

OPERATIONAL ENVIRONMENTAL MANAGEMENT

FOR THE

MALMESBURY WASTEWATER TREATMENT WORKS AND ASSOCIATED INFRASTRUCTURE ON ERF 3020, MALMESBURY

DRAFT

Prepared for: Swartland Municipality
Private Bag X52
Malmesbury
7299
Tel: (021) 487 9400
Fax: (022) 487 9440
Email: swartlandmun@swartland.org.za ("Client")

Prepared by: Eco Impact Legal Consulting (Pty) Ltd
P.O. Box 45070
Claremont
South Africa
7735
Tel: 021 671 1660
Fax: 021 671 9976
Email: admin@ecoimpact.co.za



APRIL 2019



Title:
MALMESBURY WASTEWATER TREATMENT WORKS AND ASSOCIATED INFRASTRUCTURE ON ERF 3020

OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

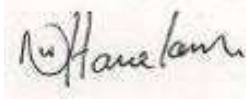
Carried Out By:
 Eco Impact Legal Consulting (Pty) Ltd
 P.O. Box 45070
 Claremont
 7735
 Tel: 021 671 1660;
 E-mail: admin@ecoimpact.co.za

Client:
 Swartland Municipality
 Private Bag X52
 Malmesbury
 7299
 Tel: (021) 487 9400
 Fax: (022) 487 9440
 Email: swartlandmun@swartland.org.za ("Client")

Author(s):
 Nicolaas Hanekom

Client Contact Person:
 The Municipal Manager

© COPYRIGHT: Eco Impact Legal Consulting (Pty) Ltd

Verification	Capacity	Name	Signature	Date
By Author(s):	EAP	Nicolaas Hanekom		26 March 2019

DEFINITIONS

Auditing:	A systematic and objective assessment of an organization's activities and services conducted and documented on a periodic basis based to a (e.g. ISO 19011:2011) standard.
Environment:	A place where living, non-living and man-made features interact, and where life and diversity is sustained over time.
Evaporation:	The change by which any substance (e.g. water) is converted from a liquid state into and carried off as vapour.
Independent:	Is independent and has no interest in any business related to the development site, nor will receive any payment or benefit other than fair remuneration for the task undertaken.
Groundwater:	Subsurface water in the zone in which permeable rocks, and often the overlying soil, are saturated under pressure equal to or greater than atmospheric.
Monitoring:	A systematic and objective observation of an organisation's activities and services conducted and reported on regularly.
Monitoring programme:	A programme for taking regular measurements of the quantity and quality of a water resource, waste or wastewater discharge at specified intervals and at specific locations to determine the chemical, physical and biological nature of the water resource, waste or wastewater discharge.
Natural vegetation:	All existing vegetation species, indigenous or otherwise, of trees, shrubs, groundcover, grasses and all other plants found growing on a site.
Pollution:	The result of the release into air, water or soil from any process or of any substance, which is capable of causing harm to man or other living organisms supported by the environment.
Rehabilitation:	Making the land useful again after a disturbance. It involves the recovery of ecosystem functions and processes in a degraded habitat. Rehabilitation does not necessarily re-establish the pre-disturbance condition but does involve establishing geological and hydro logically stable landscapes that support the natural ecosystem mosaic.

ACRONYMS

DEA&DP:	Department of Environmental Affairs and Development Planning
DWS:	Department of Water and Sanitation
EA:	Environmental Authorisation
OEMP:	Operational Environmental Management Programme
I&AP:	Interested and Affected Party
SANS:	South African National Standards

TABLE OF CONTENTS

CHAPTER 1	4
1.1. Executive Summary.....	4
1.2. Project Description	5
CHAPTER 2	5
2.1 Applicable Legislation Identified	5
CHAPTER 3	6
3.1 Monitoring and Auditing.....	6
3.1.1 Introduction.....	6
3.1.2. Roles and Responsibilities	6
3.2 The Monitoring Procedure.....	7
3.3 The Auditing Procedure.....	7
CHAPTER 4	8
4.1. Good Housekeeping.....	8
4.2 Record Keeping.....	8
4.3 Document Control.....	8
CHAPTER 5	9
5.1. Public Communication Protocols.....	9
CHAPTER 6	9
CHAPTER 7	20
Environmental Reporting	20
CHAPTER 8	22
Compliance with the Environmental Authorisation	22
CHAPTER 9	22
Updating/Adapting the OEMP	22
References	23

DEVELOPER'S COMMITMENT

The Swartland Municipality has committed itself to a set of values that include the maintenance of good relations and transparent communications with all stakeholders, and the dynamic engagement of the larger community.

