

BASIC ENVIRONMENTAL IMPACT ASSESSMENT
FOR THE
PROPOSED CONSTRUCTION AND OPERATION OF A
WASTEWATER TREATMENT PLANT AT THE EXISTING EXOL
GROUP (PTY) LTD - VIRGINIA USED OIL STORAGE AND
TRANSFER SITE IN THE FREE STATE PROVINCE

REF: 12/9/11/L1303/2

BACKGROUND INFORMATION DOCUMENT

Prepared by



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LIST OF ABBREVIATIONS, ACRONYMS OR DEFINITIONS

BA	Basic Assessment
BAR	Basic Assessment Report
BID	Background Information Document
CBD	Central Business District
COD	Chemical Oxygen Demand
DEA	Department of Environmental Affairs
DEDTEA	Department of Economic Development, Tourism and Environmental Affairs (Provincial authority)
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
GNR	Government Notice Regulation
GPS	Global Positioning System
I&AP	Interested and Affected Party
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998)
NEMWA	National Environmental Management Waste Act, 2008 (Act 59 of 2008)
NWA	National Water Act, 1998 (Act 36 of 1998)
PPP	Public Participation Process
WMCO	Waste Management Control Officer
WML	Waste Management Licence
WQG	Water Quality Guidelines

1. INTRODUCTION

HydroScience cc, an independent Environmental Assessment Practitioner (EAP), has been appointed by Exol Group (Pty) Ltd to undertake a Basic Assessment (BA) process and submit a Basic Assessment Report (BAR) to apply for a Waste Management Licence (WML) for the proposed construction and operation of a wastewater treatment plant at its existing Virginia used oil storage and transfer site in the Free State Province.

As part of the Environmental Impact Assessment (EIA) BA process (Figure 1), a WML application, in terms of the National Environmental Management Waste Act, 2008 (Act 59 of 2008) and Government Notice Regulation (GNR) 718 of 3 July 2009 as well as the associated EIA regulations of 18 June 2010, has been submitted to the National Department of Environmental Affairs (DEA), The Director: Authorisation and Waste Disposal Management, in July 2013 as the delegated authority handling applications relating to hazardous waste management activities.

2. PURPOSE OF THIS DOCUMENT

The purpose of this document is to provide background information, in terms of GNR 543 (Sections 54 through 57) of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended, to all Interested and Affected Parties (I&APs) regarding the proposed project as described above.

In addition, this document will provide a platform from which to obtain comments and contributions from stakeholders with regard to the potential environmental impacts of the proposed project as part of the Public Participation Process (PPP). The aim of the PPP is not only to adhere to the required legislation, but also to give as many stakeholders and I&APs as possible an opportunity to be actively involved in this process.

The PPP will be carried out in accordance with Chapter 6 of NEMA as amended and in support of the EIA Regulations, 2010 and associated published guidelines.

3. ROLE OF I&APs

You are invited to register as an I&AP (see contact details and registration form attached) and to assist us in:

- Identifying issues of concern that need to be investigated as well as possible impacts of the proposed project on the environment;
- Suggesting alternatives to mitigate possible negative impacts and enhance positive impacts.

Your input is considered valuable as it contributes to:

- The decision-making process;
- Information on public needs, values and expectations; and
- Local and traditional knowledge.

The following stakeholders or I&APs will also be notified and requested to provide comments:

- Matjhabeng Local Municipality as the site falls within their municipal boundary and jurisdiction and any discharges of effluent from the site will feed into their sewer system. The Ward Councillor, for this area, will also be consulted with.
- Lejweleputswa District Municipality as the site falls under this district municipality.
- The Free State DEDTEA as the relevant provincial authority.

- The DEA (national) as the delegated authority to whom the application has been made and who will be considering the documentation in terms of issuing a WML.
- The Department of Water Affairs (DWA) in terms of the National Water Act (NWA), 1998 (Act 36 of 1998) as a Section 21(g) water use registration will be required for the wastewater treatment plant and possibly a Section 21(e) water use licence for the use of the water for irrigation purposes on the site.

