

BASIC ENVIRONMENTAL IMPACT ASSESSMENT
FOR THE
PROPOSED ESTABLISHMENT OF A PASSIVE TREATMENT PLANT
AT VRYHEID CORONATION COLLIERY IN KWAZULU-NATAL FOR
THE TREATMENT OF EXCESS MINE WATER FROM THE WEST
ADIT

NEAS REF: DEA/EIA/0001710/2013

DEA REF: 14/12/16/3/3/3/71

BACKGROUND INFORMATION AND SUMMARY DOCUMENT

Prepared by



Address: P.O. Box 1322, Ruimsig, 1732
Tel: 082 850 5482
Fax: 086 692 8820
paulette@hydroscience.co.za

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LIST OF ABBREVIATIONS, ACRONYMS OR DEFINITIONS

AATC.....	Anglo American Thermal Coal
Al	Aluminium
ALM	Abaqulusi Local Municipality
AMD	Acid Mine Drainage
BA	Basic Assessment
BAR	Basic Assessment Report
CARA	Conservation of Agricultural Resources Act, 1983
.....	(Act 43 of 1983)
CBD	Central Business District
COD	Chemical Oxygen Demand
DAEA	Department of Agriculture and Environmental Affairs
DAFF.....	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR.....	Department of Mineral Resources
DPBR	Degrading Packed Bed Reactor
DRDLR.....	Department of Rural Development and Land Reform
DWA.....	Department of Water Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
EMF	Environmental Management Framework
EMP	Environmental Management Programme
Fe	Iron
GNR	Government Notice Regulation
GPS	Global Positioning System
HDPE	High Density Poly-Ethylene
HIA	Heritage Impact Assessment
I&AP.....	Interested and Affected Party
KZN	KwaZulu-Natal
mamsl	metres above mean sea level
Mn	Manganese

MPRDA	Mineral and Petroleum Resources Development Act,2002 (Act 22 of 2002)
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998)
NEMWA	National Environmental Management Waste Act, 2008 (Act 59 of 2008)
NHRA	National Heritage Resources Act (NHRA), 1999 (Act 25 of 1999)
NWA.....	National Water Act, 1998 (Act 36 of 1998)
PES	Present Ecological Status
PPP	Public Participation Process
SAHRA.....	South African National Heritage Resources Act, 1999 (Act 25 of 1999)
SANBI	South African National Biodiversity Institute
SDF	Spatial Development Framework
SEA	Strategic Environmental Assessment
SO ₄	Sulphate
UDM.....	Umzinyathi District Municipality
VCC	Vryheid Coronation Colliery
ZKCT.....	Zimbambeleni Khondlo Community Trust

1. INTRODUCTION

HydroScience CC, an independent Environmental Assessment Practitioner (EAP), has been appointed by Anglo American Thermal Coal (AATC a subsidiary of Anglo Operations Proprietary Limited) to undertake a Basic Assessment (BA) process and submit a Basic Assessment Report (BAR) to apply for environmental authorisation and a waste management licence (integrated application) for the proposed establishment of a passive treatment plant at Vryheid Coronation Colliery (VCC) in KwaZulu-Natal (KZN) for the treatment of contaminated mine drainage decanting from the west adit.

As part of the Environmental Impact Assessment (EIA) BA process (Figure 1), an integrated application, in terms of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998), as amended, and associated regulations, 2010 as well as the National Environmental Management Waste Act, 2008 (Act 59 of 2008), has been submitted to the Department of Environmental Affairs (DEA), the national authority in February 2013 after the provincial authority KZN Department of Agriculture and Environmental Affairs (DAEA) requested the authority to be delegated to the national authority. The delegation to DEA allows the application to be handled as an integrated application as both environmental authorisation and a waste management licence is required.

2. PURPOSE OF THIS DOCUMENT

The purpose of this document is to provide summarised information, in terms of Government Notice Regulation (GNR) 543 (Sections 54 through 57) of NEMA, 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 Environmental Impact Assessment 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:

- Abaqulusi Local Municipality (ALM) as the site falls within their municipal area and jurisdiction. The Ward Councillor at the ALM, for this area, will also be consulted with.

- Umzimyathi District Municipality (UDM) as ALM falls under this district municipality.
- The KZN DAEA 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 an integrated authorisation.
- The Department of Agriculture, Forestry and Fisheries (DAFF) in terms of the Conservation of Agricultural Resources Act (CARA), 1983 (Act 43 of 1983) as the property appears to still be zoned as agricultural.
- Ezemvelo KZN wildlife for input into flora and fauna study as well as comments on the specialist flora and fauna study.
- The Department of Mineral Resources (DMR) in terms of the Mineral and Petroleum Resources Development Act (MPRDA), 2002 (Act 28 of 2002) as the site was previously used for mining of coal and AATC still has responsibilities in terms of mine closure in terms of the MPRDA.
- The Department of Water Affairs (DWA) in terms of the National Water Act (NWA), 1998 (Act 36 of 1998) as an Integrated Water Use Licence will be required in terms of Section 21 of the NWA
- The South African Heritage Resources Agency (SAHRA) in terms of the National Heritage Resources Act (NHRA), 1999 (Act 25 of 1999) will have to provide comments of the Heritage Impact Assessment (HIA). There is also a cemetery on one of the properties.