Swartland municipality undertakes to implement suitable management systems for all the areas and aspects of this operation. This will ensure that development itself and management of the project will comply with legal, technical, environmental and transformation policies and standards.

Swartland municipality, in drafting this OEMP for implementation, intends to enable continuous improvement in legal compliance and the sustainable operation of the site.

The OEMP intends to change the way in which the owners, the operation process they have commissioned and the contractor plan for and manage resources to achieve sustainability.

The satisfactory implementation of the OEMP on site will require both the full support and commitment of all personnel.

CHAPTER 1

1.1. Executive Summary

This OEMP has been prepared principally in compliance with the requirements of section 24N and Section 34 of the National Environmental Management Act 107 of 1998. This document, together with the conditions in the Environmental Authorisation, must be adhered to.

The Author and Eco Impact Legal Consulting (Pty) Ltd ("Eco Impact")

Mr Hanekom is a registered Professional Natural Scientist in the ecological science field with the South African Council for Natural Scientific Professions ("SACNASP") and a qualified EAP who holds a Masters Technologiae, Nature Conservation ("Vegetation Ecology and Biodiversity Assessment") degree from the Cape Peninsula University of Technology.

He further qualified in Environmental Management Systems ISO 14001:2004, at the Centre for Environmental Management, North-West University, as well as Environmental Management Systems ISO 14001:2004 Audit: Internal Auditors Course to ISO 19011:2003 level, from the Centre for Environmental Management, North-West University qualifying him to audit to ISO/SANS environmental compliance and EMS standards.

Mr Hanekom has been responsible for many environmental impact assessments and several EIA, waste license and atmospheric emission license applications as well as being involved in the implementation of several environmental management systems

*See attached hereto curriculum vitae of the EAP.

1.2. Project Description

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act, 107 of 1998.

The existing Malmesbury Wastewater Treatment Works (WWTW) consists principally of a series of maturation ponds. Accordingly, the WWTW was upgraded to increase the effectiveness of specific components of the existing sewerage treatment works and increased the capacity within the existing boundary of the Treatment Works. The existing access to the site was upgraded, and currently available electricity supply is utilised.

Furthermore, the WWTW was upgraded via the operation of two 5ML/day activated sludge membrane bioreactor modules in a biological nutrient removal (BNR) configuration. The existing Pasveer Ditch is utilised as a balancing tank and the existing clarifiers as aerobic digestors. The total footprint of the is approximately 1.5ha and is located within the boundary of the existing site. The bio filter plant is replaced with more modern technology that is better suited to achieving better quality effluent. The development comprises the following:

- A new inlet works constructed in a new position in the upgraded plant configuration;
- A new office building;
- An additional belt press for standby sludge dewatering capacity;
- The existing Return Activated Sludge/ waste Activated Sludge was upgraded
- A basic Supervisory Control and Data Acquisition ("SCADA") system for the control and management of the plant;
- Upgraded chlorine closing system;
- A chemical dosing facility for phosphate removal (when required);
- An irrigation system making use of treated effluent;
- Decommissioning and demolition of the bio filter plant
- De-sludging of the maturation ponds,
- Removal of sludge from sludge storage ponds; and
- Infill of sludge storage ponds and storm overflow ponds

CHAPTER 2

Applicable Legislation, Policy and Environmental Principles

It is important that all on site staff are aware of other relevant legislation that may relate to the activities taking place on site, especially local authority required compliances.

