



Tronox KZN Sands (Pty) Ltd

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# INTEGRATED ENVIRONMENTAL AUTHORISATION FOR THE PORT DURNFORD MINE, KWAZULU- NATAL

Draft Scoping Report





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Tronox KZN Sands (Pty) Ltd

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Draft Scoping Report

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## ***APPENDICES***

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## EXECUTIVE SUMMARY

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Tronox KZN Sands (Pty) Ltd (herein referred to as Tronox) currently operates the Fairbreeze mine where heavy mineral sands are mined south-west of Mtunzini in the Greater Richards Bay area. This is supported by a Tronox Mineral Separation Plant (MSP) and Smelter (collectively known as the Central Processing Complex (CPC)) in the Empangeni area (see Figure 1-1). Tronox's previous mining operation, Hillendale is currently in the mine closure phase.

Tronox KZN Sands (Pty) Ltd (Tronox) is applying for a mining right for the following tenements:

- A renewed prospecting right (KZN 30/5/1/1/2/10708 PR) covering the following farms: Remainder of the farm Richards 16802, Remainder of the farm Birkett 16832 and Ruth 16833 (known as the Port Durnford lease area),
- Waterloo prospecting right (DMRE Ref: KZN30/5/1/1/2/296 PR) located on the following farms: Portion 1,2 and Rem of Lot 131 uMlalazi 14098; Rem of Lot 103 uMlalazi 13880 and Rem of Lot 104 uMlalazi 13853, and
- Penarrow located on the following farms: Remainder of Lot 132 uMlalazi 13602 and Portion 1 of Lot 132 uMlalazi 13602.

Tronox is now planning on applying for a consolidated Mining Right for all of these areas and seeking environmental authorisation (EA) to support this. A full Scoping and Environmental Impact Reporting (S&EIR) Process is required in support of the application for EA for the project. WSP Group Africa (Pty) Ltd (WSP) has been appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the Scoping and EIR (S&EIR) Process required in terms of the following legislation:

- Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (MPRDA)
- National Environmental Management Act (No. 107 of 1998) (NEMA) for submission of application for environmental authorisation (EA) in respect of activities identified in terms of GNR 983, 984 and 985 (7 April 2017, as amended)
- National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA) and the list of waste management activities (GN 921:2013, as amended), requiring submission of a waste management license (WML) application.

Given that this project is a mining project, the Department of Mineral Resources and Energy (DMRE) is the Competent Authority for the EA Application.

This is the Draft Scoping Report and is being made available in the public domain for a 30 day comment period from 21 November 2022 until 12 January 2023. Following the closure of this comment period the report will be finalised and submitted to the DMRE to inform its decision making for the impact assessment phase of the EIA.

## PROJECT DESCRIPTION AND LISTED ACTIVITIES

The following listed activities are being applied for in the environmental authorisation application (see Section 3.1):

Relevant legislation	Listed activity
Listing Notice 1 (GN R. 983, as amended by GNR 327)	Activity 9,10,11,12,13,14, 16,19,24,25,28,45 and 56
Listing Notice 2 (GN R. 984, as amended by GNR 325)	Activity 6, 15,16 and 17
Listing Notice 3 (GN R. 985, as amended by GNR 324)	Activity 2, 3, 10, 12, 14, and 18
GN921 of 2003, Category A	Activity 1
GN921 of 2003, Category B	Activity 1, 7, 11

The proposed mining project will be undertaken in two phases: Phase 1, between 2025 and 2036 which will entail the mining of 70 400 tpa and Phase 2, which will operate between 2036/2037 at 3000tph and continue until mine closure in 2074.

Key aspects of each of these phases are presented below in Tables 1 and 2:

**Table 1: Phase 1 mining operation**

Project location	See Figure 1-2
Mining process	The proposed low-rate (Phase 1) involves Port Durnford run-of-mine (ROM) material being mined by excavators and trucked to a ROM stockpile on the Port Durnford mining right area, from which it will be hauled on trucks to Fairbreeze mine.
Mineral processing	<p>No processing on site is proposed as part of the Phase 1 mining operation. ROM will be transported to Fairbreeze mine by truck on public roads for further processing.</p> <p>At Fairbreeze mine, it is intended that existing mined-out portions of the Fairbreeze orebody will be utilised for the stockpiling of the ROM. A hydraulic mining process will continue as per the current practise at Fairbreeze, and the hydraulically reclaimed ROM slurry will be pumped to the existing Fairbreeze Primary Wet Plant (PWP) for processing. As mentioned above, any changes to the Fairbreeze operations and authorisations as a result are currently excluded from the scope of work.</p> <p>The processed material will then be trucked to the existing Mineral Separation Plant (MSP) located at the Central Processing Complex (CPC) in Empangeni as part of the Fairbreeze product.</p>
Project layout and infrastructure	<p>The following infrastructure will be required on the Port Durnford Phase 1 mining site:</p> <ul style="list-style-type: none"> <li>• Gravel access road from the R102 to the mine site. An existing road will be utilised for this purpose, but the road will need to be widened</li> <li>• Temporary haul roads to the mining areas</li> <li>• Offices and ablutions: Fully renovated containers will act as offices and ablution facilities.</li> <li>• Parking</li> <li>• Maintenance Workshop and Laydown area</li> </ul>

	<ul style="list-style-type: none"> <li>• Electrical servitudes and substation (see further description under Associated infrastructure)</li> <li>• Fuel and Lubricant Storage: Fuel tanks will be supported on a concrete surface bed with edge thickenings. A concrete bund wall will be constructed surrounding the fuel tanks. It is anticipated that a 23 m<sup>3</sup> storage tank will be provided and it is estimated that 153 422 litres will be utilised per annum.</li> <li>• High light mast</li> <li>• Potable water tank</li> <li>• ROM stockpile</li> <li>• Septic tank</li> <li>• Domestic and hazardous waste storage area</li> </ul>
Associated infrastructure	<p>It has been planned that power supply will be obtained from Eskom's existing medium voltage 22kV reticulation available for rural power distribution.</p> <p>A miniature substation (MSS) will be required for stepping down the Eskom 22kV to 400V for the mine offices distribution.</p> <p>For Phase 1 of the mining operation water will be brought onto site via water bowsers. The primary water use on site will be dust suppression. It is anticipated that 4800 m<sup>3</sup> per annum will be required for this phase of the project.</p>
Employment requirements	It is currently estimated that there will be 25 employment opportunities available as a result of the Phase 1 mining operation.

**Table 2 – Phase 2 mining operation**

Location	See Figure 1-3
Summary of the Phase 2 operation	<p>The phase 2 mining operation sees a mine of similar scale to the Fair breeze operation being developed at the Port Durnford site. This will include processing and residue disposal. Use will be made of dozer trap mining units (DTMUs), and fine residue storage facilities (RSFs) will need to be constructed to contain the fines tailings from the Primary Wet Plant (PWP). All bulk services (such as power and raw water), and associated infrastructure to support this operation will also be required. The 3,000tph operation involves a full production facility which will consist of a new Primary Wet Plant (PWP) to be constructed to process the Port Durnford ROM material and produce heavy mineral concentrate (HMC) to be used as feedstock to the existing Mineral Separation Plant (MSP).</p> <p>The PWP is designed to process 22,866,000 t/annum run of mine (ROM) at a nominal rate of 3,000t/h. The process will produce the following output streams:</p> <ul style="list-style-type: none"> <li>• Heavy Mineral Concentrate (HMC)</li> <li>• Coarse (+45µm) sand tails</li> <li>• Fine (-45µm) sand tails</li> </ul>
Project layout and infrastructure	<p>The proposed mine layout plan is presented in Figure 1-3. The following infrastructure is proposed for the Phase 2 operations:</p> <ul style="list-style-type: none"> <li>• Primary Wet Plant (PWP): which will produce heavy mineral concentrate (HMC) to be the used as feedstock at the existing Mineral Separation Plant</li> </ul>



(MSP) at Central Processing Facility (CPC). The proposed layout for this facility is presented below and will include:

- Feed preparation and fines removal area
- Residue containment (48000m<sup>3</sup>) and pollution control dams (44000m<sup>3</sup>):
- Gravity separation area
- Magnetic separation area
- Fine tails dewatering and pumping area
- 33kV sub-station and power factor correction (PFC) Yards
- Eskom Yard
- Raw and process water storage and distribution area: Raw water will be stored in a single 10,000m<sup>3</sup> raw water dam. Process water will be stored in two 7,500m<sup>3</sup> dams connected by a common overflow sump
- Compressed air plant: The PWP will be serviced by a single compressed air facility comprising of two compressors, two air receivers and two air dryers.
- Potable water treatment plant: A standalone packaged potable water plant capable of supplying sufficient water for the total estimated personnel compliment
- Sewage treatment plant: a plant will be developed to accommodate the onsite personnel. Processed effluent from this treatment plant will be pumped to the process water dam.
- Workshop and stores
- Fine tails treatment area
- HMC dewatering, stockpiling and reclaim area
- MSP tails handling
- Gypsum plant
- Mine Complex including administration office with parking, control room, change house, mess, security office, laboratory and sample room
- A fit for purpose and legally compliant fire water pumping station and distribution system is to be installed at the PWP. It will be fed directly from the raw water dam.
- Access and haul roads

**Residue Storage facilities:**

Two RSFs will be constructed for the fines disposal as depicted in Figure 1-3. The western RSF (located on Site 9) will be constructed ahead of mining and will provide storage space for the first three years, until the first phase of the RSF to be located on Site C has been constructed. Mining will start in Site C to provide an open area for the construction of the additional RSF.

**Sand tailings disposal:**

In addition to the fine's disposal, the sand tails will need to be deposited and is generally used to backfill the mining void. For the first 7 years while opening the area for the RSF, sand tails of about 95Mm<sup>3</sup> will need to be deposited outside of the mining void area.

	<p>An area on the eastern side of the property has been earmarked for this initial sand tails deposition.</p> <p><b>Temporary topsoil stockpiles</b></p> <p>Topsoil will be placed in areas that are excluded due to grade. These temporary stockpiles will be as close as possible to the mining area and will move with the mining front.</p>
Associated infrastructure	<p>Raw water will be supplied to Port Durnford from the existing uMhlathuze bulk water supply station directly to the raw water dam by a take-off from the main pipeline currently feeding Fairbreeze.</p> <p>It is currently proposed that the Phase 2 mining operation will be powered by two 88kV Eskom incoming overhead lines to the Port Durnford 33kV incoming substation via two 88/33kV step-down transformers.</p>
Additional waste streams from CPC	<p>The following tails products are received from the CPC for disposal on site:</p> <ul style="list-style-type: none"> <li>• MSP coarse tails</li> <li>• Gypsum filter cake</li> </ul>
Employment requirements	<p>The phase 2 mining operation at Port Durnford will be of similar scale to the current Fairbreeze operation and largely act as a replacement reserve as production tails off at Fair breeze. Consequently, there will be few new job opportunities created however the Pourt Durnford operation provides opportunity for transition of the Fairbreeze workforce to the new operation.</p>

## PROJECT MOTIVATION

Fairbreeze Mine will be reaching the end of its life span within the next fifteen years. Tronox's previous mining operation Hillendale is currently in the mine closure stage of its life.

It is intended that the Heavy Mineral Concentrate (HMC) produced at Port Durnford will be used to replace Fairbreeze mine commitments to the Mineral Separation Plant (MSP) and to the Empangeni Smelter. The mineral suite in the Port Durnford ore body closely matches that of the Fairbreeze ore bodies, with all previous test work showing that Port Durnford mineral products would effectively be a 'like for like' replacement for Fairbreeze mineral products.

The Port Durnford Project will thus secure continued feed to the CPC in Empangeni, allow for the continued supply of customers and realise sustained economic benefits for:

- National gross domestic product (GDP);
- Tronox;
- its employees;
- the communities that benefit from the Social and Labour Plan; and
- and the region within which it operates.

## PROJECT ALTERNATIVES

The following project alternatives have been considered for this project to date:

- Siting of Phase 1 operations;
- Layout alternatives for the Phase 2 PWP;



- Preferred mining method for both phases;
- Routes for the ROM transport during Phase 1;
- Access road location during Phase 2;
- Scheduling of the mining phases;
- No go option.

The following alternatives remain under consideration for the EIA Phase of the project:

Alternative type	Alternatives remaining under consideration
Project versus no-go option	Both of these alternatives remain under consideration
Layout alternatives	Additional environmental exclusion zones may be identified through the specialist investigations and modifications will need to be made to the layout plans
Route to be utilised for the transportation of ROM during Phase 1	Still under consideration. To be advised by the traffic specialist
Mine closure alternatives	The final end land use for the project needs to be advised by the mine closure assessment currently being undertaken as part of the EIA as well as agreements reached with the landowners
Input alternatives	Although water and power sources for the project have been detailed these supplies need to be confirmed and agreements reached. As such these alternatives remain under consideration for the EIA.

## APPROACH FOLLOWING FOR THE SCOPING PHASE OF THE EIA, TO DATE

The following activities have been undertaken to date for the Scoping Phase of the EIA:

- Desktop review of available information regarding the project and project environment;
- Submission of application forms;
- Specialist site visits;
- Preparation of the Draft Scoping Report;
- Stakeholder engagement activities, which have included the following:

Activities	Details	Reference in Draft Scoping Report
Introductory meeting with the Mkhwanazi Traditional Authority	An introductory meeting was held with the Mkhwanazi Traditional Authority on 1 November 2022. Permission was granted	

	at this meeting to continue with the required studies	
Update of the Stakeholder Engagement Database	The existing Fairbreeze Stakeholder Engagement database has been updated.	
Project Announcement letter, Invitation to register as Interested and Affected Parties (I&AP) and attend Public Meetings, and Background Information Document (BID)	BID and announcement documentation emailed and posted to stakeholders on the 21 November 2022.  (Public registration period and comment period on the Draft Scoping Report: 21 November 2022 to 12 January 2023)	BID, announcement documentation (Appendix 2)
Newspaper advertisement announcing the project and availability of the Draft Scoping Report	Two Advertisements (English and isiZulu) published as follows: <ul style="list-style-type: none"> <li>• Ilanga (Zulu) on 14 November 2022;</li> <li>• Zululand Observer (English) on 14 November 2022</li> </ul>	Copies of published advertisements (Appendix 3)
Display of site notices	11 sites notices were displayed at various locations in the project area.  6 were placed on site, 4 in the villages 1 was placed at the Umhlathuze municipality.  GPS coordinates of locations were taken.	To be provided with Final Scoping Report
Availability of the Draft Scoping Report	The Draft Scoping Report has been made available at the following venues for comment for a 30 day period: <ul style="list-style-type: none"> <li>• Umhlathuze Municipal Office, Civic Centre, Central Business, 5 Mark Strasse Street, Richards Bay, 3900</li> <li>• Mkhwanazi Tribal Authority, KwaDlangezwa</li> <li>• Esikhawini Library, H2 Inhlokohloko Street, Esikhawini, 3887</li> <li>• Felixton Library, 1West End, Felixton, Empangeni, 3875</li> <li>• Mtunzini SAPS, 1 Clarke Avenue, Mtunzini, 3867</li> </ul>	
Availability of documentation on the WSP website during public review period	Placed documentation on for public review period 21 November to 12 January 2023.  <a href="https://www.wsp.com/en-ZA/services/public-documents">https://www.wsp.com/en-ZA/services/public-documents</a>	

Stakeholder engagement meetings	Stakeholders will be invited to the meetings in the Mkwanzazi Traditional Authority area and Richards Bay.	
Obtaining comments from stakeholders	Comments, issues of concerns and suggestions received from stakeholders during all the meetings, and written submissions will be captured in a Comments and Response Report.	A comments and response report remains to be developed for the project. This will be included in the Final Scoping Report.

## BASELINE ENVIRONMENT DESCRIPTION

The following provides a summary of the baseline environment that has been considered to date:

Baseline characteristic	Description
Climate and meteorology	<p>Clear seasonal variations are evident in the temperature and rainfall values for the area. The region typically receives higher levels of rainfall during the warmer, summer (December to February) months, with drier conditions during the cooler, winter months (June, July and August). The total rainfall received for 2019, 2020 and 2021 was 1596 mm, 946 mm and 1636 mm, respectively. Temperatures ranged from a low of 7°C, 6°C and 5°C in 2019, 2020 and 2021, respectively in winter to a high of 39°C, 41°C and 40°C in 2019, 2020 and 2021, respectively in summer. The average relative humidity for 2019, 2020 and 2021 recorded was 73%, 71% and 73%, respectively.</p> <p>Calm conditions occur 1-11% of the time with wind speeds of 3-5 m/s. Winds are predominantly from a north westerly direction.</p> <p>No exceedances of South African National Standards 1929: 2005 for dust fallout and PM10s have been observed.</p>
Topography	<p>The topography of the project development area is characterised by moderately to strongly sloping incised valleys (average slopes of 13%) west of the project area, which grades to gently undulating terrain (average slope of 6%) towards the coastline, with wide valleys that represent the floodplains of prominent drainage channels. The topography of the project area itself is rolling and exhibits gently sloping terrain, but in some areas significantly steeper slopes are encountered. Elevations within the project area range between 10 and 130 mamsl, with an average elevation of 55 mamsl.</p>
Geology	<p>The Port Durnford project lies in the south western portion of the Zululand coastal plain. The Port Durnford deposit is situated within the formed coastline environment, consisting of the Late Tertiary-Pleistocene dune corridor developed along the Natal coastline. The Pleistocene Port Durnford Formation, which is intermittently exposed in sea cliffs along the southern Zululand coast, consists of a Lower Argillaceous Member up to 10m thick, containing mammalian remains, marine fossils, crustacean burrows and wood debris, separated by a persistent lignite bed averaging 1.3m thick from an upper cross-bedded Arenaceous Member up to 15m thick. This vertical succession, which has its base below lowest spring tide, is interpreted as representing the intermittent landward accretion of a barrier complex (cross-bedded sands) over back-barrier swamps (lignite) and lagoonal- shallow marine facies (fossiliferous clays with subordinate sandstones) (Worley Parsons, 2015). The Port Durnford deposit forms part of the greater Maputaland Group as has been described in detail by CF Botha, 1997; Maud and Botha, 2000; Botha et al., 2003, Roberts</p>

	<p>et al, 2007 (cited in Worley Parsons, 2015) and is characterised by the Cenozoic coastal plain and littoral marine sedimentary succession that buries bedrock along the eastern seaboard of KwaZulu-Natal.</p> <p>The individual formations extend from the Maputo Bay area southwards along the coast to the Eastern Cape where the remnant deposits thin crop out discontinuously over the preferentially uplifted Cape Supergroup basement. The broadest part of the Maputaland coastal plain narrows southwards towards the St Lucia area, influenced by the strike of the Lebombo cuesta created by eastward dipping late Jurassic Jozini rhyolite Formation. South of St Lucia to the Mtunzini area the morphology of the coastal plain changes due to the influence of the tectonically juxtaposed bedrock types ranging from the Cretaceous mudrocks to Natal Metamorphic Province igneous and metamorphic lithologies (Botha, 2008, cited in Worley Parsons, 2015).</p>
<p>Soils and Land Capability</p>	<p>Based on a detailed survey undertaken by Snyman (2008), soils at Port Durnford are mostly derived from recent and weathered sands. Soils are typically sandy becoming sandy clay at depth. Increased slope in some parts, together with sandy soil textures, results in exacerbated erosion potential. Soils are mostly of the Hutton and Fernwood (pale) forms which occur on elevated sites in the west. Hydromorphic soils associated with a shallow water table occur extensively in the east (Kroonstad, Longlands, Westleigh, Fernwood dark). A small area of gneiss in the southwest results in gravely lithosols of the Glenrosa soil form.</p> <p>According to the DFFE Environmental Screening Tool (accessed August 2022) there exists generally high agricultural land capability within the area, particularly to the north of the N2 Highway on the Port Durnford property. However, Snyman (2008) does note that all the sites at Port Durnford are not suited to irrigation due to sandy soil textures, erosion hazard, steep gradients and a shallow water tables in places.</p>
<p>Hydrology</p>	<p>The project development area is situated within the Usuthu-Mhlathuze Water Management Area and is bisected by two quaternary catchments, namely W12F to the north east and W13B to the south west. The area is characterised by two prominent perennial rivers, Mlalazi and Mhlathuze, that drain into the Indian Ocean. Floodplain wetlands and estuaries are situated along the lower reaches of the Mlalazi and Mhlathuze rivers. The Mhlathuze River flows past the northern boundary of the project area and its tributaries drain the north western areas, whilst the Mzingwenya River flows along a section of the eastern boundary of the project area and drains the area north east towards Qhubu Lake. The tributaries of the Mlalazi River drain the Penarrow and Waterloo areas, and a portion of the Port Durnford area. The Amanzamnyama River, situated in the central to southern section of the project development area and the southern boundary of the Waterloo area, drain south and southeast towards the Mlalazi River. The Mlalazi River flows past the southwestern and southern boundaries of the Waterloo area. The project development area falls within a Strategic Water Source Area, which means that it is a key resource in the supply of water to downstream economies and urban centres (WWF, 2013).</p>
<p>Biodiversity</p>	<p>The majority of the project development area is currently under commercial timber plantation or sugarcane and surrounded by fairly densely inhabited community farming areas. Notwithstanding this, there are a number of largely undisturbed habitats in or immediately adjacent to the project development area. Here, 174 plant species could occur within the project development area and approximately 563 vertebrate species that may potentially use or be found within the project development area.</p>

	<p>The high biodiversity exhibited was evident firstly due to the large area of the study site, the variety of habitats and the presence of a number of wetlands.</p> <p>There are six major vegetation types on the site:</p> <ul style="list-style-type: none"> <li>• Coastal Lowland Forest</li> <li>• Barringtonia Dominated Swamp Forests</li> <li>• Voacang/Ficus Dominated Swamp Forests</li> <li>• Syzygium/Cassipourea Dominated Swamp Forests</li> <li>• Undefined forest regions</li> <li>• Grasslands with forest trees or bush clumps</li> </ul> <p>The wetland ecosystem based on the presence of the species such as the one mentioned above and the potential occurrence of the frog <i>Hyperoilius pickersgilli</i> further indicates the importance of the aquatic systems, their connectivity and direct linkage with the localised streams and river directly adjacent to the sites (Mzingwenya and Amanzimnyama rivers).</p> <p>The project development area encompasses Critical Biodiversity Areas (CBAs), as well as Ecological Support Areas (ESA). These areas sensitive areas are situated on the western portion of the site.</p> <p>channelled valley bottom wetlands within the project development area are mostly situated east of the N2 in the Port Durnford mining right area, along the tributaries and main channels of the Amanzamnyama and Mzingwenya rivers, and west of the N2 in the Waterloo and Penarrow mining right area, along tributaries of the Mlalazi River. Floodplain wetlands and estuaries are situated along the lower reaches of the Mlalazi and Mhlathuze rivers. Marshes and swamp forests occur along drainage channels east of the N2 highway which transects the project development area.</p> <p>The surveys of the estuarine benthic sites in the upper Mlalazi Estuary and the lower Ntuzze River produced a total of 18 taxa in August 2007 and 16 taxa in November 2007. The areas of the two systems are strongly influenced by freshwater inputs and the estuarine fauna is accordingly reduced. The diversity, individual abundance of the species recorded, and distribution patterns were in keeping with the physical and chemical conditions and did not indicate any significant anthropogenic impacts (MER, 2008).</p>
Hydrogeology	<p>The average yield of boreholes drilled in the coastal sand deposits is 0.8 L/s, whereas boreholes drilled into the Natal Metamorphic Province, most likely in or near faults and with a depth of over 100 mbgl, have an average yield of 1.5 L/s. Groundwater elevations range between 9 and 75 mamsl; and the average groundwater elevation is 36 mamsl. The depth to saturated zone varies between artesian (at or above ground level) to 58 mbgl, with an average depth of 22 mbgl. The regional groundwater flow direction is south to south east. Sodium and chloride enrichment are indicative of atmospheric deposition within the coastal environment. Recharge to the groundwater system across the project development area is estimated to be in the order of 10 to 17% of mean annual precipitation (MAP).</p>
Socio-economic	<p>The project development area is situated within the boundaries of the King Cetshwayo District Municipality (formerly Uthungulu District Municipality) and falls under the jurisdiction of the uMhlathuze Local Municipality.</p> <p>The uMhlathuze Municipality has an area of 123 325Ha and in 2016, the uMhlathuze population is estimated at to be in the region of 410 465 people</p>

	<p>(UMhlatuze Spatial Development Framework, 2020). Land ownership within the municipality consists of:</p> <p>Private ownership (26%)</p> <p>Ingonyama Trust Board (ITB) which is administered by Traditional Authorities (51%).</p> <p>The population in Port Durnford and surroundings, is generally a young population with low income and poor levels of education. Approximately 43% of the population only have up to primary school level of education and of this proportion 20% have no schooling at all. In the light of the fact that the majority of the population is youth and working age this has serious implications for current and future employment trends. The nearest residential areas neighbouring Port Durnford include Mahunu Village and Esikhawini to the east, Nyembe Village to the south west, and Ongoye to the north. Port Durnford falls within the jurisdiction of the Mkhwanazi Traditional Authority.</p> <p>Port Durnford falls under the jurisdiction of the uMhlatuze Local Municipality. Wards 10, 11, 18, 19 and 20 will most likely be directly affected by the mining operations.</p>
Heritage	<p>A total of 39 archaeological and/or historical sites (PD01 to PD39) were recorded during the survey undertaken by Anderson &amp; Anderson (2007). Most of the sites are of low significance; however there is one site of medium significance (PD33), and four of high significance (PD15, PD24, PD21 and PD18) (Anderson &amp; Anderson, 2007). The medium and high significance sites include: graves and furnaces from the Late Iron Age.</p>
Palaeontological	<p>According to the Palaeontological Technical Report for KwaZulu Natal (Amafa, 2012), The Port Durnford Formation consists of mudstone, lignite clay and sand and comprises a succession of carbonaceous muds and sand, containing fossils of terrestrial vertebrates such as hippopotamus, buffalo, antelope, rhinoceros and elephant as well as marine fossils including crustaceans and fish, foraminifera, marine molluscs and fragments of turtles and crocodiles.</p>
Visual	<p>The project area is located on a low-level coastal plain with a mix of afforestation and sugar cane farming. The project area of influence includes:</p> <p>Industrial</p> <p>Road infrastructure (including the N2 freeway)</p> <p>Residential / Urban Townships</p> <p>Tribal Lands</p> <p>Other mining operations</p> <p>The “whaleback” ridge crest extends from the Forest Inn area towards the northeast in the project area, west of the N2, with highpoints at 112 – 125 mamsl (Botha, 2008). The low-lying coastal plain is separated from the ocean by a high aeolian dune cordon (Groundwater Consulting Services (GCS), 2020).</p>
Current landuses	<p>The predominant land use in the project area is agriculture in the form of commercial Eucalyptus plantations owned by Mondi plc. Other vegetation in the form of swamp forests, wetlands and small portions of coastal dune forests, occurs in the drainage channels and streams between the plantations. The area is bordered by the R102, regional road, to the west and the coastal railway line,</p>



	<p>running from Richards Bay to Durban, to the east. The project development area ends near the Forest Inn Hotel on the R102 to Mtunzini. The N2, national road, traverses the length of the 12.4 x 2.5 km orebody. The Umlalazi Nature Reserve is situated 3 km to the south east". There is also a railway line just south of the N2 that also traverses the mining right area. Other general infrastructure in the project development area includes electric power lines, which cross the area in an east to west direction. Land uses in the surrounding area include mining, commercial sugarcane farming, aqua-ponic exotic fish farming, organic flower farming, tea-tree cultivation, fruit farming, university, rural and urban settlements, Umlalazi Nature Reserve, industry, roads and railways.</p>
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## SCOPING SIGNIFICANCE RATINGS

The following potential impacts have been identified for the project:

### Positive impacts

- Continued economic spend in the project area
- Employment opportunities and/or extension of employment ,
- Community investment as part of the Social and Labour Plan Process
- Continued contribution to Gross National Product
- Improved access to the N2 as a result of the access road improvement

### Negative impacts

- Destruction/damage/removal of vegetation in the area to be mined and for the infrastructure footprint
- Disturbance of fauna as a result of activities on site
- Loss of ecological habitat
- Loss of ecosystem services
- Loss of agricultural potential
- Changes in the ground and surface water regimes and the impact on neighbouring water users and ecological systems
- Contamination of groundwater and surface water
- Increased soil erosion
- Increased sedimentation of water bodies
- Soil contamination
- Decreased ambient air quality as a result of PM2.5, PM5, PM10 and nuisance dust increase
- Noise pollution
- Destruction of heritage and palaeontological resources
- Change to the visual attributes of the landscape
- Increased migration to the project area by job seekers
- Increased exposure to radiation
- Increased pressure on municipal services
- Incompatibility with existing and proposed land uses
- Increased traffic levels (congestion and safety risks)
- Deterioration of roads utilised by the project



- Climate change impacts as a result of increased greenhouse gas emissions

An initial Scoping level assessment has been undertaken for these impacts for the four project phases. These are presented in Tables 3-6.

## **PLAN OF STUDY FOR EIA**

The following specialist studies are to be undertaken as part of the EIA:

- Air quality assessment;
- Noise impact assessment;
- Climate change impact assessment;
- Biodiversity assessment;
- Soils and Agricultural Potential Assessment;
- Surface water, water balance and floodline determination;
- Hydrogeological assessment;
- Geochemistry characterisation;
- Social Impact Assessment;
- Traffic Assessment;
- Landscape/Visual Assessment;
- Archaeological and Heritage Assessment;
- Palaeontological Assessment;
- Mine Closure and Rehabilitation Plan.

WSP has developed a standard methodology for the assessment of impacts which will be applied for this project.

Cumulative impacts will be assessed in line with the above methodology. Following the identification of valued environmental and social components (VECs), projects that may contribute to the cumulative impact will be identified and where readily available, the significance of the impacts associated with these projects and/or proposed developments will be considered.

With regard to the public participation process for the EIA Phase, the following is proposed:

Public participation during the EIA phase revolves around the review of the environmental impact assessment findings, which will be presented in the Draft EIA Report. All stakeholders will be notified of the progress to date and availability of the Draft EIA Report, via mail, email and/or SMS. A legislated period of 30 consecutive days will be allowed for public comment. Reports will be made available in the following way:

The document will be made available to download from the WSP website;

- Copies will be availed in public places; and
- Copies of CDs will be made available on request.
- The approach for the EIA Phase consultation will be ascertained through the initial consultation during Scoping.

All comments received during the EIA phase will be recorded in the comments and response report (CRR), which will be included in the draft and final EIA Reports. The final EIA Report will be made available for public review with hard copies distributed mainly to the authorities and key stakeholders. All stakeholders will receive a letter notifying them of the authority's decision.

**Table 3: Significance rating of construction phase impacts**

Impact number	Receptor	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation			Further Assessment Required
						Probability	Severity	Significance	
Impact 1:	Soils	Loss of topsoil as a result of construction activities.	Construction	Negative	Moderate	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 2:	Soils	Soil compaction from construction vehicles and development of site	Construction	Negative	Moderate	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 3:	Soils	Loss of agricultural potential	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 4:	Socio- Economic	Continued socio-economic spend in the project area	Construction	Positive	High	4	3	12	Yes
<b>Significance</b>						<b>Major (+ve)</b>			
Impact 5:	Socio- Economic	Community investment as part of the Social and Labour Plan Process	Construction	Positive	High	4	3	12	Yes
<b>Significance</b>						<b>Major (+ve)</b>			
Impact 6:	Socio-Economic	Continued contribution to the Gross National Product	Construction	Positive	Low	4	1	4	Yes
<b>Significance</b>						<b>Minor (+ve)</b>			
Impact 7:	Socio-Economic	Increased in-migration with the influx of job seekers to the area	Construction	Negative	Moderate	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 8:	Socio-Economic	Incompatibility with adjacent land uses	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 9:	Socio-Economic	Increased pressure on municipal services	Construction	Negative	High	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 10:	Socio- Economic	Job Creation	Construction	Positive	Moderate	4	2	8	Yes
<b>Significance</b>						<b>Moderate (+ve)</b>			
Impact 11:	Heritage	Impact on palaeontological resources	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 12:	Heritage	Impact on Heritage Resources	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 13:	Biodiversity	Destruction/damage/removal of vegetation in the area	Construction	Negative	Moderate	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 14:	Biodiversity	Disturbance of fauna	Construction	Negative	Moderate	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 15:	Biodiversity	Loss of ecosystem services	Construction	Negative	Low	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 16:	Water impacts	Increased sedimentation of water bodies	Construction	Negative	Moderate	1	3	3	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 17:	Water impacts	Contamination of surface and groundwater	Construction	Negative	High	1	3	3	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 18:	Noise	Increase in ambient noise levels	Construction	Negative	Low	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 19:	Visual	Visual disturbances during construction phase	Construction	Negative	Low	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 20:	Air Quality	Decrease in ambient air quality	Construction	Negative	High	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 21:	Traffic	Increased traffic levels	Construction	Negative	High	1	2	2	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 22:	Traffic	Deterioration of roads	Construction	Negative	High	1	2	2	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 23:	Health and Safety	Community related health and safety risks	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 24:	Climate Change	Climate change as a result of greenhouse gas emissions	Construction	Negative	Moderate	1	2	2	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			



**Table 4: Significance rating of operational phase impacts**

Impact number	Receptor	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation			Further Assessment Required
						Probability	Severity	Significance	
Impact 1:	Soils	Loss of topsoil as a result of mining activities	Operation	Negative	Low	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 2:	Soils	Loss of agricultural potential	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 3:	Socio- Economic	Continued socio-economic spend in the project area	Operation	Positive	High	4	3	12	Yes
<b>Significance</b>						<b>Major (+ve)</b>			
Impact 4:	Socio- Economic	Community investment as part of the Social and Labour Plan Process	Operation	Positive	High	4	3	12	Yes
<b>Significance</b>						<b>Major (+ve)</b>			
Impact 5:	Socio-Economic	Continued contribution to the Gross National Product	Operation	Positive	Low	4	1	4	Yes
<b>Significance</b>						<b>Minor (+ve)</b>			
Impact 6:	Socio-Economic	Increased in-migration with the influx of job seekers to the area	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 7:	Socio-Economic	Incompatibility with adjacent land uses	Operation	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 8:	Socio-Economic	Increased pressure on municipal services	Operation	Negative	High	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 9:	Socio- Economic	Job Creation	Operation	Positive	Moderate	4	2	8	Yes
<b>Significance</b>						<b>Moderate (+ve)</b>			
Impact 10:	Heritage	Impact on palaeontological resources	Operation	Negative	Moderate	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 11:	Heritage	Impact on Heritage Resources	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 12:	Biodiversity	Destruction/damage/removal of vegetation in the area	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 13:	Biodiversity	Disturbance of fauna	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 14:	Biodiversity	Loss of ecosystem services	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 15:	Water impacts	Increased sedimentation of water bodies	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 16:	Water impacts	Contamination of surface and groundwater	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 17:	Noise	Increase in ambient noise levels	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 18:	Visual	Visual disturbances during construction phase	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 19:	Air Quality	Decrease in ambient air quality	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 20:	Traffic	Increased traffic levels	Operation	Negative	High	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 21:	Traffic	Deterioration of roads	Operation	Negative	High	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 22:	Health and Safety	Community related health and safety risks	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 23:	Climate Change	Climate change as a result of greenhouse gas emissions	Operation	Negative	Moderate	2	3	6	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 24:	Water impacts	Changes in ground and surface water regimes and the impact on neighbouring water users and ecological systems	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			

**Table 5: Significance rating of closure impacts**

Impact number	Receptor	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation			Further Assessment Required
						Probability	Severity	Significance	
Impact 1:	Socio- Economic	Job Losses	Operation	Positive	Low	4	3	12	Yes
<b>Significance</b>						<b>Major (-ve)</b>			
Impact 2:	Visual	Remaining visual disturbances and modified topography	Operation	Negative	Low	4	3	12	Yes
<b>Significance</b>						<b>Major (-ve)</b>			
Impact 3:	Water impacts	Changes in ground and surface water regimes and the impact on neighbouring water users and ecological systems	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			

## ANTICIPATED MITIGATION MEASURES

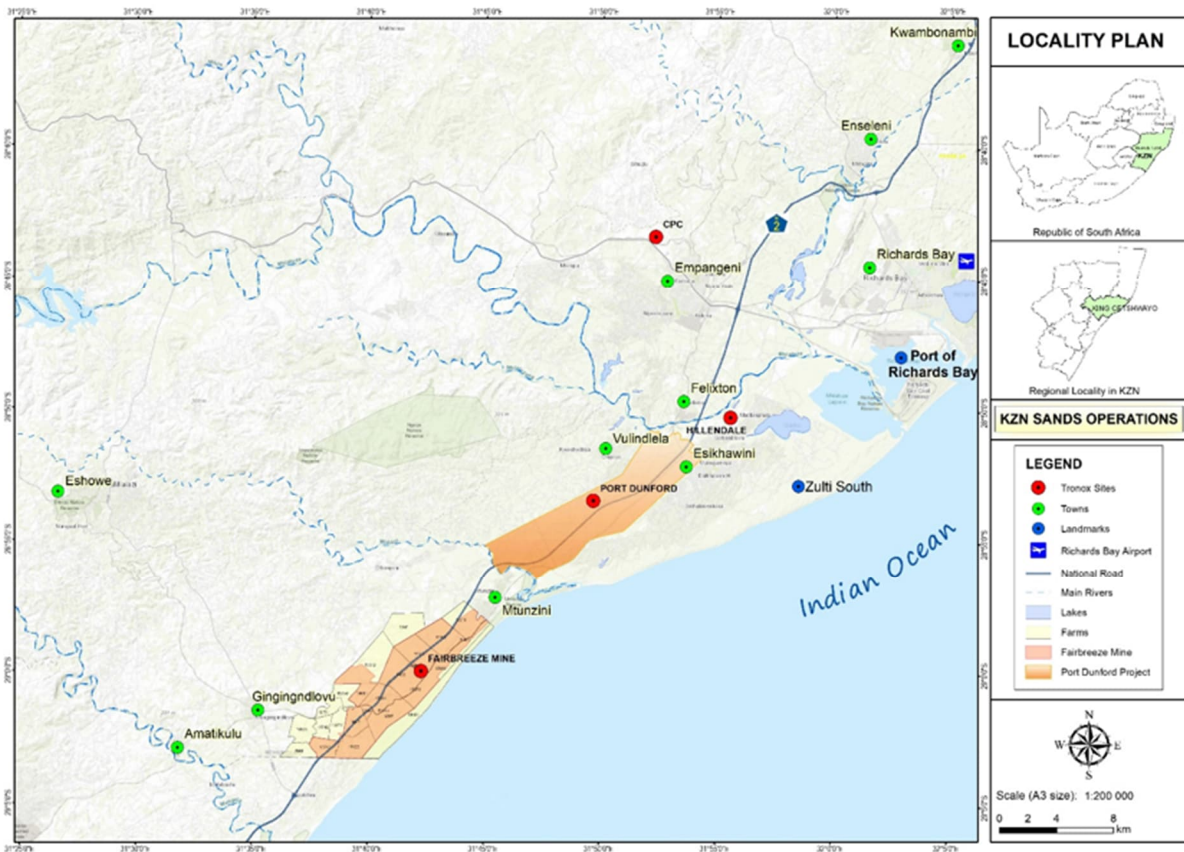
Anticipated mitigation measures are presented in the Draft Scoping Report. These remain subject to expansion on the basis of the results of specialist work and comments and suggestions raised in the public domain.