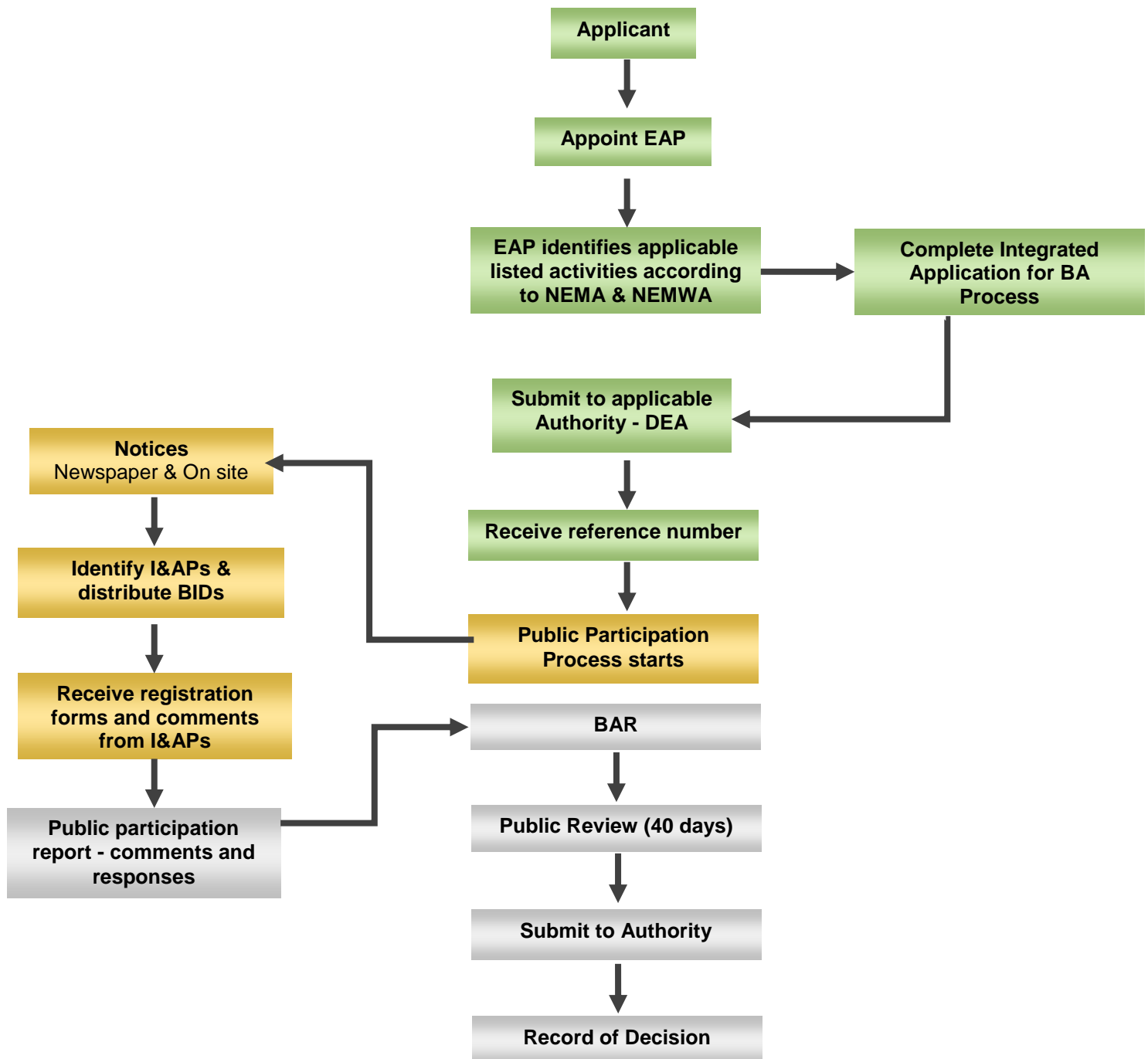


Figure 1: Simplified diagram presenting the Basic Assessment process (green = completed; yellow = in process)

4. PROPOSED PROJECT

4.1. Project motivation

The status quo is that West Adit, at the historic VCC mine, is decanting contaminated mine water directly into the KwaNotshelwa River. The mine water has a low pH (2.6 – 3.0), high heavy metal content (50 mg/l Fe; 25 mg/l Mn; 75 mg/l Al) and high sulphate concentration (1 600 mg/l). This situation is detrimental to the environment and water resources and in terms of duty of care (Section 28 of NEMA and Section 19 of NWA), urgent intervention is required.

The project will result in a net positive impact on the environment and water resources as water quality in the KwaNotshelwa River will improve and discharge of mine water directly into a watercourse will cease. The mine water will be piped for treatment to neutralise the pH (6.5 – 7.5), reduce the heavy metal content (< 1 mg/l Fe; < 4 mg/l Mn; < 1 mg/l Al) and reduce the sulphate concentration (1 200 mg/l) before discharge or use.

4.2. Project objective

The objective of the project is to cease the uncontrolled discharge of mine water into the KwaNotshelwa River and treat the mine water to an improved water quality to allow discharge or use.

The project further aims to establish a passive water treatment plant rather than an active water treatment plant as the mine is no longer operational. Passive water treatment technologies make use of natural elements such as solar energy and gravitational flow, resulting in limited human intervention and control required to be effective.

4.3. Project timing

Construction of the passive water treatment plant can only proceed during the dry season (winter) and the objective therefore, is to start construction during the winter of 2014.

4.4. Project locality

Province:	KwaZulu-Natal (KZN)
District Municipality:	Umzinyathi
Local Municipality:	Abaqulusi
Farm:	Veelsgeluk 171 HU
Portions of farm:	Sub-division 1 & 21
Ownership:	The Zimbambeleni Khondlo Community Trust (ZKCT) currently owns and occupies the land
Surrounding towns:	Vryheid Central Business District (CBD) is 33km south west Thakazele is neighbouring the area
Roads:	The R69 runs past the site and provides access

Figure 2 indicates regional locality and Figure 3 indicates the locality of the infrastructure associated with the project.