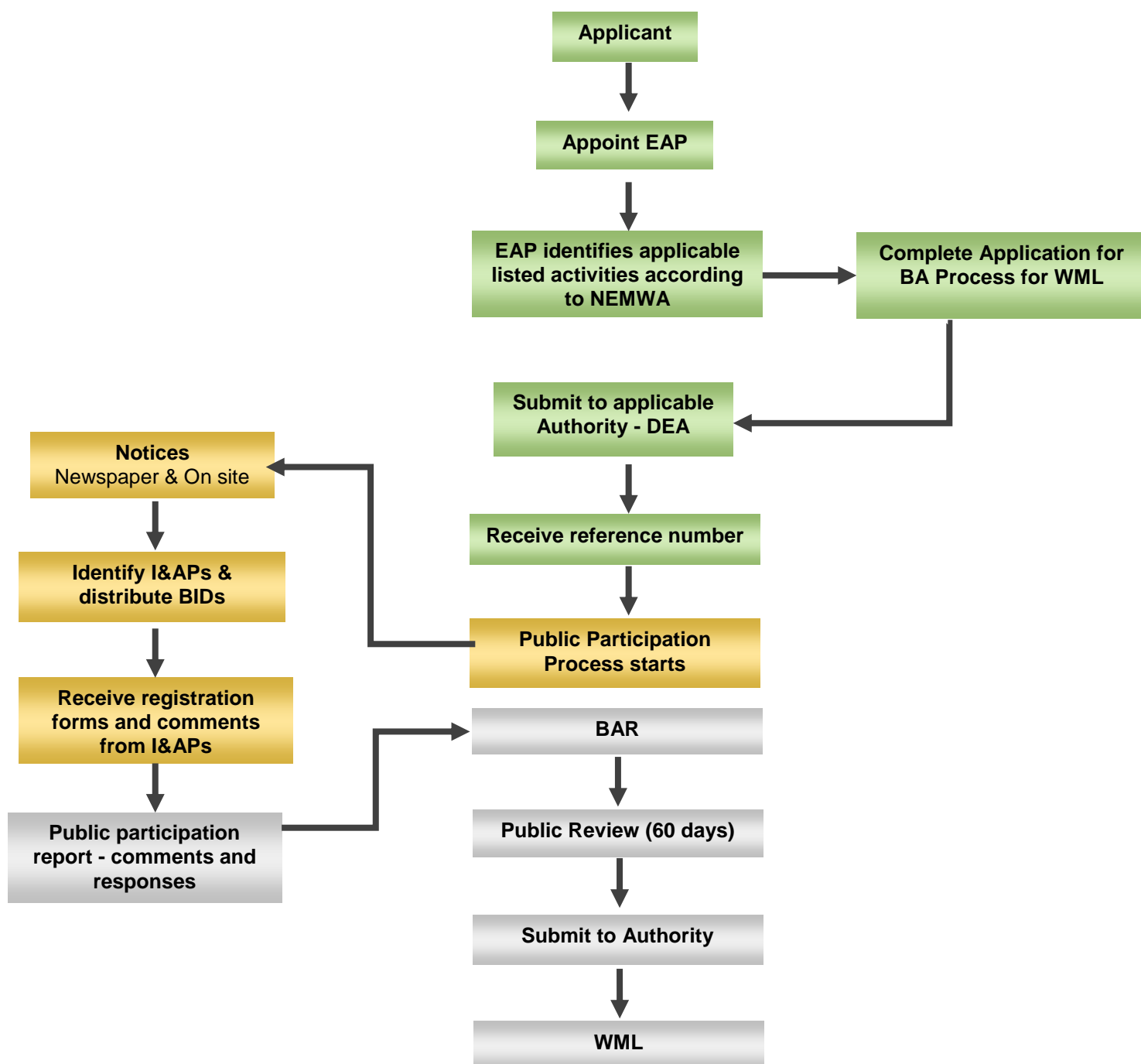


Figure 1: Simplified diagram presenting the Basic Assessment process for the WML application (green = completed; yellow = in process)

4. PROPOSED PROJECT

4.1. Project objective and motivation

The objective of the project is to treat any effluent of wastewater arising on the site to such a quality that it is suitable for reuse on the site (irrigation of gardens) or for discharge to the municipal sewer. Wastewater will arise from the wash bay as well as water drained from underneath used oil.