# 1 INTRODUCTION

Tronox KZN Sands (Pty) Ltd (herein referred to as Tronox) currently operates the Fairbreeze mine where heavy mineral sands are mined south-west of Mtunzini in the greater Richards Bay area. This is supported by a Tronox Mineral Separation Plant (MSP) and Smelter (collectively known as the Central Processing Complex (CPC)) in the Empangeni area (see Figure 1-1). Tronox’s previous mining operation, Hillendale is currently in the mine closure phase.

Tronox KZN Sands (Pty) Ltd (Tronox) is applying for a mining right for the following tenements:

- A renewed prospecting right (KZN 30/5/1/1/2/10708 PR) covering the following farms: Remainder of the farm Richards 16802, Remainder of the farm Birkett 16832 and Ruth 16833 (known as the Port Durnford lease area),
- Waterloo prospecting right (DMRE Ref: KZN30/5/1/1/2/296 PR) located on the following farms: Portion 1,2 and Rem of Lot 131 uMlalazi 14098; Rem of Lot 103 uMlalazi 13880 and Rem of Lot 104 uMlalazi 13853, and
- Penarrow located on the following farms: Remainder of Lot 132 uMlalazi 13602 and Portion 1 of Lot 132 uMlalazi 13602



**Figure 1-1: Location of Tronox operations and proposed project area at Port Dunford (Tronox, MWP, current)**



Tronox is now planning on applying for a consolidated Mining Right for all of these areas and seeking environmental authorisation (EA) to support this. A full Scoping and Environmental Impact Reporting (S&EIR) Process is required in support of the application for EA for the project. WSP Group Africa (Pty) Ltd (WSP) has been appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the Scoping and EIR (S&EIR) Process required in terms of the following legislation:

- Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (MPRDA)
- National Environmental Management Act (No. 107 of 1998) (NEMA) for submission of application for environmental authorisation (EA) in respect of activities identified in terms of GNR 983, 984 and 985 (7 April 2017, as amended)
- National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA) and the list of waste management activities (GN 921:2013, as amended), requiring submission of a waste management license (WML) application.

Given that this project is a mining project, the Department of Mineral Resources and Energy (DMRE) is the Competent Authority for the EA Application.

## **1.1 PURPOSE OF THE SCOPING REPORT**

This is the Draft Scoping Report which has been prepared in alignment with the template required by the DMRE (downloaded from SAMRAD in October 2022). The intention of this report is the following:

- Document the results of work undertaken to date for this Project
- Present an understanding of the project and project area
- Present the plan for the Environmental Impact Assessment Phase of the Study
- Provide this information to Project Stakeholders to enable their input into decisions around project alternatives, the scope of the investigations and potential mitigation measures.
- Evaluate project alternatives including the no-go option.

This Draft Scoping Report is being made available in the public domain for a 30 day comment period from 21 November 2022 until 12 January 2023. Following the closure of this comments period the report will be finalised and submitted to the DMRE to inform its decision making on the way forward.

## **1.2 CONTENT OF THE DRAFT SCOPING REPORT**

The Draft Scoping Report has been prepared to reflect the requested content of the DMRE template and is divided into the following Sections:

- Section 1: Introduction
- Section 2: Detailed description of the activities to be undertaken
- Section 3: Policy and Legislative Context
- Section 4: Project alternatives and need and desirability
- Section 5: Approach to the EIA Process
- Section 6: Environmental attributes associated with the sites
- Section 7: Scoping Phase Assessment of Impacts

- Section 8: Plan of study for EIA
- Section 9: Measures to avoid, reverse, mitigate or manage identified impacts and the extent of residual risk
- Section 10: Other information required by the competent authority

With reference to the NEMA GN982 requirements, Table 1-1 sets out the required contents of a Scoping Report and where in this report these can be found.

**Table 1-1: Legislated Report Requirements as detailed in GNR 982**

Reference	Legislated requirements as per the NEMA GNR 982	Relevant Report Section
(a)	Details of	
	the EAP who compiled the report; and	Section 1.4, Appendix A
	the expertise of the EAP, including a Curriculum Vitae	Appendix A
(b)	The location of the activity, including-	
	The 21 digit Surveyor code for each cadastral land parcel;	Section 1.6
	Where available, the physical address and farm name	Section 1.6
	Where the required information in terms of (i) and (ii) is not available, the coordinates of the boundary of the property.	N/a
(c)	A plan which locates the proposed activities applied for at an appropriate scale, or, if it is-	
	A linear activity, a description of the corridor in which the proposed activity or activities is to be undertaken; or	N/A
	On land where the property has not been defined, the coordinates within which the activity is to be undertaken.	N/a
(d)	A description of the proposed activity, including-	
	All listed and specified activities triggered;	Section 3.1
	A description of the activities to be undertaken, including associated structures and infrastructure;	Section 2
(e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	3
(f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section 4.1
(h)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including-	



Reference	Legislated requirements as per the NEMA GNR 982	Relevant Report Section
	Details of all the alternatives considered;	Section 4.3
	Details of the public participation undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 5.5
	a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	To be included in the Final Scoping Report (FSR)
	the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 6
	the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	Section 5.7 Section 7
	the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Section 8.4
	positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 5.8
	the possible mitigation measures that could be applied and level of residual risk;	Section 9
	the outcome of the site selection matrix;	Section 4.3
	if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and	N/A
	a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Sections 4.3 and 8.1
(i)	A plan of study for undertaking the environmental impact assessment process to be undertaken, including-	
	a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;	Section 8.1
	a description of the aspects to be assessed as part of the environmental impact assessment process;	Section 8.2
	aspects to be assessed by specialists;	Section 8.3

Reference	Legislated requirements as per the NEMA GNR 982	Relevant Report Section
	a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;	Section 8.4
	a description of the proposed method of assessing duration and significance;	Section 8.5
	an indication of the stages at which the competent authority will be consulted;	Section 8.7
	particulars of the public participation process that be conducted during the environmental impact assessment process; and	Section 8.8
	a description of the tasks that will be undertaken as part of the environmental impact assessment process;	Section 8
	identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	Section 9
(j)	An undertaking under oath or affirmation by the EAP in relation to-	
	the correctness of the information provided in the report;	Section 10
	the inclusion of comments and inputs from stakeholders and interested and affected parties; and	
	any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	
(k)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	Section 10
(l)	Where applicable, any specific information required by the competent authority; and	N/A
(m)	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	N/A

### 1.3 DETAILS OF THE APPLICANT

The details of the applicant are as follows:

**Table 1-2: Applicant details**

<b>Name of the Applicant</b>	<b>Tronox KZN Sands (Pty) Ltd</b>
Telephone number	+27 35 902 7364
Postal address	Private Bag X20010, Empangeni, 3880
Physical address	R34 Melmoth Road, Empangeni, 3880
File reference number SAMRAD	Application submission to take place on 18 November 2022 so not available at the time of print

## 1.4 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

**Table 1-3: EAP details**

<b>Name of the EAP</b>	<b>Nadia Mol</b>
Project Company	WSP Group Africa (Pty) Ltd
Telephone number	(021) 481 8782
Fax number	(086) 582 1561
Qualifications	BSc(Hons) in Environmental and Geographical Science (see Appendix A)
Summary of EAPs previous experience	Nadia Mol is a Registered Professional Natural Scientist and Registered Environmental Assessment Practitioner with 25 years of experience in the field of environmental impact assessments, due diligence and lender's technical advisory services for energy/power and mining projects in Africa. She has 18 years of experience in the mining industry, predominantly in the South African legislative context, having provided environmental authorisation support, particularly in relation to integrated environmental authorisation applications for heavy minerals, coal, platinum, gold and copper mines.

## 1.5 DETAILS OF THE SPECIALIST TEAM

**Table 1-4: Team for specialist studies**

<b>Name</b>	<b>Study</b>
Brian Magongoa	Stakeholder Engagement
Shameer Hareeparsad	Geochemical Analysis
Shannon Dixon	Geohydrology Study
David Allen	Terrestrial (Avifauna) Impact Assessment
Luke Verbrugt	Terrestrial (Herpetofauna) Impact Assessment
Lucas Niemandt	Terrestrial (Insects) Impact Assessment
Andrew Zinn	Terrestrial (Ecology) Impact Assessment
Anton Pelser	Heritage Impact Assessment
Heidi Fourie	Palaeontology Impact Assessment
Pieter Kruger	Traffic Impact Assessment
Thigesh Vather	Soil and Land capability Assessment
Eugeshin Naidoo	Surface Water Impact Assessment
Johan Bothma	Visual Impact Assessment and Closure Study
Novania Reddy	Air Quality Impact Assessment
Justin Govender	Noise Impact Assessment
Lufuno Nemakhavhani	Wetland Impact Assessment
Tebogo Khoza	Aquatic Ecology Assessment

## 1.6 DESCRIPTION OF THE PROPERTIES

The proposed project area is located in the uMhlathuze Local Municipality that falls under the King Cetshwayo District Municipality in the province of KwaZulu-Natal. It is located approximately 15km south-west of Richards Bay and is adjacent to the following settlements/towns at different points along the boundary:

- Mtunzini
- Port Durnford
- Esikhawini
- Gobandlovu
- KwaDlangezwa



The N2 highway as well as the R102 traverse the length of the prospecting rights area; the R102 being located to the northwest and the N2 running through the centre.

The following properties are proposed as part of the Port Durnford Mine:

**Table 1-5: Description of properties**

<b>Farm Name</b>	<p><b>Port Durnford</b></p> <p>Portion 0 of Farm Richard 16802          Portion 0 of Farm Birkett 16832          Portion 0 of Farm Ruth 16833          Portion 1 of Farm Birkett 16832</p> <p><b>Waterloo</b></p> <p>Portion 2 of Farm Umlalazi 14098          Portion 0 of Farm Umlalazi 13880          Portion 0 of Farm Umlalazi 14098          Portion 3 of Farm Umlalazi 14098          Portion 0 of Farm Umlalazi 13853          Portion 43 of Farm Umlalazi 14098</p> <p><b>Penarrow</b></p> <p>Portion 0 of Farm Umlalazi 13602          Portion 1 of Farm Umlalazi 13603</p>												
Application area (hectares)	4 733.64												
Magisterial District	King Cetshwayo District Municipality												
Distance and direction from the nearest town	<p>The Port Durnford study project area is adjacent to the following towns at different points along the Mining Right (MR) application boundary:</p> <p>200 m North-East from Mtunzini          60 m North-North-West from Port Durnford          200 m North-West from Esikhawini          200 m North-East from Gobandlovu</p>												
21 digit surveyor general code for each farm portion	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #333; color: white;"> <th colspan="2">Port Durnford</th> </tr> </thead> <tbody> <tr> <td>Portion 0 of Farm Richard 16802</td> <td>N0GU00000001680200000</td> </tr> <tr> <td>Portion 0 of Farm Birkett 16832</td> <td>N0GU00000001683200000</td> </tr> <tr> <td>Portion 0 of Farm Ruth 16833</td> <td>N0GU00000001683300000</td> </tr> <tr> <td>Portion 1 of Farm Birkett 16832</td> <td>N0GU00000001683200001</td> </tr> <tr style="background-color: #333; color: white;"> <th colspan="2">Waterloo</th> </tr> </tbody> </table>	Port Durnford		Portion 0 of Farm Richard 16802	N0GU00000001680200000	Portion 0 of Farm Birkett 16832	N0GU00000001683200000	Portion 0 of Farm Ruth 16833	N0GU00000001683300000	Portion 1 of Farm Birkett 16832	N0GU00000001683200001	Waterloo	
Port Durnford													
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Portion 0 of Farm Ruth 16833	N0GU00000001683300000												
Portion 1 of Farm Birkett 16832	N0GU00000001683200001												
Waterloo													

	Portion 2 of Farm uMlalazi 14098	N0GU00000001409800002
	Portion 0 of Farm uMlalazi 13880	N0GU00000001388000000
	Portion 0 of Farm uMlalazi 14098	N0GU00000001409800000
	Portion 0 of Farm uMlalazi 13853	N0GU00000001385300000
	Portion 1 of Farm uMlalazi 14098	N0GU00000001409800001
	Penarrow	
	Portion 0 of Farm Umlalazi 13602	N0GU00000001360200000
	Portion 1 of Farm Umlalazi 13602	N0GU00000001360200001

## 1.7 DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

The proposed project is for the mining of heavy minerals including ilmenite, rutile, zircon and leucosene which are used to produce:

- Titanium dioxide (TiO<sub>2</sub>) pigment which is used in paints, plastics, paper laminates, ink and the food market
- Titanium metal
- Welding consumables
- Titanium feedstocks used in the manufacture of brake pads, roof tiles and in the glass industry; and
- Zircon used for the manufacturing of ceramics, foundry, refractory, zirconia and other zircon chemicals.

It is proposed that the mining activities will be undertaken in two phases:

- Phase 1, a low-rate mining operation at approximately 70400 tpa (tons per annum) for approximately 10 years from 2025 to 2035. It is anticipated that the mining operations will increase in throughput after 2035; and
- Phase 2 (Full Scale), an operation with a mining rate of 3000 tph which will operate until close of mine in 2074.

The current EA application is seeking authorisation for both phase1 and Phase 2.

The Tronox existing Fairbreeze operation will conclude its life of mine in 2037 and it is intended that the Port Durnford mining activities will facilitate the continuation of Tronox mining operations in the area. This mining project will ensure continued feed of heavy mineral concentrate to the KwaZulu Natal (KZN) Mineral Separation Plant in Empangeni.

Further details about these two phases of the project and infrastructure that will be required to support these activities are detailed in Section 2.

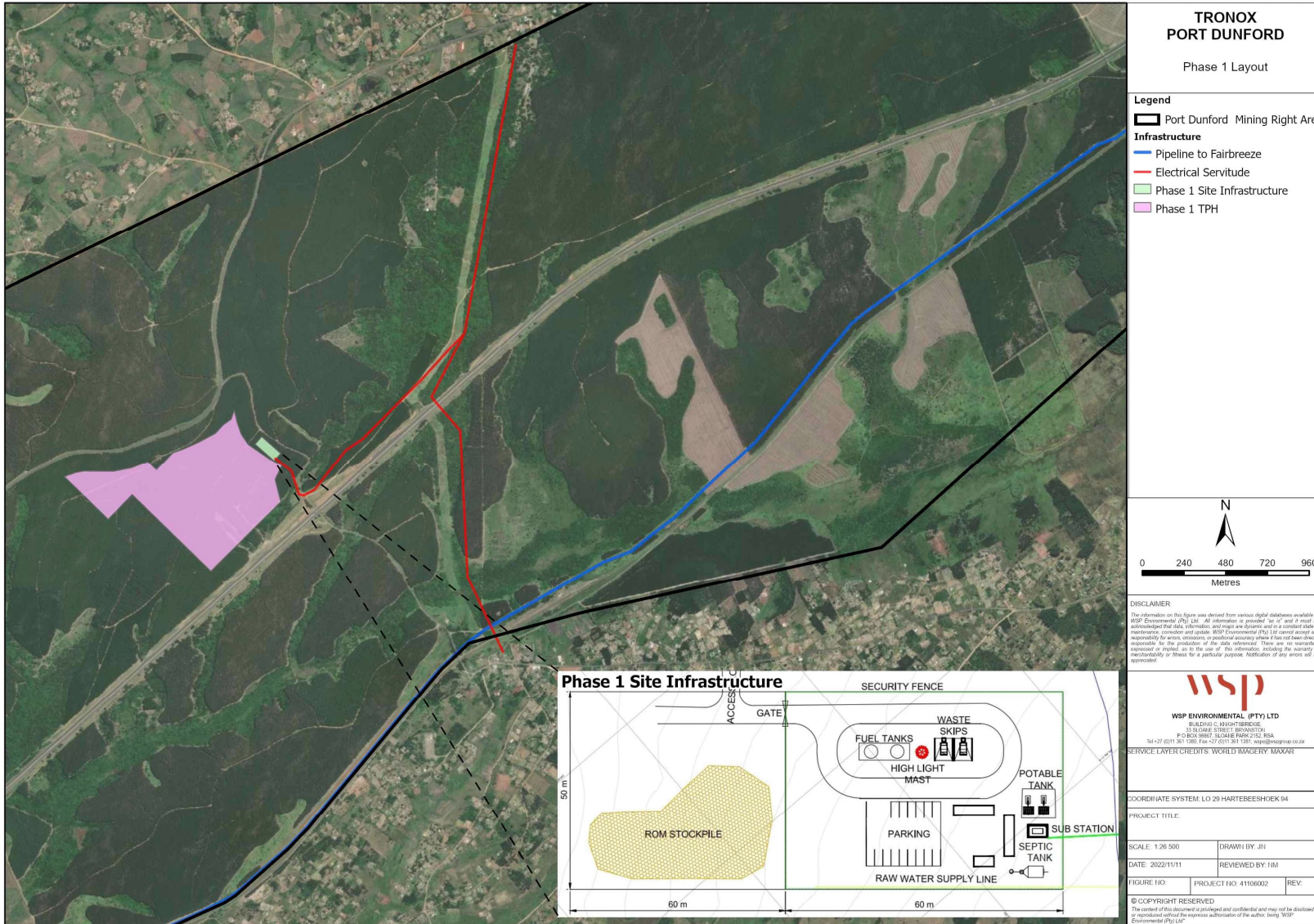
## 1.8 LISTED ACTIVITIES

A map showing the location of the infrastructure proposed for the two phases of the operation is provided in Figure 1-2 and Figure 1-3 below.

A description of the listed activities associated with the project is provided in Table 1-6.

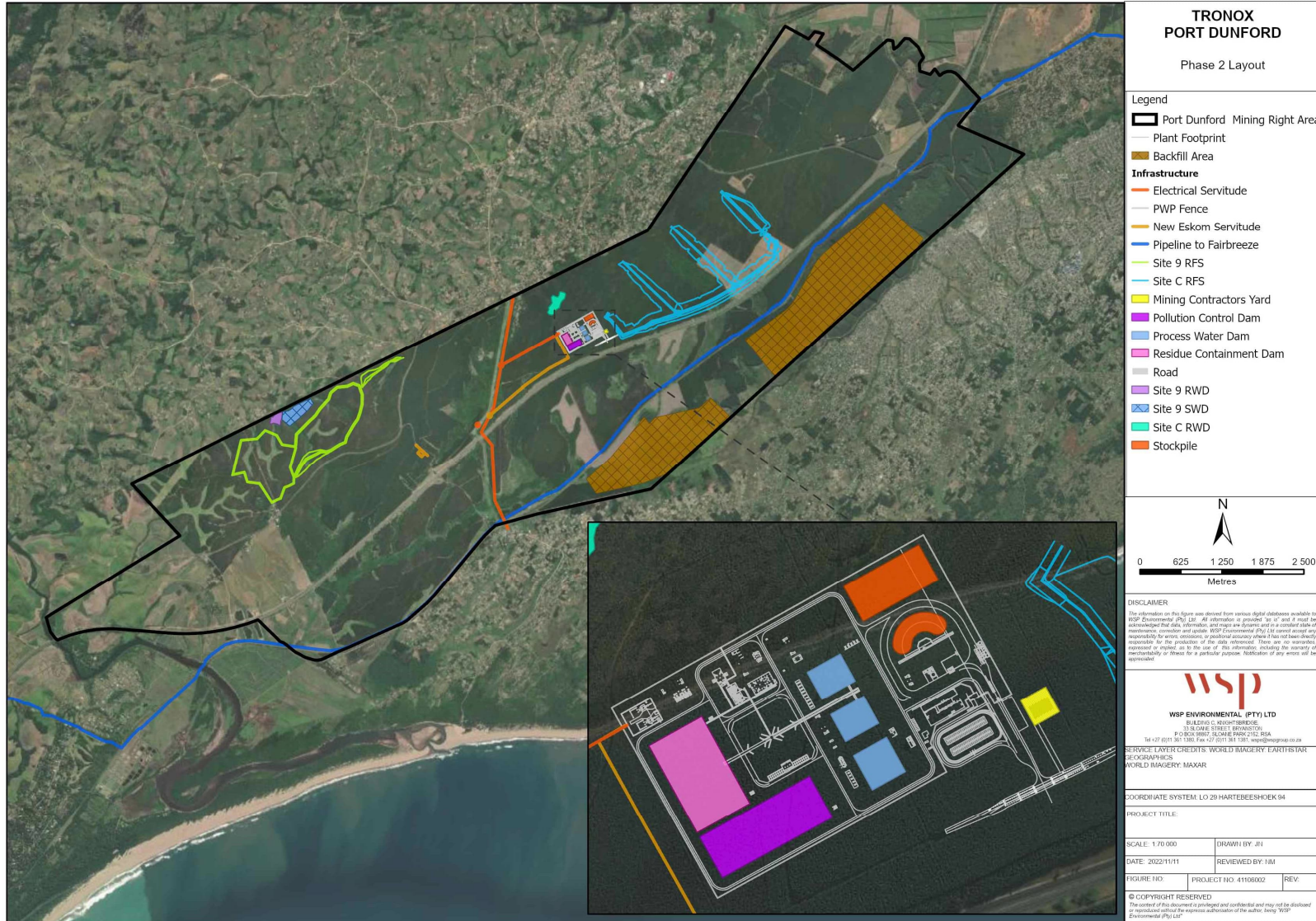
**Table 1-6: Listed activities associated with Phase 1 and 2 of the Port Durnford mining operation**

Relevant legislation	Listed activity
Listing Notice 1 (GN R. 983, as amended by GNR 327)	Activity 9,10,11,12,13,14, 16,19,24,25,28,45 and 56
Listing Notice 2 (GN R. 984, as amended by GNR 325)	Activity 6, 15,16 and 17
Listing Notice 3 (GN R. 985, as amended by GNR 324)	Activity 2, 3, 10, 12, 14, and 18
GN921 of 2003, Category A	Activity 1
GN921 of 2003, Category B	Activity 1, 7, 11



**Figure 1-2: Proposed Phase 1 infrastructure and layout (WSP, 2022)**





**Figure 1-3: Proposed Phase 2 infrastructure and layout (WSP, 2022)**

## 2 DETAILED DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

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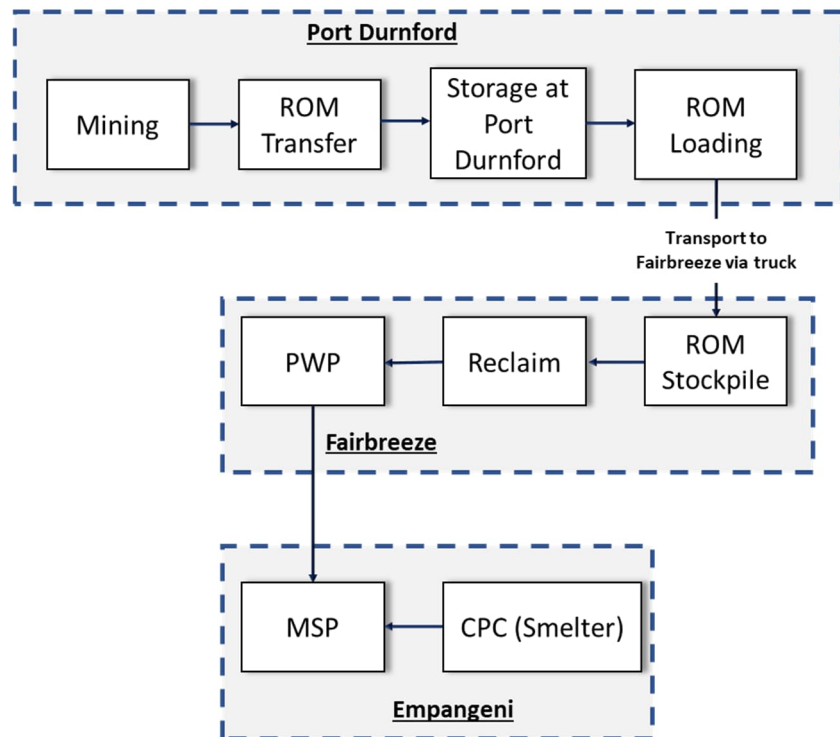
The scope of the current authorisation is for activities taking place as described in this section. Modifications at the receiving Fairbreeze and CPC operations and these authorisations are currently excluded from the scope of this study.

### 2.1 PHASE 1 MINING

Table 2-1 presents the main features with regard to the Phase 1 mining operation proposed for the Port Durnford Project.

**Table 2-1: Phase 1 mining operation**

Location	The location of the Phase 1 mining operations as can be seen in Figure 1-2 and will be located on the Remainder of Richards 16802.
Mining rate	70400 tpa
Mining process	The proposed low-rate (Phase 1) involves Port Durnford run-of-mine (ROM) material being mined by excavators and trucked to a ROM stockpile on the Port Durnford mining right area, from which it will be hauled on trucks to Fairbreeze mine.
Phase 1 programme	Phase 1 mining is intended for a 10 year period between 2025 and 2035.
Mineral processing	<p>No processing on site is proposed as part of the Phase 1 mining operation. ROM will be transported to Fairbreeze mine by truck on public roads for further processing.</p> <p>At Fairbreeze mine, it is intended that existing mined-out portions of the Fairbreeze orebody will be utilised for the stockpiling of the ROM. A hydraulic mining process will continue as per the current practise at Fairbreeze, and the hydraulically reclaimed ROM slurry will be pumped to the existing Fairbreeze Primary Wet Plant (PWP) for processing. As mentioned above, any changes to the Fairbreeze operations and authorisations as a result are currently excluded from the scope of work.</p> <p>The processed material will then be trucked to the existing Mineral Separation Plant (MSP) located at the Central Processing Complex (CPC) in Empangeni as part of the Fairbreeze product (see routing in Figure 2-3).</p> <p>The process flow for Phase 1 activities is presented below:</p>



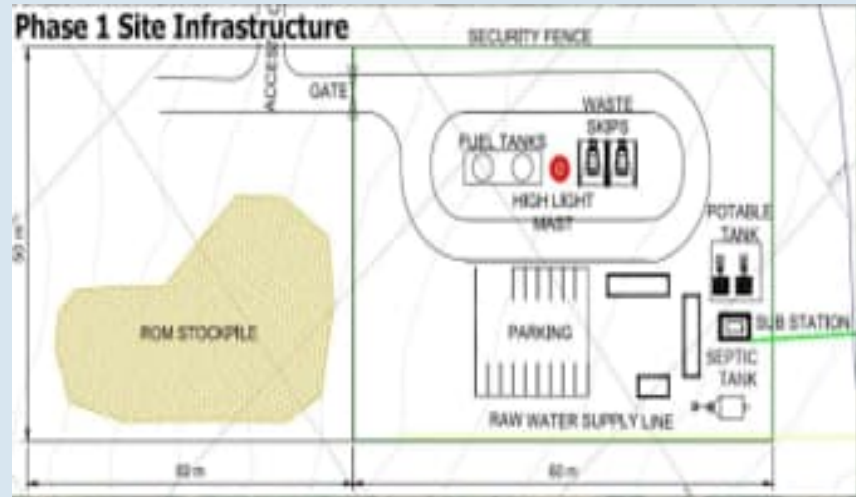
**Figure 2-1: Proposed Phase 1 Summary Process Block Diagram**

Project layout and infrastructure

The following infrastructure will be required on the Port Durnford Phase 1 mining site:

- Gravel access road from the R102 to the mine site. An existing road will be utilised for this purpose, but the road will need to be widened
- Temporary haul roads to the mining areas
- Offices and ablutions: Fully renovated containers will act as offices and ablution facilities.
- Parking
- Maintenance Workshop and Laydown area
- Electrical servitudes and substation (see further description under Associated infrastructure)
- Fuel and Lubricant Storage: Fuel tanks will be supported on a concrete surface bed with edge thickenings. A concrete bund wall will be constructed surrounding the fuel tanks. It is anticipated that a 23 m3 storage tank will be provided and it is estimated that 153 422 litres will be utilised per annum.
- High light mast
- Potable water tank
- ROM stockpile
- Septic tank
- Domestic and hazardous waste storage area

The proposed layout for the project is illustrated in Figure 2-2 below.



**Figure 2-2: Proposed Phase 1 Infrastructure (Hatch, 2020)**

<p>Associated infrastructure</p>	<p>The following additional infrastructure will be required to support Phase 1:</p> <p><b>Power supply</b></p> <p>The power supply for Phase 1 will be to service the administration offices. It is anticipated that additional power will be required by the mining contractor and will be diesel driven.</p> <p>It has been planned that power supply will be obtained from Eskom's existing medium voltage 22kV reticulation available for rural power distribution. Due to the relative low demand requirement, this is not considered a concern.</p> <p>A miniature substation (MSS) will be required for stepping down the Eskom 22kV to 400V for the mine offices distribution.</p> <p><b>Water Supply</b></p> <p>For Phase 1 of the mining operation water will be brought onto site via water bowsers. The primary water use on site will be dust suppression. It is anticipated that 4800 m3 per annum will be required for this phase of the project.</p>
<p>Employment requirements</p>	<p>It is currently estimated that there will be 25 employment opportunities available as a result of the Phase 1 mining operation.</p>

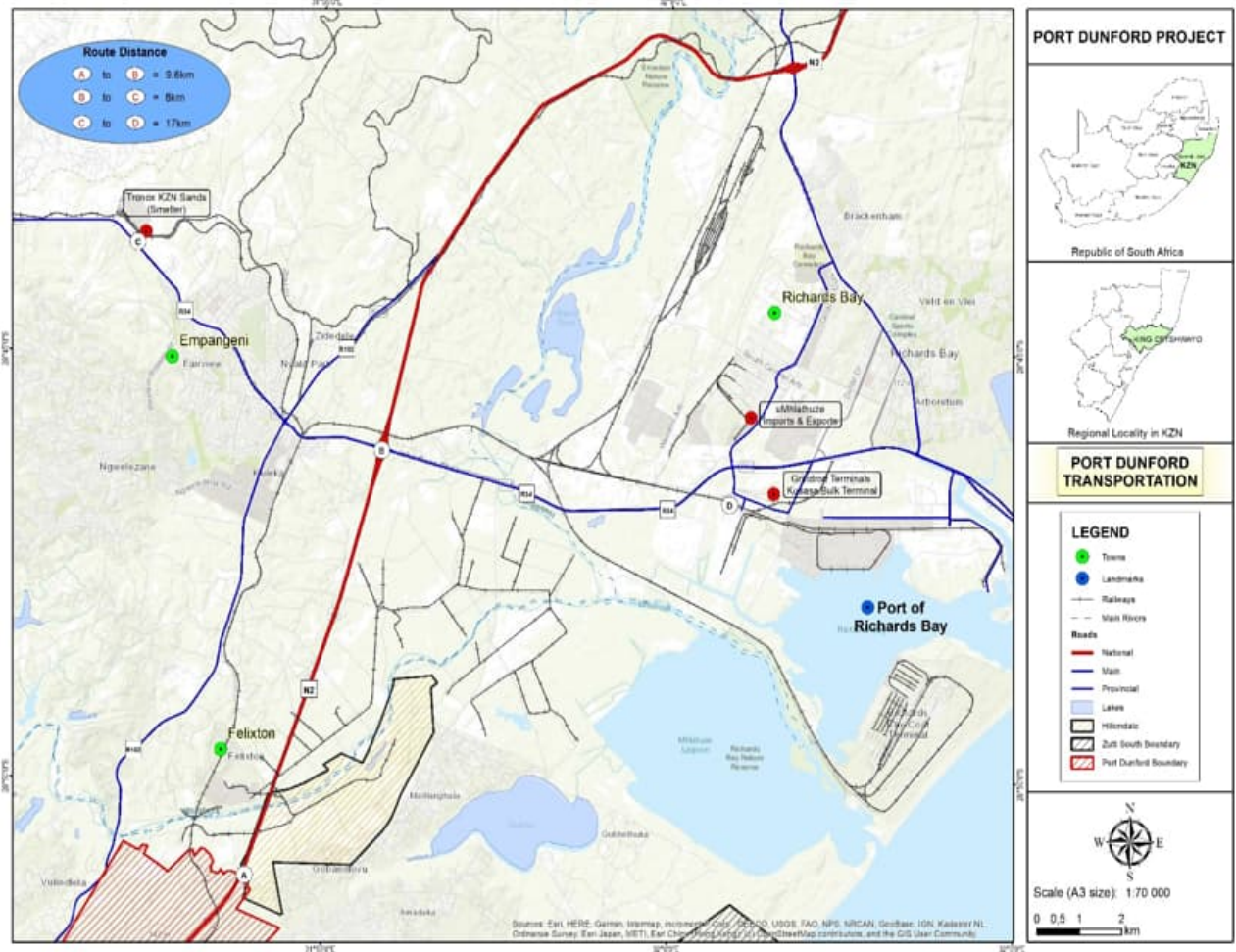

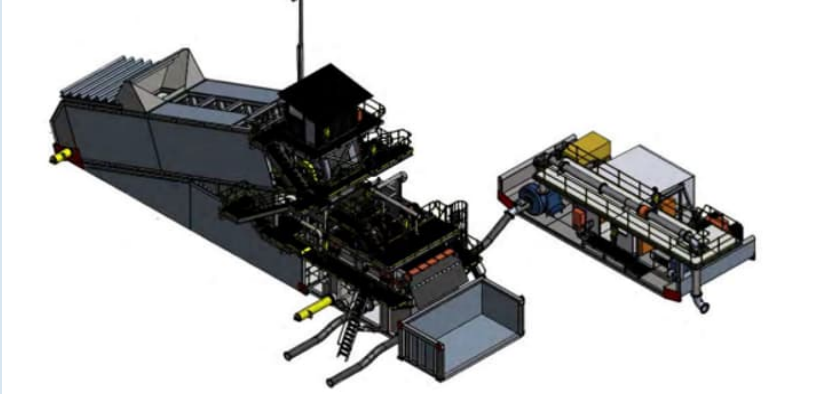


Figure 2-3: Proposed Phase 1 material transport routes (Tronox, Mine Works Programme, Nov 2022)

## 2.2 PHASE 2 MINING

Table 2-2: Phase 2 mining operation

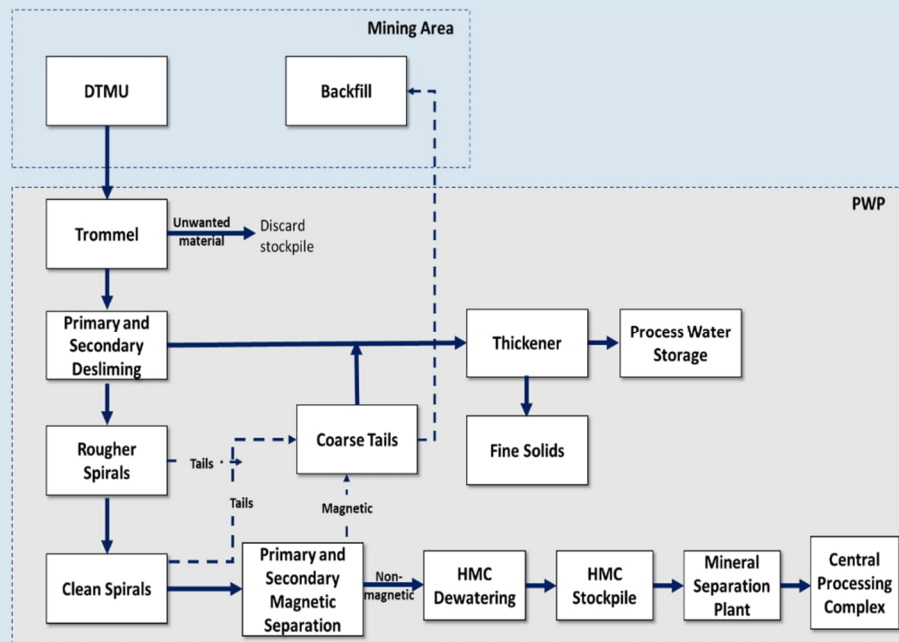
Location	The location of the Phase 2 mining operations as can be seen in Figure 1-3 and will be located on all the prospecting rights farms.
Mining rate	3000 tph
Summary of the Phase 2 operation	From 2036/2037 to the end of the Life of Mine (LoM), the low mining rate truck and shovel mining method will be ramped up by a 3000tph dozer trap mining units (DTMUs), and residue storage facilities (RSFs) will need to be constructed to contain the fines tailings from the Primary Wet Plant (PWP). All bulk services (such as power and raw water), and associated infrastructure to support this operation will also be required. The 3,000tph operation involves a full production facility which will consist of a new Primary Wet Plant (PWP) to be constructed to process the Port Durnford ROM material and produce heavy mineral concentrate (HMC) to be used as feedstock to the existing Mineral Separation Plant (MSP).

