

# ATIRA

## ENVIRONMENTAL ENGINEERING DIVISION

P.O. AMBAVADI VISTAR AHMEDABAD-380 015.

Phone : 079- 26307921, 26307922, 26307923

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WEBSITE: [www.atira.in](http://www.atira.in)



### ➤ Water / Waste water

Sr. No.	Parameters	Rs./Sample
1	pH	100
2	Temperature	100
3	Turbidity	150
4	Colour	250
5	Total Dissolved Solids	150
6	Total Suspended Solids	150
7	Dissolved Oxygen	150
8	Free Carbon Dioxide	150
9	Chemical Oxygen Demand - COD	400
10	Biochemical Oxygen Demand - BOD	600
11	Oil & Grease	150
12	Ammonical Nitrogen	400
13	Free Ammonia	400
14	Total Kjeldahl Nitrogen	400
15	Total Nitrogen	400
16	Nitrate (NO <sub>3</sub> <sup>-</sup> )	300
17	Nitrite (NO <sub>2</sub> <sup>-</sup> )	300
18	Phenolic Compound	500
19	Surfactants	300
20	Sulphates	250
21	Sulphides	150
22	Chlorides	150
23	Conductivity	150
24	Alkalinity	150
25	Acidity	150
26	Total Hardness as CaCO <sub>3</sub>	150
27	Calcium	150
28	Magnesium	150
29	Sodium	400
30	Potassium	400
31	Residual Free Chlorine	150
32	Fluoride	250
33	Percentage Sodium	1200
34	Reactive Silica	250

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Sr. No.	Parameters	Rs./Sample
1	Water Analysis (pH, TDS, TSS, Hardness, Chloride, Sulphate, Alkalinity, Calcium & Magnesium)	1400/-

### ➤ Heavy Metals & Biological Analysis

Sr. No.	Parameters	Rs./Sample
1	Heavy metals	400/metal/sample
2	Bio Assay	3000 /-
3	Pesticides	5000 /-

### ➤ Sample Collection Charges: Rs. 200/- per water sample

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### ➤ Air

Sr. No.	Parameters	Rs.
1	Stack charges for Flue gas vent	
	Collection charges	4000/-
	SPM	
	NO <sub>x</sub>	2500/-
	SO <sub>2</sub>	
2	Process Vent	
	Collection charges	3000/-
	NO <sub>x</sub>	500/-
	SO <sub>2</sub>	500/-
	Cl <sub>2</sub>	500/-
	HCl	500/-
	NH <sub>3</sub>	500/-
	CS <sub>2</sub>	500/-
	H <sub>2</sub> S	500/-
3	Ambient Monitoring	
	Collection charges	5000/-
	PM <sub>10</sub>	1000/-
	PM <sub>2.5</sub>	1000/-
	NO <sub>x</sub>	500/-
	SO <sub>2</sub>	500/-
	Cl <sub>2</sub>	500/-
	HCl	500/-
	NH <sub>3</sub>	500/-
	CS <sub>2</sub>	500/-
	H <sub>2</sub> S	500/-
	CO	1000/-
	CH <sub>4</sub>	1000/-

### ➤ Noise monitoring charges (lump-sum for 10 locations): Rs. 1000/-

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### ➤ Sludge

Sr. No.	Parameters	Rs. / sample
1.	pH	100
2.	Total Dissolved Solids	150
3.	Total Suspended Solids	150
4.	Chemical Oxygen Demand - COD	400
5.	Biochemical Oxygen Demand - BOD	600
6.	Oil & Grease	150
7.	Chlorides	150
8.	Sulphates	250
9.	Moisture	150

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### ➤ Leachate:

Sr. No.	Parameters	Rs./Sample
1	pH	100
2	Total Dissolved Solids	150
3	Total Suspended Solids	150
4	Dissolved Oxygen	150
5	Chemical Oxygen Demand -- COD	400
6	Biochemical Oxygen Demand -- BOD	600
7	Oil & Grease	150
8	Ammonical Nitrogen	400
9	Phenolic Compound	500
10	Surfactants	300
11	Sulphate	250
12	Sulphides	150
13	Chlorides	150
14	Conductivity	150
15	Alkalinity	150
16	Acidity	150
17	Hardness	150
18	Calcium	150
19	Magnesium	150
20	Sodium	400
21	Potassium	400
22	Residual Chlorine	150
23	Fluoride	250
24	Colour	250
25	Percentage Sodium	1200
26	%Moisture	150

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### ➤ Soil Analysis Charges:

Sr. No.	Parameters	Rs./Sample
1.	pH	100
2.	Conductivity	150
3.	Alkalinity	150
4.	Carbonates	150
5.	Bicarbonates	150
6.	Chlorides	150
7.	Sulphates	250
8.	Ammonical Nitrogen	400
9.	Total Nitrogen	400
10.	Nitrate (NO <sub>3</sub> <sup>-</sup> )	300
11.	Hardness	150
12.	Calcium	150
13.	Magnesium	150
14.	Sodium	400
15.	Potassium	400
16.	Phosphorus	150
17.	%Moisture	150

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### ❖ List of Heavy Metals:

Sr. No.	Test
1.	Barium
2.	Copper
3.	Iron
4.	Manganese
5.	Zinc
6.	Silver
7.	Aluminum
8.	Selenium
9.	Calcium
10.	Magnesium
11.	Sodium
12.	Antimony
13.	Borates
14.	Mercury
15.	Cadmium
16.	Arsenic
17.	Lead
18.	Chromium
19.	Nickel

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**Table 6 : Criteria for Direct Disposal of Hazardous Waste into Secured Landfill**

Leachate Quality	Concentration
pH	4-12
Total Phenols	<100 mg./l.
Arsenic	<1 mg./l.
Lead	<2 mg./l.
Cadmium	<0.2 mg./l.
Chromium-VI	<0.5 mg./l.
Copper	<10 mg./l.
Nickel	<3 mg./l.
Mercury	<0.1 mg./l.
Zinc	<10 mg./l.
Fluoride	<50 mg./l.
Ammonia	<1,000 mg./l.
Cyanide	<2 mg./l.
Nitrate	<30 mg./l.
Adsorbable organic bound Chlorine	<3 mg./l.
Water soluble compounds except salts	<10 %
<b>Strength</b>	
Transversal Strength (Vane Testing)	>25 KN/m <sup>2</sup>
Unconfined Compression Test	>50 KN/m <sup>2</sup>
Axial Deformation	<20 %
<b>Degree of Mineralization or Content of Organic Materials (original sample)</b>	
Annealing loss of the dry residue at 550° C	<20 Wt. % (for non- biodegradable waste) <5 Wt. % (for biodegradable waste)
Extractable Lipophylic contents (Oil & Grease)	<4 Wt. %

**Note:**

- 1). *leachate quality is based on water leachate test i.e Leachability tests are conducted by preparing a suspension of waste and water i.e taking 100 gm of waste and filling up to 1 liter with distilled water, stirring or shaking for 24 hrs, filtering the solids and analyzing the filtrate.*
- 2). *Calorific value of the land disposable hazardous waste should be less than 2500 K. Cal/Kg*