2.1 Applicable Legislation Identified

1. ADVERTISING ON ROADS AND RIBBON DEVELOPMENT ACT, 21 OF 1940
2. BASIC CONDITIONS OF EMPLOYMENT ACT, 75 OF 1997
3. COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 130 OF 1993
4. CONSERVATION OF AGRICULTURAL RESOURCES ACT, 43 OF 1983
5. CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1996
6. ENVIRONMENT CONSERVATION ACT, 73 OF 1989, WESTERN CAPE NOISE CONTROL REGULATIONS
7. EMPLOYMENT EQUITY ACT, 55 OF 1998

8. ENVIRONMENT CONSERVATION ACT, 73 OF 1989
9. FENCING ACT, 31 OF 1963
10. HAZARDOUS SUBSTANCES ACT, 15 OF 1973
11. LABOUR RELATIONS ACT, 66 OF 1995
12. NATIONAL HEALTH ACT 61 OF 2003
13. NATIONAL HEALTH ACT 61 OF 2003 REGULATIONS RELATING TO THE MANAGEMENT OF HUMAN REMAINS
14. NATIONAL BUILDING REGULATIONS AND BUILDING STANDARDS ACT, 103 OF 1977
15. NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 107 OF 1998
16. NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 39 OF 2004
17. NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 10 OF 2004
18. NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 59 OF 2008
19. NATIONAL FORESTS ACT, 84 OF 1998
20. NATIONAL HERITAGE RESOURCES ACT, 25 OF 1999
21. NATIONAL VELD AND FOREST FIRE ACT, 101 OF 1998
22. NATIONAL WATER ACT, 36 OF 1998
23. OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993
24. SWARTLAND LOCAL MUNICIPALITY: AIR QUALITY MANAGEMENT
25. SWARTLAND LOCAL MUNICIPALITY: COMMUNITY FIRE SAFETY
26. SWARTLAND LOCAL MUNICIPALITY: FENCING AND WALLS
27. SWARTLAND LOCAL MUNICIPALITY: IRRIGATION WATER
28. SWARTLAND LOCAL MUNICIPALITY: OUTDOOR ADVERTISING AND SIGNAGE
29. SWARTLAND LOCAL MUNICIPALITY: STORM WATER MANAGEMENT
30. SWARTLAND LOCAL MUNICIPALITY: WASTE MANAGEMENT
31. SWARTLAND LOCAL MUNICIPALITY: WATER SUPPLY, SANITATION SERVICES AND INDUSTRIAL EFFLUENT
32. TOBACCO PRODUCTS CONTROL ACT, 83 OF 1993
33. WATER SERVICES ACT, 108 OF 1997

CHAPTER 3

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act, 107 of 1998.

Compliance

3.1 Monitoring and Auditing

3.1.1 Introduction

In keeping with current environmental and associated legislation, all environmental management procedures and actions must be reviewed and refined on an ongoing basis.

This is in accordance with the dynamic nature of environmental management and allows for the timeous identification and mitigation of issues as they come to light.

The process of review and refinement, built into the requirements of the OEMP, is known as monitoring and auditing.

3.1.2. Roles and Responsibilities

Efficient implementation of the performance specifications, effective monitoring and auditing, as well as clear responsibility and accountability allocation requires that various role-players be defined for the operation implementation project.

Depending on the nature and scale of a project, implementing teams could be composed of any number of role-players, each with their own specified responsibilities.

Therefore, for the purpose of this document, the following role-players are defined, based purely on

responsibility and accountability allocation. The actual designation of role-players may vary, but the responsibilities will largely remain as stated.

3.1.2.1. Developer/landowner or custodian of the land

The developer/landowner or custodian of the land is the person or organization with decision making capacity for the land in question, and thus ultimately accountable for what takes place on that land.

3.1.2.2. Environmental Auditor

A suitably qualified Environmental Assessment Practitioner will manage and undertake annual inspections and audits for the duration of the operation phase of the project.

3.2 The Monitoring Procedure

Environmental monitoring is the continuous evaluation of the status and condition of environmental elements. Its purpose is to detect change that takes place in the environment over time and involves the measuring and recording of physical, social and economic variables associated with development impacts.

Many techniques for environmental monitoring have been proposed, each detailing a specific protocol. Regardless of which technique is used, the ultimate aim is that each environmental management specification be checked by means of a system in which a score may be allocated for:

- Full compliance;
- Satisfactory performance;
- Unsatisfactory performance and
- No action taken.

Completed monitoring reports will be submitted to the Municipal Manager and the site manager, who will attend to issues. These reports must be kept on file and be made available upon request by any environmental authority requesting such.

All persons employed, the contractor or his sub-contractors, must abide by the requirements of these performance specifications as they apply to the works. Any employees, the contractor or his sub-contractors found to be in breach of any of the environmental specifications, may be ordered to vacate the site forthwith and/or be subject to a disciplinary process.