<p>Mining process</p>	<p>Dozer trap mining unit (DTMUs) fed by dozers are the preferred mining method for this phase. These units are skid mounted and designed to be mobile. It is intended that two of these units will be provided on the mining site. These are used to screen for vegetation, rocks and oversized materials which are then slurried and pumped to the PWP and pass through a trommel screen to remove further oversized material.</p>   <p><b>Figure 2-4: Typical DTMU Layouts (Tronox, 2022)</b></p>
<p>Phase 2 programme</p>	<p>Phase 2 mining is intended for the period 2037 until close of mine in 2074. The proposed sequence for mining activities is illustrated in Figure 2-6.</p>
<p>Mineral processing</p>	<p>At the PWP the following takes place:</p> <ul style="list-style-type: none"> <li>• Mined material will then be deslimed and placed through a spiral circuit to separate out the coarse tailings which will then be used for backfilling and for the establishment of the walls of the residue storage facilities.</li> <li>• The spiral concentrate is put through a magnetic separation circuit to remove the reject magnetite which is fed back into the coarse tailings circuit.</li> <li>• The non-magnetic material forms the HMC which reports to the PWP, MSP and ultimately the CPC.</li> <li>• Fine tailings is collected from the desliming process, thickener is added and process water retrieved before disposal on the residue storage facilities</li> </ul>

The PWP is designed to process 22,866,000 t/annum ROM at a nominal rate of 3,000t/h. The process will produce the following output streams:

- Heavy Mineral Concentrate (HMC)
- Coarse (+45µm) sand tails
- Fine (-45µm) sand tails

The process flow for Phase 2 activities is:



**Figure 2-5: Proposed Phase 2 Summary Process Block Diagram (Tronox, 2022)**

Project layout and infrastructure

The proposed mine layout plan is presented in Figure 1-3. The following infrastructure is proposed for the Phase 2 operations:

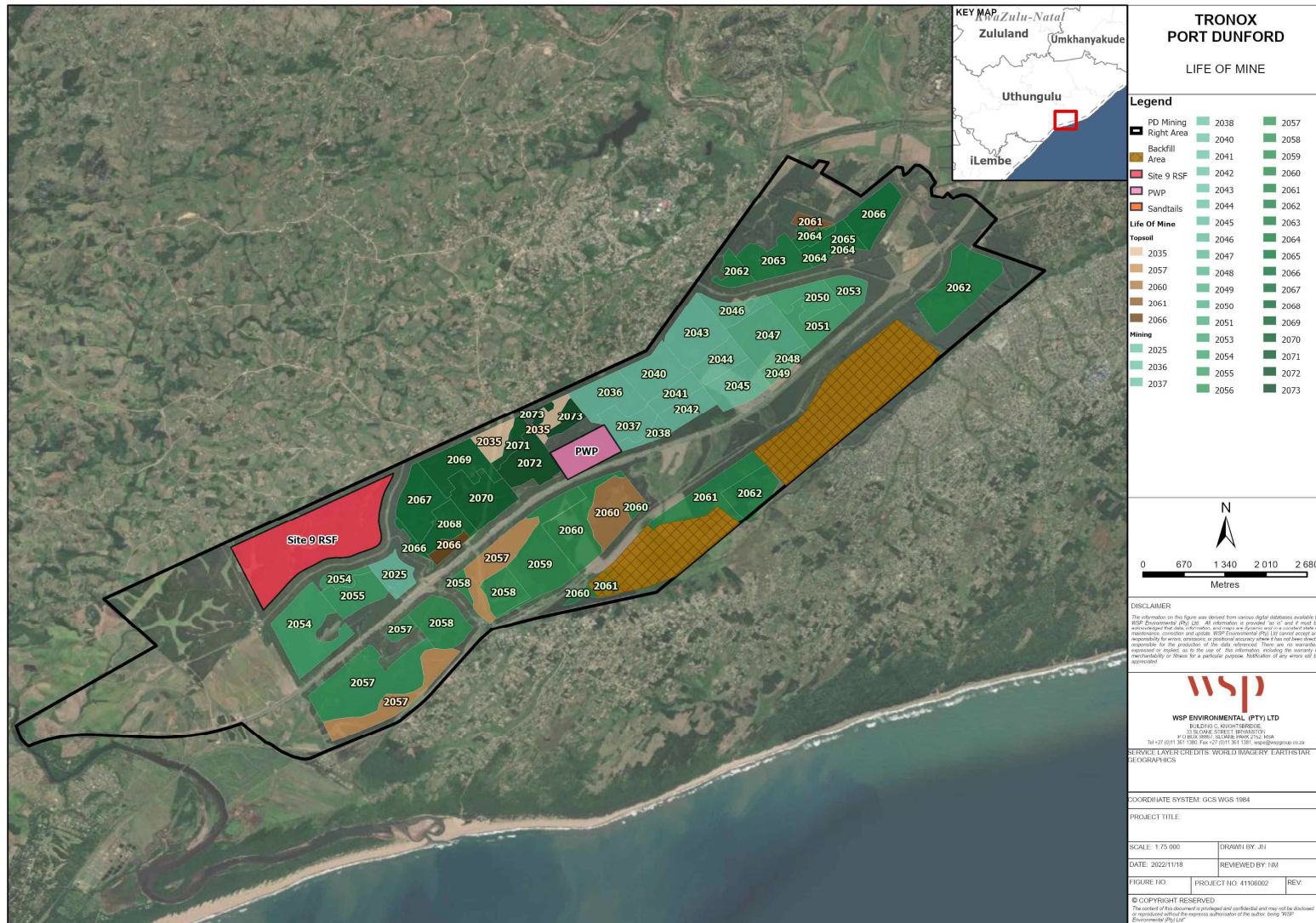
- Primary Wet Plant (PWP): which will produce heavy mineral concentrate (HMC) to be the used as feedstock at the existing MSP at CPC. The proposed layout for this facility is presented below and will include:
  - Feed preparation and fines removal area
  - Residue containment (48000m<sup>3</sup>) and pollution control dams (44000m<sup>3</sup>):
  - Gravity separation area
  - Magnetic separation area
  - Fine tails dewatering and pumping area
  - 33kV sub-station and power factor correction (PFC) Yards
  - Eskom Yard
  - Raw and process water storage and distribution area: Raw water will be stored in a single 10,000m<sup>3</sup> raw water dam. Process water will be stored in two 7,500m<sup>3</sup> dams connected by a common overflow sump
  - Compressed air plant: The PWP will be serviced by a single compressed air facility comprising of two compressors, two air receivers and two air dryers.
  - Potable water treatment plant: A standalone packaged potable water plant capable of supplying sufficient water for the total estimated personnel compliment

	<ul style="list-style-type: none"> <li>- Sewage treatment plant: a plant will be developed to accommodate the onsite personnel. Processed effluent from this treatment plant will be pumped to the process water dam.</li> <li>- Workshop and stores</li> <li>- Fine tails treatment area</li> <li>- HMC dewatering, stockpiling and reclaim area</li> <li>- MSP tails handling</li> <li>- Gypsum plant</li> <li>- Mine Complex including administration office with parking, control room, change house, mess, security office, laboratory and sample room</li> <li>- A fit for purpose and legally compliant fire water pumping station and distribution system is to be installed at the PWP. It will be fed directly from the raw water dam.</li> </ul> <ul style="list-style-type: none"> <li>• Access and haul roads:</li> <li>• Residue Storage facilities:</li> </ul> <p>Two RSFs will be constructed for the fines disposal as depicted in Figure 1-3. The western RSF located on Site 9 will be constructed ahead of mining and will provide storage space for the first three years, until the first phase of the RSF to be located on Site C has been constructed. Mining will start in Site C to provide an open area for the construction of the additional RSF.</p> <ul style="list-style-type: none"> <li>• Sand tailings disposal</li> </ul> <p>In addition to the fine's disposal, the sand tails will need to be deposited and is generally used to backfill the mining void. For the first 7 years while opening the area for the RSF, sand tails of about 95Mm<sup>3</sup> will need to be deposited outside of the mining void area.</p> <p>An area on the eastern side of the property has been earmarked for this initial sand tails deposition.</p> <ul style="list-style-type: none"> <li>• Temporary topsoil stockpiles</li> </ul> <p>Topsoil will be placed in areas that are excluded due to grade. These temporary stockpiles will be as close as possible to the mining area and will move with the mining front.</p>
<p>Associated infrastructure</p>	<p><b>Water Supply</b></p> <p>For Phase 2 of the mining operation Raw water will be supplied to Port Durnford from the existing uMhlathuze bulk water supply station directly to the raw water dam by a take-off from the main pipeline currently feeding Fairbreeze.</p> <p><b>Power supply</b></p> <p>It is currently proposed that the Phase 2 mining operation will be powered by two 88kV Eskom incoming overhead lines to the Port Durnford 33kV incoming substation via two 88/33kV step-down transformers.</p>
<p>Additional waste streams from CPC</p>	<p>The following tails products are received from the CPC for disposal with the various tails products at the PWP:</p> <ul style="list-style-type: none"> <li>• MSP coarse tails are received by tip truck from the MSP. It is tipped directly into a slurry hopper where it is slurried before pumping directly into the rougher sand tails tank for disposal with the sand tails. It is expected that total MSP tails received for disposal will be between 260 and 330 kt/annum.</li> <li>• Gypsum filter cake from the MSP is received via truck from the CPC and deposited on a dedicated stockpile. The cake is reclaimed and fed into a materials handling facility for re-slurrying before being fed to the thickener</li> </ul>





	underflow tank for disposal together with the fines to the RSF. It is estimated that between 4,800 and 9,600 t/annum will be received per annum.
Employment requirements	The phase 2 mining operation at Port Durnford will be of similar scale to the current Fairbreeze operation and largely act as a replacement reserve as production tails off at Fair breeze. Consequently, there will be few new job opportunities created however the Port Durnford operation provides opportunity for transition of the Fairbreeze workforce to the new operation.



**Figure 2-6: Proposed Phase 2 mining sequence**

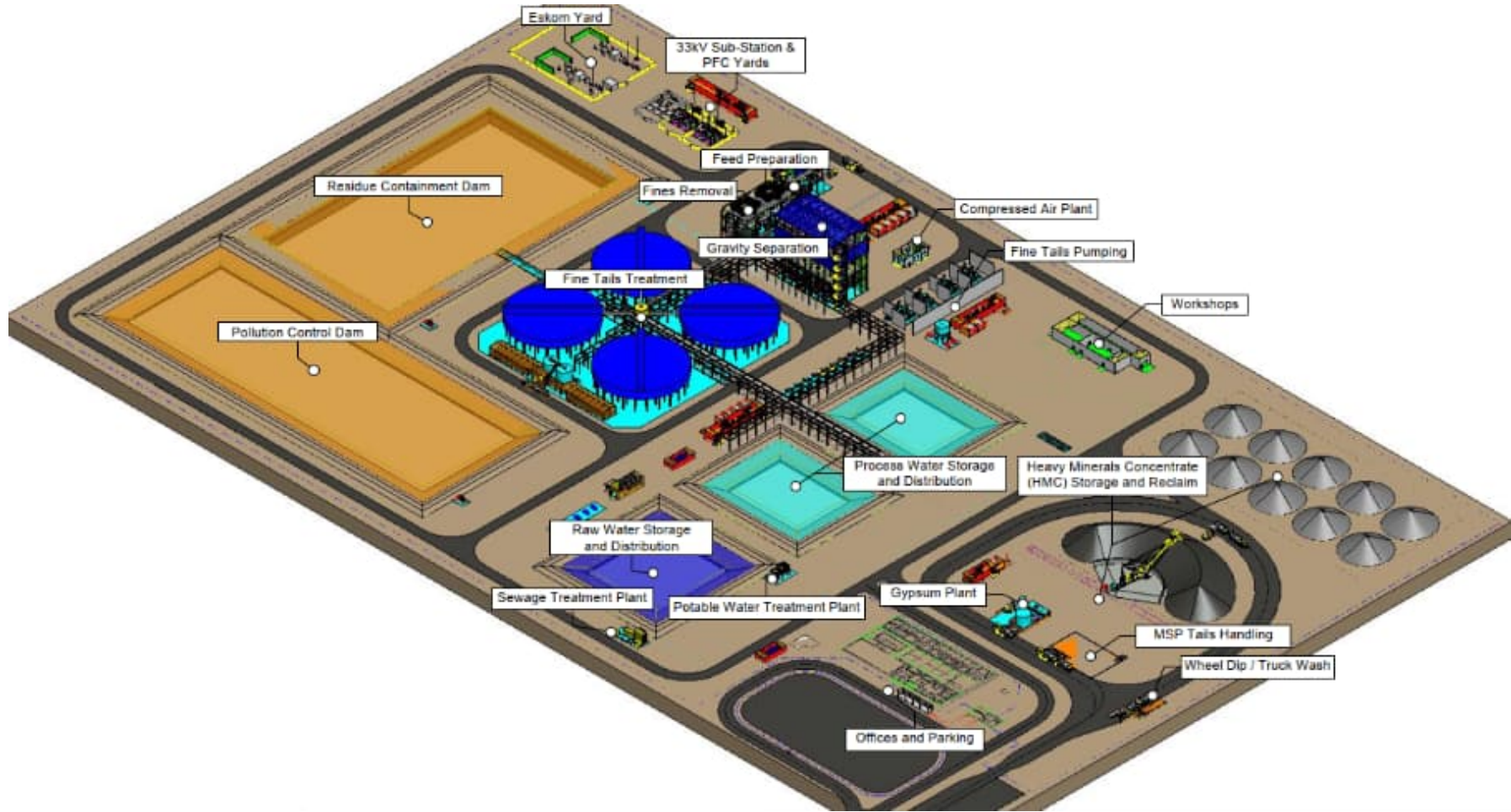


Figure 2-7: Proposed Phase 2 PWP Layout (Hatch, 2020)

## 2.3 PROJECT ACTIVITIES FOR EACH PHASE OF THE PROJECT

The following activities are anticipated for each phase of the project:

- **Construction Phase:**
  - Obtaining the rights to the mine the lease
  - Prior to site establishment all authorisations need to be in place
  - Forestry activities on the site to cease
  - Bush clearing will then commence two years prior to production
  - Bulk earthworks (in case of Phase 2)
  - Development of required service infrastructure on the site
  - Development and improvement of access roads
  - Site establishment
  - Topsoil stripping
  - Construction of project components
- **Operational Phase:**
  - Mining to commence. One DTMU mines a 200 m by 100 m block at a time. Progressive backfilling and rehabilitation to take place. Anticipated that 4 years post the commencement of mining in a block, this area will be subject to rehabilitation
  - Ongoing processing and supporting activities
  - Disposal of wastes from the mining process
- **Decommissioning Phase:**
  - Plant to be demolished and materials to be removed
  - Termination of all services to the area
  - Rehabilitation of all areas to be completed sufficiently to meet relevant commitments of the closure plan
- **Closure and post closure**
  - Ongoing monitoring of post-closure impacts and success of rehabilitation as required in terms of the closure plan

### 3 POLICY AND LEGISLATIVE CONTEXT

The Policy and Legislative Framework is presented in Table 3-1.

**Table 3-1: Applicable policies and legislation for the Port Durnford Project**

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILER THE REPORT	REFERENCE WHERE APPLIED
<p><b>The Constitution of the Republic of South Africa, 1996</b></p> <p>Under Section 24 of the Constitution of the Republic of South Africa, 1996 (the Constitution) it is clearly stated that:</p> <p>Everyone has the right to</p> <ul style="list-style-type: none"> <li>• an environment that is not harmful to their health or well-being; and</li> <li>• to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -               <ul style="list-style-type: none"> <li>○ Prevent pollution and ecological degradation;</li> <li>○ Promote conservation; and</li> <li>○ Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</li> </ul> </li> </ul>	<p>An EIA process is being undertaken to identify and determine the potential impacts associated with the proposed mining right application. The recommended mitigation measures will aim to ensure that the potential impacts are managed to acceptable levels to support the rights as enshrined in the Constitution.</p>
<p><b>Mineral and Petroleum Resource Development Act. 2002 (Act No. 28 of 2002) [MPRDA]</b></p> <p>The MPRDA sets out the requirements relating to the development of the nation’s mineral and petroleum resources. It also aims to ensure the promotion of economic and social development through exploration and mining related activities. The MPRDA requires that mining companies assess the socio-economic impacts of their activities from start to closure and beyond. Companies must develop and implement a comprehensive Social and Labour Plan (SLP) to promote socio-economic development in their host communities and to prevent or lessen negative social impacts.</p>	<p>The EIA will be undertaken to meet the requirements of the MPRDA read with the EIA Regulations, 2014 (as amended). Financial Provisioning and Closure Costs will be included in the EIA/ Environmental Management Programme (EMPr) Reports.</p>
<p><b>National Environmental Management Act, 1998 (Act No 107 of 1998, as amended) [NEMA] and NEMA EIA Regulations (GN. R. 982:2014 as amended by GN. R 326:2017).</b></p> <p>Certain environmental principles under NEMA have to be adhered to, to inform decision making for issues affecting the environment.</p>	<p>Activities associated with the proposed mining right application are as follows (see Table 3-2):</p> <ul style="list-style-type: none"> <li>• Listing Notice 1: Activity 9, 10, 11, 12, 13, 14, 16, 19, 24, 25, 28, 45, 56</li> <li>• Listing Notice 2: Activity 6, 15, 16, 17</li> <li>• Listing Notice 3: Activity 2, 3, 10, 12, 14, 18</li> </ul>

<p>Section 24 (1)(a) and (b) of NEMA state that:</p> <p>The potential impact on the environment and socio-economic conditions of activities that require authorisation or permission by law and which may significantly affect the environment, must be considered, investigated and assessed prior to their implementation and reported to the organ of state charged by law with authorizing, permitting, or otherwise allowing the implementation of an activity.</p> <p>The EIA Regulations 2014, were published under GN982 and came into operation on 8 December 2014. GN983, 984 and 985 (Listing Notices 1-3) identify activities requiring authorisation.</p>	<p>This Scoping Report and proceeding EIA report will be informed by the requirements of the NEMA and Regulations thereunder.</p>
<p><b>National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [NEMWA]</b></p> <p>A list of 'Category A', and 'Category B' and subsequently 'Category C' waste management activities were first published, in GN 718 of 3 July 2009. These were amended, with the latest amendment being GN 1094 at the time of submission of this application. Category A and B activities require a Waste Management Licence in terms of section 20(b) of NEMWA, whereas Category C activities require that the person conducting these activities complies with the relevant requirements or standards as stated in GN. R.921, as amended.</p>	<p>The NEMWA Listed Waste Management Activities listed under GN R.921, as amended, that are applicable to the proposed mining right application are as follows:</p> <ul style="list-style-type: none"> <li>• Category A: Activity 1</li> <li>• Category B: Activity 1, 7, 10</li> </ul>
<p><b>National Water Act, 1998 (Act No. 36 of 1998) [NWA]</b></p> <p>The NWA provides for the sustainable and equitable use and protection of water resources. It is founded on the principle that the National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest, and that a person can only be entitled to use water if the use is permissible under the NWA.</p> <p>GN R 704 was published in June 1999 and aims to regulate the use of water for mining and related activities for the protection of water resources and states the following:</p> <p>Regulation 4: No residue deposit, reservoir or dam may be located within the 1:100 year flood line, or less than a horizontal distance of 100 m from the nearest watercourse. Furthermore, person(s) may not dispose of any substance that may cause water pollution;</p> <p>Regulation 5: No person(s) may use substances for the construction of a dam or impoundment if that substance will cause water pollution; and</p>	<p>An Integrated Water Use Licence Application (IWULA) and an associated Integrated Water and Waste Management Plan (IWWMP) are anticipated to be required in terms of Section 21 of the NWA for the proposed mining operations.</p>

<p>Regulation 6 is concerned with the capacity requirements of clean and dirty water systems, and Regulation 7 details the requirements necessary for the protection of water resources.</p>	
<p><b>National Dust Control Regulations, 2013 in terms of the National Environmental Air Quality Act, 2004 (Act 39 of 2004, as amended) [NEMAQA]</b></p> <p>Section 32 of NEMAQA states that the Minister or MEC may prescribe measures relating to control of dust. These have been published in terms of the National Dust Control Regulations GN.R 827:2013.</p>	<p>An Air Quality Impact Assessment (AQIA) will be undertaken as part of the EIA Phase. The proposed activities will set out to abide by the NEMAQA and standards set out in the NAAQS. The required mitigation will be included in the EMP as part of the EIA Phase.</p>
<p><b>The National Heritage Resources Act, 1999 (Act 25 of 1999) [NHRA]</b></p> <p>This act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha) and where linear developments (including pipelines) exceed 300 metres in length. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA). This act is enforced through the National Heritage Regulations GN R 548 (2000).</p>	<p>A Heritage Impact Assessment will be undertaken as part of the EIA Phase.</p>
<p><b>The National Nuclear Regulator Act 47 of 1999</b> governs the following:</p> <p>“(a) the use, possession, production, storage, enrichment, processing, reprocessing, conveying or disposal of, or causing to be conveyed, radioactive material;</p> <p>(b) any action, the performance of which may result in persons accumulating a radiation dose resulting from exposure to ionizing radiation; or</p> <p>(c) any other action involving radioactive material”</p> <p>According to section 2 (b), this act does not apply to any action where the radioactivity concentrations of individual radioactive nuclides, or the total radioactivity content, are below the exclusion levels provided for in the safety standards.</p>	<p>It is known that the mined mineral sands at Fairbreeze, and the proposed Port Durnford operations, contain radioactive elements that may pose some exposure risk.</p> <p>It is anticipated that a radioactivity Impact Assessment will be required.</p>
<p><b>The Noise Control Regulations (R 154 GG 13717 of 1992)</b></p> <p>These regulations have the following definition:</p> <ul style="list-style-type: none"> <li>• nuisance noise as, “any sound which disturbs or impairs or may disturb or impair the convenience or peace of any person”; and</li> </ul>	<p>A Noise Impact Assessment, including modelling, impacts and proposed mitigation measures will be undertaken for the EIA Phase</p>

<ul style="list-style-type: none"> <li>• disturbing noise as, “any noise level which exceeds the zone sound level or, if no zone sound level has been designated, a noise level which exceeds the ambient sound level at the same measuring point by 7 dBA or more”.</li> <li>• Regulation 4 states, “No person shall make, produce or cause a disturbing noise, or allow it to be made, produced or caused by any person, machine, device or apparatus or any combination thereof”.</li> </ul>	
<p><b>National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) [NEM:BA]</b></p> <p>The NEM:BA regulates the management and conservation of the biodiversity of South Africa within the framework provided under NEMA. This Act also regulates the protection of species and ecosystems that require national protection and also takes into account the management of alien and invasive species. The following regulations which have been promulgated in terms of the NEM:BA are also of relevance:</p> <ul style="list-style-type: none"> <li>• Alien and Invasive Species Lists, 2014 published (GN R.599 in GG 37886 of 1 August 2014);</li> <li>• National Environmental Management: Biodiversity Act, 2004: Threatened and Protected Species Regulations; and</li> <li>• National list of Ecosystems Threatened and in need of Protection under Section 52(1) (a) of the Biodiversity Act (GG 34809, GN R.1002, 9 December 2011).</li> </ul>	<p>Permits will be required in terms of this Act for the carrying out of a restricted activity involving a specimen of a listed threatened or protected species. The potential for this will be identified through the EIA Process, but detailed site walk throughs upon the fixture of the infrastructure location will be required to inform these permit applications.</p>
<p><b>National Forests Act (No 84 of 1998)</b></p> <p>The purposes of this Act are to—</p> <ul style="list-style-type: none"> <li>• promote the sustainable management and development of forests for the benefit of all;</li> <li>• create the conditions necessary to restructure forestry in State forests;</li> <li>• provide special measures for the protection of certain forests and trees;</li> <li>• promote the sustainable use of forests for environmental, economic, educational, recreational, cultural, health and spiritual purposes;</li> <li>• promote community forestry;</li> <li>• promote greater participation in all aspects of forestry and the forest products industry</li> </ul>	<p>Authorisation will be required for the destruction, removal or damage to protected tree species in accordance with this act. This EIA will identify the potential for this.</p>



<p>by persons disadvantaged by unfair discrimination.</p>	
<p><b>Kwazulu-Natal Planning and Development Act, 2008 (Act No. 06 of 2008)</b></p> <p>The mining of land, and its associated activities constitutes “development” as defined in the KZNDPA. Since the proposed project is situated within the area of the jurisdiction of the Umhlathuze Municipality prior approval is required of the Municipality in terms of the following provisions of the KZNDPA:</p> <ul style="list-style-type: none"> <li>• Section 38(1) – Chapter 4;</li> <li>• Section 21(1) – Chapter 3, and</li> <li>• Section 60(1) – Chapter 6.</li> </ul> <p>These sections detail requirements for an application to be made to the Municipality, seek approval for any subdivisions of land that may be required and seek approval for any restrictions on the land that may be changed</p>	<p>Rezoning of the land from agricultural (the current land use) to mining, will be required from uMhlathuze Local Municipality.</p>
<p><b>Mines Health and Safety Act (No 29 of 1996)</b></p> <p>The Mines Health and Safety Act (No. 29 of 1996) provides for the health and safety of employees and other persons at mines, such as communities.</p>	<p>Tronox will need to comply with all requirements of the Mines. Health and Safety Act No 29 of 1996.</p>
<p><b>GNR1147 Financial Provisioning Regulations), 2015</b></p> <p>The Financial Provisioning Regulations prescribe methods for determining the quantum of financial provision for rehabilitation and mechanisms for providing for it. Section 41 (1) of the MPRDA has been repealed and Section 24P of the NEMA, as amended, which provides that the holder of a mining right must make financial provision for rehabilitation of negative environmental impacts. The financial provision must guarantee the availability of sufficient funds.</p>	<p>The Financial Provisioning Regulations are applicable to rehabilitation and closure plans as they prescribe the minimum content of an annual rehabilitation plan and the minimum content of a final rehabilitation, decommissioning and mine closure plan.</p> <p>This will be finalised and included in the EIA Report.</p>
<p><b>GN R527 (MPRDA Regulations), 2004</b></p> <p>Regulation 527 (GN R. 527) specifies that the EMP must include environmental objectives and specific goals for mine closure. The applicant for a mining right must make prescribed financial provision for the rehabilitation or management of negative environmental impacts, which must be reviewed annually. R527 provides specific principles for mine closure including safety and health, residual and latent environmental impacts etc.</p>	<p>A preliminary EMP is provided in this report but a comprehensive EMPr will be compiled during the assessment phase of the project.</p>

### 3.1 LISTED ACTIVITIES

The listed activities that have been identified in terms of NEMA and NEMWA are detailed in Table 3-2. A full Integrated EIA Process is being undertaken to address the authorisation thereof.

**Table 3-2: Listed activities anticipated for the Port Durnford Mining Project**

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
Pipelines for the transportation of stormwater, raw water and potable water. Potable/raw water to be sourced from uMhlatuze River bulk water supply station (for phase 2 of the project).	1688m	9	Listing Notice 1 - GNR 327 The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water- (i)with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more etc; excluding where- such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve; or where such development will occur within an urban area.	
Pipelines for the transportation of water (sewage, raw water, process water, stormwater)	1255m	10	Listing Notice 1 - GNR 327 The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, wastewater, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or	

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
			(b) where such development will occur within an urban area	
33kV and 88kV Powerlines to be developed.	14.29ha	11	<p>Listing Notice 1 - GNR 327</p> <p>The development of facilities or infrastructure for the transmission and distribution of electricity—</p> <p>(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or</p> <p>(ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more;</p> <p>excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is —</p> <p>(a) temporarily required to allow for maintenance of existing infrastructure;</p> <p>(b) 2 kilometres or shorter in length;</p> <p>(c) within an existing transmission line servitude; and</p> <p>(d) will be removed within 18 months of the commencement of development.</p>	
Mining pits and related infrastructure in stream and/or within a wetland	1952ha	12	<p>Listing Notice 1 - GNR 327</p> <p>The development of— dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p>	

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
			(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; —	
Site C Return water dam (90,000m <sup>3</sup> ) Site 9 stormwater dam (320,000m <sup>3</sup> ) Site 9 return water dam (90,000m <sup>3</sup> ) Potable water tank	Site C RWD = 4.7 ha  Site 9 RWD = 2.42ha  Site 9 SWD = 8.58 ha	13	Listing Notice 1 - GNR 327  The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.	Category A, Activity 1; Category B Activity 1
Bulk fuel storage (80kl)	80m <sup>3</sup>	14	Listing Notice 1 - GNR 327  The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.	
Raw water treatment	991.57m <sup>2</sup>	16	Listing Notice 1 - GNR 327  The development and related operation of facilities for the desalination of water with a design capacity to produce more than 100 cubic metres of treated water per day.	Category B, Activity 7
Mining pits and related infrastructure in stream and/or within a wetland	1952ha	19	Listing Notice 1 - GNR 327  The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving —	

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
			<p>will occur behind a development setback;</p> <p>is for maintenance purposes undertaken in accordance with a maintenance management plan;</p> <p>falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies</p>	
Development of haul roads within the mine footprint.	4km	24	<p>Listing Notice 1 - GNR 327</p> <p>The development of a road— with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres</p>	
Sewage treatment plant	80m <sup>2</sup>	25	<p>Listing Notice 1 - GNR 327</p> <p>The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2 000 cubic metres but less than 15 000 cubic metres.</p>	Category A, Activity 1; Category B Activity 1
Re-zoning application required for change in land use from agricultural to mining.	4 733.64 ha	28	<p>Listing Notice 1 - GNR 327</p> <p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land</p>	

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
			to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	
Expansion of raw water pipeline infrastructure for water from Mhlatuzi Water system currently supplying Fairbreeze Mine	1688m	45	Listing Notice 1 - GNR 327 The expansion of infrastructure for the bulk transportation of water or storm water where the existing infrastructure— (i) has an internal diameter of 0,36 metres or more; or (ii) has a peak throughput of 120 litres per second or more; and (a) where the facility or infrastructure is expanded by more than 1 000 metres in length; or (b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more;	
Upgrade and expansion of existing road	44m2	56	Listing Notice 1 - GNR 327 The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre— (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres; excluding where widening or lengthening occur inside urban areas.	
Water use activities: Residue storage facilities (RS <sup>f</sup> ) Stormwater control dam Process water dam Return water dam (RWD) Stormwater dam (SWD)	Site C RSF = 113ha  Site 9 RSF = 66.2ha	6	Listing Notice 2 - GNR 325 The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent.	Category B, Activity 11

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
<p>The processing of ore in the Phase 2 PWP may trigger this activity in terms of AEL or WUL requirements</p>	<p>Site C RWD= 4.7ha Site 9 RWD = 2.42ha Site 9 SWD = 8.58ha Process water dam = 1.16ha Pollution control dam = 1.79ha Residue containment dam = 1.82ha</p>			
<p>Vegetation clearing to allow for mining</p>	<p>4 733.64 ha</p>	<p>15</p>	<p>Listing Notice 2 - GNR 325 The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for – the undertaking of a linear activity; or maintenance purposes undertaken in accordance with a maintenance management plan.</p>	
<p>This is an application for a mining right.</p>	<p>4 733.64 ha</p>	<p>17</p>	<p>Listing Notice 2 – GNR 325 Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource; or (b) the primary processing of a mineral resource including winning, extraction, classifying,</p>	

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
			<p>concentrating, crushing, screening or washing;</p> <p>but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</p>	
<p>Site 9 and Site C RSF dam wall</p> <p>Stormwater Dam</p>	<p>Site C RSF = 113ha</p> <p>Site 9 RSF = 66.2ha</p> <p>Stormwater Dam = 8.58ha</p>	16	<p>Listing Notice 2 - GNR 325</p> <p>The development of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the highwater mark of the dam covers an area of 10 hectares or more.</p>	Category B, Activity 11
<p>Vegetation clearing to allow for mining in a Critical Biodiversity area as identified in the DFFE screening tool.</p>	4 733.64 ha	12	<p>Listing Notice 3 – GNR 324</p> <p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>v. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p> <p>xii. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; or</p>	



NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
Development within 32 meters of a watercourse in a Critical Biodiversity area as identified in the DFFE screening tool.	975.76ha	14	<p>Listing Notice 3 – GNR 324</p> <p>The development of—</p> <p>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or</p> <p>(ii) infrastructure or structures with a physical footprint of 10 square metres or more</p> <p>where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse,</p> <p>measured from the edge of a watercourse;</p> <p>vii Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p> <p>viii Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority.</p>	
Bulk fuel storage (80kl) in a Critical Biodiversity area as identified in the DFFE screening tool	80m3	10	<p>Listing Notice 3 – GNR 324</p> <p>The development and related operation of</p> <p>facilities or infrastructure for the storage, or</p> <p>storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.</p> <p>ix Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p>	

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
			xii Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority	
Installation of a communication mast in a Critical Biodiversity area as identified in the DFFE screening tool	1ha	3	<p>Listing Notice 3 – GNR 324</p> <p>The development of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast or tower—</p> <p>(a) is to be placed on a site not previously used for this purpose; and</p> <p>(b) will exceed 15 metres in height—</p> <p>but excluding attachments to existing buildings and masts on rooftops.</p> <p>vi A protected area identified in terms of NEMPAA, excluding conservancies</p> <p>viii Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p> <p>xi Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority</p>	
Development of a reservoir	2ha	2	<p>Listing Notice 3 – GNR 324</p> <p>The development of reservoirs excluding dams, with a capacity of more than 250 cubic metres.</p> <p>vii Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p> <p>xi Sensitive areas as identified in an environmental management</p>	

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m <sup>2</sup>	LISTED ACTIVITY	APPLICABLE LISTING NOTICE	NEMWA ACTIVITY
			framework as contemplated in chapter 5 of the Act and as adopted by the competent authority	
Expansion of existing roads to be used as haul roads	44m <sup>2</sup>	18	Listing Notice 3 – GNR 324  The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.  viii. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;  xi. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;	

### 3.2 PERIOD FOR WHICH ENVIRONMENTAL AUTHORISATION IS REQUIRED

The authorisation will be required for the duration of the mining operations. The anticipated life of mine is ~50 years.

## **4 PROJECT ALTERNATIVES AND NEED AND DESIRABILITY**

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### **4.1 NEED AND DESIRABILITY**

Fairbreeze Mine will be reaching the end of its life span within the next fifteen years. Tronox's previous mining operation Hillendale is currently in the mine closure stage of its life.

It is intended that the Heavy Mineral Concentrate (HMC) produced at Port Durnford will be used to replace Fairbreeze mine commitments to the Mineral Separation Plant (MSP) and to the Empangeni Smelter. The mineral suite in the Port Durnford ore body closely matches that of the Fairbreeze ore bodies, with all previous test work showing that Port Durnford mineral products would effectively be a 'like for like' replacement for Fairbreeze mineral products.

The Port Durnford Project will thus secure continued feed to the CPC in Empangeni, allow for the continued supply of customers and realise sustained economic benefits for:

- National gross domestic product (GDP);
- Tronox;
- its employees;
- the communities that benefit from the Social and Labour Plan; and
- and the region within which it operates.

### **4.2 DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED SITE AND MOTIVATION FOR THIS**

The proposed project has been subject to multiple studies to date which have informed project feasibility (see Section 5.1) and decisions with regard to project alternatives, the preferred site and the site layout. The results of these investigations are detailed further in Section 4.3.

The preferred site has been selected as Tronox already has the prospecting rights to a large part of the Port Durnford Project, the reserves on this site make the project financially feasible and Tronox is in the process of applying for a mining right. Adjacent potential mining areas (Penarrow and Waterloo) are also under consideration given their location to the Port Durnford prospecting rights area.

