (SO ₄)	IS:3025(Part-24)	12.0	mg/l
6.	Nitrate (NO ₃)	IS:3025(Part-34)	2.56	mg/l
7.	Total Hardness (as CaCO ₃)	IS:3025(Part-21)	164.0	mg/l
8.	Chloride (as Cl)	IS:3025(Part-32)	28.0	mg/l
9.	Fluoride (as F)	APHA 4500F	0.18	mg/l
10.	COD (as O ₂)	APHA-5220 B	21.0	mg/l
11.	Iron (as Fe)	IS:3025(Part-53)	0.24	mg/l
12.	Dissolve Oxygen	IS:3025(Part-38)	7.8	mg/l
13.	Total Dissolved Solid	IS:3025(Part-16)	242	mg/l
14.	BOD (3 days at 27 ⁰ C)	IS:3025 (P-44)	8.8	mg/l
15.	Calcium (as Ca)	IS:3025(Part-40)	36.5	mg/l
16.	Magnesium (as Mg)	IS:3025(Part-46)	17.4	mg/l
17.	Arsenic (as As)	IS:3025(Part-37)	BDL	mg/l
18.	Lead (as Pb)	IS:3025(Part-47)	BDL	mg/l
19.	Copper (as Cu)	IS:3025(Part-42)	BDL	mg/l

20.	Zinc (as Zn)	IS:3025(Part-49)	BDL	mg/l
21.	Manganese (as Mn)	IS:3025(Part-59)	BDL	mg/l
22.	Total Chromium (as Cr)	IS:3025(Part-52)	BDL	mg/l
23.	Sodium (as Na)	IS:3025(Part-45)	21.8	mg/l
24.	Potassium (as K)	IS:3025(Part-45)	1.16	mg/l
25.	Total Alkalinity (as CaCO ₃)	IS:3025(Part-23)	158	mg/l
26.	Phosphate (as P)	IS:3025(Part-31)	0.16	mg/l
27.	Nitrite (as NO ₂)	IS:3025(Part-34)	0.110	mg/l
28.	Total Suspended Solid	IS:3025(Part-17)	8.8	mg/l
29.	Faecal Coliform	IS-1622	1.0×10^3	MPN/100 ml
30.	Total Coliform	IS-1622	1.2×10^3	MPN/100ML

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY

Test Report of	Report Code	Date of Issue
Surface Water Quality	SW-150222-034	03/03/2022

Issued To: M/s Instromedix Waste Management Pvt. Ltd.

Project Details: Common Bio-medical Waste Treatment Facility (CBWTF) At Khasra No. 400,
Village – Rampuraoonti, Tehsil – Sanganer, Jaipur (Rajasthan)

SAMPLING & ANALYSIS DATA

Sample Received On : 15/02/2022
Sample Description : **Surface Water**
Sample Collected By : Laboratory (NTL)
Sample Quantity : 2.0 Litre
Analysis Duration : 15/02/2022 to 21/02/2022
Sample Location : Collected from Sadriya Nadi -Downstream (SW1)

RESULTS				
S.No.	Parameter	Test Method	Results	Units
1.	pH (at 25 ⁰ C)	IS:3025(Part-11)	7.68	---
2.	Temperature	IS:3025(Part-9)	20.0	⁰ C
3.	Turbidity	IS:3025(Part-10)	6.8	NTU
4.	Electric Conductivity @25 ⁰ C	IS:3025(Part-14)	420	μS/cm
5.	Sulphate (SO ₄)	IS:3025(Part-24)	23.0	mg/l
6.	Nitrate (NO ₃)	IS:3025(Part-34)	4.01	mg/l
7.	Total Hardness (as CaCO ₃)	IS:3025(Part-21)	210.0	mg/l
8.	Chloride (as Cl)	IS:3025(Part-32)	38.8	mg/l
9.	Fluoride (as F)	APHA 4500F	0.24	mg/l
10.	COD (as O ₂)	APHA-5220 B	36.0	mg/l
11.	Iron (as Fe)	IS:3025(Part-53)	0.27	mg/l
12.	Dissolve Oxygen	IS:3025(Part-38)	6.2	mg/l
13.	Total Dissolved Solid	IS:3025(Part-16)	270	mg/l
14.	BOD (3 days at 27 ⁰ C)	IS:3025 (P-44)	10.2	mg/l
15.	Calcium (as Ca)	IS:3025(Part-40)	45.8	mg/l
16.	Magnesium (as Mg)	IS:3025(Part-46)	23.1	mg/l
17.	Arsenic (as As)	IS:3025(Part-37)	BDL	mg/l
18.	Lead (as Pb)	IS:3025(Part-47)	BDL	mg/l
19.	Copper (as Cu)	IS:3025(Part-42)	BDL	mg/l