The contractor and staff are deemed not to have complied with the OEMP if:

- There is evidence of wilful or accidental contravention of any specification included in the specification;
- There is evidence of the site manager carrying out activities not permitted in terms of the OEMP, contract and / or the specification;
- There is evidence of environmental negligence and / or mismanagement resulting in negative impacts on the environment;
- Has failed to meet with the requirements of the approved schedule.

The developer/landowner will be informed via the Environmental Auditor annual reports, as well as by means of direct instruction (if necessary) as to what corrective actions are required in terms of environmental compliance.

Disregard for an instruction, and failure to respond adequately to complaints from the public will be construed as non-compliance. Non-compliance may lead to parties being penalised.

3.3 The Auditing Procedure

Environmental auditing is the process of comparing the impacts predicted with those which have occurred during implementation.

An environmental performance audit examines and assesses practices and procedures which, in the event of failure, would cause an environmental impact or result in an environmental risk. During each of the lifecycle phases, various issues will be monitored. The performance audit will ensure that the monitoring was correctly undertaken and that compliance was best achieved.

To these ends the project will be audited versus this OEMP, Environmental Authorization and Water Use license for effectiveness. ISO/SANS 19011:2011 auditing standards will be applied.

Audits will be undertaken annually during operational phases. Audit reports will be submitted to management, who will attend to all noted issues.

These reports must be kept on record and be made available upon request by the developer/landowner/custodian of the land and any environmental authority or I&AP requesting such.

CHAPTER 4

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act 107 of 1998.

4.1. Good Housekeeping

The developer/landowner will ensure the maintenance of “good housekeeping” practices during operations.

This will help avoid several disputes regarding responsibility and will allow for the smooth running of the operation as a whole.

Good housekeeping extends beyond the environmentally sensitive operation methods to include the care for and preservation of the surrounding environment.

4.2 Record Keeping

The developer/landowner will ensure that a filing system, identifying all documentation related to the OEMP, is established.

A list of reports likely to be generated during the project is set out below.

All applicable documentation must be included in the environmental filing system catalogue or document retrieval index.

- Approved OEMP, authorizations, licenses or permits;
- Final design documents and diagrams issued;
- All communications detailing changes of design/scope that may have environmental implications;
- Monitoring reports;
- Environmental Audit Reports
- Complaints register;
- Environmental training manual;
- Environmental training attendance registers;
- Incident and accident reports;
- Emergency preparedness and response plans;
- Copies of all relevant environmental legislation;
- Permits and legal documents as part of emergency preparedness teams e.g. fire teams, etc.;
- Crisis communication manual;
- Disciplinary procedures;
- Site meeting minutes during operation;
- All relevant permits;
- All method statements for all phases of the project.

4.3 Document Control

The developer/landowner will be responsible for establishing a procedure for document control.

The document control procedure must comply with the following requirements:

Documents must be identifiable by organisation, division, function, activity and contact person. Every document must identify the person and their positions, responsible for drafting and compiling the document, for reviewing and recommending approval, and final approval of the document for distribution;

All documents must be dated, provided with a version number and reference number, filed systematically, and retained for a specified period.

The owner will ensure that documents are periodically reviewed and revised where necessary, and that current versions are available at all locations where operations essential to the functioning of the OEMP are performed. All documents will be made available to the external auditor.

CHAPTER 5

5.1. Public Communication Protocols

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act 107 of 1998.

The developer/landowner must be responsible for regulating public access to information and compliance reporting.

The developer/landowner must respond to third party or public queries and complaints.

The developer/landowner must also be responsible for maintaining the compliance register to record complaints received and action taken.

CHAPTER 6

Operational Environmental Management Programme

This following section defines the management programme for each of the identified goals during the operational phase. The programme is presented in the form of a table, which includes the components described. This programme consists of the following components:

Goals

Over-arching environmental goals for the management phase.

Objectives

The objectives are in place in order to meet these goals. These take into account the findings from existing studies and monitoring programmes.

Management Actions

The actions needed to achieve the objectives, taking into consideration factors such as responsibility, methods, frequency, resources required and prioritisation.

Monitoring

Key actions to verify that objectives are being achieved, taking into consideration responsibility, frequency, methods, and reporting.