### **4.3 DETAILS OF ALL ALTERNATIVES CONSIDERED**

#### **4.3.1 SITE ALTERNATIVES AND MOTIVATION FOR THE PREFERRED SITE**

The location of the heavy minerals and the availability of the mining rights has informed the site selection for Phase 2 of the Project. No alternative site locations can be considered as a result.

Numerous site alternatives were considered for Phase 1 of the project. Factors that were considered in the selection of the preferred site were:

- The location of the high grade ore;
- Proximity to existing infrastructure, specifically access roads;
- Topographically uniformity and ease of mining; and
- Avoidance of environmentally sensitive areas

### 4.3.2 LAYOUT ALTERNATIVES

The final layout plans for Phase 1 and 2 of the project are presented in Figure 1-2 and Figure 1-3.

In the case of Phase 2, several factors have been considered in the selection of the site layout.

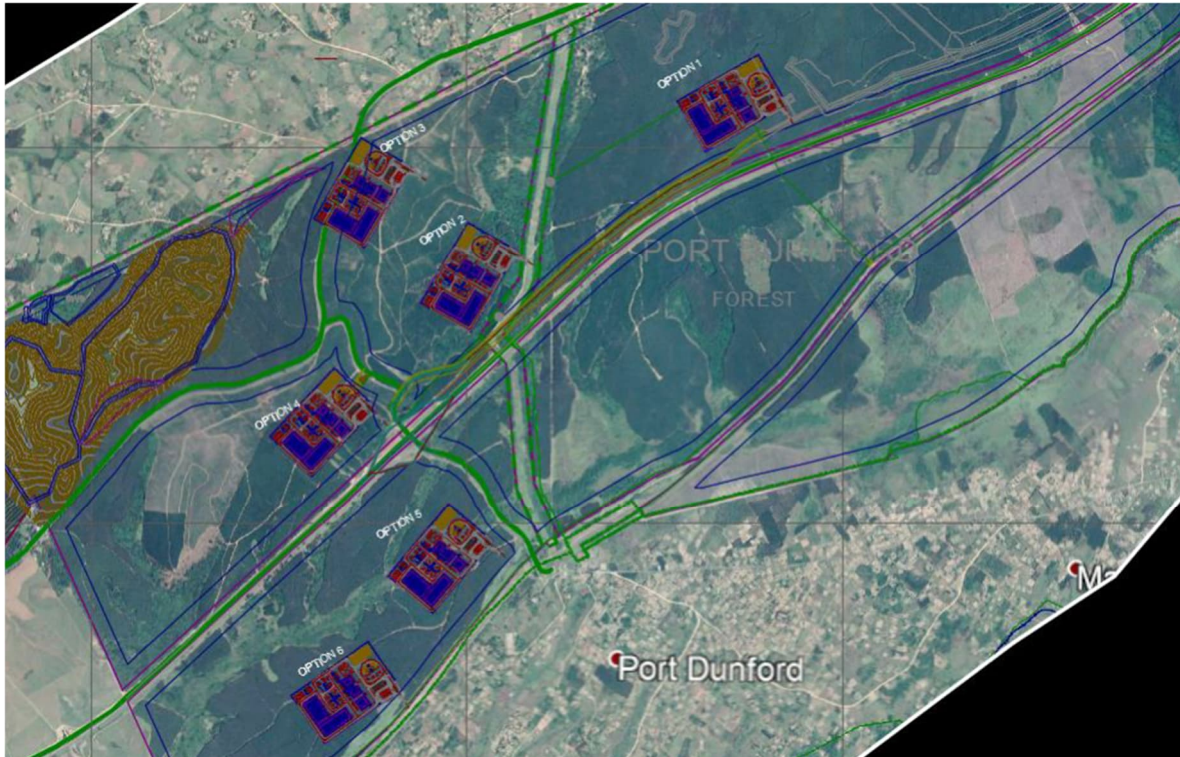
These include the following:

- Environmental constraints and exclusion areas with a buffer of 60 m have been accommodated in the plan. Exclusion zones for mining activities, in addition to environmentally sensitive areas include the plant area, residue storage facilities and roads and infrastructure;
- The mining grades anticipated with in the area – areas anticipated to be of lower grade (below 2.5%) will not be mined;
- An angle of repose of 30 degrees is required for all mining area boundaries; and
- Need to avoid the sterilisation of ore reserves in the case of RSFs, sand tailings areas and temporary topsoil stockpiles.

The layout may be subject to change on the basis of the results of the EIA

With regard to the location of the PWP for Phase 2 of the project, several options for the location thereof have been considered to date as can be seen in Figure 4-1. Option 1 was selected as the preferred siting for the following reasons:

- Lower pumping and logistics costs;
- Shorter distance to the mine reserve centroid;
- Placement outside of the anticipated mining areas;
- Shorter distance to the RSFs
- Most effective use of natural terrain to minimise the bulk earthworks quantities required for terracing



**Figure 4-1: Proposed PWP layout alternatives (Hatch, 2020)**

### 4.3.3 MINING METHOD ALTERNATIVES

For Phase 1, given the low scale of the mining activities, the preferred mining method from an economical perspective makes use of truck and front end loaders.

For Phase 2 there were two mining methods under consideration, of which the use of DTMU's has been selected as the preferred technology. Considerations were the following:

- DTMU – Dozer trap mining unit (as described in Section 2.2)
- Tracked Bin – Excavator with a mobile bin and mobile conveyor. The mobile conveyor would then feed a stationary conveyor

The following factors were considered in the selection of the preferred mining method, the DTMU:

- Machine productivity;
- Costs associated with each unit;
- Additional infrastructure requirements;
- Number of units required;
- Proven track record of the technology;
- Wear and tear on the equipment; and
- Suitability to the topography of the mining area.

### 4.3.4 TRANSPORTING OF ROM DURING PHASE 1

Two routes from Port Durnford to Fairbreeze have been considered, with one route along the N2 highway, and the other alternative using secondary roads as per Figure 4-2 and Figure 4-3 respectively. The N2 route is slightly shorter at 18.7km versus 20.1km for the secondary roads route. Both options remain under consideration.

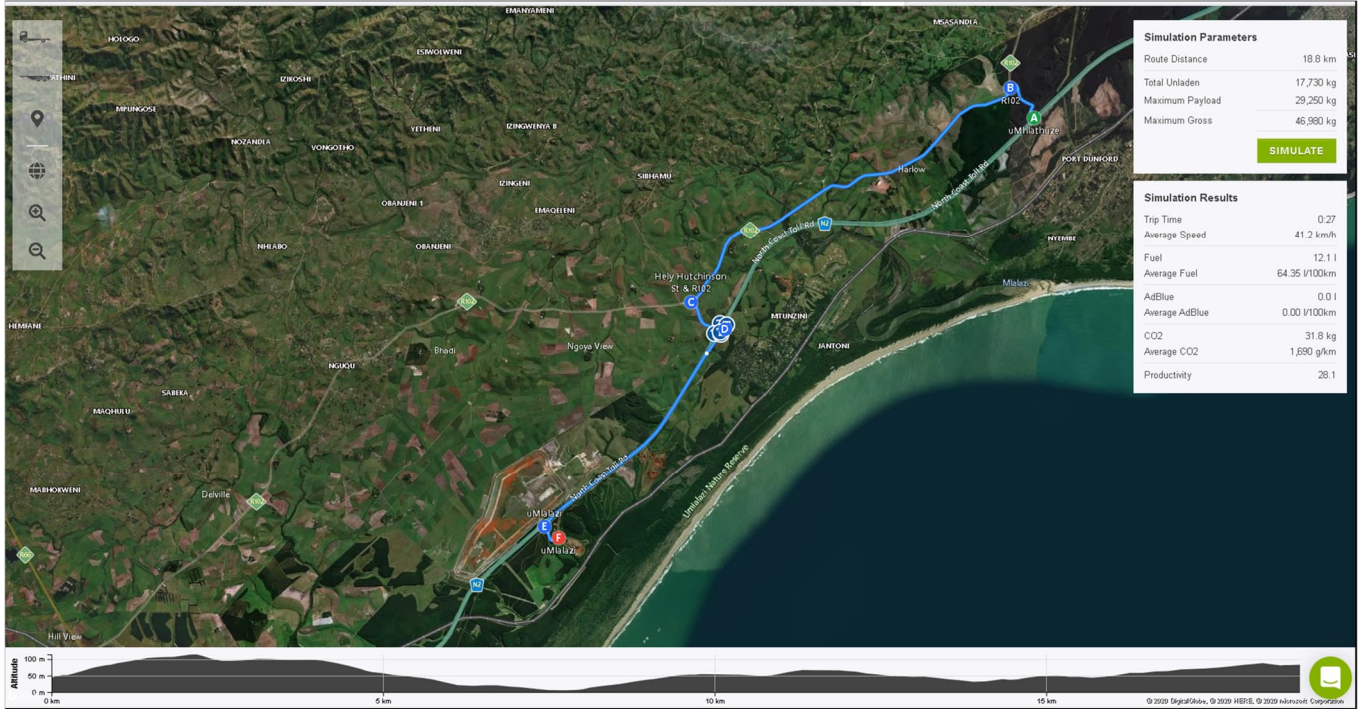


Figure 4-2: N2 Highway Route (Hatch 2020)



Figure 4-3: Secondary Roads Route (Hatch 2020)

#### 4.3.5 SELECTION OF THE ACCESS ROAD DURING PHASE 2

Two main roads are running adjacent to the PWP site. These are the N2 highway to the south and the R102 to the north. Three options have been considered for access to the PWP:

- Use of the existing N2 highway intersection north-east of the plant as your main access road;
- Change the existing N2 highway underpass and slipways onto the N2; and
- Create a new N2 highway intersection inclusive of a bridge spanning over the N2.
- Advantages and disadvantages of these were analysed further as per Table 4-1.

**Table 4-1: Comparison of Site Access Options**

Access Road Option	Advantage	Disadvantage
Option 1 (Use existing N2 intersection)	Existing intersection thus no work required on N2	Intersection is approximately 5km away from PWP
	Capacity to accommodate high amounts of traffic	Intersection design required at road tie-in point to ensure safe access from both ways.
	Accessible from R102	Traffic impact study required
Option 2 (Change existing underpass into an intersection)	Closer to PWP than Option 1 (3.5km)	Permission required to tie into N2
	There is an existing underpass and therefore other than tying in the slipways there is no modification required to N2	Possible upgrade required on existing road – existing condition to be investigated
	Accessible from both sides of N2	High volume of traffic due to local community use
	Community benefits	Approval required from SANRAL – wayleave applications
	Access from existing R102 is a possibility	Traffic impact study required
Option 3 (Bridge over highway)	Short access road to PWP	High costs involved
	Accessible from both sides of N2	Approval required from SANRAL – wayleave applications
		Traffic impact study required

Based on PWP location it was decided that Option 2 would be most feasible. This will also benefit the local community that can make use of this road to access the N2. Currently a self-made gravel road is used to gain access to the N2 in the vicinity of the underpass. This is unsafe and by adding slipways and creating an intersection using the underpass that can be used by the local community, it will assist in mitigating the risk of a potentially fatal accidents.



#### **4.3.6 SCHEDULING ALTERNATIVES**

Phase 1 of the proposed Port Durnford mining operation has been proposed for the commencement of the project given that operations at Fairbreeze will be continuing and therefore the market demand can be largely met. With the closure of the Fairbreeze mine, operations at Port Durnford will ramp up to ensure continued product is supplied.

In terms of the mining sequence for Phase 2, the initial focus is on creating space for the RSF on Site and hence this will be the first mining block that is mined.

#### **4.3.7 NO-GO ALTERNATIVE**

The 'no-go' option will be a scenario in which there will be no mining. The reserves will not be mined, and no income generation will be realised. The area will remain a forestry area.

Should the mining project not proceed, the continued ability to meet market demand will not be realised. Income that would have been realised as a cash injection into secondary industries such as contractors, manufacturers and suppliers will not take place. In addition to this, the SLP will not be implemented. This will result in no investment within the local community, and as a result there will be a loss in the potential for community upliftment.

### **4.4 FINAL SITE LAYOUT PLAN**

The final site layout plan for Phase 1 and 2 mining is provided in Figure 1-2 and Figure 1-3. These layouts will be subject to change on the basis of comments received from stakeholders as well as the outcome of specialist investigations.

## 5 APPROACH TO THE EIA PROCESS

### 5.1 DESKTOP REVIEW

WSP undertook a review of all available baseline studies and historical reports pertinent to the Port Durnford Project. A reference list of documents reviewed or considered for this purpose is presented below:

**Table 5-1: Documents reviewed as part of WSP’s desktop analysis**

Document	Compiled By	Dated
Tronox KZN Sands (Pty) Ltd, Port Durnford PFS Project	Hatch Africa (Pty) Ltd	November 2020
Mining Works Programme for Tronox KZN Sands (Pty) Ltd Operations	Tronox KZN Sands (Pty) Ltd	Unknown
Study for the Residue Disposal Facility at the Port Durnford Heavy Mineral Sands Project	Hatch Africa (Pty) Ltd	October 2020
Heritage Survey of the Port Durnford State Forest	Umlando: Archaeological Tourism and Resource Management	November 2007
Final Environmental Impact Assessment Report: Richards Bay Mining Zulti South Project	SRK Consulting	December 2014
Exxaro Sands (PTY) LTD Port Dunford Project, Air Quality Monitoring	Zanokuhle Environmental Services	May 2008
Baseline Hydrogeological Assessment for the Proposed Tronox Port Durnford Mining Right Area	GCS (Pty) Ltd	September 2020
Preliminary Desktop Hydrology Assessment	Terratest	November 2014
Port Durnford Pre-Feasibility Study - Water Quality and Biological Monitoring	Marine & Estuarine Research	July 2009
Archaeological Survey of Proposed Exxaro Port Durnford Mining Lease	Umlando: Archaeological Tourism and Resource Management	October 2008
Port Durnford – Terrestrial Ecological Assessment	Coastal & Environmental Services	April 2008
Port Durnford Pre-Feasibility Study – Water Quality Monitoring and Biological Monitoring	Marine & Estuarine Research	March 2008
Phase 1 Report Port Durnford Pre-Feasibility Study	Isikhungusethu Environmental Services (Pty) Ltd	March 2008

Report on the Soils, Sites, Land Capability And Land Use	Keith Snyman & Associates	March 2008
Identification and Delineation of Wetlands and Riparian Areas Using Terrain, Soil Form and Soil Wetness Indicators as well as the Special Case of Sandy Coastal Aquifers, for Port Durnford Plantation in Zululand Kwazulu Natal Mapped at a Reconnaissance Level	W Z Heathman, Geology and Soil Consultant	November 2007
Historical and Architectural Impact Assessment Report for the Port Durnford State Forest, Umhlatuze, Uthungulu District Municipality	Archaic Consulting	January 2008
Tronox 2020 Sustainability Report	Tronox	2020
Palaeontological Technical Report for KwaZulu Natal	Amafa	October 2012
Spatial Development Framework 2017/2018 – 2021/2022 (Third Review)	uMhlatuze Municipality	May 2020

This review has informed the scope of the specialist studies and stakeholder engagement process.

## 5.2 APPLICATION FORMS

An integrated application form in terms of MPRDA, NEMA and NEMWA was submitted to DMRE on 18 November 2022.

## 5.3 SITE VISITS AND SPECIALIST WORK

The identification of specialists to be involved in the Port Durnford Project and the preparation of proposed terms of reference for these studies has been undertaken and is detailed in Section 8.

Specialist site visits are currently underway and due to be completed in January 2023. The list of specialists that have been appointed for the project is provided in Table 1-4.

In addition, it is anticipated that a radiation specialist and water use license specialist will be appointed in addition to the above.

## 5.4 DRAFT SCOPING REPORT

This document, the Draft Scoping Report, which seeks to document the results of all work undertaken to date, was prepared in November 2022 and will be made available for public and authority comment for a 30-day comment period from 21st November 2022 to 12th January 2023. Following this comment period, the report will be finalised on the basis of comments received submitted to the regulatory authorities for comment with regard to the proposed way forward for the impact assessment phase of the study.

## 5.5 DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

- Our approach to stakeholder engagement is based on the following principles:
- Undertake meaningful and timely participation with stakeholders;
- Focus on important issues during the EIA process;
- Undertake due consideration of alternatives;
- Take accountability for information used;
- Encourage co-regulation, shared responsibility and a sense of ownership over the Proposed Project lifecycle;
- Apply "due process" particularly with regard to public participation as provided for in the EIA Regulations; and
- Consider the needs, interests and values of stakeholders.

## 5.6 STAKEHOLDER ENGAGEMENT PROCESS DURING SCOPING

Table 5-2 details the activities undertaken for stakeholder engagement proposed during the Scoping Phase of the assessment process and the status of these activities:

**Table 5-2: Stakeholder engagement activities proposed for the Scoping Phase of the Study**

Activities	Details	Reference in Draft Scoping Report
Introductory meeting with the Mkhwanazi Traditional Authority	An introductory meeting was held with the Mkhwanazi Traditional Authority on 1 November 2022. Permission was granted at this meeting to continue with the required studies	
Update of the Stakeholder Engagement Database	The existing Fairbreeze Stakeholder Engagement database has been updated.	
Project Announcement letter, Invitation to register as Interested and Affected Parties (I&AP) and attend Public Meetings, and Background Information Document (BID)	BID and announcement documentation emailed and posted to stakeholders on the 21 November 2022.  (Public registration period and comment period on the Draft Scoping Report: 21 November 2022 to 12 January 2023)	BID, announcement documentation (Appendix B1)
Newspaper advertisement announcing the project and availability of the Draft Scoping Report	Two Advertisements (English and isiZulu) published as follows: <ul style="list-style-type: none"> <li>• Ilanga (Zulu) on 14 November 2022;</li> <li>• Zululand Observer (English) on 14 November 2022</li> </ul>	Copies of published advertisements (Appendix B2)
Display of site notices	11 sites notices were displayed at various locations in the project area.	List of GPS coordinates, photo of site notices and

Activities	Details	Reference in Draft Scoping Report
	6 were placed on site, 4 in the villages 1 was placed at the Umhlathuze municipality. GPS coordinates of locations were taken.	Google map siting GPS coordinates (Appendix B3)
Availability of the Draft Scoping Report	The Draft Scoping Report has been made available at the following venues for comment for a 30 day period: <ul style="list-style-type: none"> <li>Umhlathuze Municipal Office, Civic Centre, Central Business, 5 Mark Strasse Street, Richards Bay, 3900</li> <li>Mkhwanazi Tribal Authority, KwaDlangezwa</li> <li>Esikhawini Library, H2 Inhlokohloko Street, Esikhawini, 3887</li> <li>Felixton Library, 1West End, Felixton, Empangeni, 3875</li> <li>Mtunzini SAPS, 1 Clarke Avenue, Mtunzini, 3867</li> </ul>	
Availability of documentation on the WSP website during public review period	Placed documentation on for public review period 21 November to 12 January 2023. <a href="https://www.wsp.com/en-ZA/services/public-documents">https://www.wsp.com/en-ZA/services/public-documents</a>	
Stakeholder engagement meetings	Stakeholders will be invited to the meetings in the Mkwanazi Traditional Authority area and Richards Bay.	
Obtaining comments from stakeholders	Comments, issues of concerns and suggestions received from stakeholders during all the meetings, and written submissions will be captured in a Comments and Response Report.	A comments and response report remains to be developed for the project. This will be included in the Final Scoping Report.

## 5.7 SUMMARY OF ISSUES RAISED BY STAKEHOLDERS

The project was announced on 14th November 2022 and prior to this consultation has been limited. A comprehensive engagement process is now proposed as part of the comments period on the Draft Scoping Report. All comments will be recorded and integrated into a Comments and Response Report and included in the Final Scoping Report.

## **5.8 POSITIVE AND NEGATIVE IMPACTS THAT THE PROPOSED ACTIVITY AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT AND THE COMMUNITY THAT MAY BE AFFECTED**

Currently the following potential positive and negative impacts are anticipated as a result of the project:

### **Positive impacts**

- Continued economic spend in the project area
- Employment opportunities and/or extension to employment
- Community investment as part of the Social and Labour Plan Process
- Continued contribution to Gross National Product
- Improved access to the N2 as a result of the access road improvement

### **Negative impacts**

- Destruction/damage/removal of vegetation in the area to be mined and for the infrastructure footprint
- Disturbance of fauna as a result of activities on site
- Loss of ecological habitat
- Loss of ecosystem services
- Loss of agricultural potential
- Changes in the ground and surface water regimes and the impact on neighbouring water users and ecological systems
- Contamination of groundwater and surface water
- Increased soil erosion
- Increased sedimentation of water bodies
- Soil contamination
- Decreased ambient air quality as a result of PM2.5, PM5, PM10 and nuisance dust increase
- Noise pollution
- Destruction of heritage and palaeontological resources
- Change to the visual attributes of the landscape
- Increased migration to the project area by job seekers
- Increased exposure to radiation
- Increased pressure on municipal services
- Incompatibility with existing and proposed land uses
- Increased traffic levels (congestion and safety risks)
- Deterioration of roads utilised by the project
- Climate change impacts as a result of increased greenhouse gas emissions



## **5.9 POSSIBLE MITIGATION MEASURES THAT COULD BE APPLIED TO ADDRESS STAKEHOLDER CONCERNS**

Although the stakeholder engagements have not yet commenced, WSP has prepared the following on the basis of the above impacts which will be refined and updated in the Final Scoping Report. This is detailed in Section 7 report. In this section of the report we document the following:

- A Screening level assessment of the potential impacts pre-and post mitigation
- Mitigation measures that can be applied to manage these impacts

A preliminary mitigation plan is presented in Section 9.

## 6 ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE SITES

### 6.1 BASELINE ENVIRONMENT

#### 6.1.1 CLIMATE AND METEOROLOGY

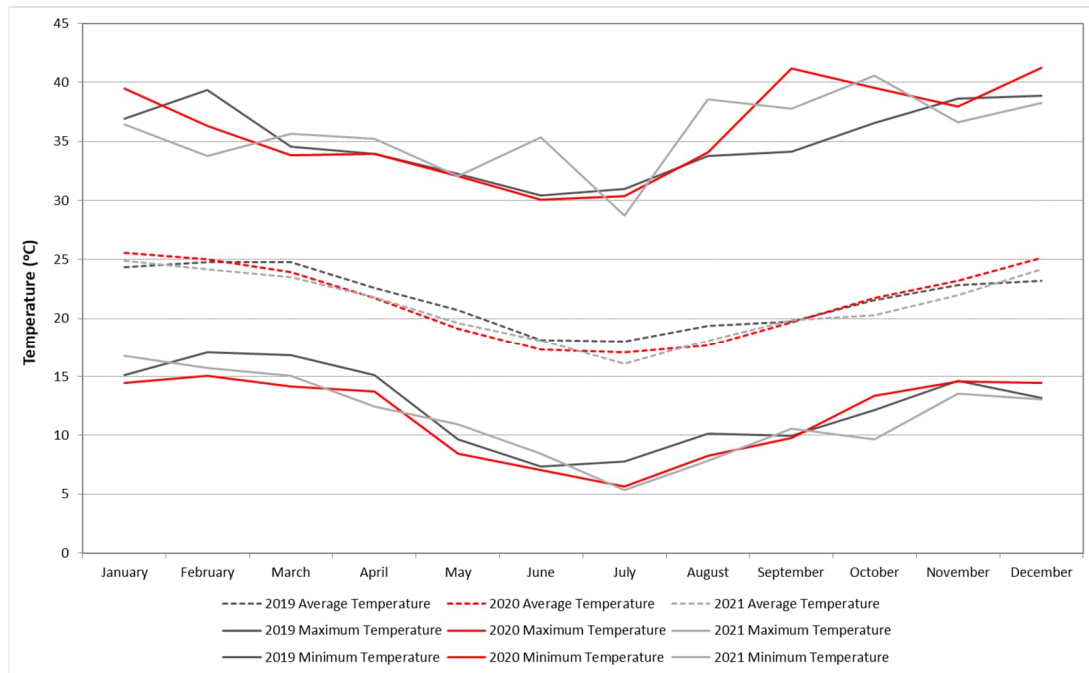
The KZN north coast is known for its warm, moist subtropical climate.

##### Temperature, Rainfall and Humidity

Figure 6-1 presents the average, maximum and minimum temperatures, whilst Figure 6-2 presents the humidity and total monthly rainfall recorded using WRF modelled data for the 2019 to 2021 period. Clear seasonal variations are evident in the temperature and rainfall values for the area. The region typically receives higher levels of rainfall during the warmer, summer (December to February) months, with drier conditions during the cooler, winter months (June, July and August). The total rainfall received for 2019, 2020 and 2021 was 1596 mm, 946 mm and 1636 mm, respectively. Temperatures ranged from a low of 7°C, 6°C and 5°C in 2019, 2020 and 2021, respectively in winter to a high of 39°C, 41°C and 40°C in 2019, 2020 and 2021, respectively in summer. The average relative humidity for 2019, 2020 and 2021 recorded was 73%, 71% and 73%, respectively.

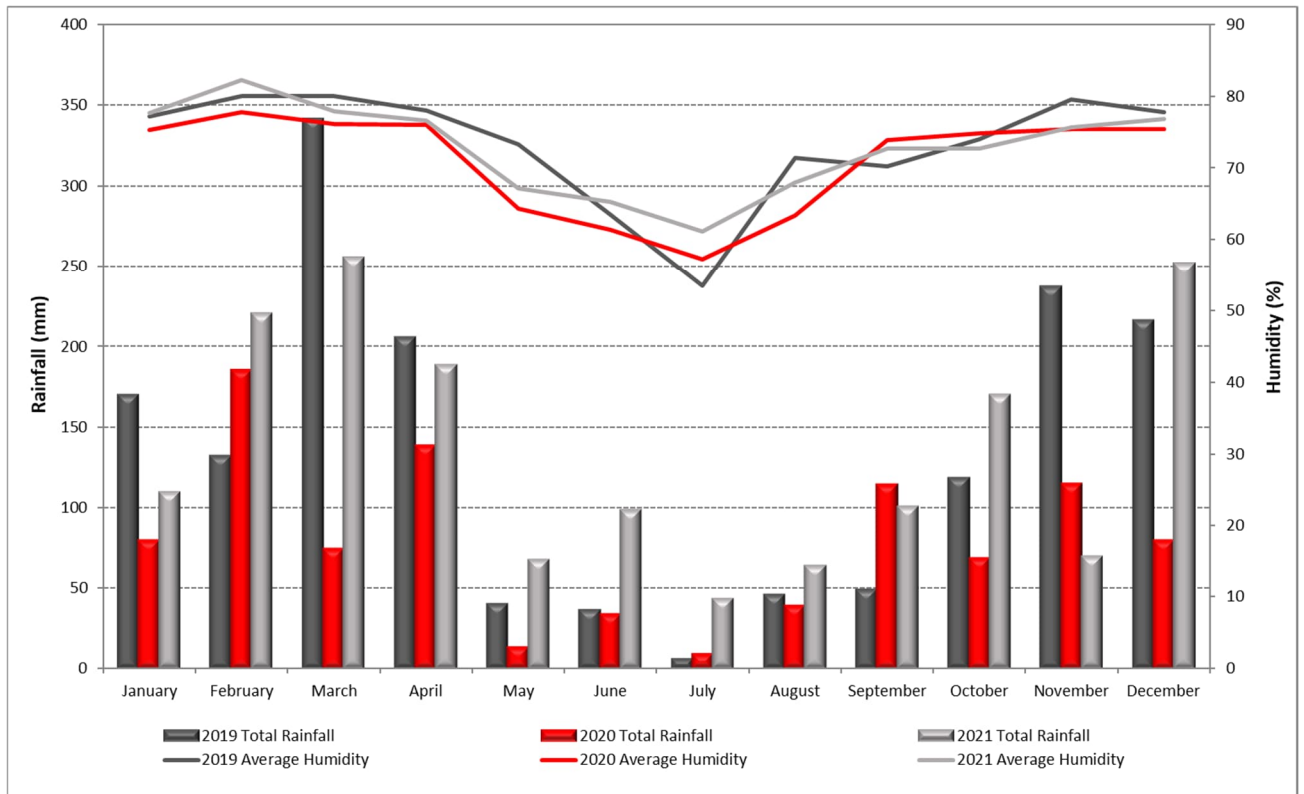
Due to the missing data from the eSikhawini station no graphs have been displayed but a discussion has been provided. Clear seasonal variations were also evident in the temperature values for the area. Temperatures ranged from a low of 12°C, 8°C and 9°C in 2019, 2020 and 2021, respectively in winter to a high of 38°C, 40°C and 43°C in 2019, 2020 and 2021, respectively in summer. The average relative humidity for 2019, 2020 and 2021 recorded was 67%, 72% and 77%, respectively.

Both data sets produced similar ranged results and are thus deemed representative of the site.



**Figure 6-1: Average, maximum and minimum monthly temperatures for the Port Dunford region for the period January 2019 to December 2021 using modelled WRF data**





**Figure 6-2: Total monthly rainfall and average humidity for the Port Dunford region for the period January 2019 to December 2021 using modelled WRF data**

Wind roses summarize wind speed and directional frequency at a location. Calm conditions are defined as wind speeds less than 1.0 m/s. Each directional branch on a wind rose represents wind originating from that direction. Each directional branch is divided into segments of colour, each representative of different wind speeds.

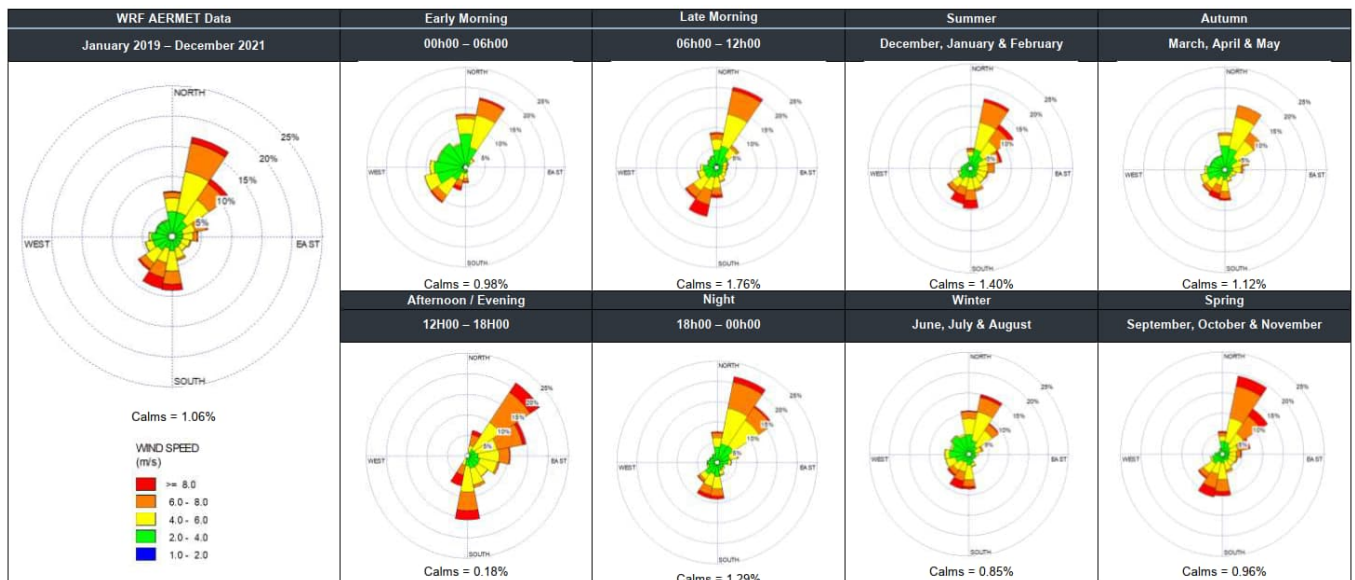
Typical wind fields are analysed for the full period (January 2019 to December 2021); diurnally for early morning (00h00–06h00), morning (06h00–12h00), afternoon (12h00–18h00) and evening (18h00–00h00); and seasonally for summer (December, January and February), autumn (March, April and May), winter (June, July and August) and spring (September, October and November), using the WRF modelled data and the eSikhawini station data.

Wind roses from the WRF modelled meteorological data are presented in Figure 6-3 and are further discussed below.

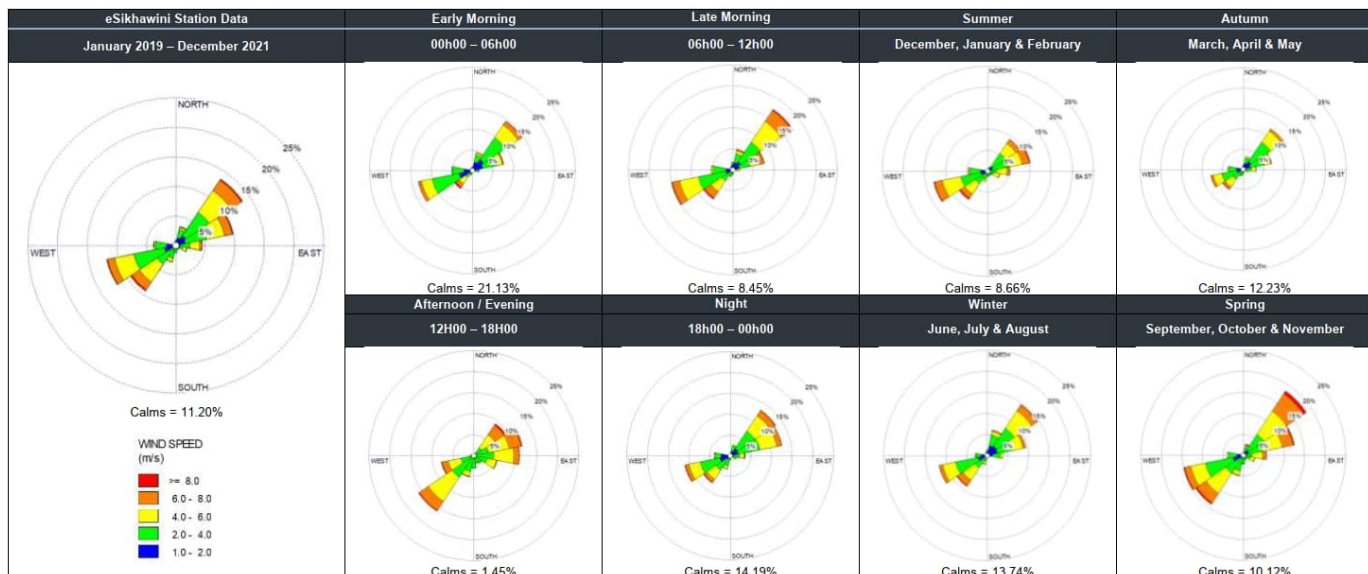
- North-northeast winds prevail in the region for the entire period, with calm conditions occurring ~1% of the time and an average wind speed of 5 m/s recorded.
- North-north-easterly winds prevail during the early morning hours (00h00-06h00) into the late morning (06h00-12h00) and again at night (18h00-00h00).
- In the afternoon (12h00-18h00) and during the night (18h00-00h00) the north easterly winds prevail.
- Seasonal winds from the north-northeast prevail throughout the year with stronger wind speeds observed during spring.
- Wind roses from the eSikhawini station are presented Figure 6-4 and are further discussed below.

- North-easterly winds prevail in the region for the entire period, with calm conditions occurring ~11% of the time and an average wind speed of 3 m/s recorded.
- North--easterly and west-south-westerly winds prevail during the early morning hours (00h00-06h00) into the late morning (06h00-12h00) and again at night (18h00-00h00), with an east-south-easterly wind also introduced at night.
- In the afternoon/ early evening (12h00-18h00) the south-westerly winds prevail.
- Seasonal winds from the northeast and west southwest prevail throughout the year with stronger wind speeds observed during spring.

When comparing the WRF modelled meteorological data with the eSikhawini station it was observed that winds from the north northeast prevailed, whilst the eSikhawini station indicated a slight shift in winds with prevailing winds from the northeast. As such, similar trends in wind directions were observed. The slight changes in data can be associated with the height of the eSikhawini station, the slightly lower percentage data recovery from the eSikhawini station and the location of the eSikhawini station.



**Figure 6-3: Wind Conditions for Port Durnford (January 2019-December 2021) using modelled WRF data**



**Figure 6-4: Wind Conditions for Port Durnford (January 2019-December 2021) using local ambient Air Quality**

### Dust Fallout Monitoring

Zanokuhle Environmental Services (2008) conducted dust fallout monitoring for a period of four months as part of the 2007/2008 Port Durnford Feasibility Study. The study found no exceedances of the recommended South African National Standard 1929:2005 criteria for dust fallout. However, elevated levels of dust fallout were observed at two sampling sites.

### Particulates Matter Monitoring

Background PM10 concentrations were sourced from the eSikhawini station in the absence of current on-site data (Table 6-1). The data recovery was 75% and as such should be viewed with caution. The P99 24-hour average for 2019 to 2021 was 8 µg/m<sup>3</sup> and the annual average was 24 µg/m<sup>3</sup>. Both the PM10 P99 24-hour average and annual average for the entire period were below their respective 24-hour average PM10 standard of 75 µg/m<sup>3</sup> and annual average PM10 standard of 40 µg/m<sup>3</sup>.