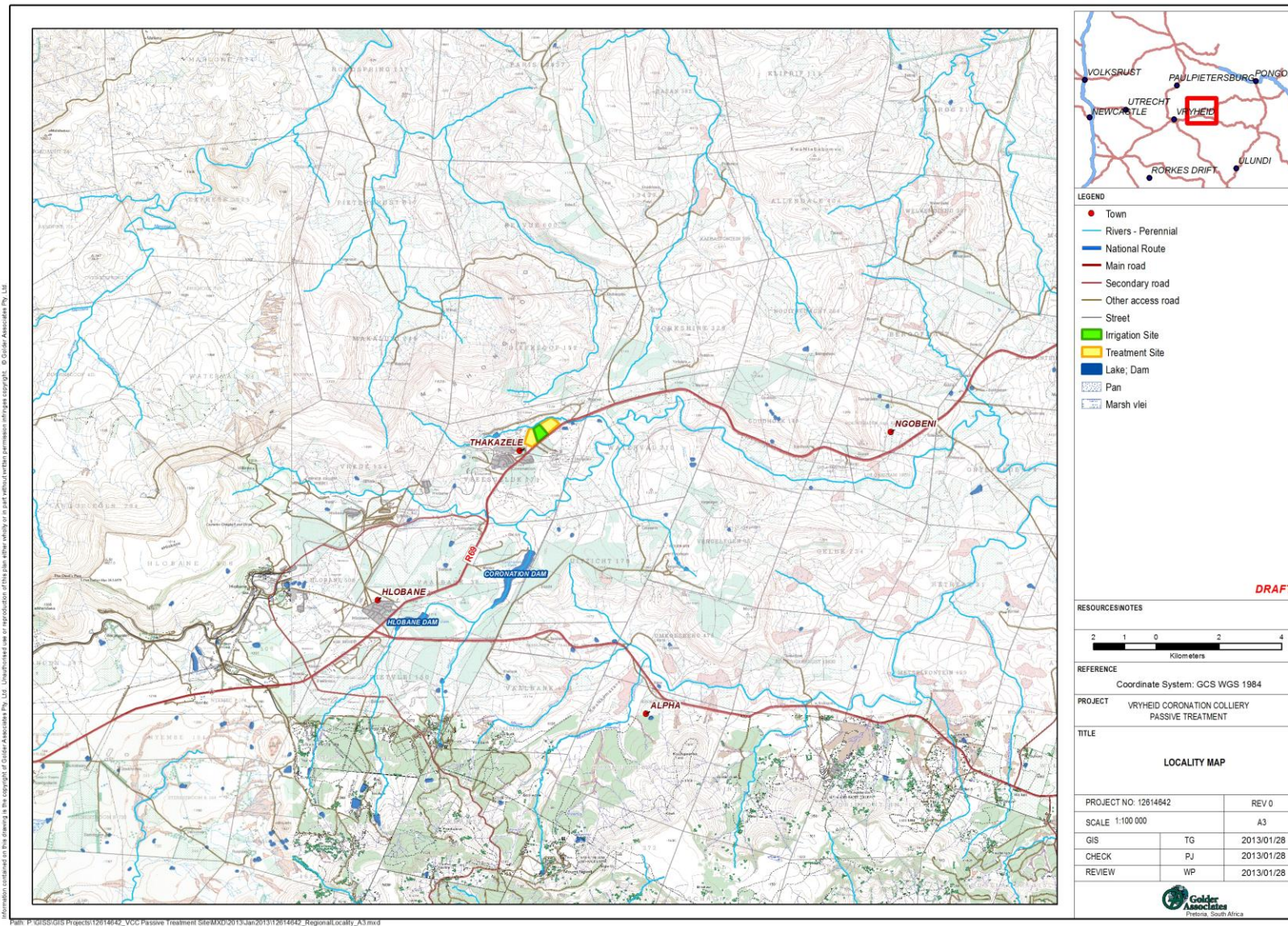


Figure 2: Regional locality map

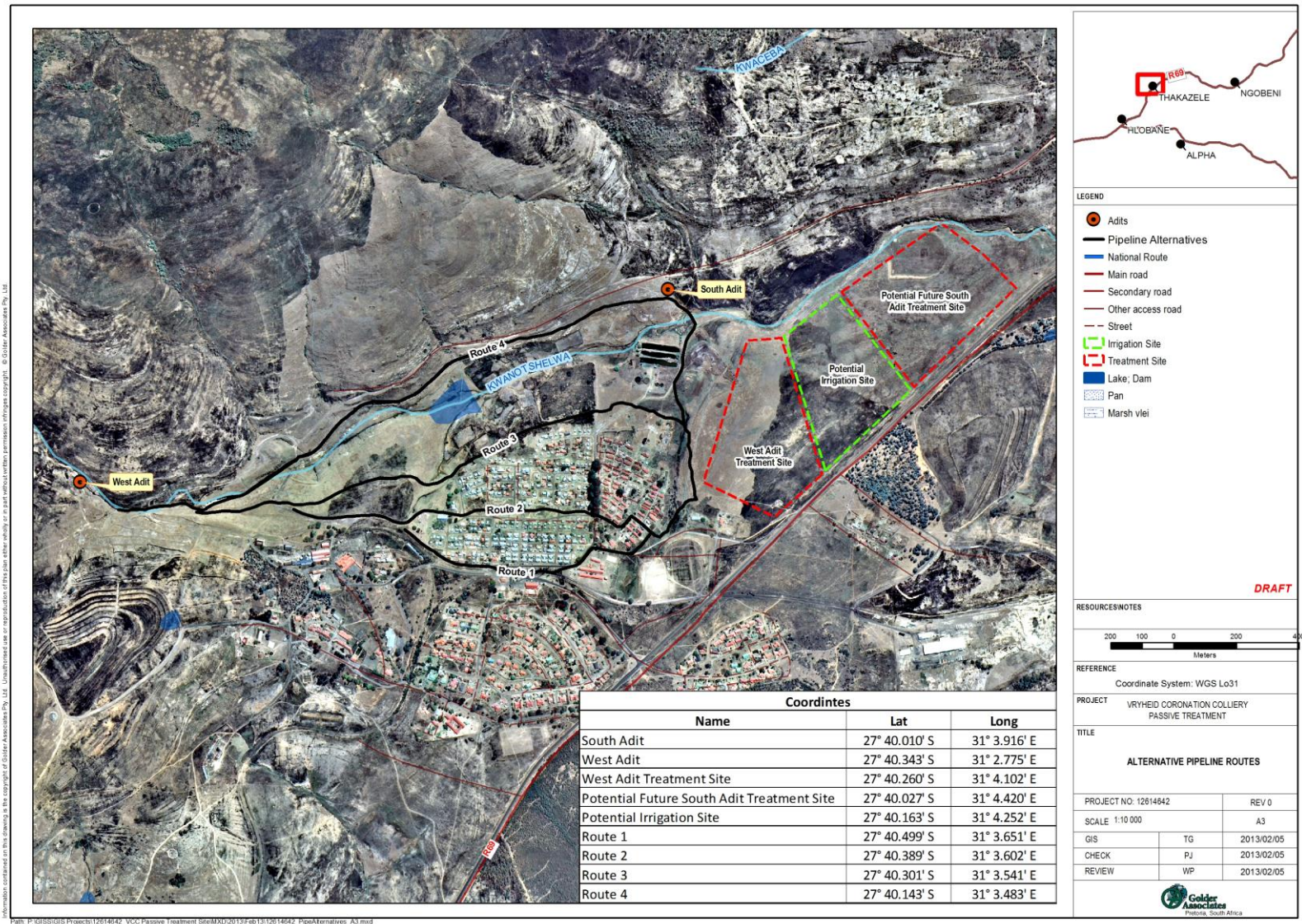


Figure 3: Project infrastructure locality

4.5. Project description

The project involves the use of passive water treatment technology to neutralise the water (pH 6.5 – 7.5) and remove metals ($\text{Fe} < 1 \text{ mg/l}$, $\text{Mn} < 4 \text{ mg/l}$, $\text{Al} < 1 \text{ mg/l}$) from the mine water currently decanting from West Adit at VCC into the KwaNotshelwa River. Some sulphate reduction will also take place ($1\,200 \text{ mg/l}$) but this is not the main objective and a potential future upgrade will deal with sulphate removal.

Process and associated infrastructure: The project will include:

- The collection of the West Adit decant in a sump/weir located close to the stream bed. A reinforced concrete collection reservoir will be constructed in order to capture the seepage and protect it from dilution and mixing with upstream catchment runoff. It may also be necessary to construct river bank protection systems to ensure that the upstream catchment runoff cannot enter the collection reservoir.
- The piping of the collected water over approximately 3km, in a HDPE pipe, to the treatment plant. An outlet will be placed at a low point in the collection reservoir wall in order to allow seepage to discharge freely down the pipeline as and when it emanates from the ground. The HDPE pipeline from the collection reservoir down to the passive water treatment plant site will be routed along an existing concrete canal and pipeline route.
- The passive water treatment plant (also refer to schematic diagram in Figure 4) which includes:
 - A splitter box (1 217mamsl) to split flow and consisting of an adjustable rectangular weir set to allow $1\,000 \text{ m}^3/\text{day}$ over v-notch weir; a fixed v-notch weir that will allow all flows $< 1\,000 \text{ m}^3/\text{day}$ into the flow splitter; and a fixed v-notch weir plate with 5 notches to ensure the flow is split into five (5) equal portions. Flow exceeding design flow of $1\,000 \text{ m}^3/\text{day}$ will go back into the river. The splitter box will also provide a point for the addition of molasses.
 - Five (5) parallel degrading packed bed reactors (DPBR) at 1 214mamsl, designed and operated as a bionetralisation. Each DPBR will have design capacity of $200 \text{ m}^3/\text{day}$. Only one (1) of the five (5) to be constructed now.
 - An aeration/oxidation cascade(s) and sulphide scavenging reactor (1 189mamsl) to remove sulphides, allow for oxidation of manganese and control flow of effluent (partially treated water) from the plant and discharge into wetland as well as allow oxygen to enter the circuit.
 - Aerobic wetland (1 181mamsl) to polish water and remove residual COD, sulphides, ammonia, phosphate and oxidised metal compounds.
- Discharge of treated water into the KwaNotshelwa River. Depending on the outcome of the risk assessment, the water may be supplied to the community for agricultural purposes (irrigation site in Figure 3).

In preparing a plant layout, space will be allocated for potential future expansion of the plant to provide a sulphate reduction capability, by allowing space for five (5) primary biological sulphide oxidation reactors, five (5) secondary sulphate reducing reactors and five (5) secondary sulphide oxidation reactors.