Criteria/Targets

The criteria or targets indicate the efficacy of the management programme. The targets should be readily measurable, understandable to the layperson, cost-effective to monitor, and meet legal requirements.

Remedial Actions

Specifies actions needed to be taken if the targets are not met; or if there is an unforeseen event.

Goals

The following 7 are specified goals:

Goal 1: Waste Management

Goal 2: Water Quality and Storm Water Management

Goal 3: Fire Management

Goal 4: Safety and Security Measures and Emergency Procedures

Goal 5: Aquatic Ecosystems (Diep River system)

Goal 6: Vegetation management, inclusive of Alien Vegetation.

Goal 7: Effluent Discharge Monitoring

Goal 1: Waste Management

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocation of sufficient resources for on-going Integrated Waste Management e.g. staff, equipment.</i></p>	<p>Pollution and odours</p>	<ol style="list-style-type: none"> 1. No solid waste may be incinerated on the property. 2. Domestic waste needs to be stored in skips for transport to a registered Landfill site. 3. Hazardous waste generated on premises must be stored thereon in an approved container until it is collected from the premises and it must be stored in a manner not creating a nuisance or causing harm to human health or polluting the environment. 4. Sewerage sludge must be classified in terms of the DWS Sewerage sludge guidelines and disposed in terms of the sludge disposal guidelines that will be regulated by DWS. 5. Treated effluent quality and quantity monitoring must be done and the treated effluent disposed in terms of the DWS guidelines and authorizations. 6. An integrated waste management approach must be implemented on site, based on waste minimisation, reduction, recycling, re-use and disposal where possible. 	<p>Annual audits of operations vs OEMP to identify those requirements that are not being met. Responsibility: Environmental Auditor</p>	<ol style="list-style-type: none"> 1. On-site waste management procedure for non-recyclable waste for employees is in place and implemented. 2. Adequate annual budgets 	<ul style="list-style-type: none"> • If pollution on site is detected immediate actions must be taken to contain the pollution. • Within 24hours of detection the DEA&DP and DWS must be informed of the incident. • Depending on type and extent of pollution occurred specialists may be contacted to provide specific recommendations. • An incident must be compiled and sent to and governmental authorities.

Waste Management

Waste is defined as any matter for which the current user has no further purpose, or any matter, gaseous, liquid, or solid or any combination thereof originating from any residential, commercial or industrial use, which has been discarded, accumulated, or stored.

It further is worth noting that on average 80% of waste management costs accrue to transport.

Principally three types of waste occur:

- Gaseous Open fires
- High moisture (effluent) Sewerage/waste water/ petroleum products
- Low moisture (solid/semi solid) Glass/plastic/ cardboard/ paper/ domestic/ chemical

Some potential consequences:

- Salination of ground/surface/ river water.
- Eutrophication (nutrient enrichment) of natural areas.
- Microbiological contamination of natural areas.
- Sediment & silt migration inflows.
- Harmful inorganic/organic compounds introduction into soil.

Identified Waste Streams:

Components-

Sewerage (black water)

Sewerage (grey water)

Garden refuse

General other waste

Integrated Waste Management Strategy:

Waste Avoidance-

Objective is to promote the concept of minimisation in the generation of any waste in all activities and sites.

Waste Reduction-

To promote the reduction of all waste by ensuring that nothing that can be decomposed is disposed of to waste as opposed to recycling.

Waste Recycling-

Re-using waste or selling waste to recycling companies as far as and if possible to prevent re-usable waste from going to municipal landfill site.

Waste Disposal-

To store, dispose or treat all waste that cannot be avoided, recycled, or composted at licensed facilities within regular operational and environmental monitoring and always in accordance with regulatory requirements.

Storm water Pollution Management-

Storm water and effluent systems must be separated by cut-off trenches to ensure that storm water is not contaminated by effluent water

Goal 2: Water Quality and Storm Water Management Measures.