Table 6-1 - Background PM10 concentrations for the period January 2019 to December 2021

eSikhawini Station	24-Hour Standard	P99 24-Hour Average	Annual Standard	Annual Average <sup>e</sup>
2019	75	25.8	40	8.2
2020	75	23.4	40	7.6
2021	75	22.8	40	7.9
Average	75	24.0	40	7.9

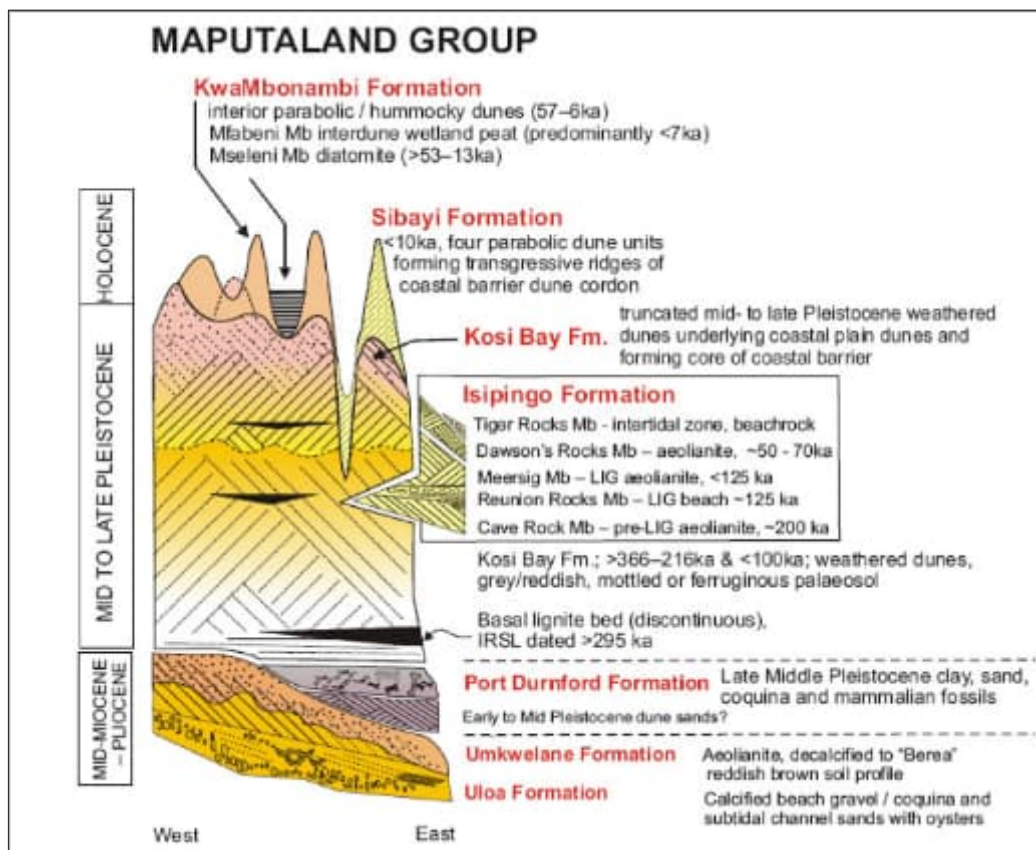
### 6.1.2 TOPOGRAPHY

The topography of the project development area is characterised by moderately to strongly sloping incised valleys (average slopes of 13%) west of the project area, which grades to gently undulating terrain (average slope of 6%) towards the coastline, with wide valleys that represent the floodplains of prominent drainage channels. The topography of the project area itself is rolling and exhibits gently sloping terrain, but in some areas significantly steeper slopes are encountered. Elevations within the project area range between 10 and 130 mamsl, with an average elevation of 55 mamsl.

### 6.1.3 GEOLOGY

The Port Durnford project lies in the south western portion of the Zululand coastal plain. The Port Durnford deposit is situated within the formed coastline environment, consisting of the Late Tertiary-Pleistocene dune corridor developed along the Natal coastline. The Pleistocene Port Durnford Formation, which is intermittently exposed in sea cliffs along the southern Zululand coast, consists of a Lower Argillaceous Member up to 10m thick, containing mammalian remains, marine fossils, crustacean burrows and wood debris, separated by a persistent lignite bed averaging 1.3m thick from an upper cross-bedded Arenaceous Member up to 15m thick. This vertical succession, which has its base below lowest spring tide, is interpreted as representing the intermittent landward accretion of a barrier complex (cross-bedded sands) over back-barrier swamps (lignite) and lagoonal- shallow marine facies (fossiliferous clays with subordinate sandstones) (Worley Parsons, 2015). The Port Durnford deposit forms part of the greater Maputaland Group as has been described in detail by CF Botha, 1997; Maud and Botha, 2000; Botha et al., 2003, Roberts et al, 2007 (cited in Worley Parsons, 2015) and is characterised by the Cenozoic coastal plain and littoral marine sedimentary succession that buries bedrock along the eastern seaboard of KwaZulu-Natal.

The individual formations extend from the Maputo Bay area southwards along the coast to the Eastern Cape where the remnant deposits thin crop out discontinuously over the preferentially uplifted Cape Supergroup basement. The broadest part of the Maputaland coastal plain narrows southwards towards the St Lucia area, influenced by the strike of the Lebombo cuesta created by eastward dipping late Jurassic Jozini rhyolite Formation. South of St Lucia to the Mtunzini area the morphology of the coastal plain changes due to the influence of the tectonically juxtaposed bedrock types ranging from the Cretaceous mudrocks to Natal Metamorphic Province igneous and metamorphic lithologies (Botha, 2008, cited in Worley Parsons, 2015). The lithology as described above is shown in Figure 6-5.



**Figure 6-5: Port Durnford Lithology to the Greater Maputoland Group Succession (Hatch, 2020)**

### 6.1.4 SOILS AND LAND USE CAPABILITY

Based on a detailed survey undertaken by Snyman (2008), soils at Port Durnford are mostly derived from recent and weathered sands. Soils are typically sandy becoming sandy clay at depth. Increased slope in some parts, together with sandy soil textures, results in exacerbated erosion potential. Soils are mostly of the Hutton and Fernwood (pale) forms which occur on elevated sites in the west. Hydromorphic soils associated with a shallow water table occur extensively in the east (Kroonstad, Longlands, Westleigh, Fernwood dark). A small area of gneiss in the southwest results in gravelly lithosols of the Glenrosa soil form.

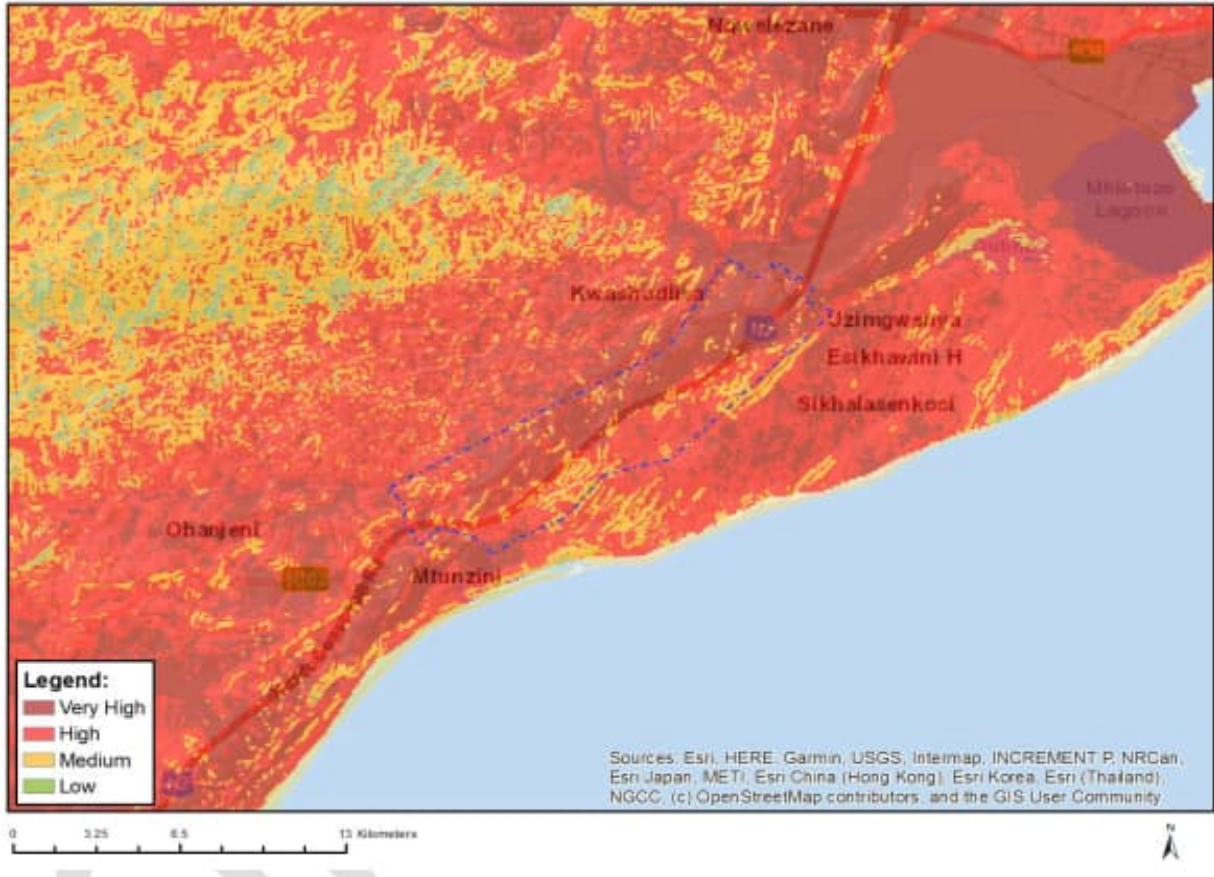
A land capability assessment was undertaken by Snyman (2008) to determine a pre-mining inventory that will assist in post-mining land use planning and rehabilitation. The system was based on four classes with assessment findings presented in Table 6-2 below:

Table 6-2: Land Capability on the Port Durnford Site

Land Capability Classification	Hectares	Percentage	Land Capability Description
I	100	3	Wetland
II	552	14	Arable Land

III	2,434	60	Grazing Land
IV	905	23	Wilderness

According to the DFFE Environmental Screening Tool (accessed August 2022) there exists generally high agricultural land capability within the area, particularly to the north of the N2 Highway on the Port Durnford property. However, Snyman (2008) does note that all the sites at Port Durnford are not suited to irrigation due to sandy soil textures, erosion hazard, steep gradients and a shallow water tables in places.



**Figure 6-6: DFFE Screening Tool Map Showing Relative Agricultural Theme Sensitivity (DFFE, 2022)**

### 6.1.5 BIODIVERSITY

The majority of the project development area is currently under commercial timber plantation or sugarcane and surrounded by fairly densely inhabited community farming areas. Notwithstanding this, there are a number of largely undisturbed habitats in or immediately adjacent to the project development area.

#### Terrestrial

This section provides a summary of the terrestrial ecology assessment undertaken by Coastal & Environmental Services (2008). In the study, the specialists identified a total of 174 plant species

within the project development area and approximately 563 vertebrate species that may potentially use or be found within the project development area.

The high biodiversity exhibited was evident firstly due to the large area of the study site, the variety of habitats and the presence of a number of wetlands. The continued survival of these wetland systems will be through the continued removal of alien vegetation and the maintenance of baseflows by maintaining the current connectivity between wetland and riverine systems. Features such as the current road and rail network and the presence of the plantations have also altered the ecological integrity of the systems present and have reduced the connectivity within the site as well as the surrounding areas (Coastal & Environmental Services, 2008).

The most important as well as sensitive habitats, were all found in association with either drainage lines or rivers. This was as a result of the forestry practices within the area, but active clearing of alien plants from the natural vegetated areas has aided in the maintenance of these swamp forests and hygrophilous grasslands.

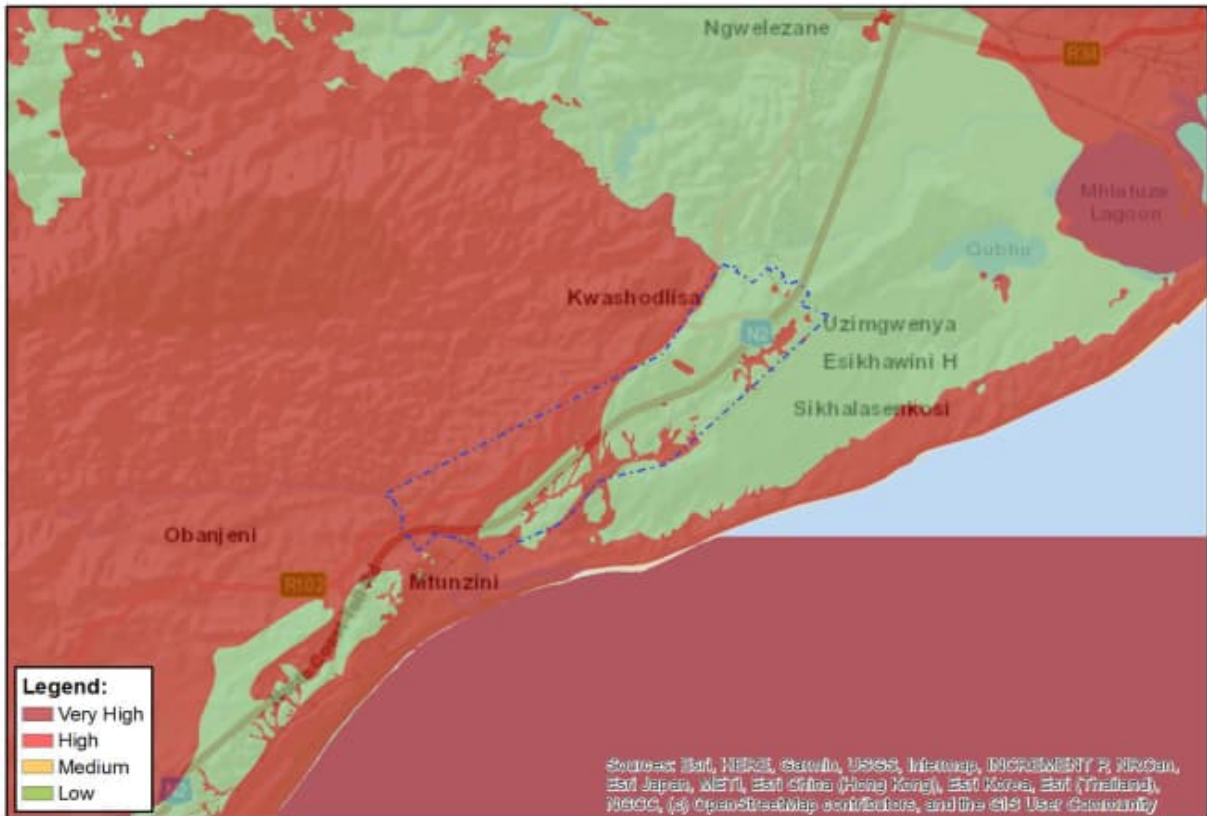
According to Coastal & Environmental Services (2008), six major vegetation units, which coincided with faunal habitats, were observed in this study area. These were:

- Coastal Lowland Forest
- Barringtonia Dominated Swamp Forests
- Voacang/Ficus Dominated Swamp Forests
- Syzygium/Cassipourea Dominated Swamp Forests
- Undefined forest regions
- Grasslands with forest trees or bush clumps.

These corresponded with other studies conducted in the area, with the latter two providing important habitat edges or ecotones. The importance of the mixed/hygrophilous grasslands areas was emphasised through the sighting of a Red Data Bird species, namely the Swamp Nightjar (*Caprimulgus natalensis*) (Coastal & Environmental Services, 2008).

The wetland ecosystem based on the presence of the species such as the one mentioned above and the potential occurrence of the frog *Hyperoilius pickersgilli* further indicates the importance of the aquatic systems, their connectivity and direct linkage with the localised streams and river directly adjacent to the sites (Mzingwenya and Amanzimnyama rivers). For this reason, these areas were rated as sensitive to change (Coastal & Environmental Services, 2008). Large coastal forest areas (exhibiting significant botanical age and complexity) exist along the central and northern areas of the site.

Further to the Coastal & Environmental Services (2008) study, data from the South African National Biodiversity Institute Biodiversity Geographic Information System (SANBI BGIS) indicates that the project development area encompasses Critical Biodiversity Areas (CBAs), as well as Ecological Support Areas (ESA). These areas sensitive areas are situated on the western portion of the site as shown in Figure 6-7.



**Figure 6-7: DFFE Screening Map Showing Terrestrial Biodiversity Theme Sensitivity**  
**Aquatic and Wetland Ecology**

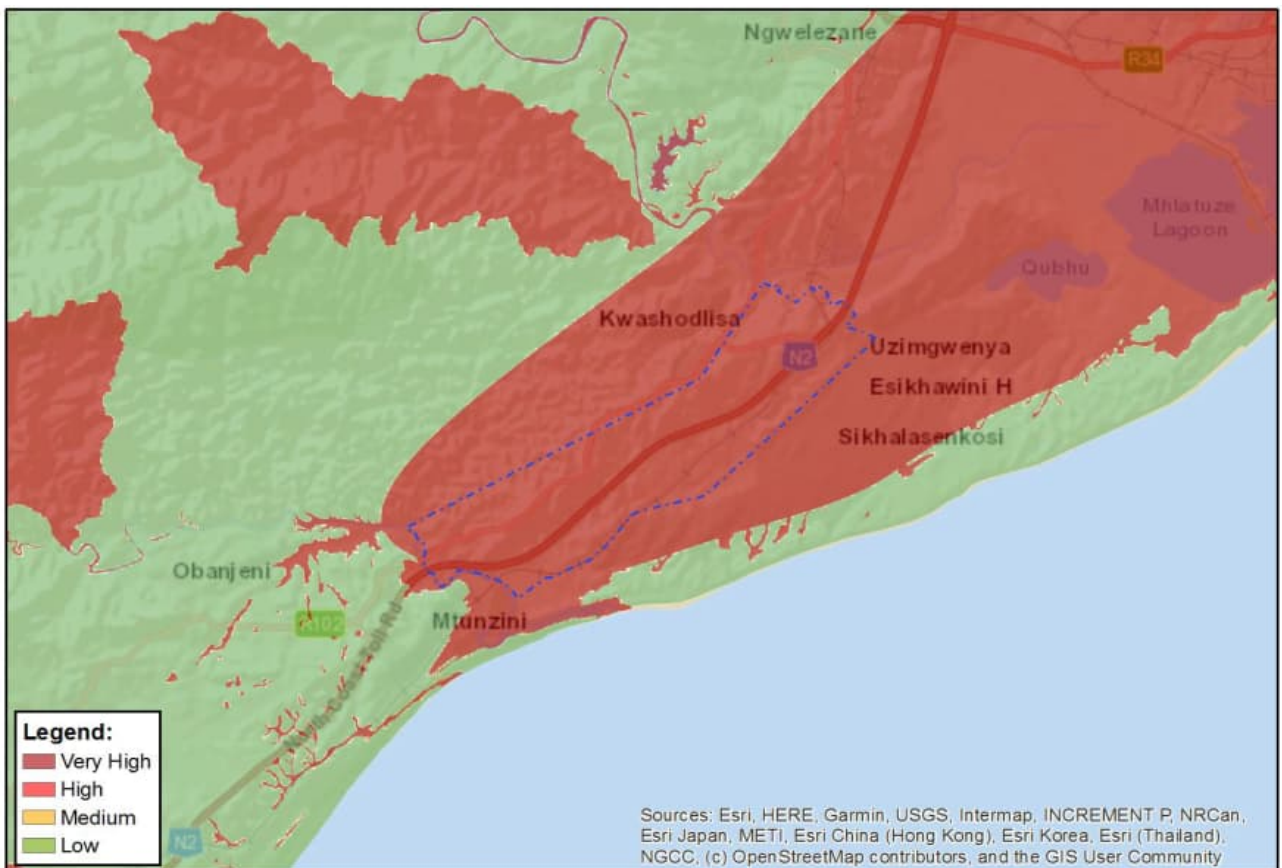
According to GCS (2020) channelled valley bottom wetlands within the project development area are mostly situated east of the N2 in the Port Durnford mining right area, along the tributaries and main channels of the Amanzamyama and Mzingwenya rivers, and west of the N2 in the Waterloo and Penarrow mining right area, along tributaries of the Mlalazi River. Floodplain wetlands and estuaries are situated along the lower reaches of the Mlalazi and Mhlathuze rivers. Marshes and swamp forests occur along drainage channels east of the N2 highway which transects the project development area.

A study conducted by MER (2008) found a frequent lack of correspondence between indicated water courses on maps and the presence of any water on the ground, or even at times a recognizable water course. MER (2008) attributed this situation to the effects of insensitive large-scale forestry and to some degree sugarcane cultivation on water resources and the riparian environment in this area, which justified further investigation. This made it difficult for MER (2008) to assess water quality and the associated fauna at pre-selected SASS/Water Quality sites, and also precluded any sampling of fish fauna. It also prevented any realistic development of the integrated habitat index which is dependent on an assessment of the diversity of the aquatic habitat including the condition of the aquatic and adjacent riparian vegetation. Riparian species were either absent in plantations or areas under cane and in valley bottoms which were frequently in retreat (MER, 2008). Areas that did contain water had generally low SASS and ASPT scores which could be attributed to the generally low scoring taxa found in lowland east coast streams and the small overall size of the stream habitats, the consequent small size of the habitats within the stream and the general lack of physical diversity.



The surveys of the estuarine benthic sites in the upper Mlalazi Estuary and the lower Ntuze River produced a total of 18 taxa in August 2007 and 16 taxa in November 2007. The areas of the two systems are strongly influenced by freshwater inputs and the estuarine fauna is accordingly reduced. The diversity, individual abundance of the species recorded, and distribution patterns were in keeping with the physical and chemical conditions and did not indicate any significant anthropogenic impacts (MER, 2008).

Figure 6-8 depicts the aquatic sensitivities in the project development area and surroundings, which is classified as very high sensitivity according to the DEFF Environmental Screening Tool (accessed in August 2022).

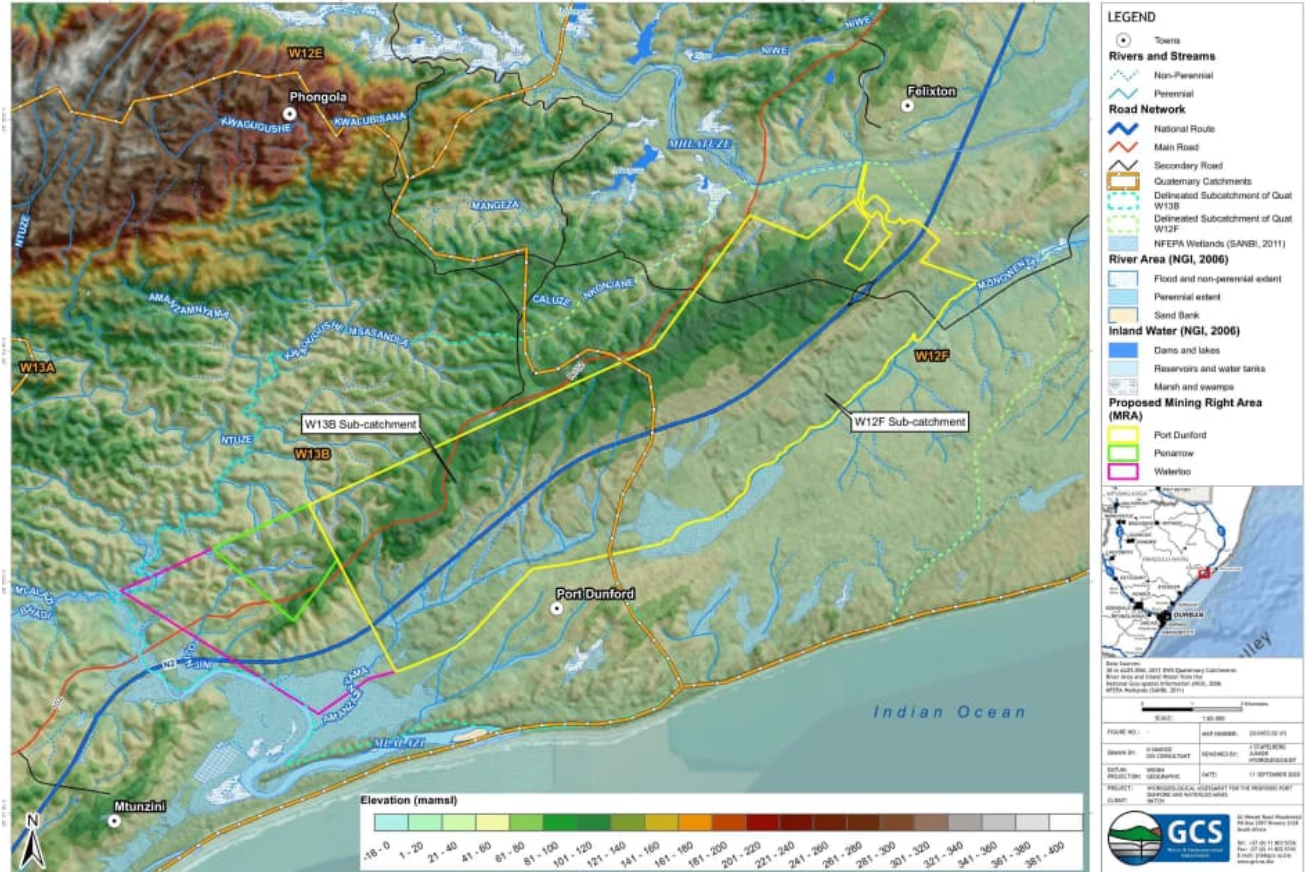


**Figure 6-8: DFFE Screening Report Showing Relative Aquatic Biodiversity Theme Sensitivity**

### 6.1.6 HYDROLOGY

The project development area is situated within the Usuthu-Mhlathuze Water Management Area and is bisected by two quaternary catchments, namely W12F to the north east and W13B to the south west. The area is characterised by two prominent perennial rivers, Mlalazi and Mhlathuze, that drain into the Indian Ocean. Floodplain wetlands and estuaries are situated along the lower reaches of the Mlalazi and Mhlathuze rivers. The Mhlathuze River flows past the northern boundary of the project area and its tributaries drain the north western areas, whilst the Mzingwenya River flows along a section of the eastern boundary of the project area and drains the area north east towards Qhubu Lake. The tributaries of the Mlalazi River drain the Penarrow and Waterloo areas, and a portion of the Port Durnford area. The Amanzamnyama River, situated in the central to southern section of the project development area and the southern boundary of the Waterloo area, drain south and

southeast towards the Mlalazi River. The Mlalazi River flows past the southwestern and southern boundaries of the Waterloo area. The project development area falls within a Strategic Water Source Area, which means that it is a key resource in the supply of water to downstream economies and urban centres (WWF, 2013).

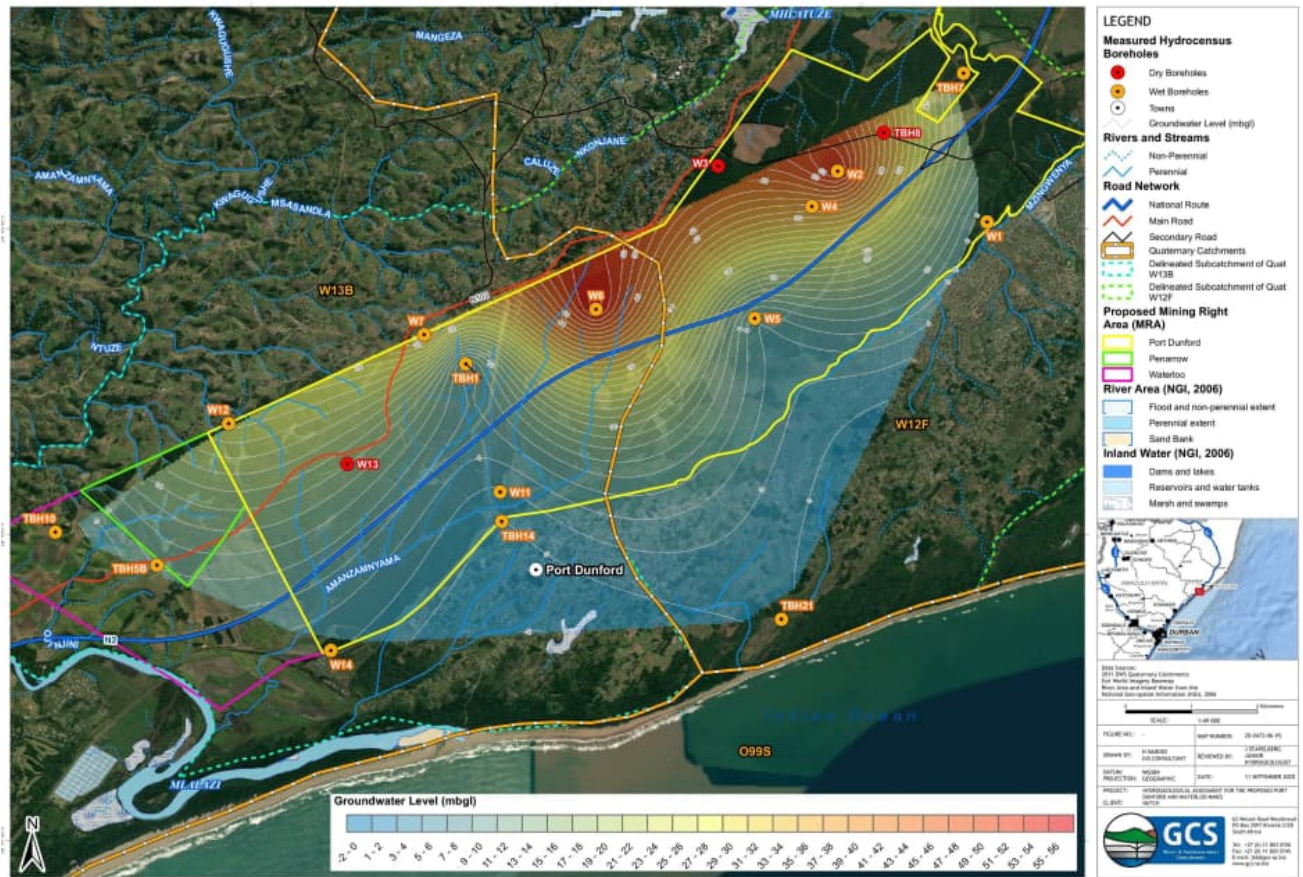


**Figure 6-9: Port Durnford Hydrological and Topographical Setting (GCS, 2020)**

### 6.1.7 HYDROGEOLOGY

A baseline hydrogeological assessment was conducted in 2020 for Port Durnford, Penarrow and Waterloo Mines that constitutes Phase 1 of the hydrogeological investigation in 2020 (Hatch, 2020). The hydrocensus was conducted between 6 and 10 July 2020, which comprised an assessment of the critical hydrocensus area (Port Durnford, Penarrow and Waterloo Mines and extended hydrocensus area, which was defined based on the delineated sub-catchments and limited to a 3km

radius of the project development area (Figure 6-10).



**Figure 6-10: 2020 Hydrocensus Depth to Groundwater for Proposed Port Dunford MRA (GCS, 2020)**

The average yield of boreholes drilled in the coastal sand deposits is 0.8 L/s, whereas boreholes drilled into the Natal Metamorphic Province, most likely in or near faults and with a depth of over 100 mbgl, have an average yield of 1.5 L/s. Groundwater elevations range between 9 and 75 mamsl; and the average groundwater elevation is 36 mamsl. The depth to saturated zone varies between artesian (at or above ground level) to 58 mbgl, with an average depth of 22 mbgl. The regional groundwater flow direction is south to south east. A significant difference between groundwater levels measured in 2017 by Vlok (2017) (cited in GCS, 2020) and 2020 is not observed. Water quality sampling results indicate good and mostly compliant water quality across the study area. Sodium and chloride enrichment are indicative of atmospheric deposition within the coastal environment.

The key aquifer host media across the project development area can be described as primary intergranular aquifer hosted within coastal dune deposits with a secondary intergranular and fractured aquifer hosted within sedimentary and metamorphic rocks. The primary aquifer associated with the coastal sand deposits can be described as a minor aquifer. The underlying intergranular and fractured aquifer is also described as a minor aquifer. The expected range of hydraulic conductivity within the primary aquifer is in the order of 0.1 to 3 m/day and is attributed to the large variation of deposit grain size and distribution. Recharge to the groundwater system across the project development area is estimated to be in the order of 10 to 17% of mean annual precipitation (MAP). The groundwater reserve indicates a surplus value of approx. + 8,238 m<sup>3</sup>/day in the

delineated sub-catchment within W13B and + 6,367m<sup>3</sup>/day in the W12F sub-catchment (GCS, 2020).

Marshes, swamp forests and channelled valley bottom wetlands occur along drainage channels in the study area, particularly east of the N2 highway. Persistent wet conditions within marshes, swamps and wetlands were visible during winter and could in part, be attributed to groundwater interconnectivity in the form of springs. Shallow to artesian groundwater levels close to perennial rivers are recorded in some areas. A combination of topography and textural characteristics of the geological formations influence the baseflow component of the study area, a phenomenon that appears to be more prominent east of the N2 Highway (GCS, 2020).

### **6.1.8 SOCIO-ECONOMIC**

#### **Geographical Setting**

The project development area is situated within the boundaries of the King Cetshwayo District Municipality (formerly Uthungulu District Municipality) and falls under the jurisdiction of the uMhlathuze Local Municipality. The uMhlathuze is bordered by the following Local Municipalities: Mfolozi, Mthonjaneni, uMlalazi (Figure 6-11).

The main access into the municipal area is via the N2 in a north south direction and in an east west direction the R34. Other significant roads in the area include the MR431 (that provides a northerly entry into Richards Bay from the N2) as well as the Old Main Road that straddles the N2 on its inland. Railway lines are prevalent in the municipal area but do not provide a passenger service, only a commercial/industrial service is provided.

The municipality has the benefit of about 45km of coastline of which about 80% is in its natural state. Linked to its coastal locality is the Richards Bay deep-water port that has been instrumental in the spatial development of the area in the past and will definitely impact on the areas' future spatial development. There is one airport and a couple of landing strips in the municipal area.

The municipality has vast areas of commercial farmlands as well as a number of areas that are significant from an environmental perspective.

The municipal area includes the formal towns of Empangeni, Richards Bay, eSikhaleni, Ngwelezane, eNseleni, Vulindlela and Felixton. Rural settlements include Buchanana, Luwamba, Makwela, Mambuka, Hluma, Matshana and Mabuyela.

#### **Population Overview**

The uMhlathuze Municipality has experienced a 22,73% increase, mainly due to the dissemination and incorporation of the former Ntambanana Municipality into the two listed municipalities. The higher population densities in the formal urban, and surrounding areas, as well as some of the Traditional Council areas has been observed. Entrepreneurship development and sustainability efforts in former R293 towns have been hampered by a number of reasons including inequalities, level of education, and lack of adequate information (uMhlathuze SDF, 2020).

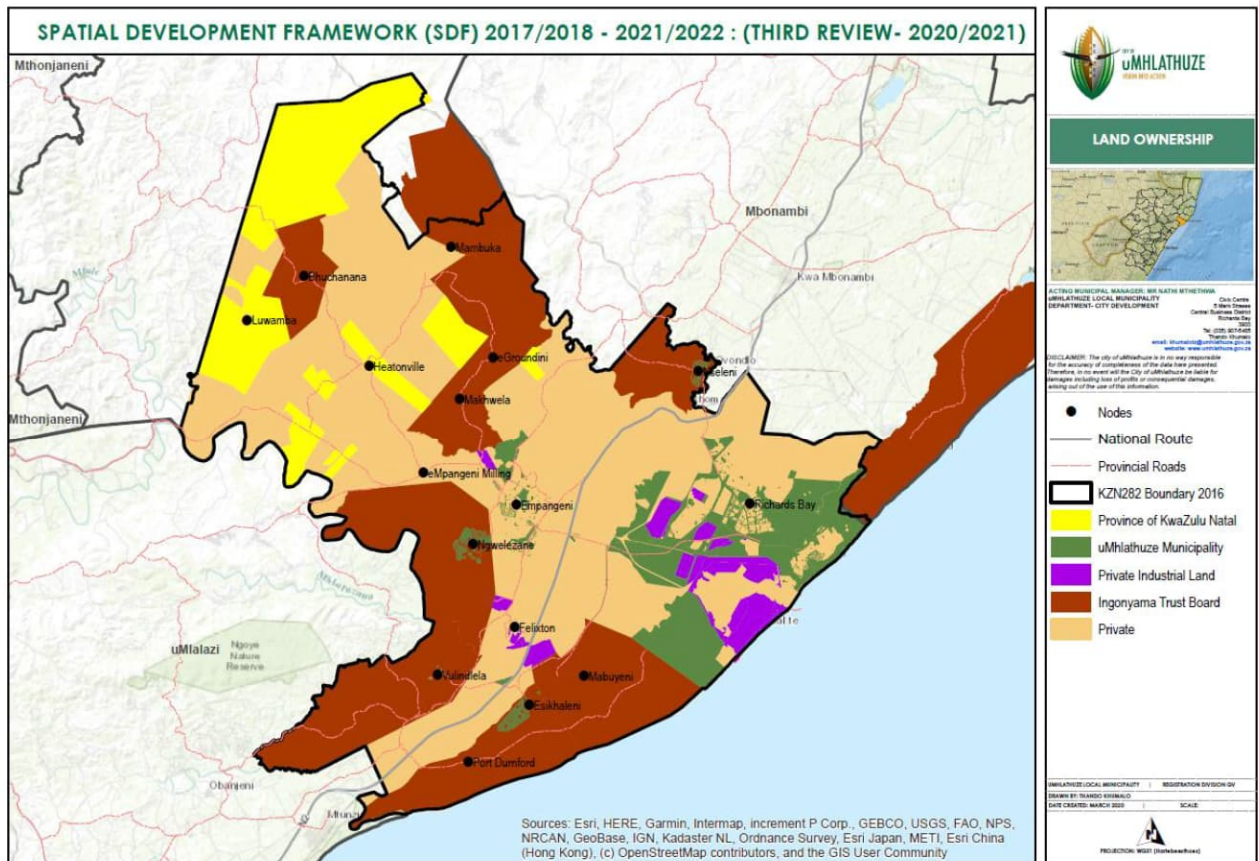
#### **Land Governance**

The uMhlathuze Municipality has an area of 123 325Ha and in 2016, the uMhlathuze population is estimated at to be in the region of 410 465 people (UMhlathuze Spatial Development Framework, 2020). Land ownership within the municipality consists of:

Private ownership (26%)

Ingonyama Trust Board (ITB) which is administered by Traditional Authorities (51%).