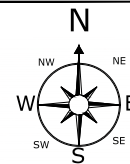
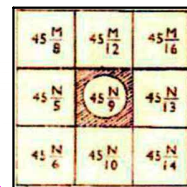
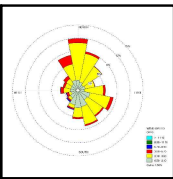
20.	Zinc (as Zn)	IS:3025(Part-49)	BDL	mg/l
21.	Manganese (as Mn)	IS:3025(Part-59)	BDL	mg/l
22.	Total Chromium (as Cr)	IS:3025(Part-52)	BDL	mg/l
23.	Sodium (as Na)	IS:3025(Part-45)	32.5	mg/l
24.	Potassium (as K)	IS:3025(Part-45)	1.80	mg/l
25.	Total Alkalinity (as CaCO ₃)	IS:3025(Part-23)	194	mg/l
26.	Phosphate (as P)	IS:3025(Part-31)	0.23	mg/l
27.	Nitrite (as NO ₂)	IS:3025(Part-34)	0.15	mg/l
28.	Total Suspended Solid	IS:3025(Part-17)	12.0	mg/l
29.	Faecal Coliform	IS-1622	0.85×10^3	MPN/100 ml
30.	Total Coliform	IS-1622	0.96×10^3	MPN/100ML

Notes:-

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

CHECKED BY

AUTHORIZED BY



Legend

Project site



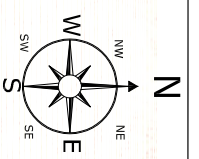
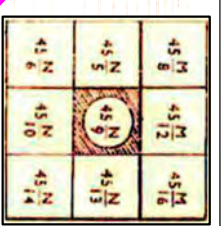
TOPOGRAPHICAL MAP OF 10 KM RADIUS SHOWING MONITORING LOCATIONS

Project: Proposed Common Bio-medical Waste
Treatment Facility (CBWTF) coming up
Khasra No. 400, Rampuraaonti Village, Tehsil
Sanganer, Jaipur

SCALE
0 2.0 4.0 5.0 Km

SOURCE: SOI TOPOSHEET NO.
45 N/6, 45 M/10, 45 N/9
& 45 N/5

Location	Distance	Direction	AQ	Noise	WQ		Soil
					GW	SW	
Project Site							
Chhitrali	3.2 km	N					
Bagru	4.3 km	NE					
Rampura	1.7 km	SSE					
Syosinghpura	2.2 km	WSW					
Sherpura	3.2 km	W					
Nayabas	2.8 km	NW					
Nariya	4.7 km	ESE					
Sadriya Nadi (Up Stream)	2.3 km	W					
Sadriya Nadi (Dn Stream)	2.5 km	N					



Legend

Project site



Water bodies

Particulars	Distance	Direction
1. Sadriya Nadi	2.3 km	NNE
2. Bandi Nadi	6.7 km	SSW
3. Hingoniya Sagar	4.9 km	WSW



TOPOGRAPHICAL MAP
OF 10 KM RADIUS

Project: Proposed Common Bio-medical Waste
Treatment Facility (CBWTF) coming up
Khasra No. 400, Rampuraonit Village, Tehsil
Sanganer, Jaipur

SCALE
0 2.0 4.0 5.0 Km

SOURCE: SOI TOPOSHEET NO.
45 N/6, 45 M/10, 45 N/9
& 45 N/5



भारत का राजपत्र The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)

PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

सं. 887]

नई दिल्ली, बृहस्पतिवार, अप्रैल 30, 2015/वैशाख 10, 1937

No. 887]

NEW DELHI, THURSDAY, APRIL 30, 2015 /VAISAKHA 10, 1937

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 17 अप्रैल, 2015

का.आ. 1142(अ).— केन्द्रीय सरकार, पर्यावरण (संरक्षण) नियम, 1986 के नियम 5 के उपनियम (4) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उपधारा (1) और धारा 3 की उपधारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, लोक हित में उक्त नियम के नियम 5 के उपनियम (3) के खंड (क) के अधीन सूचना की आवश्यकता से छूट के पश्चात्, भारत सरकार के पर्यावरण और वन मंत्रालय की अधिसूचना संख्यांक का.आ. 1533(अ), तारीख 14 सितंबर, 2006 का निम्नलिखित और संशोधन करती है, अर्थात्:—