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p>1] <i>Ensure allocation of sufficient resources for on-going Water Quality and Storm Water Management e.g. staff, equipment, budget.</i></p>	<p>Pollution, odours, erosion and illegal quality of waste water discharge.</p>	<ol style="list-style-type: none"> 1. Ensure no pollution of any water resources, including surface water, storm water and groundwater takes place as a result of any activities on the site. 2. Ensure that no storm water runoff from any premises containing waste, or containing waste emanating from waste water treatment works and premises may be discharged into a water resource. Polluted storm water must be contained. 3. If any erosion and/or degradation of the storm water channel or surrounds are noticed immediate action must be taken to rectify the situation. (Corrective and preventative measures taken will depend upon type and extent of erosion and/or degradation occurring). 4. An incident report to be compiled and sent to governmental authorities. 5. Sediment containing both organic and inorganic pollutants must be kept separately from unpolluted sediment and disposed of 	<p>Annual audits of operations vs OEMP to identify those requirements that are not being met.</p> <p>Responsibility: Municipal Manager</p>	<p>Storm water management plan in place and implemented.</p>	<ul style="list-style-type: none"> • If pollution or erosion is detected immediate action must be taken to contain the pollution or erosion. • Within 24hours of detection the Environmental Auditor must be informed of the incident, where after Environmental Auditor will conduct a site visit and recommend further rehabilitation methods to be implemented. • Depending on type and extent of pollution or erosion occurred specialists may be contacted to provide specific recommendations.

		<p>appropriately. The relevant pollution control official shall be contacted with regard to any unusual pollution not generally associated with operations to track down the source of pollution.</p> <p>6. Litter trapped in the vicinity of the stormwater outlet shall be removed and disposed of as described in an appropriate manner. Where possible, litter must be trapped before entering the storm water system.</p> <p>7. Banks in the vicinity of all storm water outlets shall be regularly inspected (quarterly) for erosion or scour. The requisite erosion protection measures shall be implemented where required.</p>			
--	--	---	--	--	--

Goal 3: Fire Management.

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<i>Ensure allocations of sufficient resources e.g. staff, equipment, Budget,) for Ongoing fire management.</i>	Pollution, fire, damage to property and health risks.	1. Sufficient Fire Fighting equipment to be on site.	Annual audits of operations vs OEMP to identify those requirements that are not being met. Responsibility: Municipal Manager	Maintenance of firefighting equipment	Maintenance of firefighting equipment

Goal 4: Safety and Security Measures and Emergency Procedures.

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<i>Ensure allocation of sufficient resources for on-going safety, security and emergency procedures. e.g. staff, equipment, Budget.</i>	Pollution, fire, security and health risks.	1. On site emergency plans should be reviewed regularly. 2. Developed operation and maintenance manual of procedures with technical guidelines be updated and implemented. 3. Establish regular inspection and maintenance of all infrastructure to ensure in working order and to assess damaged/ deficient equipment 4. Revise maintenance manual when required 5. Establish emergency procedures guidelines for sewage and chlorine spills, pipe and pump station blockage/ failure, flooding,	Annual audits of operations vs OEMP to identify those requirements that are not being met. Responsibility: Municipal Manager	Adequate annual Budgets.	Maintenance of equipment as per the maintenance manual for each equipment and infrastructure on site.

		<p>containment removal and disinfection power failure and fire must be implemented and maintained.</p> <p>6. Implement the provided response procedures when emergency incident occurs and adhere to the provided indication of responsibilities, actions and contact numbers in the case of an emergency</p> <p>7. Complete the provided incident report checklist in the case of emergency</p> <p>8. Undertake annual education course to inform all operation staff of procedures</p>			
--	--	--	--	--	--

Goal 5: Aquatic Ecosystems (Diep River).

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<i>Maintain environmental integrity of riverine ecosystem.</i>	Pollution of the riverine ecosystem.	<ol style="list-style-type: none"> 1. Completion of consulting chemists Inspection Report on water quality of treated effluent monthly. 2. File report on site as well as with Swartland Municipality 3. Monitor through consulting chemists inspection report 4. Level to of treated effluent parameters must be kept below the DWS authorization parameters. 5. Clear sediment and other material from stormwater pipes and culverts and dispose of material in an appropriate manner 6. Monitor for erosion and other impacts of stormwater at 	<p>Annual audits of operations vs OEMP to identify those requirements that are not being met.</p> <p>Responsibility: Municipal Manager</p>	Adequate annual Budgets.	Investigate causes of impacts associated with regards to the Diep River Vegetation if vegetation structure change or die off is observed and recorded.