4.2. Project locality

Province:	Free State
District Municipality:	Lejweleputswa
Local Municipality:	Matjhabeng
Erven:	4557, 4558, 4559
Address:	17 Produce Street Virginia X3
Size:	2.141 ha
Coordinates:	28°07'45.36" South 26°52'52.04" East
Surrounding towns:	Virginia, 3.6 km south from CBD
Roads:	Virginia Way located 60m east Produce Street on the western boundary of the site R73 is located 3km east

Figure 2 indicates regional locality and Figure 3 indicates the locality of the existing infrastructure on the project site on a Google *earth*TM image.

4.3. Purpose of the larger facility

The existing facility is licenced in terms of NEMWA (Licence 12/9/11/L195/2) to be used as a storage and transfer station for used oil (H:H). Used oil is collected or brought to the site from the larger region (approximately 50m³/day). From this site, used oil is transported in bulk quantities to the Exol Oil Refinery in Chamdor, Krugersdorp in Gauteng to be refined for reuse. The site is currently in transfer mode only due to the low volumes generated by industry and therefore it is currently not used for storage.

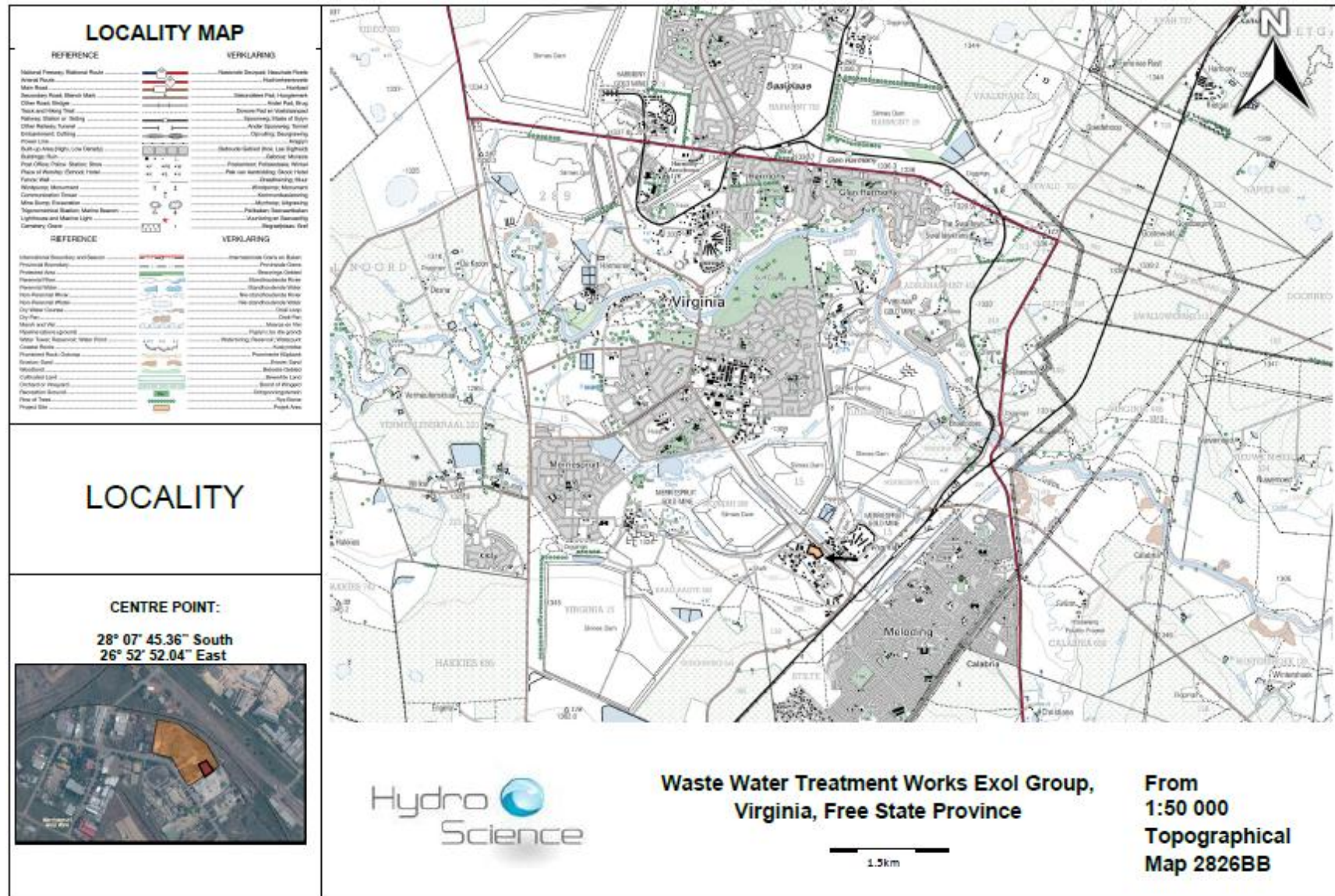


Figure 2: Regional locality map

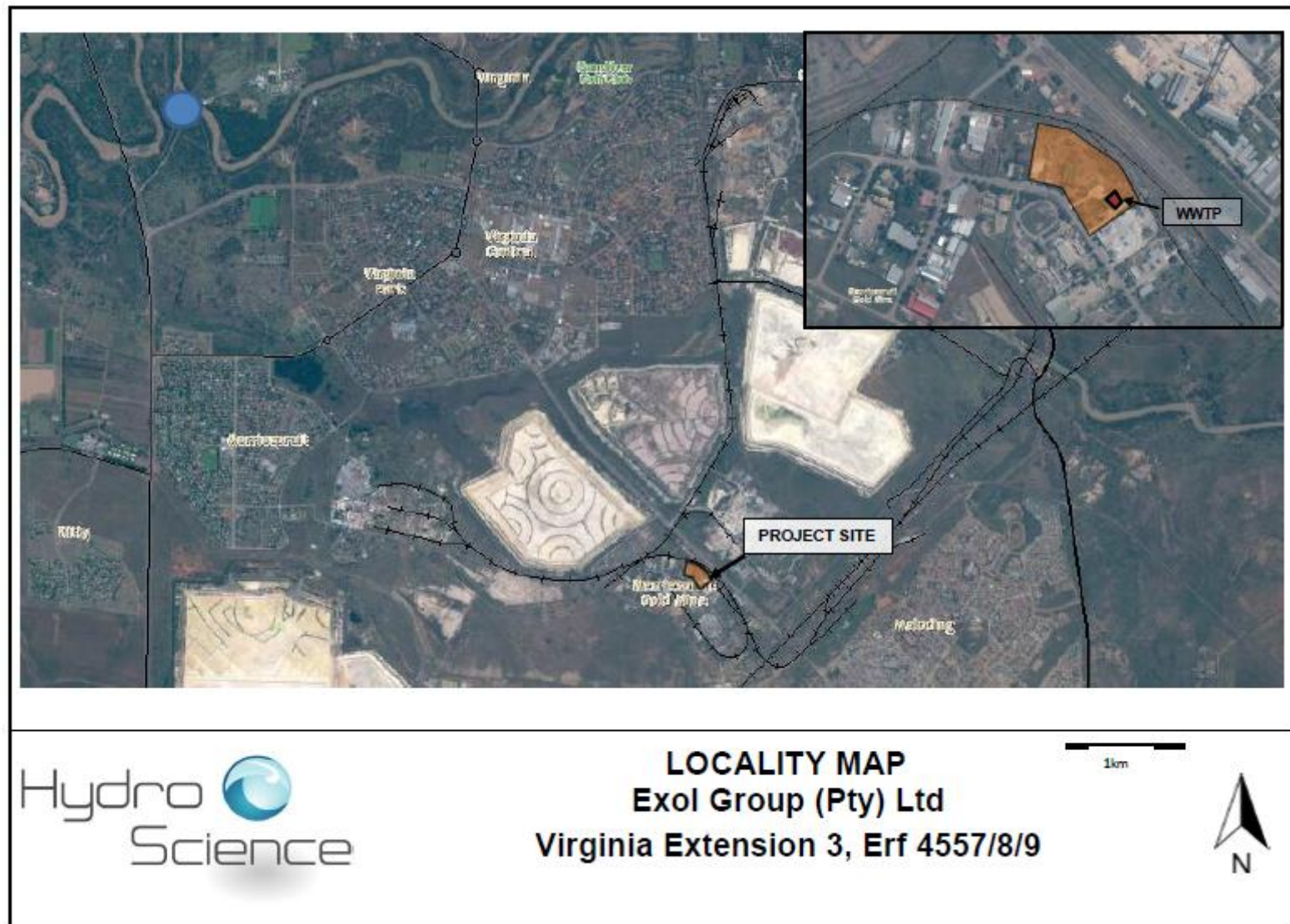


Figure 3: Project site map (Google™ image)

4.4. Current water management

