



## ETHEKWINI MUNICIPALITY Occupational Health & Safety Unit

### BASELINE RISK ASSESSMENT

Document Title	Baseline Risk Assessment
Client	EThekweni Municipality – Cleansing and Solid Waste
Project	<b>WWMF Contract B - Landfill Cell 1, Lined Dams and Platforms Construction</b>
Contract Number	ZE25115
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## **BASELINE RISK ASSESSMENT**

**1. INTRODUCTION:** In accordance with the Occupational Health and Safety Act, (Act 85 of 1993) the Legislator places specific requirements on an Employer. One of these is prescribed in Section 8(i) of the Act where it requires the Employer to ascertain the risks and dangers which may occur within the workplace or section of the workplace and then goes on to establish working procedures or practices.

**2. PURPOSE:** This is conducted to create a benchmark of the potential risks that apply to the whole project or business operation.

**3. SCOPE:** This assessment could be approached on a site, regional or national level concerning any facet of the business operation or process or activity.

### **4. REVIEW AND MONITORING PLAN**

The risk assessment form part of the health and safety plan to be applied on the site and must include the following:

- (a) The identification of the risk and hazards to which persons may be exposed.
- (b) An analysis and evaluation of the risks and hazards identified based on a documented method

### **5. REFERENCES**

- (a) Occupational Health & Safety Act and its Regulation
- (b) Tender Document ZE25115

## 6. LOCALITY PLAN



## SCOPE OF WORK

The Contract is for the construction of a landfill cell, Cell 1, a Leachate Dam, a Contaminated Stormwater Dam, Infrastructure and ancillary works for the Western Waste Management Facility (WWMF). The main parts of the envisaged work include:

- a) careful relocation of identified indigenous plants from the area of the works.
- b) clearing of other vegetation and removal of trees.
- c) stripping of topsoil to stockpile for re-use.
- d) bulk earthworks in materials ranging from soft clayey soils to soft rock in order to prepare for the new cell, the leachate storage pond, the contaminated stormwater dam and other works including, but not limited to, gravel roads, drains and pipelines.
- e) base layers, compacted clay liner (provisionally), GCL and geomembrane liner and some geogrid for Cell 1, the Leachate Storage Pond and the Contaminated Stormwater Dam.
- f) construction of liner protection layers, generally stabilised sand then the crushed rock aggregate leachate drainage layers for Cell 1, geotextiles and appurtenant works together with the pipework for the leachate detection and under drainage layers for Cell 1, the Leachate Storage Pond and the Contaminated Stormwater Dam.
- g) construction of sundry subsoil drains, blanket drains and pipework as may be needed.
- h) construction of concrete vee and trapezoidal drains as well as ancillary brickwork structures.
- i) construction of leachate, stormwater and monitoring manholes (including pipework and valves) and other structures.
- j) stormwater drainage (piping headwalls and manholes).
- k) Gabion walling and protection works.
- l) Catchwater drains and berms.
- m) The installation of a pump station, pipework and chambers for the leachate rising main
- n) Ancillary works including platforms and various infrastructure.

