ETHEKWINI MUNICIPALITY
Occupational Health & Safety Unit

BASELINE RISK ASSESSMENT

Document Title	Baseline Risk Assessment
Client	eThekwini Municipality –Water and Sanitation
Project Description	Construction and commissioning of a 1Ml/day capacity increase of the existing 1ML/day Ogungini Water Treatment Work
Contract Number	WS7202
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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 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) Tender document

(b) Occupational Health & Safety Act and its Regulation

6. LOCALITY PLAN

SCOPE OF WORKS

River Abstraction

Raw water pipeline

Modifications to existing raw

Refurbish existing works poly dosing, clarifies and slow sand filters

Raw water feed and poly dosing for New Works

New 1ML/day clarification and filtration module

On-site clear water storage/balancing/chlorine contact

Clear water pumping system

Clear water pipeline

Refurbishment and upgrade of existing sodium hypochlorite batching and dosing system

Provide new waste sludge handling and dehydration system

Power supply and control & instrumentation

Refurbishment of existing buildings

Siteworks

General

1. RISK ESTIMATION AND EVALUATION

RISK CLASSIFICATION USING A RISK SCORE TECHNIQUE

Exposure (E) How frequently does the hazardous event occur	**Risk classification**
Continuously	10
Frequently (daily)	6
Occasionally (weekly)	3
Unusually (monthly)	2
Rarely (few a year)	1

Probability (P) The probability of a loss when the hazardous event does occur	**Risk classification**
Frequent (happens often)	10
Probable (quiet possible)	6
Occasional (unusual, but possible)	3
Remotely possible (has happened somewhere)	1
Improbable (practically impossible)	0.5

Severity (S) Consequences of the hazardous event	**Risk classification**
Catastrophic many fatalities; or interruption of longer than 2 weeks; or asset or environmental damage (or both) exceeding R100m	100
Disaster (few fatalities; or interruption between one and 2 weeks; or asset or environmental damage (or both) exceeding R10m)	40
Very serious (one fatality; or interruption of 6 days; or asset or environmental damage (or both) exceeding R100,000	7
Important (temporary disability; or interruption between 6 and 24 hours; or damage exceeding R10,000	3
Noticeable (first aid needed; or interruption of less than 6 hours; damage exceeding R1000)	1

Risk classification (Risk score = E x P x S)

Risk score	**Risk classification**
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
3	**Bulk Earthwork**								
	Mechanical excavation	Incompetent	Personal	6	6	7	252		4

	Trenching for pipes and cables	operator. Machine running out of control. Open excavation. Dust Poor stockpiling. Operating mobile plant next to open excavation	injury/amputations Property damage. Respiratory problem. Obstruction of walkways						
4	**Existing Services**								
	Identify the existing services	Snakes Unforeseen hazards	Poisoned and death. Personal injuries.	6	6	7	252		4
5	**Excavation**								
	Mechanical and manual excavation.	Unauthorized operator. Machine running out of control. Open excavation. Dust. Operating mobile plant next to open excavation.	Personal injury/possible disabling injuries. Property to damage Respiratory problem	6	6	7	252		4
6	**Bedding and Pipe Laying**								
	Accessing trenches Mechanical lifting of Pipe	Trench collapse, falling objects/material	Personal injuries/death Injury to muscle	6	6	7	252		4

		Incorrect lifting of pipes							
7	**Backfilling and Compaction**								
	Backfilling and Compaction Operating a Bomag roller, Wacker etc.	Dust Incompetent operator. Noise. Vibration	Respiratory problem Personal injuries and damage to property. Noise Induce. Hearing loss. Kidney problem. Body pain.	6	6	3	108		4
8	**Compaction**								
	Operating a Bomag roller, wacker etc.	Incompetent operator. Noise. Vibration.	Personal injuries and damage to property. Noise Induce. Hearing loss. Kidney problem. Body pain.	6	6	3	108		3
9	**Construction Mobile Plant and Equipment**								
	Use of Plant & Equipment on site	Incompetent operator Unsafe plant & equipment. Collusion with other vehicles. Petrol and oil spillages.	Personal injuries. Motor vehicle accident. Environmental contamination.	6	6	7	252		4
10	**Emergency Management**								
	Development and	Failure to have a	Injury or damage to	6	6	3	108		3

	Implementation of an Emergency Management Plan	basic, site specific emergency management plan. Workers not trained in the Emergency Plan. Insufficient or no emergency equipment or personnel.	property. Inability to respond to emergencies. Insufficient or no emergency equipment.						
11	**Community Risk Management**								
	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
12	**Subcontractor Management**								
	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
13	**Block work and Brick work (Construction of new building)**								

	Block work and mixing mortar.	Manual handling of blocks. Mortar inhalation. Mortar contact with body.	Injury to hands. Respiratory problem. Skin problems.	6	6	7	252		4

RISK PROFILE: Construction and commissioning of a 1Ml/day capacity increase of the existing 1ML/day Ogungini Water Treatment Work