There is currently no effluent on the site. The wash bay is not in use and water under the used oil is not drained. Water with oil is transported to the Refinery in Chamdor. The site is currently in transfer mode only and not used for storage due to the low volumes generated by the industry. Rainwater in the bunded area and surface area runoff is released to storm water in accordance with WML requirements. Wash bay water may be released to the public sewer based on permission from Matjhabeng Local Municipality (ref 4557/8/9, 15 August 2012).

4.5. Project description and planned water management

The following is envisaged: Water from the wash bay and water drained from oil will be pumped to the wastewater treatment plant in the bunded area. After wastewater has been treated, it will be stored within a reservoir (5 000 litre) in the bunded area prior to the release into the main storage reservoir (80 000 – 100 000 litres). This transfer to the main reservoir will be controlled by the Waste Management Control Officer (WMCO) based on Water Quality Guidelines (WQG) for Irrigation Water. This water will be irrigated onto a lawn and flower beds (50 x 50m) and trees to be planted on site at a rate of 10 000 – 50 000 litres a day, depending on the availability of water. During low water recovery periods, the volume in the reservoir will be supplemented with water from one of the existing boreholes. When the reservoir is at full capacity, additional water will be purified and released into the sewer. Additional water from the bunded area and surface run-off will be channelled to storm water in accordance to current WML requirements.

Table 1: Water Quality Guidelines (WQG) for irrigation

Variable (as mg/l unless otherwise indicated)	SA WQG (DWAf, 1996)
	<i>Agricultural use - Irrigation</i>
pH	6.5 – 8.4
EC (mS/m)	< 40
TDS	< 260
SS	< 50
Ca	NA
Mg	NA
Na (also see SAR)	< 70
K	NA
Hardness	< 0.2
NO ₃ (as N)	< 0.5
Cl	< 1
F	< 2
Fe	< 5
Mn	< 0.02
Al	< 5
Cr (VI)	< 0.1
As	< 0.1
Cd (ug/l)	< 10
Co	< 0.05
Cu	< 0.2
Pb	< 0.2
Ni	< 0.2
Zn	< 1
V	< 0.1

Coliforms (counts/100 ml)	< 1 (faecal)
Hydrocarbons (oils & greases)	-

4.6. Treatment technology

The wastewater treatment process was developed in-house and then developed further in collaboration with a prominent company that provides a service in water purification technology. The process is based on gravity separation, organic contaminant breakdown, micro-bubble saturation, flotation and sterilisation. Chemical Oxygen Demand (COD) is reduced to below limits imposed by municipal bylaws as has been proven at the wastewater treatment plant currently operated at the Exol Oil Refinery site in Chamdor, Krugersdorp in Gauteng. See schematic diagram below in Figure 4.