## 1. RISK ESTIMATION AND EVALUATION

### RISK CLASSIFICATION USING A RISK SCORE TECHNIQUE

<b>Exposure (E) How frequently does the hazardous event occur</b>		<b>Risk classification</b>
Continuously .....		10
Frequently (daily) .....		6
Occasionally (weekly) .....		3
Unusually (monthly) .....		2
Rarely (few a year) .....		1
<b>Probability (P) The probability of a loss when the hazardous event does occur</b>		<b>Risk classification</b>
Frequent (happens often) .....		10
Probable (quite possible) .....		6
Occasional (unusual, but possible) .....		3
Remotely possible (has happened somewhere) .....		1
Improbable (practically impossible) .....		0.5
<b>Severity (S) Consequences of the hazardous event</b>		<b>Risk classification</b>
<b>Catastrophic</b> many fatalities; or interruption of longer than 2 weeks; or asset or environmental damage (or both) exceeding R100m .....		100
<b>Disaster</b> (few fatalities; or interruption between one and 2 weeks; or asset or environmental damage (or both) exceeding R10m) .....		40
<b>Very serious</b> (one fatality; or interruption of 6 days; or asset or environmental damage (or both) exceeding R100,000 .....		7
<b>Important</b> (temporary disability; or interruption between 6 and 24 hours; or damage exceeding R10,000 .....		3
<b>Noticeable</b> (first aid needed; or interruption of less than 6 hours; damage exceeding R1000) .....		1
<b>Risk classification (Risk score = E x P x S )</b>		
<b>Risk score</b>	<b>Risk classification</b>	
Over 400-----5	Very high risk – discontinue operation or activity	
200 to 400 ----- 4	High risk – immediate correction needed	
70 to 200----- 3	Substantial risk – correction needed	
20 to 70----- 2	Possible risk – attention needed	
Under 20 ----- 1	Risk accepted	

**BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS**

1	Site Access								
	Activity	Hazard	Risk	Risk Evaluation			Risk Score	Risk level	Risk Rank
				E	P	S			
	Accessing the site using construction vehicles or walking to site. Delivering of equipment and material to the site	Excessive speed, head on collusion, employees knocked by moving vehicles. Road blocked off due to community protest. Manual Handling and excessive lifting.	Accidents, damage to equipment or severe injuries or death. Back injuries,	6	6	7	252		4
2	Site Establishment								
	Manual and mechanical clearing of the land. Off-loading and positioning of offices by mobile crane. Fencing. Installation of temporary water supply, electricity, ablution facilities	Dust, Snakes, Bees & Wasps. Incompetent operator. Poor connection of temporary services.	Poisoned and death. Collision/impacts of mobile lifting equipment loads and dropped loads with process plant, pipe work, electrical cables and people. Water leaks, Electrocution, improper connection	6	6	7	252		4

<b>3</b>	<b>Site Fencing</b>								
	Clearing bush using bush knives Digging holes using pick and spade	Manual handling of material Dust Moving vehicles	Manual handling injuries Dust being inhaled/getting in eyes Vehicle collision and damage	3	6	7	126		3
<b>4</b>	<b>Existing Services</b>								
	Identify the existing services	Snakes Unforeseen hazards Unknown/ Unidentified underground services	Poisoned and death. Personal injuries. Electrocution	6	6	7	252		4
<b>5</b>	<b>Bulk Earthwork</b>								
	Mechanical excavation	Incompetent operator. Machine running out of control. Open excavation. Dust Poor stockpiling. Operating mobile plant next to open excavation	Personal injury/amputations Property damage. Respiratory problem. Obstruction of walkways	6	6	3	108		3
<b>6</b>	<b>Construction Mobile Plant and Equipment</b>								
	Use of Plant & Equipment on site	Incompetent operator Unsafe plant & equipment.	Personal injuries. Motor vehicle accident. Environmental	6	6	7	252		4

		Collusion with other vehicles. Petrol and oil spillages.	contamination.						
<b>7</b>	<b>Emergency Management</b>								
	Development and Implementation of an Emergency Management Plan	Failure to have a basic, site specific emergency management plan. Workers not trained in the Emergency Plan. Insufficient or no emergency equipment or personnel.	Injury or damage to property. Inability to respond to emergencies. Insufficient or no emergency equipment.	6	6	3	108		3
<b>8</b>	<b>Community Risk Management</b>								
	Managing community risk	Failure to adequately monitor and manage the multi-faced social issues.	Violent protests. Injury to employees and property damage.	6	6	3	108		3
<b>9</b>	<b>Subcontractor Management</b>								



	Managing subcontractors	Failure to adequately assess subcontractors S.H.E Management System before work commences and at regular intervals. Inadequate Supervision. Utilizing incompetent Subcontractors.	Injury and non-compliance to legislation. High level of employee unsafe behavior. Accidents and property damage.	6	6	3	108		3
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