		<p>stormwater outlets</p> <p>7. Complete the provided incident report as required</p> <p>8. Visual inspection of vegetation associated with the Diep river annually next to and immediately downstream of the WWTW.</p> <p>9. Focus on vegetation density, height and occurrence of individual die off</p> <p>10. Complete the provided incident report checklist</p>			
--	--	---	--	--	--

Goal 6: Vegetation management, inclusive of Alien Vegetation.

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<i>Ensure allocations of sufficient resources e.g staff, equipment, Budget) for On-going alien and vegetation management.</i>	Alien/invasive plant species spread into natural/indigenous vegetation areas.	<ol style="list-style-type: none"> The developer must clear all weeds and alien invasive plant from the operational sites and access routes No on-site burying, dumping or stockpiling of any weeds or invasive species must occur. They should be removed from the site and dumped at a suitable dumping site from which seed cannot escape. The developer must make sure of and implement all legal requirements regarding herbicide application procedures if herbicide is to be used to control weeds/invasive plants. The instructions on the herbicide labels must be strictly followed throughout application. The developer shall take all necessary precautions to prevent 	<p>This will be monitored during annual site visits and recorded, reported and proof included in the audit reports to be submitted:</p> <ul style="list-style-type: none"> to the site manager annually during the operational phase) to the DEA&DP, site manager and municipality as part of the annual compliance report during the operational phase to the DEA&DP, site manager and municipality at the completion of the operational phase 	Adequate annual Budgets.	Ensure that all alien vegetation is cleared and the site is kept clean from alien vegetation invasions.

		<p>overspray of herbicides outside of the demarcated construction areas and onto natural veld.</p> <ol style="list-style-type: none"> 5. All personnel working with any herbicide, pesticide or fertilizer must be registered and comply with the requirements set in these registrations. 6. All equipment associated to herbicides and pesticides must be maintained in accordance to the set standards. 7. The disposal of all redundant and empty containers of herbicides and pesticides must be controlled and disposed of at a waste management facility licensed to do so under the National Environmental Management: Waste Act. 	<p>Responsibility: Municipal Manager</p>		
--	--	--	---	--	--

Goal 7: Effluent Discharge Monitoring.

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
<p><i>Ensure allocation of sufficient resources for on-going Effluent Discharge Monitoring e.g. staff, equipment, budget.</i></p>	<p>Pollution of water resources.</p>	<ol style="list-style-type: none"> 1. Weekly quantity monitoring 2. Quality monitored by monthly grab sample and the analysis of specific substances as set out in water use authorization 3. Monitoring must be undertaken by a laboratory that has been accredited under the South African National Accreditation System (SANAS) in terms of SABS Code 0259. Monthly submissions to responsible authority of the following information is required: 	<p>Annual audits of operations vs OEMP to identify those requirements that are not being met.</p> <p>Responsibility: Municipal Manager</p>	<p>Adequate annual Budgets.</p>	<p>To be determined when required</p>

		<ul style="list-style-type: none">• Quantity of wastewater discharged• Quality of wastewater discharged• Details of the monitoring programme/s; and• Details of failures and malfunctions in the discharge system and details of measures taken.			
--	--	---	--	--	--

CHAPTER 7

Environmental Reporting

In order to ensure that the necessary environmental issues are adequately addressed and recorded, the following environmental reporting shall be undertaken:

- Incident reporting; and
- Compliance reporting

See below for a template of an Incident Report to serve as a guideline for the recording and addressing of emergency incidents as and when they occur.

ENVIRONMENTAL INCIDENT REPORT

DATE:	File Ref:
NAME:	Copy to:
EXACT LOCATION OF INCIDENT:	