Flow Diagram of Water Treatment Plant

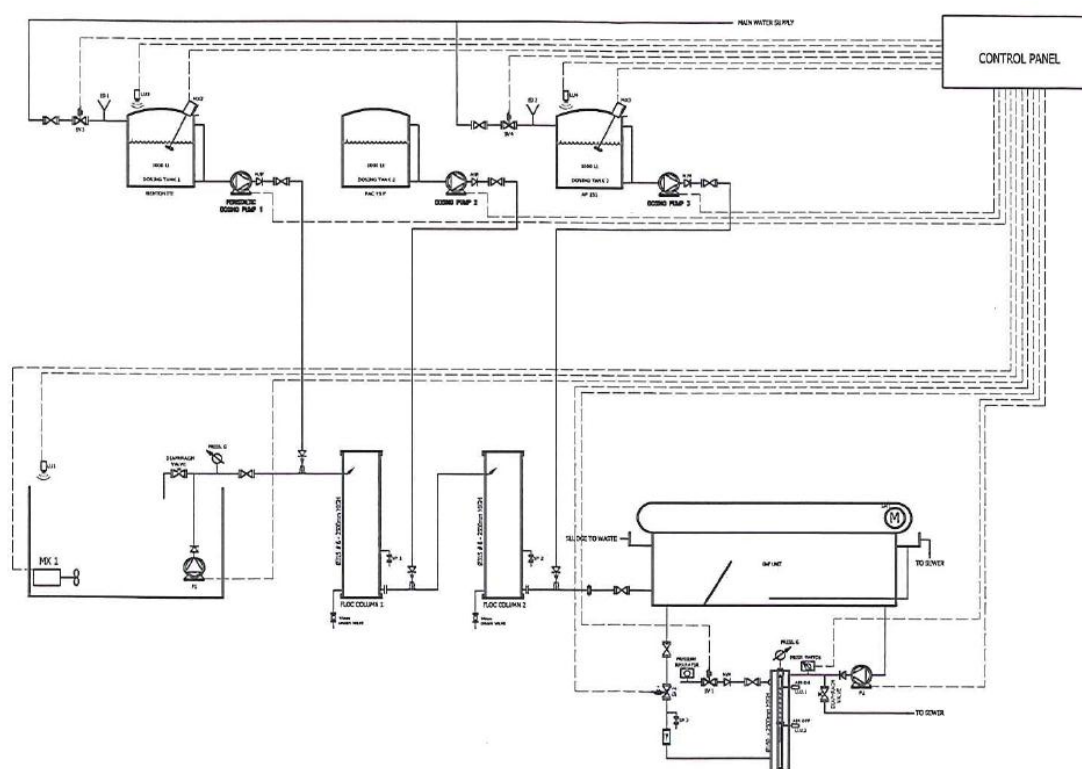


Figure 4: Process schematic

4.7. Environmental management

An environmental management programme (EMP) with emergency response plan is in place. The complaints register and incident reports are part of the electronic management system ZIZO. An environmental audit was conducted by DEA in November 2012.

4.8. Additional Work

As the site is an existing industrial site, none of the following will be conducted:

- Flora and fauna impact assessment.
- Heritage impact assessment (HIA).
- Wetland studies including wetland delineation and wetland management plan.

- Reviews of process and civil engineering designs.

The following will however be included:

- Public participation process (PPP).
- Water use registrations and applications in terms of the NWA.

5. IMPACTS AND THEIR MANAGEMENT

Possible impacts that may occur and need to be managed, as part of the EMP, were identified and will be investigated as part of the study and include:

- Discharges to municipal sewer as well as associated monitoring.
- Use of water for irrigation purposes.
- Geohydrology and groundwater monitoring.

6. APPLICABLE LEGISLATION

6.1. NEMWA

An application for a WML in terms of the NEMWA, has been submitted to the DEA as the delegated competent authority (Reference number 12/9/11/L1303/2).