One of the biggest Municipal challenges in relation to land ownership is the distribution and allocation of land in the ITB land which is mainly administered by Traditional Authorities (Figure 6-11). Such distribution is common in the peri-urban and infill areas. This situation has led to the formation of unplanned settlements which put pressure to the Municipality from services provision perspective.



**Figure 6-11: uMhlathuze Municipality Land Ownership (uMhlathuze SDF, 2020)**

Challenges are caused by the limited understanding by stakeholders of the legal mandate of the Municipality as a planning authority with regards to spatial planning, development control, environmental planning, settlement planning etc., irrespective of land ownership. Traditional Councils are generally not consulting with the Municipality as planning authority on matters relating to settlement planning. As a result, the Municipality is compromised in its ability to efficiently deliver services and formalize development and sustainability is compromised.

There are currently three interdependent levels of authority relevant for planning and land management in Traditional Council areas; namely Traditional Councils; ITB; and Municipalities. Normally, the municipalities are not directly involved in the land allocation in Traditional Council areas. However, they are always required to provide services in these settlements. The Ingonyama Trust Board usually requests municipalities to provide their comments/inputs on lease agreements. The Ingonyama Trust Board usually requests municipalities to provide their comments/inputs on lease agreements.

The Municipality has finalised its Land Use Scheme in terms of SPLUMA for the whole municipal area noting that in certain areas of the Municipality, land usage is more complex than in other areas. As such, it is necessary to prepare a Land Use Framework (LUF) as a linkage “step to translate the SDF into more detailed broad land use areas”, to inform the detailed formulation of zones, notably for urban areas, peri-urban areas as well as rural areas.

### **Port Durnford**

The population in Port Durnford and surroundings, is generally a young population with low income and poor levels of education. Approximately 43% of the population only have up to primary school level of education and of this proportion 20% have no schooling at all. In the light of the fact that the majority of the population is youth and working age this has serious implications for current and future employment trends. The nearest residential areas neighbouring Port Durnford include Mahunu Village and Esikhawini to the east, Nyembe Village to the south west, and Ongoye to the north. Port Durnford falls within the jurisdiction of the Mkhwanazi Traditional Authority.

Port Durnford falls under the jurisdiction of the uMhlathuze Local Municipality. Wards 10, 11, 18, 19 and 20 will most likely be directly affected by the mining operations.

The Municipality is in the process of preparing Rural Development Framework Plans for 5 different rural nodes, including Port Durnford Rural Settlement Plan.

#### **6.1.9 HERITAGE**

A total of 39 archaeological and/or historical sites (PD01 to PD39) were recorded during the survey undertaken by Anderson & Anderson (2007). Most of the sites are of low significance; however there is one site of medium significance (PD33), and four of high significance (PD15, PD24, PD21 and PD18) (Anderson & Anderson, 2007).

There are at least five concentrations of metalworking activity at site PD33. In these areas are slag concentrations that occur in pairs directly opposite each other, tuyeres, hammer stones, some iron ore and undecorated pottery. Anderson & Anderson (2007) believe that furnaces may be present but are subsurface. The pottery from the site is undecorated and it is thus unlikely to date to the Early Iron Age. However, considering the weathering on some of the sherds, parts of the site may date to the early part of the Late Iron Age. This is the highest concentration of metal working activity that Anderson & Anderson (2007) have recorded in the general area. It is surprising that afforestation has not damaged the area to a greater degree (Anderson & Anderson, 2007).

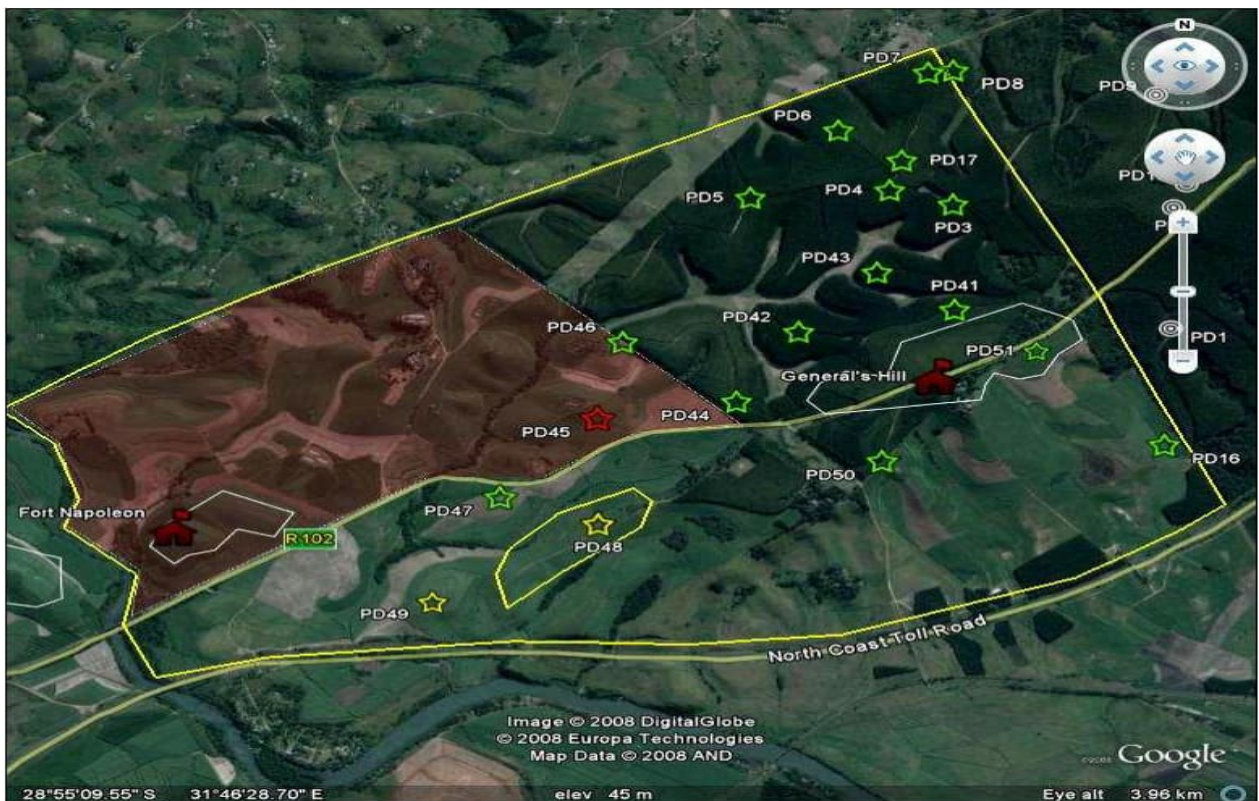
Site PD15 is the location of blue gum trees and site PD24 is a small plantation of Kauri Pine (*Agathis robusta*) planted in the early 1920s. Some of these are ~60m tall. These trees form part of the history of early afforestation and are a legacy to these foresters. The trees appear to have high significance amongst the current afforestation and birding communities and there have been several programs to conserve these trees (Anderson & Anderson, 2007). During the Hatch site visit to the Port Durnford area on 29 July 2020, it was noted that the old pine and blue gum trees had recently died and were being chopped down by Mondi.

Graves are possibly present on site PD21. Anderson & Anderson (2007) were informed that ancestral graves occur in this general area and that the family still pays their respect to the ancestors at these graves. Anderson & Anderson (2007) could not locate the exact location of the graves as they are not clearly marked with tombstones. However, Anderson and Anderson (2007) did note an area that appears to have been flattened, and it is demarcated with danger tape in

various locations. Anderson & Anderson (2007) further notes that the Manager of the Port Durnford Forest knows the exact location of the graves and the contact details of the relatives.

At site PD18 there is a small area of *Euphorbia* spp., that appears to be a grave. There are no definite signs, but it stands out as being different. This may, however, be a natural phenomenon (Anderson & Anderson, 2007).

Clusters of occupied, functional buildings that form reception, accommodation and technical support exist on the south westerly portion of the Port Durnford Forest Reserve. This is because many of the structures that were on the site, viz the old Sawmill, and foresters' houses, have been demolished (Debbie Whelan, 2008, cited in Anderson & Anderson, 2007). These structures occur in the same area as the early encampments, or dwellings. Many of them have rubbish dumps that would provide an interesting aspect to the early times of afforestation in the area.



**Figure 6-12: Locality Map of Recorded Archaeological Sites (Anderson & Anderson, 2007)**

Figure 6-12 highlights the areas of heritage significance as observed by Anderson & Anderson in 2007, and Figure 6-13 depicts the data presented within the DEFF Environmental Screening Tool (accessed in August 2022), and the findings from Anderson & Anderson (2007).

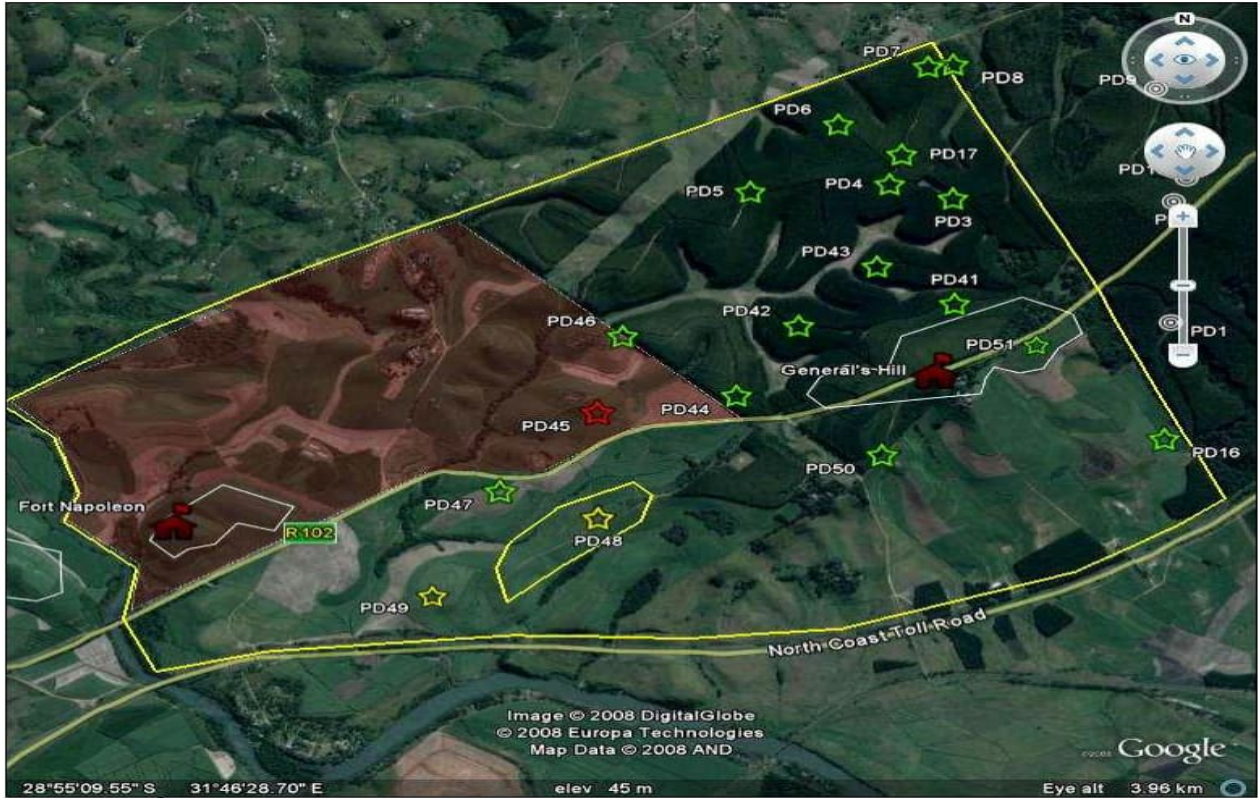


Figure 6-12: Locality Map of Recorded Archaeological Sites (Anderson & Anderson, 2007)

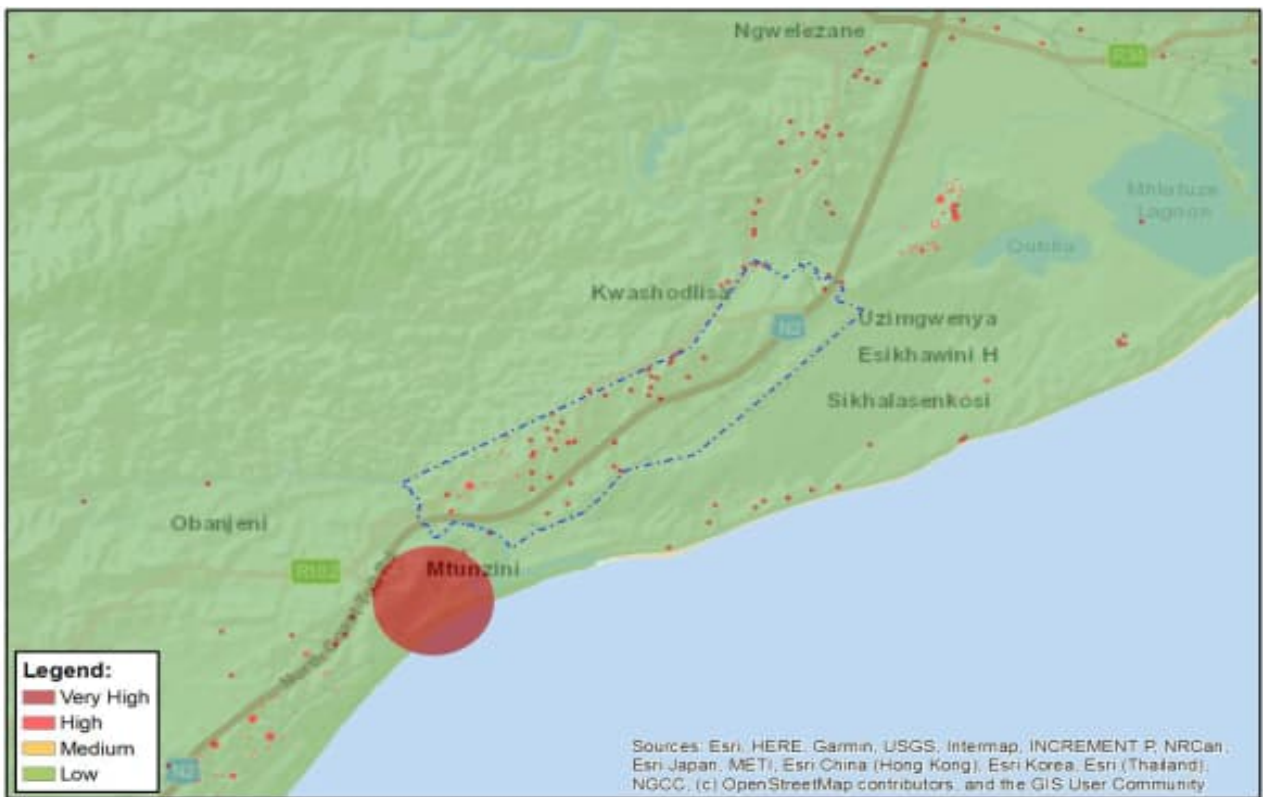
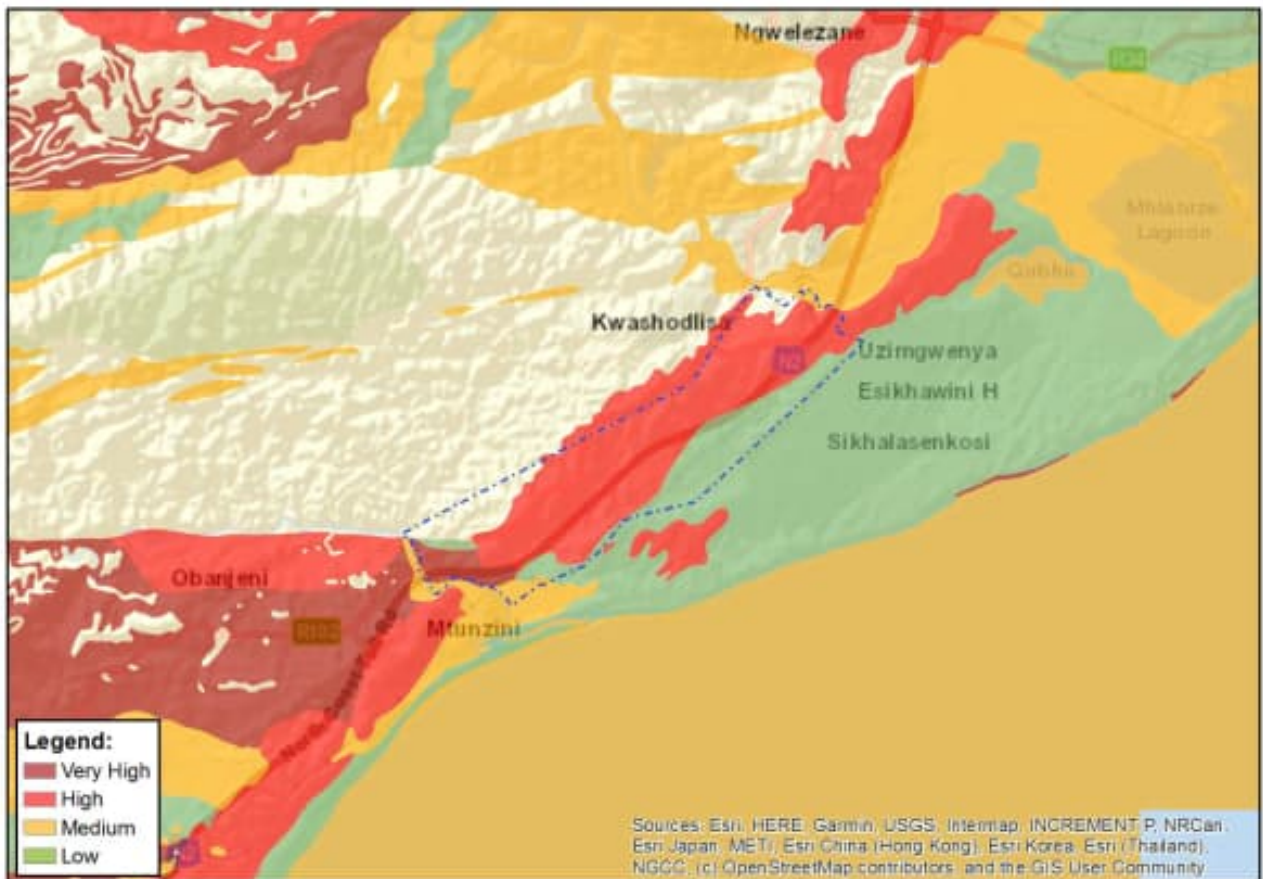


Figure 6-13: DFFE Screening Tool Map Showing Archaeological and Cultural Theme Sensitivity



### 6.1.10 PALAEOONTOLOGY

Rocks containing fossils or traces of fossils provide information about the palaeo-environments that existed in the past and the fossil history is therefore part of the Natural Heritage palaeontology of an area. The project area is shown within the DFFE Screening Report (accessed August 2022) to display high paleontological sensitivity (Figure 6-14).



**Figure 6-14: DFFE Screening Report Showing Relative Paleontology Theme Sensitivity**

According to the Palaeontological Technical Report for KwaZulu Natal (Amafa, 2012), The Port Durnford Formation consists of mudstone, lignite clay and sand and comprises a succession of carbonaceous muds and sand, containing fossils of terrestrial vertebrates such as hippopotamus, buffalo, antelope, rhinoceros and elephant as well as marine fossils including crustaceans and fish, foraminifera, marine molluscs and fragments of turtles and crocodiles.

### 6.1.11 VISUAL

According to the uMhlathuze Spatial Development Framework (May 2020), the geomorphology of the landscape is generally described as a low-relief area that is bounded by a coastline and a high-relief terrain on the landward side. Past geomorphologic processes have resulted in a unique landscape that supports complex hydrological systems. Landscape features are important factors for decision-making and development planning.

The project area is located on a low-level coastal plain with a mix of afforestation and sugar cane farming. The project area of influence includes:

- Industrial
- Road infrastructure (including the N2 freeway)
- Residential / Urban Townships
- Tribal Lands
- Other mining operations

The “whaleback” ridge crest extends from the Forest Inn area towards the northeast in the project area, west of the N2, with highpoints at 112 – 125 mamsl (Botha, 2008). The low-lying coastal plain is separated from the ocean by a high aeolian dune cordon (Groundwater Consulting Services (GCS), 2020).

These natural features will influence the visual impacts presented by the project and vice versa.

#### **6.1.12 RADIATION**

It is anticipated that Naturally Occurring Radioactive Material (NORM) which is currently present in the heavy mineral sands has the potential to pose a risk to members of the public and employees as part of the mining process. A radiation survey has not yet been undertaken for the Port Durnford project, but will be used to inform the EIA.

### **6.2 DESCRIPTION OF THE CURRENT LAND USES**

According to the pre-feasibility study conducted by Hatch Africa (Pty) Ltd (“Hatch”), the predominant land use in the project area is agriculture in the form of commercial Eucalyptus plantations owned by Mondi plc. Other vegetation in the form of swamp forests, wetlands and small portions of coastal dune forests, occurs in the drainage channels and streams between the plantations. The area is bordered by the R102, regional road, to the west and the coastal railway line, running from Richards Bay to Durban, to the east. The project development area ends near the Forest Inn Hotel on the R102 to Mtunzini. The N2, national road, traverses the length of the 12.4 x 2.5 km orebody. The Umlalazi Nature Reserve is situated 3 km to the south east. There is also a railway line just south of the N2 that also traverses the mining right area. Other general infrastructure in the project development area includes electric power lines, which cross the area in an east to west direction. Land uses in the surrounding area include mining, commercial sugarcane farming, aqua-ponic exotic fish farming, organic flower farming, tea-tree cultivation, fruit farming, university, rural and urban settlements, Umlalazi Nature Reserve, industry, roads and railways.

### **6.3 DESCRIPTION OF SPECIFIC ENVIRONMENTAL FEATURES AND INFRASTRUCTURE ON THE SITE**

Biodiversity sensitivities have been mapped and are described below according to SAAPAD 20201Q3 which delineates protected areas, the KZN Biodiversity Sector Plan of 2016 and National Wetland Mapping by SANBI, 2018 (see Figure 6-15).

In addition the baseline environment description detailed above has highlighted the following sensitive features are present on the site:



## 6.4 ENVIRONMENTAL AND CURRENT LANDUSE MAP

Current land uses around the project site are presented in Figure 6-16. These are detailed further in Section 6.2.

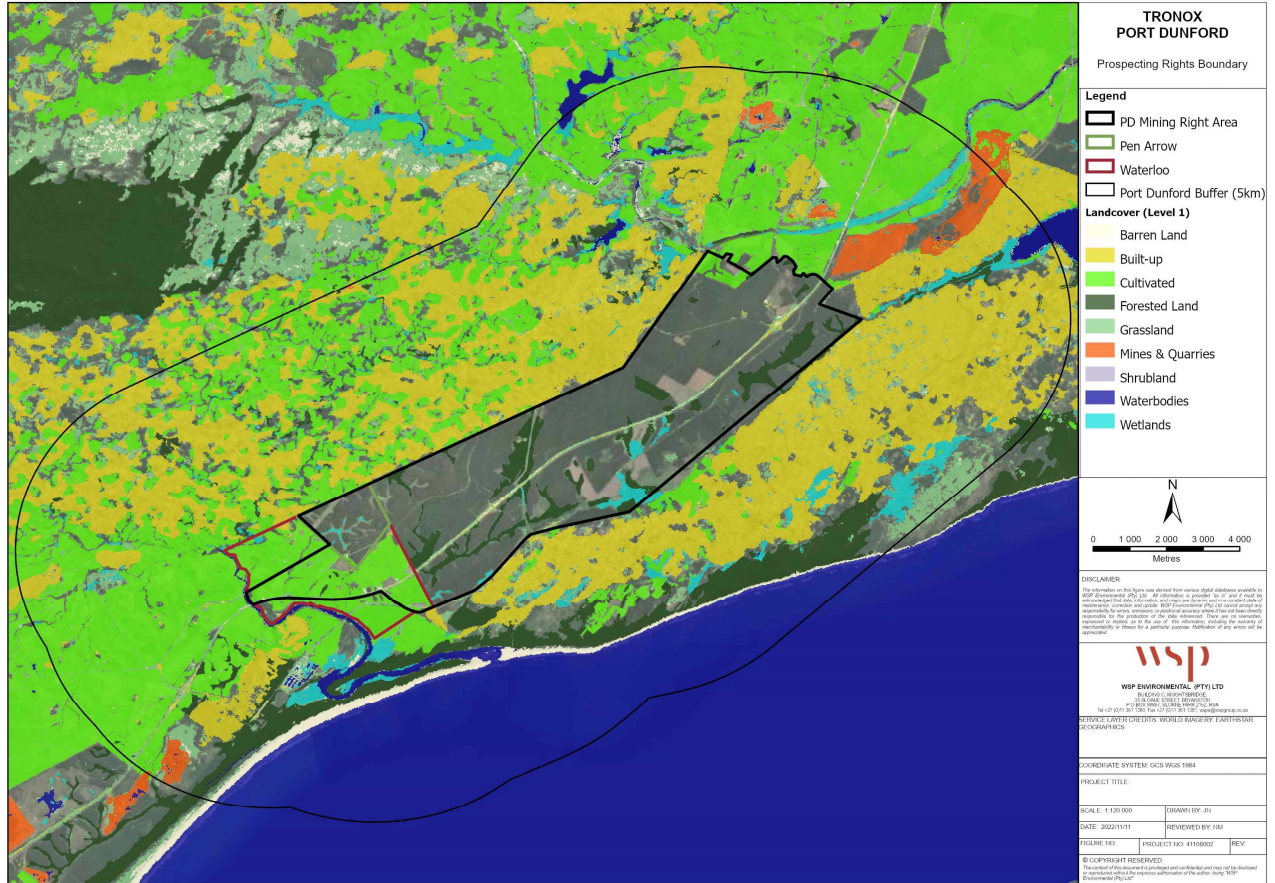


Figure 6-16.

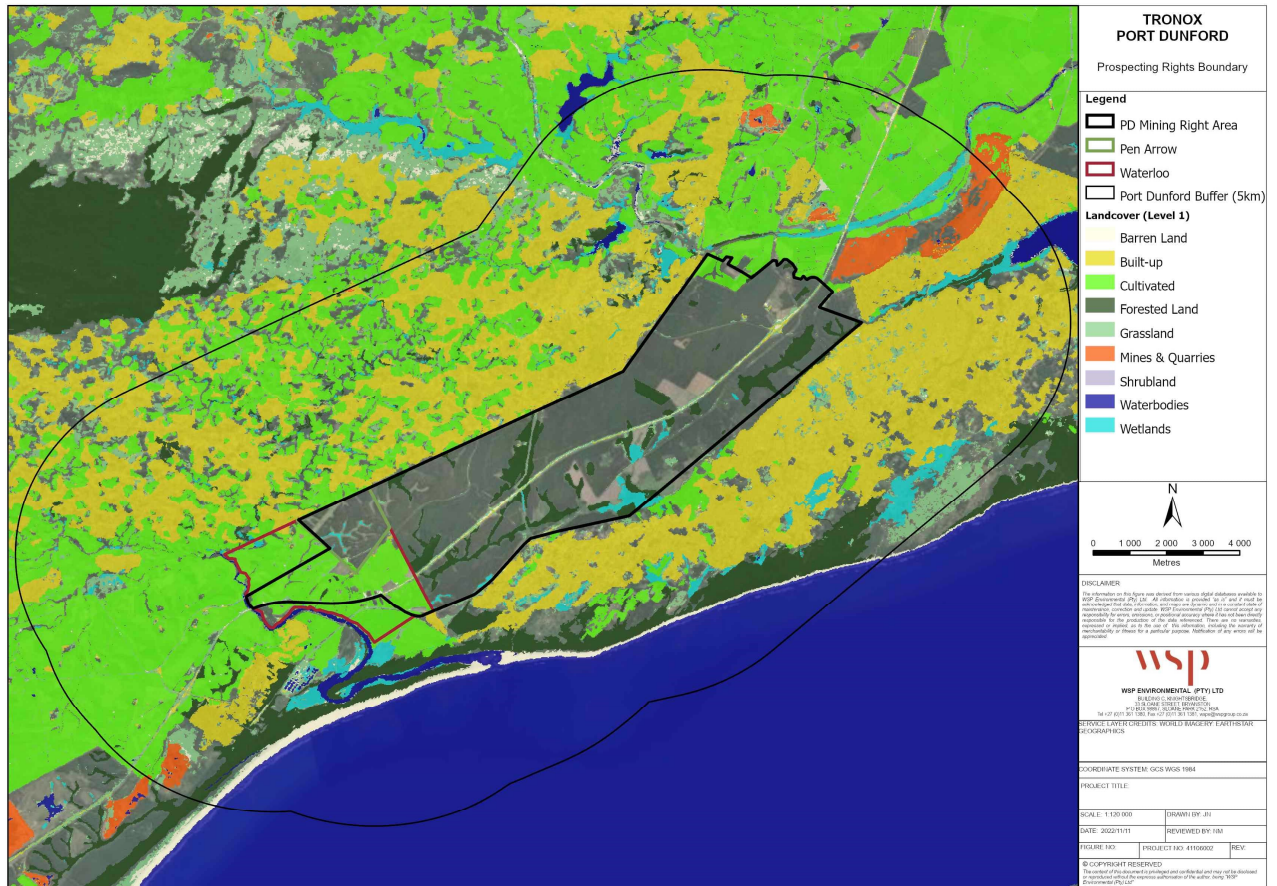


Figure 6-16: Current landcover surrounding the project site

## 7 SCOPING PHASE ASSESSMENT OF IMPACTS

### 7.1 IDENTIFICATION AND EVALUATION OF POTENTIALLY SIGNIFICANT IMPACTS

The potential impacts associated with the proposed development were determined at both a desktop level based on existing information and will be refined following the completion of stakeholder engagements. The following methodology was used:

- Identify potential sensitive environments and receptors that may be impacted on by the proposed development;
- Identify the type of impacts that are most likely to occur (including cumulative impacts);
- Determine the nature and extent of the potential impacts during the various developmental phases, including, construction, operation and decommissioning;
- Identify potential No-Go areas (if applicable); and
- Summarise the potential impacts that will be considered further in the EIA phase through detailed specialist studies.

Appendix 2 of GNR 326 requires the identification of the significance of potential impacts during scoping. To this end, an impact screening tool has been used in the scoping phase. The screening tool is based on two criteria, namely probability; and, consequence (Table 7-1), where the latter is based on general consideration to the intensity, extent, and duration.

The scales and descriptors used for scoring probability and consequence are detailed in Table 7-2 and Table 7-3 respectively.

**Table 7-1: Significance Screening Tool**

Probability Scale	Consequence scale				
		1	2	3	4
1	Very Low	Very Low	Low	Medium	Medium
2	Very Low	Low	Medium	Medium	High
3	Low	Medium	Medium	High	High
4	Medium	Medium	High	High	High

**Table 7-2: Probability Scores and Descriptors**

Score	Descriptor
4	Definite: The impact will occur regardless of any prevention measures
3	Highly Probable: It is most likely that the impact will occur
2	Probable: There is a good possibility that the impact will occur
1	Improbable: The possibility of the impact occurring is very low

**Table 7-3: Consequence Score Descriptions**

<b>Score</b>	<b>Negative</b>	<b>Positive</b>
4	Very severe: An irreversible and permanent change to the affected system(s) or party(ies) which cannot be mitigated.	Very beneficial: A permanent and very substantial benefit to the affected system(s) or party(ies), with no real alternative to achieving this benefit.
3	Severe: A long term impacts on the affected system(s) or party(ies) that could be mitigated. However, this mitigation would be difficult, expensive or time consuming or some combination of these.	Beneficial: A long term impact and substantial benefit to the affected system(s) or party(ies). Alternative ways of achieving this benefit would be difficult, expensive or time consuming, or some combination of these.
2	Moderately severe: A medium to long term impacts on the affected system(s) or party(ies) that could be mitigated.	Moderately beneficial: A medium to long term impact of real benefit to the affected system(s) or party(ies). Other ways of optimising the beneficial effects are equally difficult, expensive and time consuming (or some combination of these), as achieving them in this way.
1	Negligible: A short to medium term impacts on the affected system(s) or party(ies). Mitigation is very easy, cheap, less time consuming or not necessary.	Negligible: A short to medium term impact and negligible benefit to the affected system(s) or party(ies). Other ways of optimising the beneficial effects are easier, cheaper and quicker, or some combination of these.

The nature of the impact must be characterised as to whether the impact is deemed to be positive (+ve) (i.e. beneficial) or negative (-ve) (i.e. harmful) to the receiving environment/receptor. For ease of reference, a colour reference system (Table 7-5) has been applied according to the nature and significance of the identified impacts.

**Table 7-4: Impact Significance Colour Reference System to indicate the Nature of the Impact**

<b>Negative</b>	<b>Positive</b>
Negligible	Negligible
Minor	Minor
Moderate	Moderate
Major	Major

## 7.2 IDENTIFICATION OF SIGNIFICANCE OF POTENTIAL IMPACTS

The scoping phase of an EIA process is aimed to identify potential impacts that are most likely to be significant and which need to be assessed as part of the EIA.



Anticipated impacts associated with the proposed development are detailed in Section 5.8. These have been further assessed in Table 7-5 to Table 7-7. Proposed mitigation measures associated with these impacts are detailed in Section 9.

This assessment has not been undertaken for all of the project alternatives considered to date given that some of these are not feasible from a technical perspective. The alternatives remaining under consideration for the study include those detailed in Section 8. Currently there is not sufficient information on these options to inform an analysis of significance and further specialist work is required in this regard.