SECTION 1 : DESCRIPTION OF INCIDENT

SECTION 2 : REMEDIAL ACTION REQUIRED

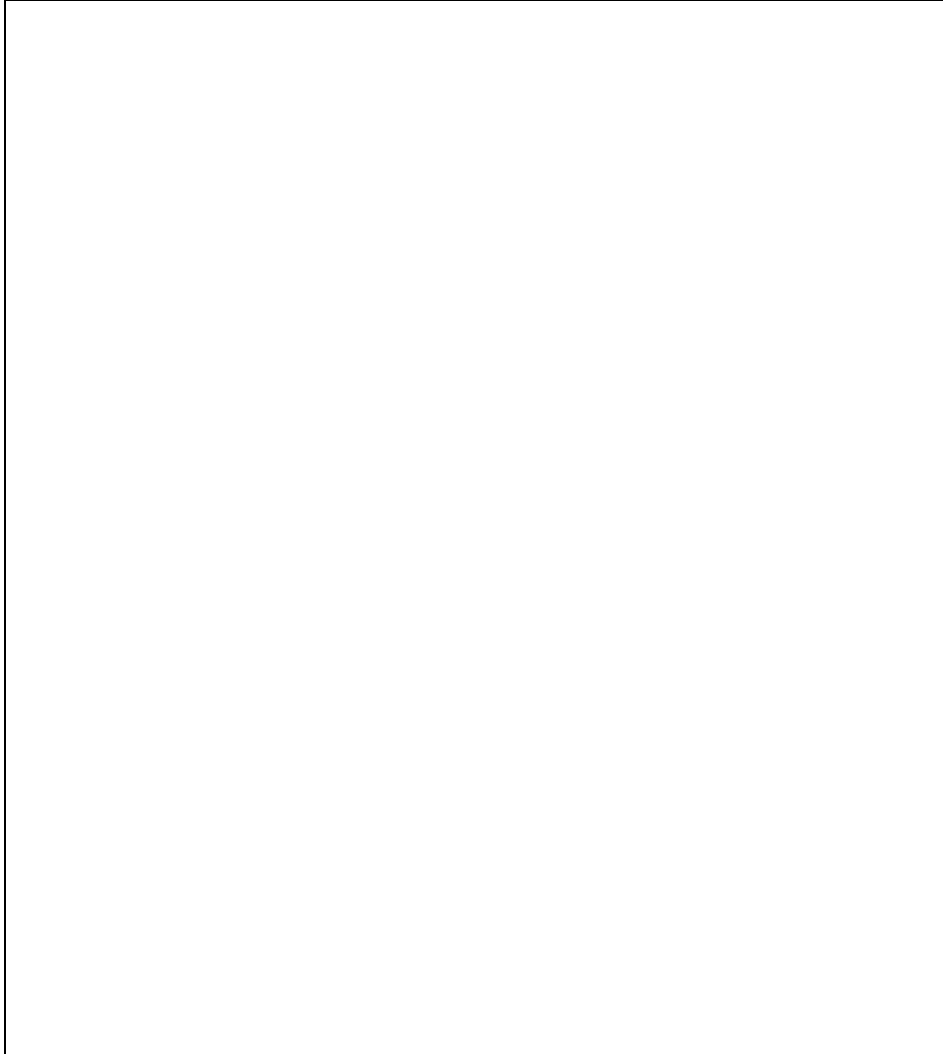
Remedial Action Due Date: _____
Confirmation of implementation: Name: _____ Date: _____

SECTION 3 : RELEVANT DOCUMENTATION

SECTION 4 : SIGNATURES

Municipal Engineer: Name: Date: _____
ECO: Name: Date: _____

SECTION 5: DRAWING/SKETCH



CHAPTER 8

Compliance with the Environmental Authorisation

All conditions of the Environmental Authorisation must be adhered to onsite during the operation-, operational-, decommissioning- and rehabilitation phases of the proposed project. A copy of the Environmental Authorisation must be available on site together with the OEMP and all site managers on site must sign the Declaration of Understanding as proof of awareness and understanding of all the conditions to be adhered to on site in terms of the EA and OEMP.

CHAPTER 9

Updating/Adapting the OEMP

Although care has been taken to address all known relevant environmental issues for the development, it will become necessary to add or amend certain procedures or instructions to improve the efficiency of the OEMP. Only those additions to, or amendments of, this OEMP that will either improve environmental protection or can be proven not to have any negative effects would be considered to be included, and any amendments to the OEMP must first be approved by the Environmental Auditor and competent authority/ies i.e. DEA&DP.

References

City of Cape Town (2002) Environmental Management Programme (Version 5) for Civil Engineering Operation Activities.

DEA&DP: ENVIRONMENTAL MANAGEMENT PROGRAMME. VER 5 (04/2002). Guideline Document for the ECO / ESO and the ER

Department of Water Affairs and Forestry, February 2005. Environmental Best Practice Specifications: Operation Integrated Environmental Management Sub-Series No. IEMS 1.6. Third Edition. Pretoria.