Notification, in the form of site notices and an advertisement placed in the Vista as well as this Background Information Document (BID), was given to all I&APs, as prescribed in Chapter 6 of NEMA, informing them that a BA process will be followed and a BAR will be submitted to the relevant authorities to obtain a WML for the proposed project as set out in Section 4 of this document.

GNR 718 (3 July 2009, Category A):

Activity 11: The treatment of effluent, wastewater or sewage with an annual throughput capacity of more than 2 000 cubic metres but less than 15 000 cubic metres. *A wastewater treatment facility will be established to treat the effluent or wastewater from the facility prior to discharge to the municipal sewage system or to consider possible reuse. The objective is therefore to improve the water quality to maximise reuse opportunities.*

Activity 18: The construction of facilities for activities listed in Category A of this Schedule. *A water treatment facility will be established/constructed.*

6.2. National Water Act

The National Water Act (NWA), 1998 (Act 36 of 1998) states in Section 22 (1) that a person may only use water –

- a) without a licence –
 - (i) if that water use is permissible under Schedule 1;
 - (ii) if that water use is permissible as a continuation of an existing lawful use; or
 - (iii) if that water use is permissible in terms of a general authorisation issued under section 39;
- b) if the water use is authorised by a licence under this Act; or
- c) if the responsible authority has dispensed with a licence requirement under subsection (3).

Water use is defined in Section 21 of the NWA. For the purposes of this Act, water use includes:

- a) taking water from a water resource;

- b) storing water;
- c) impeding or diverting the flow of water in a watercourse;
- d) engaging in a stream flow reduction activity contemplated in section 36;
- e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);
- f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
- g) disposing of waste in a manner which may detrimentally impact on a water resource;
- h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
- i) altering the bed, banks, course or characteristics of a watercourse;
- j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
- k) using water for recreational purposes.”

A NWA Section 21(g) water use registration will be required for the wastewater treatment plant and an application will also be made to DWA in terms of Section 21(e) for the use of the water for irrigation purposes.

7. PROCESS AND WAY FORWARD

- An application for a WML has been submitted to DEA. The reference number 12/9/11/L1303/2 has been assigned and the application will be handled by Ms Nnditsheni Ramuhulu, reachable on 012 310 3029.
- Notices have been placed in the Vista and on the site (9 January 2014).
- Further notification and this BID are to be delivered by hand, fax or email to other identified I&APs, including neighbours, authorities and other stakeholders between 8 and 10 January 2014.
- Comments and/or completed registration forms from I&APs should be received on or before 11 March 2014.
- A draft BAR will be available for public review in March 2014.
- A final BAR, incorporating comments received on the draft, will be submitted to the DEA for their review and a decision no later than June 2014.

8. CONTACT DETAILS

Please complete the attached form should you wish to be registered as an I&AP or make any comments regarding this project or receive a copy of the BAR.

HydroScience cc

Person: Paulette Jacobs
Tel: 082 850 5482
Fax: 086 692 8820
E-mail: paulette@hydroscience.co.za
Postal address: P.O. Box 1322, Ruimsig, 1732

**COMPLETE & FAX OR E-MAIL TO:
HYDROSCIENCE 086 692 8820 / paulette@hydroscience.co.za**

**EXOL VIRGINIA - WASTE MANAGEMENT LICENCE FOR WASTEWATER TREATMENT PLANT
REF: 12/9/11/L1303/2**

INTERESTED AND AFFECTED PARTY REGISTRATION AND COMMENT SHEET

Title:	Mr		Mrs		Ms		Dr	
Surname:				First name & initials:				
Organisation / Company:								
Postal / physical address:					Postal code:			
Tel:					Fax:			
Email:					Cell:			
Interest in approval or refusal:	Business:	YES	NO	Preferred method of notification / communication	Post/mail:			
	Financial:	YES	NO		Fax:			
	Personal:	YES	NO		Email:			
Details of interest:								
Name of other I&AP to be contacted:								
Contact details:								

Comments: (please use separate sheets if you wish/require)

Thank you for your comments, participation and time. Your contribution is appreciated and will form part of the final submission to the authority for decision-making.