**Table 7-5: Significance rating of construction phase impacts**

Impact number	Receptor	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation			Further Assessment Required
						Probability	Severity	Significance	
Impact 1:	Soils	Loss of topsoil as a result of construction activities.	Construction	Negative	Moderate	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 2:	Soils	Soil compaction from construction vehicles and development of site	Construction	Negative	Moderate	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 3:	Soils	Loss of agricultural potential	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 4:	Socio- Economic	Continued socio-economic spend in the project area	Construction	Positive	High	4	3	12	Yes
<b>Significance</b>						<b>Major (+ve)</b>			
Impact 5:	Socio- Economic	Community investment as part of the Social and Labour Plan Process	Construction	Positive	High	4	3	12	Yes
<b>Significance</b>						<b>Major (+ve)</b>			
Impact 6:	Socio-Economic	Continued contribution to the Gross National Product	Construction	Positive	Low	4	1	4	Yes
<b>Significance</b>						<b>Minor (+ve)</b>			
Impact 7:	Socio-Economic	Increased in-migration with the influx of job seekers to the area	Construction	Negative	Moderate	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 8:	Socio-Economic	Incompatibility with adjacent land uses	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 9:	Socio-Economic	Increased pressure on municipal services	Construction	Negative	High	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 10:	Socio- Economic	Job Creation	Construction	Positive	Moderate	4	2	8	Yes
<b>Significance</b>						<b>Moderate (+ve)</b>			
Impact 11:	Heritage	Impact on palaeontological resources	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 12:	Heritage	Impact on Heritage Resources	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 13:	Biodiversity	Destruction/damage/removal of vegetation in the area	Construction	Negative	Moderate	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 14:	Biodiversity	Disturbance of fauna	Construction	Negative	Moderate	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 15:	Biodiversity	Loss of ecosystem services	Construction	Negative	Low	2	3	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 16:	Water impacts	Increased sedimentation of water bodies	Construction	Negative	Moderate	1	3	3	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 17:	Water impacts	Contamination of surface and groundwater	Construction	Negative	High	1	3	3	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 18:	Noise	Increase in ambient noise levels	Construction	Negative	Low	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 19:	Visual	Visual disturbances during construction phase	Construction	Negative	Low	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 20:	Air Quality	Decrease in ambient air quality	Construction	Negative	High	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 21:	Traffic	Increased traffic levels	Construction	Negative	High	1	2	2	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 22:	Traffic	Deterioration of roads	Construction	Negative	High	1	2	2	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 23:	Health and Safety	Community related health and safety risks	Construction	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 24:	Climate Change	Climate change as a result of greenhouse gas emissions	Construction	Negative	Moderate	1	2	2	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			

**Table 7-6: Significance rating of operational phase impacts**

Impact number	Receptor	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation			Further Assessment Required
						Probability	Severity	Significance	
Impact 1:	Soils	Loss of topsoil as a result of mining activities	Operation	Negative	Low	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 2:	Soils	Loss of agricultural potential	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 3:	Socio- Economic	Continued socio-economic spend in the project area	Operation	Positive	High	4	3	12	Yes
<b>Significance</b>						<b>Major (+ve)</b>			
Impact 4:	Socio- Economic	Community investment as part of the Social and Labour Plan Process	Operation	Positive	High	4	3	12	Yes
<b>Significance</b>						<b>Major (+ve)</b>			
Impact 5:	Socio-Economic	Continued contribution to the Gross National Product	Operation	Positive	Low	4	1	4	Yes
<b>Significance</b>						<b>Minor (+ve)</b>			
Impact 6:	Socio-Economic	Increased in-migration with the influx of job seekers to the area	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 7:	Socio-Economic	Incompatibility with adjacent land uses	Operation	Negative	Moderate	2	2	4	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 8:	Socio-Economic	Increased pressure on municipal services	Operation	Negative	High	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 9:	Socio- Economic	Job Creation	Operation	Positive	Moderate	4	2	8	Yes
<b>Significance</b>						<b>Moderate (+ve)</b>			
Impact 10:	Heritage	Impact on palaeontological resources	Operation	Negative	Moderate	3	2	6	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 11:	Heritage	Impact on Heritage Resources	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 12:	Biodiversity	Destruction/damage/removal of vegetation in the area	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 13:	Biodiversity	Disturbance of fauna	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 14:	Biodiversity	Loss of ecosystem services	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 15:	Water impacts	Increased sedimentation of water bodies	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 16:	Water impacts	Contamination of surface and groundwater	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 17:	Noise	Increase in ambient noise levels	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 18:	Visual	Visual disturbances during construction phase	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 19:	Air Quality	Decrease in ambient air quality	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 20:	Traffic	Increased traffic levels	Operation	Negative	High	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 21:	Traffic	Deterioration of roads	Operation	Negative	High	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 22:	Health and Safety	Community related health and safety risks	Operation	Negative	Moderate	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			
Impact 23:	Climate Change	Climate change as a result of greenhouse gas emissions	Operation	Negative	Moderate	2	3	6	Yes
<b>Significance</b>						<b>Minor (-ve)</b>			
Impact 24:	Water impacts	Changes in ground and surface water regimes and the impact on neighbouring water users and ecological systems	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			

**Table 7-7: Significance rating of closure impacts**

Impact number	Receptor	Description	Stage	Character	Ease of Mitigation	Pre-Mitigation			Further Assessment Required
						Probability	Severity	Significance	
<b>Impact 1:</b>	Socio- Economic	Job Losses	Operation	Positive	Low	4	3	12	Yes
<b>Significance</b>						<b>Major (-ve)</b>			
<b>Impact 2:</b>	Visual	Remaining visual disturbances and modified topography	Operation	Negative	Low	4	3	12	Yes
<b>Significance</b>						<b>Major (-ve)</b>			
<b>Impact 3:</b>	Water impacts	Changes in ground and surface water regimes and the impact on neighbouring water users and ecological systems	Operation	Negative	Low	3	3	9	Yes
<b>Significance</b>						<b>Moderate (-ve)</b>			

## 8 PLAN OF STUDY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

### 8.1 DESCRIPTION OF ALTERNATIVES TO BE CONSIDERED INCLUDING THE OPTION OF NOT GOING AHEAD WITH THE ACTIVITY

A description of the alternatives that have been considered to date as part of the pre-feasibility work is provided in Section 4.3. Additional alternatives are also likely to be identified through the stakeholder engagement process and this list will be refined as part of the Final Scoping Report.

Currently the alternatives detailed in Table 8-1 remain under consideration for the EIA.

**Table 8-1: Project alternatives to be considered in the EIA**

Alternative type	Alternatives remaining under consideration
Project versus no-go option	Both of these alternatives remain under consideration
Layout alternatives	Additional environmental exclusion zones may be identified through the specialist investigations and modifications will need to be made to the layout plans
Route to be utilised for the transportation of ROM during Phase 1	Still under consideration. To be advised by the traffic specialist
Mine closure alternatives	The final end land use for the project needs to be advised by the mine closure assessment currently being undertaken as part of the EIA as well as agreements reached with the landowners
Input alternatives	Although water and power sources for the project have been detailed these supplies need to be confirmed and agreements reached. As such these alternatives remain under consideration for the EIA.

### 8.2 DESCRIPTION OF THE ASPECTS TO BE ASSESSED AS PART OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In addition to the specialist investigations detailed in Section 8.3, a qualitative assessment will be undertaken of the following aspects relevant to the construction, operational and decommissioning phase of the project, and mitigation measures included in the EMP:

- Soil, groundwater and surface water contamination associated with the handling of hazardous substances and other pollutants
- Generation of General Waste
- Generation of Hazardous Waste
- Sanitation Waste
- Effluent

- Occupational Health and Safety
  - Exposure to Hazards
  - Non-Ionizing Radiation
  - Heat
  - Noise
  - Electrical Hazards

### 8.3 DESCRIPTION OF ASPECTS TO BE ASSESSED BY SPECIALISTS

This section provides the scope of specialist studies deemed necessary for a robust assessment of impacts.

#### 8.3.1 AIR QUALITY IMPACT ASSESSMENT

**Table 8-2: Air Quality Assessment Specialist Scope**

Task	Description
Baseline Assessment	<p>To contextualise the study area, a baseline assessment will be undertaken. This will include:</p> <p>A desktop review of the site layout, identifying key neighbouring sensitive receptors, including adjacent communities and residential areas (as applicable).</p> <p>Identification of any neighbouring sources (if applicable). Emissions from these sources will not be included into the dispersion model, but a discussion on how they may contribute to the cumulative air quality conditions will be included.</p> <p>Meteorological conditions with the use of three years data purchased from the nearest South African Weather Service (SAWS) station and Weather Research and Forecasting (WRF) prognostic data (required for AERMOD) for the period January 2019 to December 2021.</p> <p>Assessment of existing ambient air quality conditions through the analysis of ambient monitoring data.</p> <p>Review of applicable air quality legislation.</p>
Dispersion Modelling	<p>To assess the dispersion of pollutants from the proposed Project, WSP proposes that the AERMOD dispersion modelling software suite is utilised. AERMOD is a Level 2 dispersion model recommended within the Modelling Regulations and is internationally recognised by organisations such as the United States Environmental Protection Agency. With the following capabilities, AERMOD is well equipped to simulate the dispersion of emissions from the facility:</p> <ul style="list-style-type: none"> <li>• It is a new generation air dispersion model designed for short-range dispersion (&lt;50 km) of airborne pollutants in steady state plumes;</li> <li>• It incorporates air dispersion based on boundary layer turbulence structure and scaling, including treatment of both surface and elevated sources and both simple and complex terrain; and</li> <li>• It uses hourly sequential meteorological files with pre-processors to generate flow and stability regimes for each hour that cumulatively</li> </ul>

Task	Description
	<p>offer long-term ambient concentrations whilst also capturing short-term peaks.</p> <p>WSP consider an AERMOD model sufficient for the local topographic and meteorological context, and the anticipated modelling domain extent. AERMOD has better near range resolution than some more complex models, such as CALPUFF, which is relevant for assessing impacts on nearby receptors. However, should the relevant authority stipulate a Level 3 model, costs will be adjusted to account for further model setup time, run times and the costs of meteorological inputs.</p> <p>One modelling scenario, namely air quality impacts associated with the operation of the proposed Project will be modelled. Cumulative impacts will be assessed through the inclusion of background monitored data (if available), as required by the modelling regulations.</p>
Air Quality Impact Assessment Report (AQIA)	<p>On completion of the dispersion modelling, WSP will compile an integrated and detailed AQIA for the proposed Project. The report will assess the impact of applicable emissions on the receiving environment through comparison of predicted ambient concentrations with ambient air quality standards. The report will include details on the methodological approaches adopted in the assessment, a detailed breakdown of the emissions inventory and analysis of dispersion modelling results in the form of isopleths and statistical tables. The report will make recommendations for impact mitigation and ambient monitoring, should these be deemed necessary. The report will align with the requirements in the Modelling Regulations.</p>

### 8.3.2 NOISE IMPACT ASSESSMENT

**Table 8-3: Noise Assessment Specialist Scope**

Task	Description
Baseline Assessment	<p>To contextualise the study, a baseline assessment will be performed which will comprise the following:</p> <ul style="list-style-type: none"> <li>• Identification of sensitive receptors (noise receivers) in the vicinity of the proposed site.</li> <li>• An assessment of the existing noise climate in the vicinity of the site through baseline noise monitoring:</li> <li>• Day and night-time noise monitoring will be conducted at various predetermined locations in and around the site and at various sensitive receptor locations. All noise level measurement procedures will be undertaken according to the relevant South African Code of Practice, South African National Standards (SANS) 10103:2008. Sound level measurements will be undertaken using a Casella™ Type 1 Integrating Sound Level Meter. Monitoring will be conducted in fifteen-minute intervals, with the day-time monitoring occurring between 06:00 and 22:00, and the night-time monitoring between 22:00 and 06:00.</li> <li>• As per the recently published GNR 320 of the National Environmental Management Act<sup>1</sup>, night-time monitoring will take place over a minimum of two nights, with each sample taken at two</li> </ul>

Task	Description
	<p>different times of the night to record the typical ambient sound levels at the different times of the night.</p> <ul style="list-style-type: none"> <li>On completion of the monitoring, WSP will download, verify and format the data for inclusion into the Environmental AIA.</li> <li>Assessment of monitored results against the relevant South Africa guideline rating levels.</li> </ul>
Acoustic Inventory	<p>A detailed acoustic inventory of all potential noise sources associated with the proposed operations will be developed, with sound pressure levels sourced from the Noise Navigator™ sound level database (Berger et al., 2010) or alternative literature. The sound level database provides sound levels of over 1,700 occupational and non-occupational noise sources.</p>
Acoustic Modelling	<p>Noise levels associated with the operational phase of the proposed Project will be determined through use of an acoustic model.</p> <p>Environmental acoustic modelling will be conducted using the internationally accredited noise modelling software, CadnaA (Computer Aided Noise Abatement). The CadnaA software provides an integrated environment for noise predictions under varying scenarios and calculates the cumulative effects of various sources. The model uses ground elevations in the calculation of the noise levels in a grid and uses meteorological parameters that influence on the propagation of noise. CadnaA has been utilised in many countries across the globe for the modelling of environmental noise and town planning. It is a comprehensive software for 3-dimensional calculations, presentation, assessment, and prediction of environmental noise emitted from industrial plants, parking lots, roads, railway schemes or entire towns and urbanized areas.</p> <p>The noise source inventory detailed above will be utilised as input for the CadnaA model. Gridded outputs from CadnaA will then be input into ArcGIS to provide a visual representation (isopleth output) of noise levels throughout the region. The noise contribution from the proposed Project to the existing noise levels (monitored data) will be calculated, with comparisons being made to relevant National guidelines.</p>
Environmental Acoustic Impact Assessment Report	<p>A detailed environmental AIA report will be provided detailing findings of the baseline assessment, acoustic modelling results and impacts, as well as monitoring recommendations and mitigation measures if deemed necessary.</p>

### 8.3.3 CLIMATE CHANGE IMPACT ASSESSMENT

**Table 8-4: Climate Change Assessment Specialist Scope**

Task	Description
Greenhouse Gas (GHG) Assessment	<p>The GHG assessment will be undertaken using the Greenhouse Gas Protocol (GHGP). The Greenhouse Gas Protocol is a joint initiative of the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI) and is one of the most widely used international accounting tools for government and businesses to quantify and manage GHG emissions. Both assessment methodologies are internationally</p>

Task	Description
	<p>recognised tools for calculating the proposed project GHG emissions. The GHG Assessment report will include the following tasks:</p> <p>Compile a GHG inventory for the proposed project based on data provided by Tronox and supplemented where necessary with publicly available literature data. The inventory will include emissions from scope 1 and scope 2 for significant sources identified for the project. Importantly, scope 3 emissions have been excluded from this assessment.</p> <p>Evaluate and tabulate annual GHG emissions for the project as CO2 equivalent.</p>
Climate Change Risk Assessment	<p>The Physical Climate Risk Assessment will employ a risk management approach based on available design to anticipate future climate conditions for the project region and how climate change related disruptions or impacts may affect the project and the related infrastructure. A high-level qualitative screening level risk assessment approach will be conducted based on the available project design information and climate change studies. The Climate Risk Assessment will include the following tasks:</p> <ul style="list-style-type: none"> <li>• Describe the current climate of the region.</li> <li>• High-level description of the predicted changes in climate for the region in the medium term (2020-2050) and long-term (2051-2100) under two GHG mitigation scenarios (medium-high mitigation and low mitigation).</li> <li>• Basic desktop review of potential climate change impacts that select project components are most vulnerable to.</li> <li>• High-level desktop assessment of the potential impact of the project's GHG emissions.</li> <li>• High-level review of mitigation measures, if deemed necessary.</li> <li>• This scope is designed to be qualitative in nature to identify key risk areas for further studies as part of the detailed design.</li> <li>• All items listed above will be provided in a Climate Change Risk Assessment Report for the project.</li> </ul>

### 8.3.4 BIOLOGICAL ASSESSMENT

Preliminary review of the web based environmental screening tool report for the proposed Port Dunford development indicates potentially high sensitivity in terms of the terrestrial biodiversity theme on account that the study area is located in an area mapped as Critical biodiversity area 1 and 2, Ecological Support Area, National Forestry Inventory, Protected Areas Expansion Strategy, Critically Endangered Ecosystem and the Umlalazi Nature Reserve. The proposed study area is also located in an area mapped as having a very high sensitivity in terms of aquatic biodiversity theme on account of the study area being located in a Strategic Water Management Area. In light of this and in line with Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation, which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”), and in Government Notice No.



1150 of 30 October 2020 (i.e. protocols for terrestrial plant and animal species), the approach to the biodiversity specialist assessments will be focused on conducting a comprehensive flora and fauna (mammal, avifauna, herpetofauna and invertebrates), wetlands, hydrogeology and aquatic ecology survey. The tasks associated with these studies are discussed below.

**Table 8-5: Biological / Ecological Specialist Scope**

Task	Description
<p>Aquatic Biodiversity specialist study (Wetlands and Rivers)</p>	<p><b><i>Wetland Assessment</i></b></p> <p>Preliminary review of the National Wetland Map version 5 indicates that a number of seep wetlands, depression wetlands and unchanneled valley bottom wetlands occur within the proposed Port Dunford study area boundary. Furthermore the proposed study area is also located within the regulated 500 m zone from an estuary functional zone. Due to the sensitivity of the study area as indicated by the NWM5 and the environmental screening tool, the approach for the wetland assessment will be a comprehensive wetland biodiversity specialist assessment and will include the following:</p> <ul style="list-style-type: none"> <li>• Information and attributes of wetland boundaries using the soil form, soil wetness, vegetation and terrain unit indicators;</li> <li>• Refined classification based on site characteristics of wetlands according to hydrogeomorphic (HGM) units;</li> <li>• Functional assessment results of wetlands within the selected areas based on the Wet-Ecoservices tool Version 2 (Kotze, 2020);</li> <li>• Determination of the Ecological Importance and Sensitivity (EIS) and Present Ecological State (PES) of the wetlands within the study area using the methods described in the manual for the rapid ecological reserve determination of inland wetlands (Rountree, 2013) and WET-Health assessment tools (McFarlane et al., 2008);</li> <li>• The health of each wetland system within the study area will be expressed in terms of 'hectare equivalents' of intact wetland, which provides a common currency for comparing different wetlands as well as baseline and post-rehabilitation scenarios.</li> <li>• Potential impacts on the wetland will be assessed and suitable mitigation measures devised in line with the mitigation hierarchy.</li> </ul> <p><b><i>Hydrogeology</i></b></p> <p>A hydrogeological site visit and soil survey will be undertaken in accordance with the survey technique presented in Le Roux et al, 2011. This technique involves the identification of representative hillslopes in a study area, augering observations along transects perpendicular to the slope, detailed descriptions, identification of horizons, taxonomic classification of the soil profiles (Soil Classification Working Group, 1991), and recording of all soil features related to hydrology.</p> <p>The soil information gathered during the survey process will be interpreted and related to associated hydrological behaviour. The various areas displaying distinct hydrogeological characteristics will be mapped. Conceptual hydrogeological process models will be determined, described and displayed visually based on each identified hydrogeological soil type for the surveyed hillslope transects.</p> <p><b><i>Aquatic Assessment</i></b></p>

Task	Description
	<p>In order to enable adequate description of the aquatic environment three indicators have been selected to represent each of the responding, habitat and stressor components involved in the aquatic environment. Broad methodologies to characterize these components are described below. These proposed methodologies are generally applied and accepted (DWS &amp; USEPA) and are as follows: Stressor Indicators: Habitat Indicators: Response Indicators.</p> <ul style="list-style-type: none"> <li>• Whole Effluent Toxicity Testing (WET testing)</li> </ul> <p>The current legislation has made toxicity testing compulsory for the protection of human health and the natural environment. Focus has shifted from environmental assessments based only on chemical analysis, to assessments which include potential effects. Whole Effluent Toxicity (WET) tests are used by governmental, industrial and international agencies as exposure indicators to give an estimation for the probability of an effect on the environment</p> <p>Four bioassay toxicity tests (<i>Vibrio fischeri</i>, <i>Selenastrum capricornutum</i> growth inhibition test, <i>Daphnia pulex</i> and <i>Poecilia reticulata</i> acute toxicity tests) will be conducted by the Golder Associates Research Laboratory, SANAS Accredited Toxicity Laboratory (T0384).</p> <p>Screening tests will be conducted at the identified sampling points along the associated aquatic ecosystems (this includes up and downstream sites along the associated system).</p> <ul style="list-style-type: none"> <li>• Reporting</li> </ul> <p>A detailed assessment of the potential impacts of the proposed development on aquatic and wetland systems in accordance with the aquatic biodiversity protocol requirements will be delivered in two separate specialist reports:</p> <ul style="list-style-type: none"> <li>• Aquatic Biodiversity Specialist Assessment Report (wetlands including hydrogeology)</li> <li>• Aquatic Biodiversity Specialist Assessment Report(Rivers)</li> <li>• Suitable mitigation measures will be devised in line with the mitigation hierarchy.</li> </ul>
<p>Terrestrial Biodiversity Study</p>	<p><b>Ecology Sensitivity Screening</b></p> <ul style="list-style-type: none"> <li>• A desktop delineation of on-site vegetation units/communities;</li> <li>• A list of potential flora and fauna species occurring through the various study area sites, with specific emphasis on Red list and protected species; and</li> <li>• Understanding of the local landscape matrix, including adjacent land uses, habitat characteristics and linkages, and existing negative impacts.</li> <li>• The outcomes of the desktop ecological sensitivity screening will be used to determine the scope of the required field programme.</li> </ul> <p><b>Vegetation &amp; Flora</b></p> <ul style="list-style-type: none"> <li>• Conduct field work in order to ground-truth and document the vegetation communities according to stratified map units defined during the preliminary vegetation mapping exercise, using</li> </ul>

Task	Description
	<p>information on vegetation pattern, structure and ecological variation (e.g., soil and moisture conditions, landscape position, level of disturbance);</p> <ul style="list-style-type: none"> <li>• Sample the full range of mappable vegetation types to compile a general inventory of plant species present within the proposed study area (i.e., trees, shrubs, forbs, and graminoids) and to characterise the plant communities present within the proposed study area;</li> <li>• Search for and map the presence of statutorily protected, rare, threatened, regionally/locally endemic plant species, range-restricted species and/or species of local importance present within the study area.</li> <li>• Document and map the presence and distribution of invasive plant species in the study area – data on invasive species in the study area will be provided in Excel format detailing common and scientific names, and photographs of each;</li> <li>• Refine the preliminary vegetation community classification and mapping based on the results of field-based ground-truthing and data collection;</li> <li>• Compilation of a comprehensive flora baseline report for the study area, with key recommendations which will include identification and mapping of High and Medium sensitivity areas from a botanical perspective, and scientifically defensible buffer zone recommendations.</li> </ul> <p><b>Fauna</b></p> <ul style="list-style-type: none"> <li>• The fauna survey will be conducted for specific ecological disciplines (mammals, birds, herpetofauna and invertebrates) based on the site environmental sensitivity screening report as identified in the National Web based Environmental Screening Tool. The Min focus of the fauna survey will be placed on species of conservation importance, particularly on Red List birds and amphibians. The sampling methods that would be utilised for each of the different fauna groups, including: <ul style="list-style-type: none"> <li>○ Mammals (active and passive sampling)</li> <li>○ Avifauna (ornithological importance of the study area)</li> <li>○ Herpetofauna (Reptiles &amp; Amphibians) (active and passive sampling)</li> <li>○ Invertebrates (active sampling)</li> </ul> </li> </ul>

### 8.3.5 SOILS AND AGRICULTURAL POTENTIAL ASSESSMENT

**Table 8-6: Soils and Agricultural Potential**

Task	Description
Desktop Review	The methodology will include acquisition and assessment of existing soils and geology data to establish baseline conditions and to establish a plan of study to undertake the soil survey.

Task	Description
Site Survey	Soil surveys will be undertaken on the proposed sites largely on foot using a hand-held bucket auger according to a free format. The soils will be classified by form and mapped according to the South African Soil Classification Taxonomic System (Soil Classification Working Group, 1991).
Reporting	<p>The relevant soils maps of the area will be provided to indicate the soil forms identified and their distribution and relevance over the study area. Agricultural Research Council Guidelines will be used to identify and map land capability and soil potential.</p> <p>The final soils report will include descriptions of the soil forms, their distribution, typical chemical and physical properties as well as descriptions of current land use, land capability and soil potential. A soil potential impacts assessment will be carried out and associated mitigation measures recommended.</p>

### 8.3.6 SURFACE WATER, WATER BALANCE AND FLOODLINES

**Table 8-7: Surface Water, Water Balance and Floodlines Scope of Work**

Task	Description
Desktop Assessment and Site Visit	A site assessment will be conducted to ground-truth the conditions with the intention of assessing drainage conditions, and confirming information gathered during the desktop review. Specific consideration will be given to the proposed site layout in relation to the drainage as well as locations of the proposed infrastructure that may affect the calculations. Thereafter, a desktop review will be undertaken to gain an understanding of the general site characteristics. The desktop review will serve to provide climatic (inclusive of rainfall data) and environmental information required for the numerical modelling, as well as providing a description of the proposed site conditions and drainage characteristics.
Hydrology	All available rainfall data, including site-specific rainfall received from site as well as nearby regional rain gauges (maintained by the Department of Water and Sanitation), and the South African Weather Service, will be analysed and verified. A suitable source of data will be selected for use in calculating the design rainfall depth for each return interval. Climate change will be incorporated into this assessment.
Flood lines	A steady flow HEC-RAS flood analysis model (one dimensional hydraulic model) will be developed for the main rivers and streams within the study area for the 1 in 50-year and 1 in 100-year intervals. The accuracy of the model is highly dependent on the quality of the survey data. It is assumed that LiDAR data will be available giving 0.5 m contour information. The abovementioned site visit will also be used to measure any river crossings (bridges, culverts etc.) for incorporation into HEC-RAS flood analysis model.
Stormwater Management Plan (SWMP) Update	A SWMP will be developed for the proposed mine area taking into account all proposed infrastructure. All relevant information pertaining to the proposed mine will be acquired from the Client. In general, the approach described in GN 704 will be adopted, as it is considered as relevant and conservative. GN

Task	Description
	<p>704 stipulates that the following tasks should be undertaken when developing SWMPs:</p> <ul style="list-style-type: none"> <li>• Separate clean and dirty water systems:</li> <li>• Demarcation of dirty water footprint areas.</li> <li>• Delineation of upstream catchment areas that would naturally drain into dirty water areas.</li> <li>• Estimation of peak flood runoff from relevant catchments.</li> <li>• Design of drains, diversion channels and berms to prevent clean water from entering dirty water areas.</li> <li>• Control and contain dirty water runoff:</li> <li>• Design of drains and berms to prevent dirty water from leaving dirty water areas.</li> <li>• Design appropriately sized pollution control dams that will not spill into a clean water system more than once in 50 years.</li> <li>• Prevent or reduce pollution to water resources:</li> <li>• Prevent or reduce pollution of clean water resources.</li> <li>• Evaluate processes and adapt systems to minimize the contact between potential pollutants and water resources.</li> <li>• The US EPA Storm Water Management Model (SWMM) will be used to develop a rainfall-runoff model for the study areas. The PCSWMM® (refer <a href="http://www.chiwater.com">www.chiwater.com</a>) commercial software package, developed by Computational Hydraulics International (CHI) was used as the analysis tool. PCSWMM® is a dynamic rainfall-runoff simulation model used for single event or long-term simulation of runoff quantity. The runoff component of SWMM operates on a collection of sub-catchment areas that receive precipitation and simulate runoff overland and underground through a system of pipes, channels, storage and treatment devices, pumps, and regulators.</li> <li>• PCSWMM tracks the quantity of runoff generated within each sub-catchment, and the flow rate, flow depth and quality of water in each pipe and channel during a simulation period comprised of multiple time steps.</li> <li>• Relevant software to be utilised includes the following: <ul style="list-style-type: none"> <li>○ ArcView10.1 for Geographic Information Systems (GIS) work and mapping.</li> <li>○ PCSWMM® modelling software for the SWMP.</li> <li>○ AutoCAD Civil 3D.</li> </ul> </li> </ul>
Water Balance Update	A water balance will be developed in Goldsim software to assist in sizing of the PCDs (associated with the SWMP) as well as the pit pumping and storage requirements.

### 8.3.7 HYDROGEOLOGICAL IMPACT ASSESSMENT

The main objective of the hydrogeological investigation at hydrogeological investigation and impact assessment at Port Dunford is to:

- Document the current groundwater baseline conditions;
- Develop a groundwater a Numerical Model and Impact Assessment (IA) of the site; and
- Prepare a groundwater baseline, numerical model, and IA report to support Tronox with their environmental authorisation processes at Port Dunford.

**Table 8-8: Hydrogeological Assessment Specialist Scope**

Task	Description
Desk Study and Information Review	Information review of existing hydrogeological reports will be undertaken to gain an understanding of the hydrogeology and geology of the investigation area. Latest monitoring data (quality and water levels), existing groundwater, and hydrological reports (numerical model), geological information, borehole logs, maps, existing groundwater quality data, abstraction rates etc. will be obtained and studied as part of the information review. The information review to include 2010 environmental and specialist studies of Port Dunford.
Site Visit and Hydrocensus	<p>A combined site visit and hydrocensus will be conducted of the investigation area to verify the status of the existing boreholes and will include a hydrocensus of accessible bordering groundwater users' boreholes within a ~2 km radius of the site.</p> <p>The hydrocensus will involve the collection of data from accessible groundwater facilities located from existing information (maps and reports), including GPS co-ordinates, landowners' details, existing equipment, current use, reported yield, reported, or measured borehole/well depth and static water level.</p> <p>Hydrocensus data and groundwater quality conducted as part of this study will be interpretate and processed.</p> <p>Allowance has been made for 15 groundwater samples to be collected during the hydrocensus of the existing boreholes to determine the current groundwater conditions. The sampling will be as per WSP's standard sampling procedures and submitted to a SANAS accredited laboratory for chemical analysis. The analytical suite for water samples will include major cations (e.g., Na, K, Mg, Ca), major anions (e.g., Cl-, F-, SO42- and NO3-), physico-chemical parameters (pH, conductivity, Total Dissolved Solids, Total alkalinity) and will include Cyanide, Fe, Al, Cu, Pb, Zn and trace elements as determined by ICP-OES).</p>
Groundwater Gap Analyses	Following the desk study and site visit a groundwater gap analysis will be conducted to identify any groundwater information gaps.
Groundwater Numerical Model and Impact Assessment	Groundwater Conceptual Model/Understanding: The existing groundwater and new groundwater information will be used to develop a groundwater conceptual model/understanding of the investigation area. The conceptual model will be developed in the source-pathway-receptor (SPR) approach, which aims to quantify relationships between sources of contamination and (potential) receptors of contamination by considering relevant pathways/exposure mechanisms and processes. The conceptual model will

Task	Description
	<p>indicate the dynamics of the groundwater system, aquifer distribution, role of geological structures and groundwater flow directions.</p> <p>Develop Numerical Model: WSP uses FEFLOW for groundwater modelling as the preferred modelling package. FEFLOW is a highly sophisticated and powerful 3D finite element modelling package and is designed to cope with complex hydrogeological and mining situations. FEFLOW can be efficiently used to describe the spatial and temporal distribution of groundwater flow and contaminants, to estimate the duration and travel times of pollutants in aquifers, to plan and design remediation strategies and interception techniques, and to assist in designing alternatives and effective monitoring schemes. The potential impact of the proposed Port Dunford opencast mining activities to the groundwater regime and existing groundwater users will be assessed from the modelling. Modelling inputs include:</p> <ul style="list-style-type: none"> <li>• Topography;</li> <li>• Rainfall data;</li> <li>• The initial groundwater conceptual model;</li> <li>• Water levels, hydraulic gradient, and groundwater flow directions;</li> <li>• Quantified aquifer hydraulic parameters;</li> <li>• Geology (geological model);</li> <li>• Site layout and infrastructure</li> <li>• Positions of existing water supply and monitoring boreholes;</li> <li>• Opencast mining plan;</li> <li>• Surface topography (x, y, z co-ordinates); and</li> <li>• Possible source term(s).</li> </ul> <p>Once the model is calibrated, the groundwater flow and solute transport model will be used to address the objectives of the investigation as set out above for the proposed Port Dunford opencast mining activities. The model will be used to simulate various scenarios and assess the need for the implementation of mitigation measures.</p> <p>Integrated Impact Assessment and Environmental Management Measures: The modelling will therefore be used to assess the likely impacts of the proposed Port Dunford opencast mining activities on the existing groundwater regime and will include the following scenarios:</p> <ul style="list-style-type: none"> <li>• Potential impact of the of the mining activities on the groundwater system will be assessed;</li> <li>• Impacts on the groundwater quantity and quality of existing groundwater users' boreholes;</li> <li>• Impacts on the existing groundwater level;</li> <li>• Possible development of pollution plumes emanating from the proposed Port Dunford opencast mining activities;</li> <li>• Transport model for pollution impact assessment and control, to include possible mitigation measures to reduce the impact on the groundwater; and</li> </ul>

Task	Description
	<ul style="list-style-type: none"> <li>Identify environmental management measures so that negative impacts may be mitigated, and positive benefits enhanced.</li> </ul> <p><b>Groundwater Monitoring Programme</b></p> <p>As part of the numerical model outcome an initial groundwater monitoring plan will be developed to support the proposed Port Dunford open cast mining activities and to build up a time related database and to identify future impacts and groundwater quality trends.</p> <p>Any groundwater monitoring network design should be guided by a risk-based source-pathway-receptor principle. A groundwater monitoring network should contain monitoring positions which can assess the groundwater status at certain areas. Both the impact on water quality and water quantity should be catered for in the monitoring system. The boreholes in the network should cover the following:</p> <ul style="list-style-type: none"> <li>Source monitoring – monitoring close to possible contaminant sources;</li> <li>Plume (pathway) monitoring – monitoring along identified contamination plumes (if any);</li> <li>Impact (receptor) monitoring – monitoring at expected sensitive receptors; and</li> <li>Monitoring of the background water quality and levels</li> </ul>
Qualitative Impact Assessment	The potential impact of the proposed Port Dunford opencast mining activities on the groundwater system will be assessed on a qualitative basis. The environmental significance of potential impacts will be determined on an Impact Assessment Methodology, provided, or as agreed upon by the client.
Hydrogeological Report	A groundwater baseline, numerical model and impact assessment report will be prepared on the DWS GN267 report format, describing the current groundwater baseline conditions and will include the numerical model and IA results, mitigation measures, and a proposed groundwater monitoring programme. The deliverables of the hydrogeological investigation will be to support Tronox with their environmental authorisation processes at Port Dunford.

### 8.3.8 GEOCHEMISTRY ASSESSMENT

The study approach and methodology that will be followed in this study will be consistent with the following guidance documents, South African regulations and National Norms and Standards:

DWAF Best Practice Guidelines for Water Resource Protection in the South African Mining Industry1- BPG G4 “Impact Prediction”, which documents and defines general strategies, techniques, and tools for predicting water impacts on mine sites of 2008:

- DEA Characterisation of waste according to the Regulations Regarding the Planning and Management of Residue Stockpiles and Residue Deposits from a Prospecting, Mining, Exploration or Production Operation of 2015.
- DEA Classification of waste according to SANS 10234 as per Waste Classification and Management Regulations (as required by GN R.634 of 23 August 2013), and



- DEA Waste Assessment as per the National Norms and Standards for the Assessment of Waste for Landfill Disposal (GN R.635 of 23 August 2013).

**Table 8-9: Geochemistry Specialist Scope**

Task	Description
Risk Assessment (GN R.632)	<p>The environmental aspects of the design and management of mine residues (i.e., dumps or stockpiles of waste rock, overburden – carbonaceous and non-carbonaceous material, ROM) are governed by the National Environmental Management: Waste Act (NEM:WA). GN R. 632 of 2015 provides for the characterisation of mine residues (all forms of mine waste and stockpiles) as input to a risk assessment. In addition to mineralogy and chemical properties, an understanding of the toxicity and physical properties is required to inform a Source-Pathway-Receptor risk assessment.</p> <p>WSP's approach to the risk assessment required by Regulation 9 of GN R. 632 of 2015 is the following framework:</p> <ul style="list-style-type: none"> <li>• Characterisation of the mining residue waste streams in terms of Regulation 4:</li> <li>• Geochemical characteristics.</li> <li>• Physical characteristics.</li> <li>• Toxicity.</li> <li>• Determination of the impact on the receiving groundwater and surface water environment, considering: <ul style="list-style-type: none"> <li>• The characterisation of the mining residues.</li> <li>• The vulnerability of the local aquifer(s).</li> <li>• The presence of vulnerable ecosystems.</li> </ul> </li> <li>• The predicted runoff and seepage chemistry, with classification of the predicted mine water in terms of baseline water quality, DWAF (1996) water use guidelines and the water quality planning limits (WQPL) applicable to the receiving water bodies.</li> </ul> <p>GN R. 632 of 2015 requires that that the pollution control barrier system for a mineral residue facility be driven by a risk assessment based on the material characteristics. Note: Prior to amendment by GN 990 (21 September 2018), the requirement was that the pollution control barrier system was driven by the GN R. 635 of 2013, which still presents a useful point of departure, and is still required by DWS.</p>
Waste Classification (SANS 10234 and GN R. 634)	<p>According to section 4(2) of GN R634 of 2013, all waste generators must ensure that their waste is classified in accordance with SANS 10234 (based on the Global Harmonised System) within 180 days of generation, except if it is listed in Annexure 1 (i.e., Wastes that do not require Classification and Assessment) of the GN R634. Furthermore, waste must be re-classified every 5 years. Waste classification according to SANS 10234 (based on the Global Harmonised System) indicates physical, health, and environmental hazards. The SANS 10234 covers the harmonised criteria for classification of potentially hazardous substances and mixtures, including wastes, in terms of its intrinsic properties/hazards. Where specific guidance from the South African perspective is lacking, classification will take cognisance of European Regulation (EC) No. 1272/2008 on the Classification, Labelling and Packaging of Substance and Mixture (CLP Regulation) which is adopted,</p>

Task	Description
	within the European community, the GHS as published in the United Nations Social and Economic Council.
Waste Assessment (GN R.635)	A GN R635 waste assessment is performed to determine the Type of waste and based here on the correct barrier design requirements for disposal. The assessment of waste must be done in terms of the procedures stipulated in GN R.635 of 23 August 2013 where the potential level of risk associated with the disposal of materials/wastes can be determined by following the prescribed and appropriate leach test protocols. The results must be assessed against the four levels of thresholds for leachate and total concentrations, which in combination, determine the waste type and associated barrier design / liner requirements.

### 8.3.9 SOCIAL IMPACT ASSESSMENT

WSP proposes a close integration between the stakeholder engagement and the social assessment process. It is WSP's experience that a closely integrated and coordinated public participation and social assessment process provides for a more streamlined engagement and assessment process and better integration in the environmental impact assessment process.

The primary objective of the SIA process is to assist with the identification, assessment and selection of the issues relating to the proposed project. The SIA process will assess the alternatives, forecast probable social impacts, and make recommendations on how to avoid, eliminate and reduce impacts and enhance any positive effects.