उक्त अधिसूचना की अनुसूची में मद 7(घ) और उससे संबंधित प्रविष्टियों के पश्चात् निम्नलिखित मद और प्रविष्टियां अंतःस्थापित की जाएगी, अर्थात्:—

(1)	(2)	(3)	(4)	(5)
"7(घ)(क)	जैव-चिकित्सा (बायो-मैडिकल) अपशिष्ट उपचार सुविधाएं		सभी परियोजनाएं	

[फा.सं.3-9/2014-आई.ए. III]

मनोज कुमार सिंह, संयुक्त सचिव

टिप्पण: मूल नियम भारत के राजपत्र, असाधारण, भाग 2, खंड 3, उपखंड (ii) में अधिसूचना सं.का.आ.1533(अ), तारीख 14 सितंबर, 2006 द्वारा प्रकाशित किए गए थे और निम्नानुसार पश्चातवर्ती संशोधन किए गए:—

1. का.आ.1737(अ), तारीख 11 अक्टूबर, 2007;
2. का.आ.3067(अ), तारीख 1 दिसंबर, 2009;
3. का.आ.695(अ), तारीख 4 अप्रैल, 2011;
4. का.आ.2893(अ), तारीख 13 दिसंबर, 2012;

5. का.आ.674(अ), तारीख 13 मार्च, 2013;
6. का.आ.2559(अ), तारीख 22 अगस्त, 2013;
7. का.आ.2731(अ), तारीख 9 सितंबर, 2013;
8. का.आ.562(अ), तारीख 26 फरवरी, 2014
9. का.आ.637(अ), तारीख 28 फरवरी, 2014;
10. का.आ.1599(अ), तारीख 25 जून, 2014;
11. का.आ.2601(अ), तारीख 7 अक्टूबर, 2014;
12. का.आ.3252(अ), तारीख 22 दिसंबर, 2014;
13. का.आ.382(अ), तारीख 3 फरवरी, 2015;
14. का.आ.811(अ), तारीख 23 मार्च, 2015; और
15. का.आ.996(अ), तारीख 10 अप्रैल, 2015।

MINISTRY OF ENVIRONMENT AND FORESTS

NOTIFICATION

New Delhi, the 17th April, 2015

S.O.1142(E).— In exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986(29 of 1986) read with sub-rule(4) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments to the notification of the Government of India, in the Ministry of Environment and Forests number S.O.1533(E), dated the 14th September, 2006 after dispensed with the requirement of notice under clause(a) of sub-rule(3) of the said rule 5 in public interest, namely:—

In the said notification, in the Schedule, after item 7(d) and the entries relating thereto, the following item and entries shall be inserted, namely:—

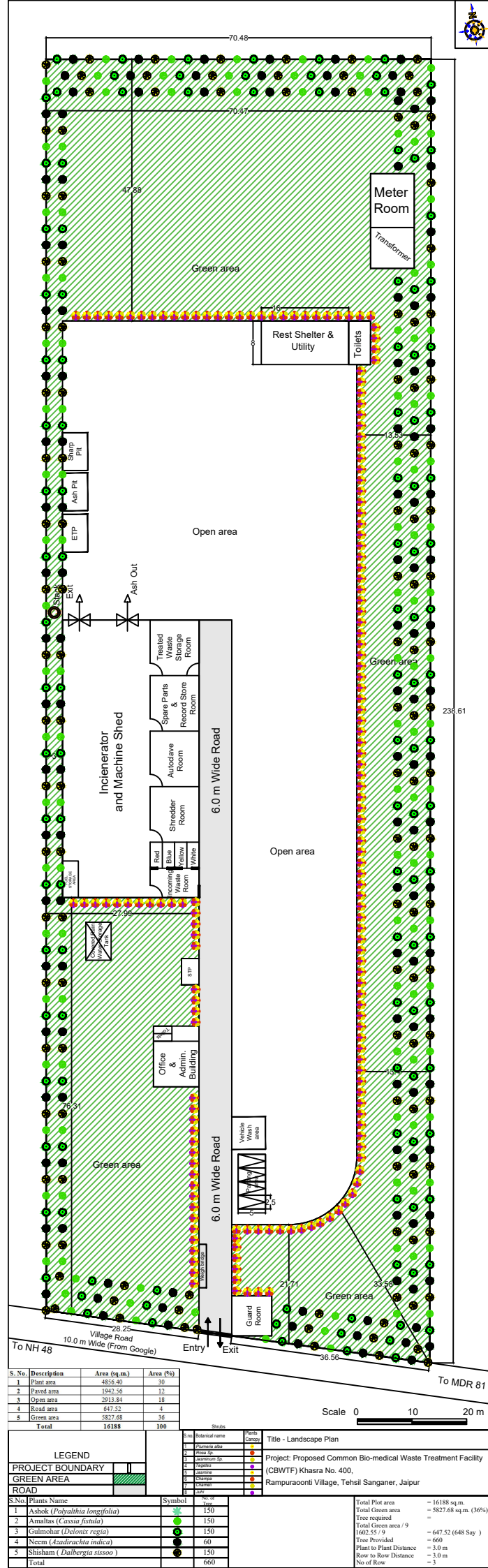
(1)	(2)	(3)	(4)	(5)
"7(da)	Bio-Medical Waste Treatment Facilities	-	All projects	-