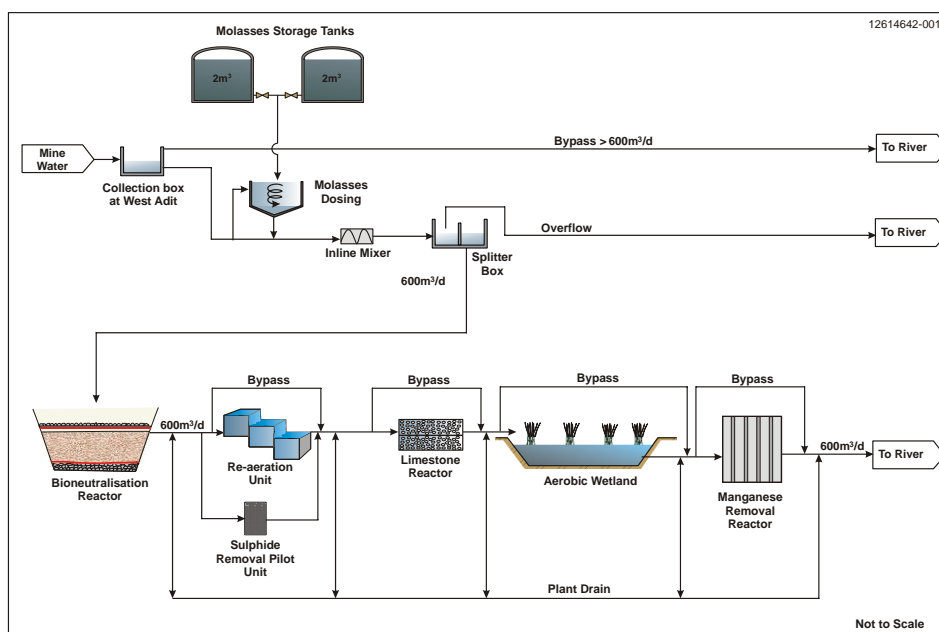


Figure 4: Process schematic

4.6. Additional Work

The following additional work has been completed as part of the project:

- Flora and fauna impact assessment.
- Heritage impact assessment (HIA).
- Surface water impact assessment.
- Flood line delineation.
- Geohydrological assessment.
- Integrated public participation.
- Wetland studies including wetland delineation and wetland management plan.
- Integrated water use licence application in terms of the NWA.
- Reviews of process and civil engineering designs to ensure the optimum environmental solution.

5. IMPACTS AND THEIR MANAGEMENT

Possible impacts that may occur and need to be managed, as part of the Environmental Management Programme (EMP), were identified and investigated as part of the additional specialist studies.

5.1. Flora & Fauna (African Litany)

Objective: To identify the faunal and floral aspects that may be impacted due to the clearance of a surface area of 2ha for establishment of the passive water treatment plant and for establishment of a water pipeline approximately 3km in length.

Findings:

- Much of the landscape has been transformed by previous opencast (and subsequently rehabilitated) and underground coal mining activities with several large rehabilitated dumps remaining.

- The project area is located in the Drakensberg Grassland Bioregion and specifically Gs 6 KwaZulu-Natal Highland Thornveld (Mucina & Rutherford, 2006), also known as VT 65 Southern Tall Grassveld (Acocks, 1986) and LR 25 Central Bushveld (Low & Rebelo, 1996).
- 2% of this vegetation type is located in statutory conservation areas and more than 16% has been transformed (Mucina & Rutherford, 2006).
- The South African National Biodiversity Institute (SANBI), Ezemvelo KZN and literature indicate endemic plant species that may occur in the area. No endemic or Red listed plant species were recorded during the site visit.
- The project area is characterised by vegetation used to rehabilitate previous mining infrastructure and therefore has low species diversity with only pioneer grass species and forbs.
- Faunal diversity was also found to be low.
- The acidic nature of the decant is not conducive to faunal diversity and no water birds were observed along the pipeline route.
- Ezemvelo KZN recorded the Rough-haired Golden Mole (*Chrysospalyx villosus*) as occurring in the quarter degree square. It is classified as Vulnerable in terms of the IUCN Red list of threatened species. No signs of mole activities were observed during the site visit.
- No Red list faunal species were recorded during the site visit. Few faunal species, other than birds, were observed.
- There has already been an adverse effect on the fauna and flora in the study area due to mining activities, resulting in a reduction in species diversity and expected impact of low significance.
- No fatal flaws from an ecological perspective. A net positive benefit is expected to the ecology.

Management:

- Prevent encroachment and spreading of invasive and exotic species as per requirements of CARA.
- Prevent destruction of Red Data flora and faunal species if such species are identified during the construction phase.
- Prevent destruction of natural, undisturbed vegetation of surrounding areas that will not be directly impacted on.
- As soon as possible after topsoil has been replaced re-vegetate all areas that were disturbed.
- Use indigenous species that are sustainable to re-vegetate disturbed areas.

5.2. Heritage (Archaeology)

Objective: To identify and locate possible objects, sites, structures and features of cultural significance in the area of the proposed development.

Findings: One (1) cultural heritage site from the Historical Age was discovered. The site contained a number of graves from all three categories, namely older than 60 years (heritage graves), without a date (unknown graves) and younger than 60 years. The site is still used for burials and an extension is planned. The site is located along pipeline route 3 (see Figure 3).

Management:

- Pipeline route 3 was excluded as a possibility due to the location of the grave site mentioned above along this route.
- The subterranean presence of archaeological and/or historical sites, features or artifacts is always possible. Care should therefore be taken during excavations and if any such

site, features or artifacts are discovered, a qualified archaeologist should be called upon to investigate.

5.3. Surface water (Golder Associates)

Objective: To collect background information on the catchment, hydrology and surface water quality as well as to determine the flood line for the KwaNotshelwa River and assess potential surface water impacts and how to manage these potential impacts.