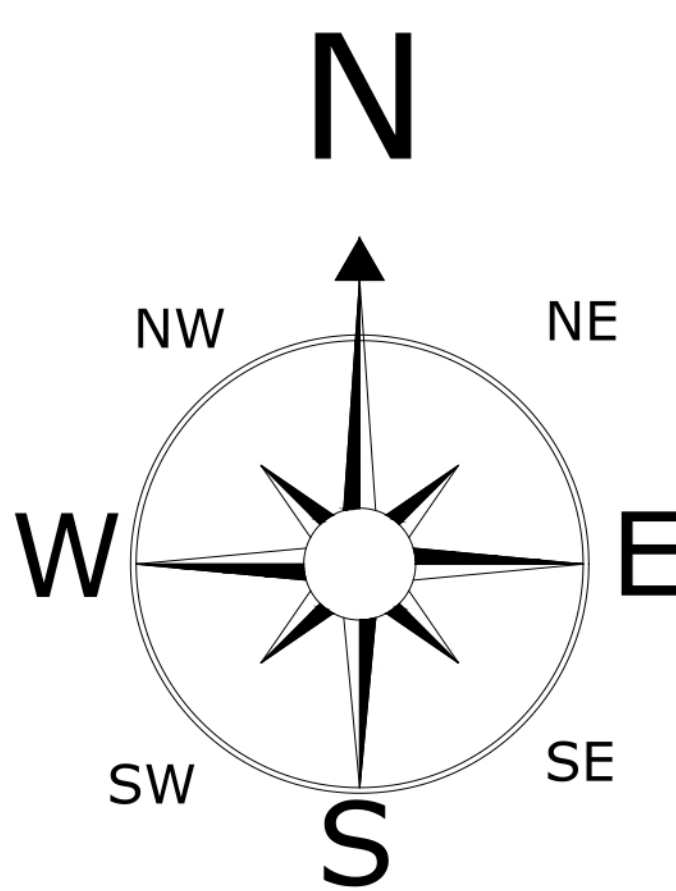
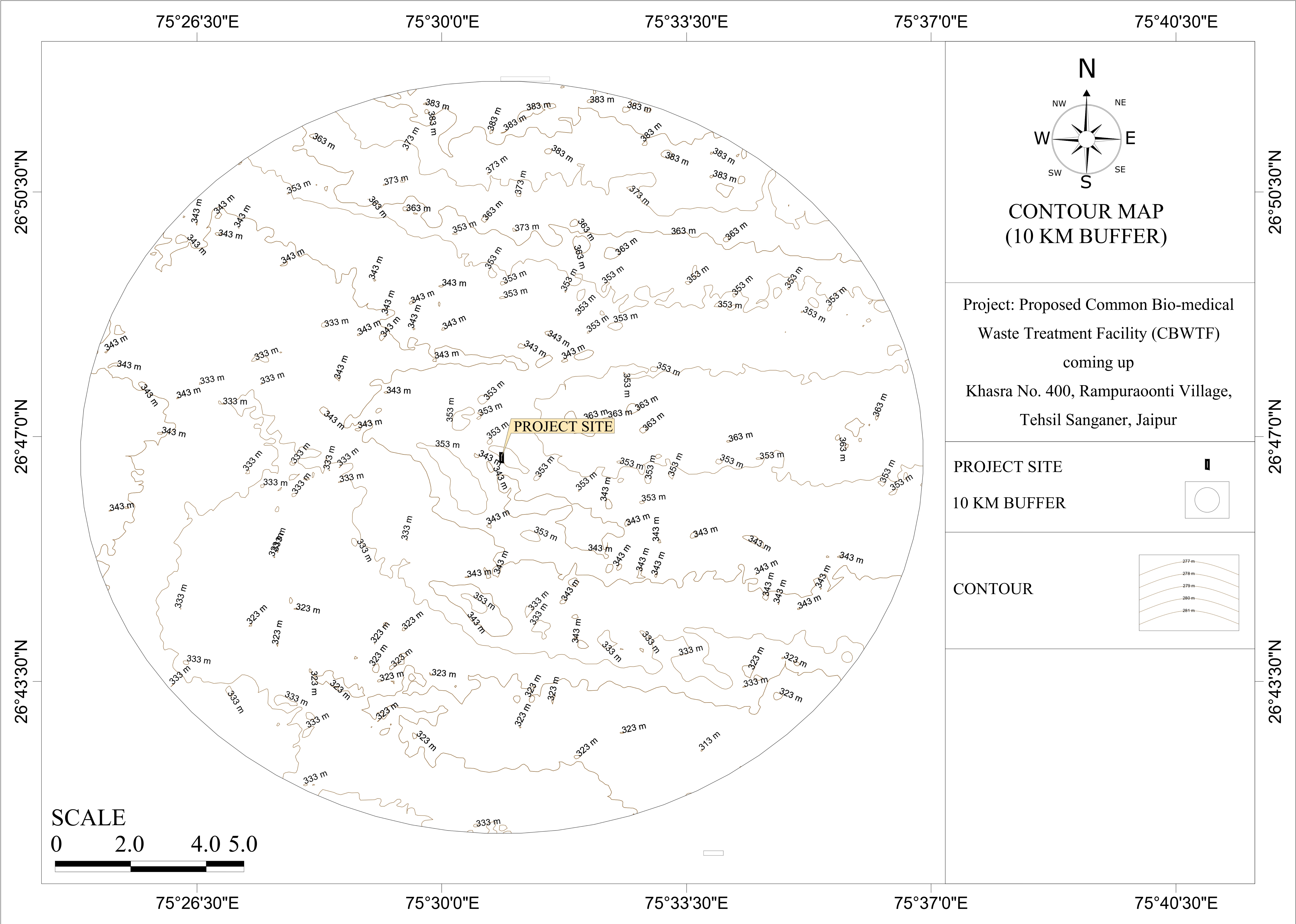
[F. No. 3-9/2014-IA.III]