Findings:

- Current main surface water users in the area are the rural sector, irrigation and afforestation.
- Coronation Dam is located 7km upstream of the confluence of the KwaNotshelwa and Nkongolwana Rivers.
- The KwaNotshelwa River flows in a north-easterly direction past the site, then under the R69 to join the Nkongolwana River about 2.5km from the site. The Nkongolwana River ultimately joins the Mkuze River which feeds Lake St Lucia.
- The site is located within the W31A quaternary catchment which falls under the Usuthu-to-Mhlatuze Water Management Area.
- West Adit is acidic with a sulphate concentration of 1 500mg/ and little to no neutralising capacity. The acidic pH also results in increased dissolved metals (Fe, Mn, Al).
- Water quality does not comply with receiving water quality objectives and is also affected by the ad hoc discharge of sewage (raw and treated) from Thukuzele.
- From the flood line determination, it is evident that the passive water treatment plant does not encroach on the 1:50 and 1:100 year recurrence intervals.
- The passive water treatment plant will be beneficial for the hydrological regime of the site and the local region.

Management:

- The pipeline, from the collection reservoir at West Adit to the passive water treatment plant, will be placed at a low point in the reservoir wall to prevent the build-up of a head in the collection reservoir and the subsequent daylight of seepage in another location since this will negatively impact on the surface water regime.
- Route 4 will be used for the pipeline as it will not impact the existing services in the village and is less susceptible to vandalism. This route also travels along an existing canal (already disturbed) for some distance which therefore has less of an impact on undisturbed areas.
- The passive water treatment plant's objective is to intercept and treat the acid mine drainage from West Adit to improve the water quality in the KwaNotshelwa River.
- Construction and decommissioning activities should stay clear of the 1:50 year flood lines to minimise the impact of runoff on the KwaNotshelwa River.
- During the operational phase, the plant operation should be monitored and stopped if any of the unit processes downstream of the DPBR fails to function optimally. In cases where unit processes do not function optimally, the impact of partially treated water will still be positive compared to no treatment at all.
- Maintain surface water monitoring plan – quarterly monitoring of C01 (downstream of discharge point, at R69 road bridge), C03 (upstream of discharge point, South Adit), C11 (West Adit) & C21 (DWA compliance monitoring point on KwaNotshelwa River) for the following parameters: pH, Alkalinity, Electrical Conductivity, TDS, Sulphates, Chlorides, Magnesium, Sodium, Calcium, Potassium, Iron, Manganese & Aluminium.
- Increase surface water monitoring frequency in the short-term (first 6 months) to monthly.
- Construction and closure should be conducted during the dry season to minimise significant runoff.

5.4. Geohydrology (Golder Associates)

Objective: To assess the current hydrogeological conditions, groundwater vulnerability and groundwater quality.

Findings:

- Site is underlain by the Karoo Super Group sediments comprising of sub horizontal fine to coarse grained sandstone and shale of the Vryheid formation of the Ecca group. The sediments on the site comprise sandstone, shale, coal seams and oil shale beds.
- No boreholes or groundwater users were found within a 2km radius of the site and this was confirmed by the municipality, local residents and Anglo American representatives. Groundwater is therefore not used in the area and the potential risks to human receptors are limited/reduced.
- Groundwater flow is assumed to mimic topography, from West Adit treatment site north towards KwaNotshelwa River.
- According to the National Groundwater Database Boreholes (DWA) information, water levels in the area range between 5 and 20 metres below ground level. Published hydrogeological maps (DWA) indicate average borehole yield in the area between 0.5l/s and 2.0l/s.
- The aquifer is classified as Intergranular (shallow) and fractured (deep) and recharge is between 37mm and 50mm per annum
- Groundwater Resources Map of RSA (DWA, 1995, Sheet 2) indicates the water quality as Calcium/Magnesium bicarbonate (Ca, Mg) HCO_3 type water. TDS geometric standard deviation range is indicated between <500mg/l to 1 000/1 500mg/l.
- Groundwater vulnerability, indicating of how susceptible an aquifer is to contamination, was classified as very low and it is therefore unlikely that the West Adit will contribute to any groundwater contamination.
- An initial groundwater conceptual model identified two (2) potential aquifer zones: a shallow weathered aquifer zone of approximately 15m, comprising sandstone and shale; and a (semi-confined) deep fractured zone below 15m in the fractured and/or contact zones between different Karoo sediment layers as well as between dolerite intrusions.

Management:

- Management measures required are limited due to the following:
 - Groundwater vulnerability was classified as very low and it is therefore unlikely that the West Adit will contribute to any groundwater contamination.
 - Groundwater is not used in the area and the potential risks to human receptors are limited.
- Monitoring boreholes are required to assess current groundwater quality and to monitor groundwater quality around the passive water treatment site. Four (4) boreholes were proposed:
 - DS1 south south west and up gradient of the site for background water quality
 - DS2 (north west) and DS3 (north east) which are down gradient on either side of the passive water treatment facility.
 - DS4 further north east of the site and the topographical low point in proximity to the KwaNotshelwa River.



5.5. Wetlands (Wetland Consulting Services)

Objective: To do a wetland delineation, wetland classification, assess the functions of the wetland areas and potential impacts of the proposed passive water treatment plant and associated pipeline on the wetlands as well as how to manage these potential impacts.

Findings:

- Downstream of West Adit, excavations associated with the historical mine workings have resulted in a modified, artificial channel along which all flows currently pass. A v-notch weir is located within this channel. The natural channel is located several metres to the east and is only expected to convey flows during high flow events.
- Upstream of West adit, the KwaNotshelwa River and its upper tributaries are considered to be in a Largely Natural condition (PES Category B) and therefore of a High ecological importance and sensitivity (EIS).
- The KwaNotshelwa River and associated valley bottom wetland have been heavily impacted and degraded and are considered Seriously Modified (Present Ecological Status (PES) Category E) with a Low/Marginal EIS. The following existing impacts were observed:
 - decant of AMD (acidic, sulphate and metal rich) from West Adit;
 - poorly defined riparian zone;
 - signs of infill on both banks;
 - evidence of carbonaceous material within the infill utilised to confine the channel;
 - two stormwater pipes conveying surface runoff from the most western discard dump;
 - cement lined channel of 1.1km (probably constructed to divert flows around the discard dump adjacent to the natural water course);
 - seepage of contaminated water from the discard dump via a number of drains;
 - bank erosion;
 - disturbance of natural vegetation and invasion by alien species due to subsistence agriculture and historic golf course;
 - discharge of raw sewage from surcharging sewers (manholes) from the village;
 - decant from South Adit (neutral sulphate-rich water);
 - discharges from the wastewater treatment works (treated sewage);
 - old dump/stockpile within wetland area;
 - several small ponds upstream of dump; and
 - discharge of stormwater runoff from Thukuzele & Coronation villages.
- Further downstream from the pollution sources (as mentioned above), the water quality gradually improves and the river flows within its natural channel, resulting in the lower reaches being classed as Largely Modified (PES Category D).
- The large northern and southern hillslope seepage wetlands are both considered to be in a Moderately Modified condition (PES Category C) and of Moderate EIS. The southern tributary to the KwaNotshelwa River is considered Seriously Modified (PES Category E), and the associated seepage wetlands Largely Modified (PES Category D).
- 2.54ha (18%) of the 14ha area indicated for the passive water treatment plant for West Adit has been classified as wetland (see Figure 6).
- A number of wetlands as well as the KwaNotshelwa River itself will be impacted by the project, specifically the pipeline which is required to run within the active channel of the KwaNotshelwa River for a distance, and then also crosses a number of wetlands.

Management:

- Rehabilitation of any wetlands impacted/disturbed during construction and decommissioning/closure phases.
- Prevent damage to wetlands and associated vegetation by fencing or demarcating the limits of construction related activities.

- Re-vegetate bare soil areas resulting from construction/decommissioning activities as soon as possible.
- Follow rehabilitation guidelines in terms of soil preparation (ploughing/ripping and scarifying), landscaping (to blend with natural/surrounding landscape profile), preparation of seed beds (horizontal furrows 0.4m apart and 10cm deep), prevention of siltation and erosion, use of hessian blankets on high erosion risk areas, seeding with indigenous grass species (hand or hydro-seeding).
- Eradication of invasive plant species by hand on a six-monthly basis.
- Monitoring:
 - Vegetation re-establishment: Monthly monitoring for the first 6 months with focus on cover and then annual monitoring during the growing season. The objective is to obtain 70% cover after 3 months.
 - Monitor erosion at wetlands, river channels, stormwater discharge points, clean water diversion discharge points and pipeline crossings through fixed point photography as well as with a walk-through survey to check for signs of erosion. Annual monitoring is required at the end of the rainy season. Erosion should be repaired immediately.
 - Monthly surface water quality monitoring of the passive water treatment plant and associated polishing wetland as well as a point immediately upstream and downstream of the discharge point for pH, EC, TDS, Sulphate, Calcium, Magnesium, Sodium, Potassium, Chloride, Nitrate, Fluoride. Aquatic macro-invertebrates and diatoms should be monitored biannually at the start and end of the wet season.
 - Alien vegetation: Biennial monitoring inspections should identify target areas for clearing.
- Apply for a National Water Act, 1998 (Act 36 of 1998) Section 21 water use license in terms of all activities that impact on wetlands or fall within 500m of any wetland area.