MANOJ KUMAR SINGH, Jt. Secy.

Note:- The principal rules were published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii) vide notification number S.O. 1533 (E), dated the 14th September, 2006 and subsequently amended as follows:-

1. S.O.1737(E) dated the 11th October, 2007
2. S.O. 3067(E) dated the 1st December, 2009
3. S.O.695(E) dated the 4th April, 2011
4. S.O.2896(E) dated the 13th December, 2012
5. S.O.674(E) dated the 13th March, 2013
6. S.O.2559(E) dated the 22nd August, 2013
7. S.O. 2731(E) dated the 9th September, 2013
8. S.O. 562(E) dated the 26th February, 2014
9. S.O.637(E) dated the 28th February, 2014
10. S.O. 1599(E) dated the 25th June, 2014
11. S.O. 2601 (E) dated 7th October, 2014
12. S.O. 3252(E) dated 22nd December, 2014
13. S.O. 382 (E) dated 3rd February, 2015
14. S.O. 811(E) dated 23rd March, 2015
15. S.O. 996(E) dated 10th April, 2015.





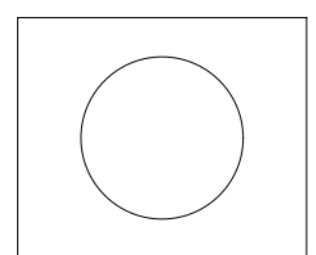
CONTOUR MAP
(10 KM BUFFER)

Project: Proposed Common Bio-medical
Waste Treatment Facility (CBWTF)
coming up
Khasra No. 400, Rampuraoonti Village,
Tehsil Sanganer, Jaipur

PROJECT SITE



10 KM BUFFER



CONTOUR