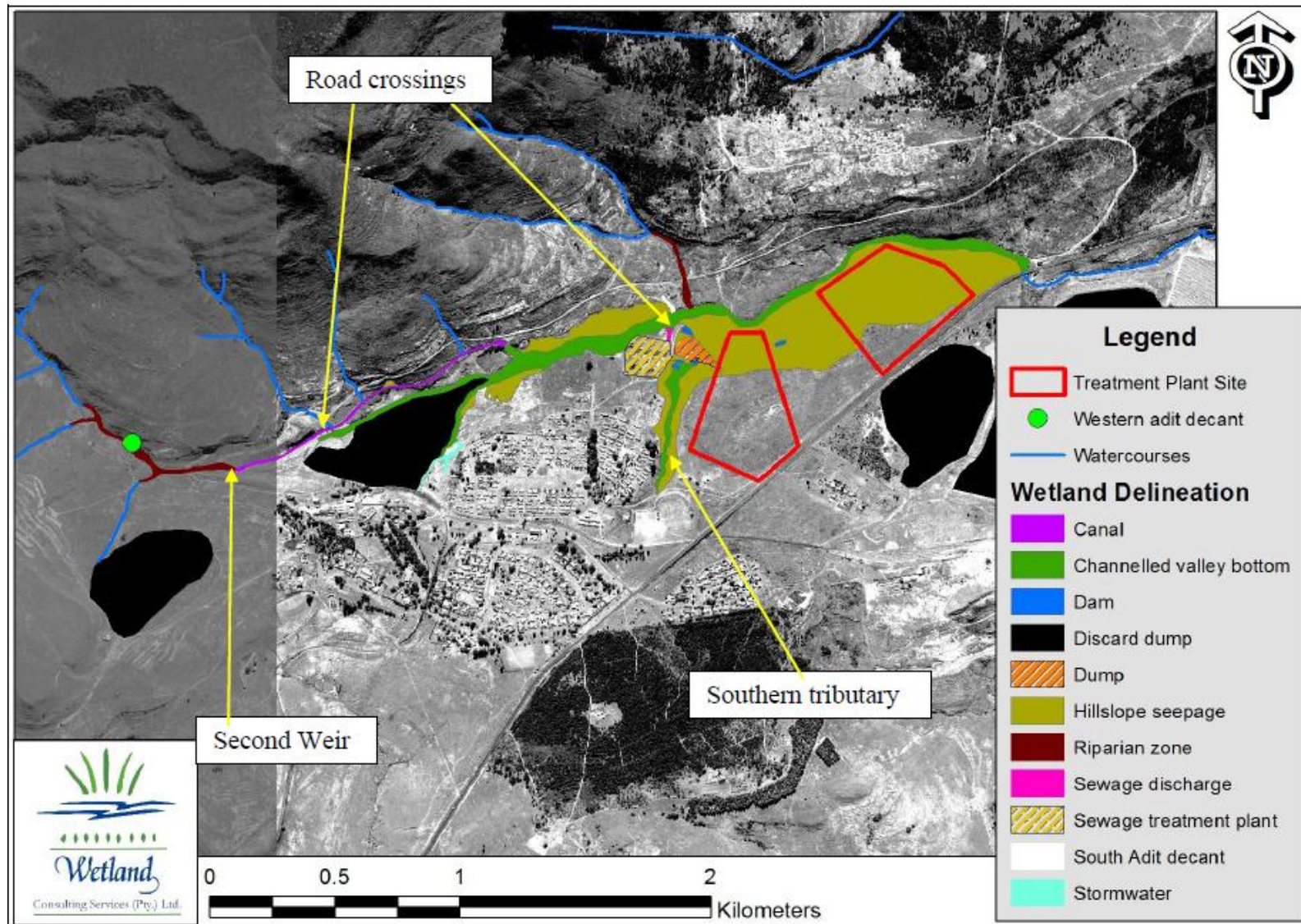


Figure 6: Wetland delineation

6. APPLICABLE LEGISLATION

6.1. NEMA & NEMWA

An application for integrated authorisation (environmental authorisation and a waste management licence), in terms of the NEMA, as amended and NEMWA, has been submitted to the DEA as the delegated competent authority (Reference number 14/12/16/3/3/3/71; NEAS reference DEA/EIA/0001710/2013).

Notification, in the form of site notices and an advertisement placed in the Vryheid Herald as well as this Background Information and Summary Document, 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 integrated authorisation for the proposed project as set out in Section 4 of this document.

The following listed activities which require environmental authorisation was identified in terms of the relevant legislation:

NEMA: GNR 544 (18 June 2010):

- **Activity 9:** A 3 km long pipeline will be constructed between the decant point and the passive water treatment plant for the bulk transportation of water. At this point in time, the diameter planned is 110 – 160 mm and only 7 litres/second will be transported and therefore the activity might not be applicable.
- **Activity 11:** A sump will be constructed to collect the decant, a pipeline will be constructed to run in the stream bed and other infrastructure/structures such as the passive water treatment plant may also be within 32 metres of the watercourse. Two (2) river crossings at existing bridges will also form part of the application.
- **Activity 12:** The degrading packed bed reactors (DPBR) and wetland may be seen as off-stream water storage.
- **Activity 18(i):** The pipeline will have to be buried within the watercourse bed for a distance to prevent damage and allow sufficient hydraulic head for gravitational flow.
- **Activity 23(i):** It has to be established if the land on which the passive water treatment plant is planned, is considered inside or outside the urban area. Awaiting confirmation from local authority.

NEMA: GNR 545 (18 June 2010):

- **Activity 3:** The acid mine drainage (AMD) can be considered a dangerous good and it will be stored and handled in the passive water treatment plant. Each of the degrading packed bed reactors (DPBR) as well as the aerobic wetland which all form part of the passive water treatment plant will be bigger than 500m³.
- **Activity 5:** A water use licence is also required in terms of the NWA.

NEMWA: GNR 718 (3 July 2009, Category B):

- **Activity 1:** The acid mine drainage (AMD) being stored temporarily is seen as hazardous and the degrading packed bed reactors (DPBR) may be considered lagoons used for storage during biological reaction which requires a retention time.
- **Activity 6:** The acid mine drainage (AMD) being treated is seen as hazardous and the degrading packed bed reactors (DPBR) may be considered lagoons.
- **Activity 7:** 7 litres/second of acid mine drainage decant will be treated.
- **Activity 11:** A passive water treatment plant will be constructed.

6.2. NWA

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.”

An application for an Integrated Water Use Licence will be submitted to Department of Water Affairs (DWA) in terms of Section 21 of the National Water Act, 1998 (Act 36 of 1998).

7. PROCESS AND WAY FORWARD

- An application for integrated environmental authorisation and waste management licence has been submitted to DEA. The reference number 14/12/16/3/3/3/71; NEAS reference DEA/EIA/0001710/2013 has been assigned and the application will be handled by Pumeza Skepe-Mngcita, reachable on 012 395 3061.
- Notices have been placed in the Vryheid Herald and on the site (30 May 2013).
- Further notification and this information document are to be delivered by hand, fax or email to other identified I&APs, including neighbours, authorities and other stakeholders between 30 May and 3 June 2013.
- Comments and/or completed registration forms from I&APs should be received on or before 10 July 2013.
- A draft BAR will be available for public review in June/July 2013.
- A final BAR, incorporating comments received on the draft, will be submitted to the DEA for their review and a decision no later than August 2013.

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
ENVIRONMENTAL IMPACT ASSESSMENT – BASIC ASSESSMENT

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.