Key aspects of the proposed WSP's SIA approach are summarised as follows:

- The SIA process will be integrated with the external stakeholder engagement processes to the furthest extent feasible. The stakeholder engagement process, including the proposed public/ focus group meetings, will have a multipurpose focus to achieve both the objectives of the stakeholder engagement and the SIA process. Social data will be sourced from the overall stakeholder engagement process, incorporating the relevant aspects from the respective comments and response registers developed as part of the stakeholder engagement process.
- The SIA process will entail a select combination of primary data collection and secondary research. Both qualitative and quantitative assessment process will be used. The social assessment evaluation methodology and the comparative assessment and rating approach will be finalised in consultation with the environmental impact assessment teams.

**Table 8-10: Social Assessment Specialist Scope**

Task	Description
Literature Review	Literature review of all existing information will be undertaken. The SIA team will study the previous environmental assessments reports done in 2012, datasets available in the private, education, civil and public fields. Information will include the Sisonke District Municipality Integrated Development Plans and results of previous social studies. and the results of previous ESIA processes if any such information is available.

Task	Description
Gap Analysis & Baseline Description	<p>A gap analysis will be used to identify any additional data that may be required. This analysis will identify vulnerable receptors for potential social impacts. Receptors include specific adjacent communities, groupings and individuals, local government, traditional authorities, NGOs etc. The social receptors will be mapped and updated throughout the SIA process as required.</p> <p>Any data gaps that became apparent during the research process mentioned above will be sourced during a secondary research process. Depending upon the initial data gap analysis findings, some of these shortcomings (if any) can be addressed in this component. The preliminary SIA findings and additional information on stakeholder and social receptors will be updated accordingly.</p> <p>An overall social baseline will be prepared that will focus the proposed development site.</p>
Stakeholder Meetings	The initial social assessment will be updated based on additional information sourced from the stakeholder engagement process and the results of the various specialist studies.
SIA Report	The SIA report will contain a description of the affected environments, and the approach followed. The report will identify key social issues and aspects of the proposed development and the related social assessment of those issues and aspects. The SIA report will assess the alternatives, forecast probable social impacts, and make recommendations on avoiding or mitigating adverse impacts and enhancing any positive effects related to the project.

### 8.3.10 TRAFFIC ASSESSMENT

**Table 8-11: Traffic Screening Specialist Scope**

Task	Description
Traffic Impact Assessment	<p>The scope of work will include the following tasks:</p> <ul style="list-style-type: none"> <li>• Review existing information</li> <li>• Baseline traffic conditions will be measured and supplemented with secondary data. Traffic surveys will be undertaken as required to inform the impact assessment</li> <li>• Hold discussions with road authorities</li> <li>• Undertake traffic modelling and road capacity and safety analysis</li> <li>• A traffic impact statement will be compiled for the project.</li> <li>• A draft traffic impact assessment report will be compiled and submitted for review;</li> <li>• Finalisation of report to affect changes recommended;</li> <li>• Submission of the traffic impact assessment, which will be included in the environmental impact assessment report for the project to the regulator.</li> </ul>

### 8.3.11 LANDSCAPE / VISUAL ASSESSMENT

The proposed site is surrounded by community homesteads and agricultural activities. The village of Mtunzini is located to the south-west of the proposed area. It is key to adequately understand the extent of visual exposure of the site. In addition, the National Road bisects the site from south-west to north-east. The visual assessment will need to take these factors into consideration. In favour of the project is the fact that the area is coastal and vegetation grows rapidly. Consequently, there is opportunity to screen site activities using either vegetation or judicious placement of soil piles. This will need some careful consideration giving the long life of the mining operation.

**Table 8-12: Landscape and Visual Specialist Scope**

Task	Description
Analysis	<ul style="list-style-type: none"> <li>Assess the relevant surface infrastructure, including layout plans, drawings, topographical maps, and aerial photography</li> <li>Conduct a photographic assessment of the sites of the proposed mining activities, associated infrastructure, and surrounding landscape. This will be undertaken during the closure/ecological assessment field visit</li> <li>Undertake a visual resources analysis of the project area, as a function of its natural biophysical and land use attributes, and identify affected visual receptors</li> <li>Compile a summary of the baseline assessment findings which will be integrated into the final visual impact assessment report</li> <li>Conduct a GIS-based viewshed analysis of the proposed mining activities and surface infrastructure using Global Mapper 10® software/similar and compile maps of visually affected areas to inform the impact assessment.</li> </ul>
Impact Assessment, Mitigation & Reporting	<ul style="list-style-type: none"> <li>Determine the magnitude and significance of visual impacts using industry standard criteria and assessment parameters</li> <li>Identify potential visual mitigation strategies and implementation measures that need to be considered of the various project components, in order to improve long-term visual appearance</li> <li>Compile a visual impact assessment report summarising the above process and outcomes</li> </ul>

### 8.3.12 ARCHAEOLOGICAL AND CULTURAL HERITAGE ASSESSMENT

**Table 8-13: Archaeological Specialist Scope**

Task	Description
Desktop Study	Desktop Study to place the study and development area in an archaeological and historical context within South Africa and the region within which the development is located.

Field Work	Physical fieldwork has already been conducted as part of the project. This will need to be reviewed against current requirements and any patterns of use on the site which may have taken place since execution of the study
Reporting	The drafting and submission of a Phase 1 HIA report that will include the results of the desktop and field-based assessments. The report will include recommended mitigation measures should there be any sites, features or material of cultural heritage origin or significance in the area that might be negatively impacted by the proposed development.

### 8.3.13 PALAEOLOGICAL ASSESSMENT

**Table 8-14: Palaeontological Specialist Scope**

Task	Description
Desktop Study	In order to determine the likelihood of fossils occurring in the affected area, geological maps, literature, palaeontological databases and published and unpublished records must be consulted. If fossils are likely to occur, then a site visit must be made by a qualified palaeontologist to locate and assess the fossils and their importance.
Site Assessment	Unique or rare fossils should either be collected (with the relevant SAHRA permit) and removed to a suitable storage and curation facility, for example a Museum or University palaeontology department or protected on site. Common fossils can be sacrificed if they are of minimal or no scientific importance, but a representative collection could be made if deemed necessary. If it is found that fossils may occur in the affected area, then a Phase 2 Study (site visit by a palaeontologist) will be necessary.

### 8.3.14 FINANCIAL PROVISIONING, REHABILITATION PLAN AND CLOSURE PLAN

The NEMA Regulations Pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations, promulgated on 20 November 2015 GN R. 1147 (as amended) requires the following components to be submitted as part of the required closure planning and financial provision for the proposed mining activities:

- An annual rehabilitation plan and costs following on from construction and initiation of the proposed mining activities
- Final rehabilitation, decommissioning and mine closure plan (closure plan)
- A latent environmental risk assessment and associated costs
- Financial provision required for the final decommissioning and rehabilitation of the mine site

**Table 8-15: Closure Plan and Operational Rehabilitation Framework Specialist Scope**

Task	Description
Closure Planning	The required closure planning to support authorisation of the proposed project will be developed to align with the requirements of GN. R. 1147 and

Task	Description
	<p>any existing closure planning for the mine, as summarised below. It is noted that further proposed amendments to the Financial Provisioning Regulations have been published for comment and may be promulgated prior to submission of the project deliverables. The proposed changes and their implications on the closure planning and resultant costs are understood by our team and will be incorporated in the final deliverables if needed:</p> <ul style="list-style-type: none"> <li>• Undertake desktop review of any existing closure work previously conducted for Tronox (if relevant)</li> <li>• Establish regulatory framework and requirements for the proposed project, including key GN. R 1147 requirements</li> <li>• Undertake screening environmental risk assessment for closure of the proposed project and identify specific risks that are expected to require post-closure (residual/latent) management</li> <li>• Compile closure planning aligned to GN R. 1147 requirements or relevant promulgated Financial Provisioning Regulations at the time, including: <ul style="list-style-type: none"> <li>• Undertake a desktop assessment of the site of the proposed mining related activities, to gain an understanding of the current state of the receiving environment and expected closure drivers</li> <li>• Identify the most likely closure scenario, next land uses and rehabilitation success criteria for scheduled/planned mine closure</li> <li>• Develop appropriate area-specific closure measures, and associated target long-term performance objectives and monitoring and aftercare requirements</li> <li>• Compute the estimated mine closure costs using the following approach: <ul style="list-style-type: none"> <li>• Application of up-to-date and site-specific, third-party rates for generally accepted good practice closure measures. Key unit rates will be reviewed and confirmed with practitioners in industry, taking cognizance of local site conditions to ensure applicability to the local context</li> <li>• Determine the demolition and rehabilitation quantities and measurements based on the evaluation of the nature and type of all infrastructural and mining aspects with measurements scaled from relevant drawings and satellite imagery supplied by the client</li> </ul> </li> <li>• Develop a dedicated Excel-based closure costing spreadsheet using WSP's proprietary model, including narratives reflecting the possible assumptions and qualifications made with each closure cost item, and making provision for the following cost categories: <ul style="list-style-type: none"> <li>– Infrastructural areas</li> <li>– Mining areas</li> <li>– General surface rehabilitation</li> <li>– Mine water management</li> <li>– Post-closure aspects</li> <li>– Additional allowances</li> </ul> </li> </ul> </li> </ul>
Operational Rehabilitative Framework	Develop an operational rehabilitation framework and high-level scheduling with associated rehabilitation objectives and outcome criteria, monitoring and aftercare as well as feedback/reporting requirements. It is unlikely that operational rehabilitation will be relevant after the first year of mining operations, however this requirement will be assessed based on the mining plan and other operational requirements and addressed as needed

## **8.4 PROPOSED METHOD OF ASSESSING THE ENVIRONMENTAL ASPECTS INCLUDING THE PROPOSED METHOD OF ASSESSING ALTERNATIVES**

### **8.4.1 ASSESSMENT OF ENVIRONMENTAL ASPECTS**

The assessment of impacts and mitigation evaluates the likely extent and significance of the potential impacts on identified receptors and resources against defined assessment criteria, to develop and describe measures that will be taken to avoid, minimise or compensate for any adverse environmental impacts, to enhance positive impacts, and to report the significance of residual impacts that occur following mitigation.

The key objectives of the risk assessment methodology are to identify any additional potential environmental issues and associated impacts likely to arise from the proposed project, and to propose a significance ranking. Issues / aspects will be reviewed and ranked against a series of significance criteria to identify and record interactions between activities and aspects, and resources and receptors to provide a detailed discussion of impacts.

The EIA Report will use a methodological framework developed by WSP to meet the combined requirements of international best practice and NEMA, Environmental Impact Assessment Regulations, 2014, as amended (GN No. 326) (the “EIA Regulations”).

As required by the EIA Regulations (2014) as amended, the determination and assessment of impacts will be based on the following criteria:

- Nature of the Impact;
- Significance of the Impact;
- Consequence of the Impact;
- Extent of the impact;
- Duration of the Impact;
- Probability if the impact;
- Degree to which the impact:
  - can be reversed;
  - may cause irreplaceable loss of resources; and
  - can be avoided, managed or mitigated.

Following international best practice, additional criteria have been included to determine the significant effects. These include the consideration of the following:

- Magnitude: to what extent environmental resources are going to be affected;
- Sensitivity of the resource or receptor (rated as high, medium and low) by considering the importance of the receiving environment (international, national, regional, district and local), rarity of the receiving environment, benefits or services provided by the environmental resources and perception of the resource or receptor); and
- Severity of the impact, measured by the importance of the consequences of change (high, medium, low, negligible) by considering inter alia magnitude, duration, intensity, likelihood, frequency and reversibility of the change.

It should be noted that the definitions given are for guidance only, and not all the definitions will apply to all of the environmental receptors and resources being assessed. Impact significance was assessed with and without mitigation measures in place.

#### 8.4.2 ASSESSMENT OF ALTERNATIVES

The EIA process identifies two types of project alternatives:

- Concept Level Alternatives, which relate to the site, technology and process alternatives
- Detailed Level Alternatives which relate to working methods and mitigation measures

The feasibility of the higher-level concept alternatives have been considered and assessed within 4.3 of the Scoping Report. The Detailed Level Alternatives will be addressed within the EIA Report.

### 8.5 THE PROPOSED METHOD OF ASSESSING SIGNIFICANCE

Impacts are assessed in terms of the following criteria:

- The nature; a description of what causes the effect, what will be affected and how it will be affected.

**Table 8-16: Nature or Type of Impact**

Nature or Type of Impact	Definition
Beneficial / Positive	An impact that is considered to represent an improvement on the baseline or introduces a positive change.
Adverse / Negative	An impact that is considered to represent an adverse change from the baseline, or introduces a new undesirable factor.
Direct	Impacts that arise directly from activities that form an integral part of the Project (e.g. new infrastructure).
Indirect	Impacts that arise indirectly from activities not explicitly forming part of the Project (e.g. noise changes due to changes in road or rail traffic resulting from the operation of Project).
Secondary	Secondary or induced impacts caused by a change in the Project environment (e.g. employment opportunities created by the supply chain requirements).
Cumulative	Impacts are those impacts arising from the combination of multiple impacts from existing projects, the Project and/or future projects.

- The physical extent.

**Table 8-17: Physical Extent Rating of Impact**

Score	Description
1	the impact will be limited to the site;
2	the impact will be limited to the local area;
3	the impact will be limited to the region;



Score	Description
4	the impact will be national; or
5	the impact will be international;

- The duration, wherein it is indicated whether the lifetime of the impact will be:

**Table 8-18: Duration Rating of Impact**

Score	Description
1	of a very short duration (0 to 1 years)
2	of a short duration (2 to 5 years)
3	medium term (5–15 years)
4	long term (> 15 years)
5	permanent

- Reversibility: An impact is either reversible or irreversible. How long before impacts on receptors cease to be evident.

**Table 8-19: Reversibility of Impact**

Score	Description
1	The impact is immediately reversible.
3	The impact is reversible within 2 years after the cause or stress is removed; or
5	The activity will lead to an impact that is in all practical terms permanent.

The magnitude of impact on ecological processes, quantified on a scale from 0-10, where a score is assigned.

**Table 8-20: Magnitude Rating of Impact**

Score	Description
0	small and will have no effect on the environment.
1	minor and will not result in an impact on processes.
2	low and will cause a slight impact on processes.
3	moderate and will result in processes continuing but in a modified way.

Score	Description
4	high (processes are altered to the extent that they temporarily cease).
5	very high and results in complete destruction of patterns and permanent cessation of processes.

The probability of occurrence, which describes the likelihood of the impact actually occurring. Probability is estimated on a scale where:

**Table 8-21: Probability Rating of Impact**

Score	Description
1	very improbable (probably will not happen).
2	improbable (some possibility, but low likelihood).
3	probable (distinct possibility).
4	highly probable (most likely).
5	definite (impact will occur regardless of any prevention measures).

- The significance, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high;
- The status, which is described as either positive, negative or neutral;
- The degree to which the impact can be reversed;
- The degree to which the impact may cause irreplaceable loss of resources; and
- The degree to which the impact can be mitigated.

The significance is determined by combining the above criteria in the following formula:

Significance = (Extent + Duration + Reversibility + Magnitude) x Probability

[S= (E+D+R+M) xP]

Where the symbols are as follows:

Symbol	Criteria	Description
S	Significance Weighting	
E	Extent	Refer to Table 23
D	Duration	Refer to Table 24
M	Magnitude	Refer to Table 25
P	Probability	Refer to Table 26

The significance weightings for each potential impact are as follows:

Overall Score	Significance Rating (Negative)	Significance Rating (Positive)	Description
< 30 points	Low	Low	where this impact would not have a direct influence on the decision to develop in the area
31 - 60 points	Medium	Medium	where the impact could influence the decision to develop in the area unless it is effectively mitigated
> 60 points	High	High	where the impact must have an influence on the decision process to develop in the area

The impact significance without mitigation measures will be assessed with the design controls in place. Impacts without mitigation measures in place are not representative of the proposed development's actual extent of impact, and are included to facilitate understanding of how and why mitigation measures were identified. The residual impact is what remains following the application of mitigation and management measures, and is thus the final level of impact associated with the development. Residual impacts also serve as the focus of management and monitoring activities during Project implementation to verify that actual impacts are the same as those predicted in this EIA Report.

## 8.6 CUMULATIVE IMPACTS

These will be assessed in line with the above methodology. Following the identification of valued environmental and social components (VECs), projects that may contribute to the cumulative impact will be identified and where readily available, the significance of the impacts associated with these projects and/or proposed developments will be considered.

## 8.7 THE STAGES AT WHICH THE COMPETENT AUTHORITY WILL BE CONSULTED

The EAP will consult the DMRE in the following subsequent phases:

- Application Submission and Letter of Acceptance.
- Distribution of Draft Scoping Report during public comment period for initial comments.
- Submission of Final Scoping Report for review and acceptance.
- Distribution of Draft EIA Report and EMPr during public comment period for initial comments.
- Submission of Final EIA Report and EMPr for review and decision.

## 8.8 PARTICULARS OF THE PUBLIC PARTICIPATION PROCESS

Public participation during the EIA phase revolves around the review of the environmental impact assessment findings, which will be presented in the Draft EIA Report. All stakeholders will be notified of the progress to date and availability of the Draft EIA Report, via mail, email and/or SMS. A



legislated period of 30 consecutive days will be allowed for public comment. Reports will be made available in the following way:

- The document will be made available to download from the WSP website;
- Copies will be available in public places; and
- Copies of CDs will be made available on request.

The approach for the EIA Phase consultation will be ascertained through the initial consultation during Scoping.

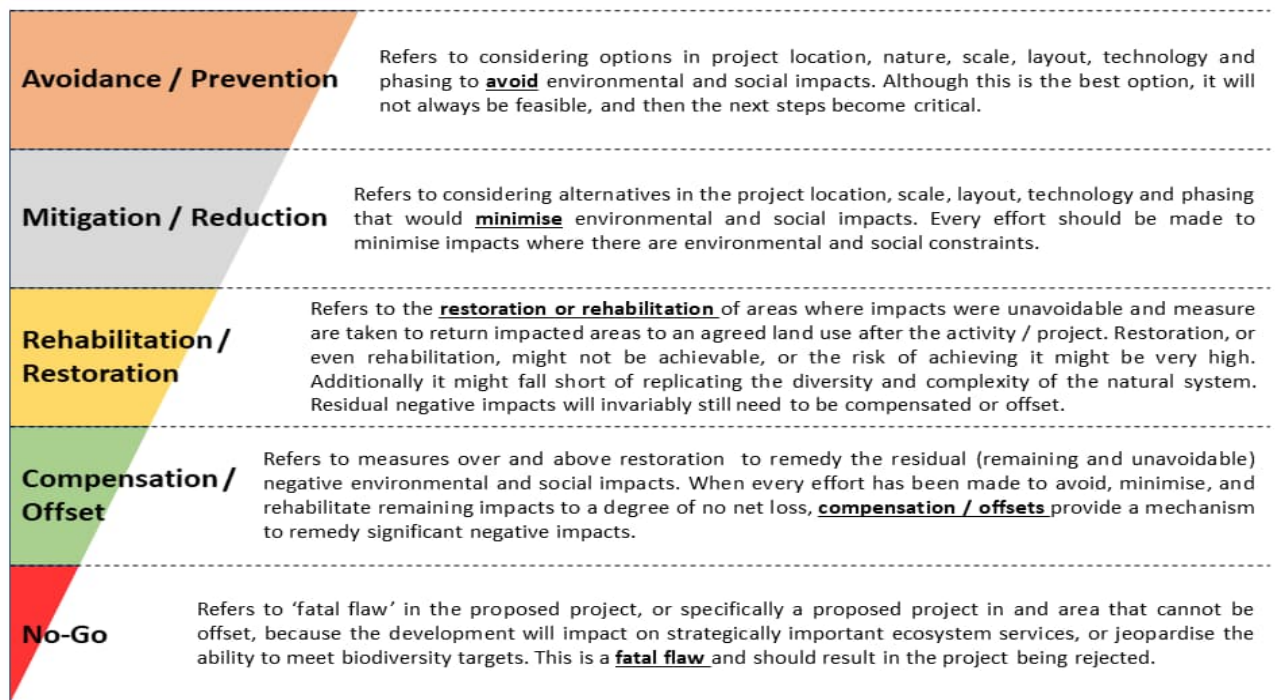
The EIA phase will provide the following information to I&APs:

- Initial Site Plan;
- Alternatives;
- A description of activities and operations to be undertaken;
- Baseline information;
- Specialist studies;
- Impact assessment;
- Management measures;
- Monitoring and measuring plan; and
- Closure details.

All comments received during the EIA phase will be recorded in the comments and response report (CRR), which will be included in the draft and final EIA Reports. The final EIA Report will be made available for public review with hard copies distributed mainly to the authorities and key stakeholders. All stakeholders will receive a letter notifying them of the authority's decision

## 9 MEASURES TO AVOID, REVERSE, MITIGATE OR MANAGE IDENTIFIED IMPACTS AND THE EXTENT OF RESIDUAL RISKS THAT NEED TO BE MANAGED OR MONITORED

The mitigation measures chosen are based on the mitigation sequence/hierarchy which allows for consideration of five (5) different levels, which include avoid/prevent, minimise, rehabilitate/restore, offset and no-go in that order. The mitigation sequence/hierarchy is shown in Figure 9-1 below.



**Figure 9-1: Mitigation Hierarchy**

The intention is that when project impacts are considered, the first option should be to avoid or prevent the impacts from occurring in the first place if possible, however, this is not always feasible. If this is not attainable, the impacts can be allowed, however they must be minimised as far as possible by considering reducing the footprint of the development for example so that little damage is encountered. If impacts are unavoidable, the next goal is to rehabilitate or restore the areas impacted back to their original form after project completion. Offsets are then considered if all the other measures described above fail to remedy high/significant residual negative impacts. If no offsets can be achieved on a potential impact, which results in full destruction of any ecosystem for example, the no-go option is considered so that another activity or location is considered in place of the original plan.



ACTIVITIES	PHASE	SIZE AND SCALE	ANTICIPATED IMPACT	TYPICAL MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	POTENTIAL FOR RESIDUAL RISK
Project footprint disturbance	Planning and Design	4 733.64 ha	Destruction/damage/removal of vegetation in the area to be mined and for the infrastructure footprint Disturbance of fauna as a result of activities on site Loss of ecological habitat Loss of ecosystem services Loss of agricultural potential Destruction of heritage and palaeontological resources	Authorisation for removal and/or relocation of protected plant species.	National Environmental Management: Biodiversity Act, Act 10 of 2004, as amended	Low
					National Forests Act (No 84 of 1998)	
				Protection of Heritage Resources	National Heritage Resources Act, Act 25 of 1999.	
Land clearing, ground excavation and materials handling activities (earthworks)	Construction	4 733.64 ha	Contamination of groundwater and surface water Increased soil erosion	Noise Control	SANS10103:2008.	Medium
				Dust Control	National Dust Control Regulations GN.R 827 of 2013.	
				Water management and monitoring	Water monitoring programme	



ACTIVITIES	PHASE	SIZE AND SCALE	ANTICIPATED IMPACT	TYPICAL MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	POTENTIAL FOR RESIDUAL RISK
			Increased sedimentation of water bodies Soil contamination Decreased ambient air quality as a result of PM2.5, PM5, PM10 and increase of nuisance dust Noise pollution Change to the visual attributes of the landscape	Training of personnel	Awareness Training Programme	
Vegetation clearing	Construction	4 733.64 ha	Destruction/ damage/ removal of vegetation in the area to be mined and for the infrastructure footprint Disturbance of fauna as a result of activities on site Loss of ecological habitat	Limit clearance to footprint Project layout to avoid sensitive areas Alien invasive vegetation management Ongoing rehabilitation	National Environmental Management Biodiversity Act 10 of 2004 National Forests Act (No 84 of 1998)	Low



ACTIVITIES	PHASE	SIZE AND SCALE	ANTICIPATED IMPACT	TYPICAL MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	POTENTIAL FOR RESIDUAL RISK
			Loss of ecosystem services Increased soil erosion			
Soil stripping and stockpiling	Construction and Operation	4 733.64 ha	Loss of agricultural potential Increased soil erosion	Topsoil management and appropriate stockpile management (including waste management)	Compliance to section 28 and 30 of NEMA and relevant regulations.	Low
Movement of vehicles on Unpaved construction access roads	Construction and Operation	Limited to road construction	Decreased ambient air quality as a result of PM2.5, PM5, PM10 and increase of nuisance dust Increased traffic levels (congestion and safety risks) Deterioration of roads utilised by the project	Speed limits and regular vehicle maintenance.  Dust and pollution control.	National Dust Control Regulations GN.R 827 of 2013.  National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (GN 331 of 2014) Compliance to GNR 827 of 01 November 2013, regulations dealing with national dust control for non-residential areas	Low
Storage and use of dangerous goods	Construction and Operation		Contamination of groundwater and surface water	Prevention of soil and water contamination.	SANS 10231, 10232, and 10131, as well the hazardous chemicals	Low





ACTIVITIES	PHASE	SIZE AND SCALE	ANTICIPATED IMPACT	TYPICAL MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	POTENTIAL FOR RESIDUAL RISK
			Soil contamination Potential risk to human health	Bunding and drip trays.	regulations under the Occupational Health and Safety Amendment Act, Act No. 181 of 1993. Water monitoring programme EMP Compliance Audits Availability of spill kits Awareness training Appropriate design of facilities	
Heavy vehicle exhaust emissions	Construction and Operation	Limited to road construction	Decreased ambient air quality Climate change impacts	Speed limits and regular vehicle maintenance (off-site). Dust and pollution control.	Compliance to GNR 827 of 01 November 2013, regulations dealing with national dust control for non-residential areas.	Low
Handling of solid and liquid waste streams	Construction	4 733.64 ha	Contamination of groundwater and surface water Soil contamination Potential risk to human health	Responsible waste management	Regulations Regarding the Planning and Management of Residue Stockpiles and Residue Deposits GN.R 6932 of 2015 as amended by GN 990 2018 09 21. National Norms and Standards for Storage of Waste GN 926 of 2013. National Norms and Standards for Disposal	Low



ACTIVITIES	PHASE	SIZE AND SCALE	ANTICIPATED IMPACT	TYPICAL MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	POTENTIAL FOR RESIDUAL RISK
					of Waste to Landfill GN 636 of 2013. Compliance monitoring	
Mining, processing plant and related facilities	Operation	4 733.64 ha	Continued economic spend in the project area Employment opportunities Community investment as part of the Social and Labour Plan Process Continued contribution to Gross National Product Improved access to the N2 as a result of the access road improvement Waste generation Destruction/damage/removal of vegetation in the area to be mined and for the	Responsible waste management	Regulations Regarding the Planning and Management of Residue Stockpiles and Residue Deposits GN.R 6932 of 2015 as amended by GN 990 2018 09 21. National Norms and Standards for Storage of Waste GN 926 of 2013. National Norms and Standards for Disposal of Waste to Landfill GN 636 of 2013.	Medium High anticipated in terms of the visual impact
				Noise Control	SANS10103:2008.	
				Dust Control	National Dust Control Regulations GN.R 827 of 2013.	
				Prevention of soil and water contamination.  Removal and remediation or disposal of	SANS 10231, 10232, and 10131, as well the hazardous chemicals regulations under the Occupational Health and Safety Amendment Act, Act No. 181 of 1993.	





ACTIVITIES	PHASE	SIZE AND SCALE	ANTICIPATED IMPACT	TYPICAL MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	POTENTIAL FOR RESIDUAL RISK
			Increased sedimentation of water bodies Risk to human health Decreased ambient air quality as a result of PM2.5, PM5, PM10 and nuisance dust increase Noise pollution Change to the visual attributes of the landscape Increased migration to the project area by job seekers Increased exposure to radiation Increased pressure on municipal services Incompatibility with existing and proposed land uses	Occupational Health and Safety Management Plan Screening and placement so as to minimise visual impacts Progressive rehabilitation	Traffic Management Plan Occupational Health and Safety Act No. 85 of 1993 EMP Compliance Compliance with Mine Closure Plan	



ACTIVITIES	PHASE	SIZE AND SCALE	ANTICIPATED IMPACT	TYPICAL MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	POTENTIAL FOR RESIDUAL RISK
			<p>Increased traffic levels (congestion and safety risks)</p> <p>Deterioration of roads utilised by the project</p> <p>Climate change impacts as a result of increased greenhouse gas</p>			
Storage dams and pipelines	Operation	4 733.64 ha	<p>Contamination of groundwater and surface water</p> <p>Soil contamination</p> <p>Potential risk to human health</p>	Prevention of soil and water contamination.	<p>Compliance to section 28 and 30 of NEMA and relevant regulations</p> <p>National Norms and Standards for Storage of Waste GN 926 of 2013.</p> <p>Pipeline and storage dam leakage inspections to be carried out regularly</p>	Low
				Odour Control	National Environmental Management: Air Quality Act No. 39 of 2004.	
Telecommunication mast	Operation	1ha	Change to the visual attributes of the landscape	Limit clearance to footprint	National Environmental Management Biodiversity Act 10 of 2004	Low



ACTIVITIES	PHASE	SIZE AND SCALE	ANTICIPATED IMPACT	TYPICAL MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	POTENTIAL FOR RESIDUAL RISK
				Screening and placement so as to minimise visual impacts		
All infrastructure	Closure	4 733.64 ha	Loss of employment opportunities Residual visual impact and topographical changes Changes in surface and groundwater regime Increase in nuisance dust Noise pollution Waste Generation Soil erosion	Noise Control	SANS10103:2008.	Low to Medium (social impacts)
				Dust Control	National Dust Control Regulations GN.R 827 of 2013.	
				Responsible Waste Management	National Norms and Standards for Disposal of Waste to Landfill GN 636 of 2013.	
				Adequate backfilling and restoration of topography	Regulations Regarding the Planning and Management of Residue Stockpiles and Residue Deposits GN.R 6932 of 2015 as amended by GN 990 2018 09 21.	
				Redundancy/mine closure job losses	Labour Grievance Management System Mine Closure Plan to be developed	



The mitigation measures chosen are based on the mitigation sequence/hierarchy which allows for consideration of five (5) different levels, which include avoid/prevent, minimise, rehabilitate/restore, offset and no-go in that order. The mitigation sequence/hierarchy is shown in Figure 9-1 below.

## **10 OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY**

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### **10.1 IMPACT ON THE SOCIO-ECONOMIC CONDITIONS OF THE DIRECTLY AFFECTED PERSON**

A socio-economic study is being undertaken as part of the EIA in order to investigate and evaluate the significance of social impacts. Currently it is anticipated that the positive impacts associated with the proposed Port Durnford mine will include job creation (during the construction and operational phase of the project), community investment, local economic activity and continued contribution to GNP. Negative impacts may include a loss of forestry activity and revenue in the project area, in-migration of job seekers, increased strain on municipal services and infrastructure and potential for increased crime in the area. Currently it is not anticipated that any involuntary physical or economic displacement will take place.

### **10.2 IMPACT ON ANY NATIONAL ESTATE REFERRED TO IN SECTION 3(2) OF THE NATIONAL HERITAGE RESOURCES ACT**

A full heritage and palaeontological study will be undertaken during the EIA, in compliance with Section 38 of the National Heritage Resources Act.

### **10.3 OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24 (4)(A) AND (B) OF THE ACT**

Section 24(4)(a) and (b) provides that an investigation must be undertaken of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the potential consequences or impacts, including the option of not implementing the activity. Refer to Section 4.3. This will be addressed as part of the EIA

### **10.4 UNDERTAKING REGARDING CORRECTNESS OF INFORMATION**

I, Nadia Mol, herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties has been correctly recorded in the report.

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Signature of the EAP

DATE: 21 November 2022





## 10.5 UNDERTAKING REGARDING LEVEL OF AGREEMENT

I, Nadia Mol, herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

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Signature of the EAP

# **APPENDIX A: EAP CV AND QUALIFICATIONS**



**UNIVERSITY OF CAPE TOWN**  
*with which is incorporated the South African College*

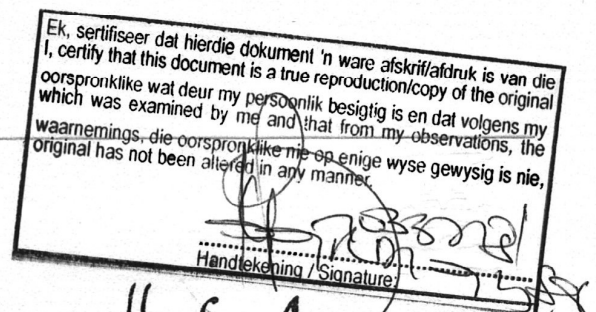
**Degree of Bachelor of Science  
(Honours)**

*We hereby certify that* NADIA MOL  
*was admitted to the Degree of Bachelor of Science (Honours)*  
*in* ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE ON 6 DECEMBER 1994.

THE DEGREE WAS AWARDED IN THE SECOND CLASS (DIVISION TWO)



Vice-Chancellor



Registrar



**CAREER SUMMARY**

I am a Registered Professional Natural Scientist and Registered Environmental Assessment Practitioner with 25 years of experience in the field of environmental impact assessments, due diligences and lender’s technical advisory services for energy/power and mining projects in Africa. My experience in the energy/power sector has included a wide spectrum of projects including renewable (solar PV, wind and concentrated solar plants), hydropower, and gas projects. I have worked with numerous financial institutions, some being: United States International Development Finance Corporation, CDC Group, International Finance Corporation, KfW, Standard Chartered Bank, FMO, Standard Bank of South Africa, ABSA, Nedbank and the African Development Bank. I have a comprehensive understanding of international lender requirements both from an environmental and social (labour conditions, stakeholder engagement and resettlement) perspective. I am very familiar with the context and constraints of developing countries, having completed projects in Zimbabwe, Zambia, Mozambique, Lesotho, Swaziland, Democratic Republic of Congo, Mali, Eritrea, Ghana, Kenya and Madagascar.

**Years with the firm**

< 1 year

**Years of experience**

25

**Areas of expertise**

*Environmental Impact Assessments*

*Due Diligence*

*Lender’s Technical Advisory services (energy/power/mining)*

**Languages**

*English*

*Afrikaans*

*Dutch*

**EDUCATION**

Bachelor of Science (Honours) Environmental and Geographical Science, University of Cape Town 1994

Bachelor of Science Environmental and Geographical Science, University of Cape Town 1993

**PROFESSIONAL MEMBERSHIPS**

Registered as an Environmental Assessment Practitioner (2019/1034) EAP

Registered with the South African Council for Natural Scientific Professions (SACNASP) as a Professional Natural Scientist (Pr.Sci.Nat) (400159/09) SACNASP

Member of the South African International Association for Impact Assessment IAIAsa

**PROFESSIONAL EXPERIENCE**

*Environmental and Social Lead, RINA*

- Conducting lenders’ advisory roles, undertaking various due diligence assessments, supplementary
- ESIA’s, feasibility studies, operational monitoring for projects; assisting lenders and Project Companies to manage their environmental and social compliance risks.
- Responsible for the technical delivery of the environmental team in South Africa, signing off on all deliverables released during this timeframe.
- Business development for the English speaking African business.
- Supporting the renewable technical team in the Cape Town office with regard to all E&S inputs required on their projects.
- Resource management for the South African E&S team
- Interim Office Manager

Relevant project experience has included:

- Supplementary ESIA for the Thanaleng Dry Port Project in Laos (2021-2022) – Technical Lead for an appointment by the IFC for the completion of a Supplementary ESIA and Land Review to close out gaps between local legislation and the IFC Performance Standards for a Dry Port development in Laos.
- Nampower Rosh Pinaar wind farm development, Feasibility Study (2021 and 2022) – E&S input and review of the local ESIA against lenders requirements. Guidance provided regarding additional work required to close out gaps.
- Funae mini grid project, Mozambique, Feasibility Study (2021) - E&S input into the site selection and E&S constraint identification for the development of multiple min grid sites across Mozambique as part of a rural electrification initiative.
- DRC mini grid project, Scoping Study (2022) – appointment by the IFC and DRC Government for a Scoping Study to screen suitable sites at two provincial capitals within the DRC and collect adequate baseline information so as to develop the Terms of Reference for the ESIA appointment.
- KfW Framework Contract (2021-2022) – support provided to KfW for project reviews of ESIA's and ESMP implementation programmes of compliance against KfW standards and the Equator Principles.
- Environmental amendment application (2021-2022) – Technical Reviewer for the proposed amendment of the turbine specifications and layout of the Richtersveld Wind Farm, Northern Cape, South Africa. This project has been undertaken to meet the South African legislative requirements.
- Environmental and Social Due Diligence for the offshore drilling Pecan Project, Ghana (2022) for Aker Energy - Project manager and environmental lead for an environmental and social due diligence to meet lenders requirements for an offshore drilling operation off the coast of Ghana
- Acquisition ESDD for a confidential client for seven renewable energy projects as part of two portfolios (one wind and one solar) (2022) - Project manager and lead for an acquisition due diligence portfolio of 7 renewable energy assets in South Africa. Due diligence to advise on bid ready status and risks associated with financial close.

*Development Manager, Red Cap Energy*

- Management of the screening phase/planning and early project design for 4 windfarm projects in the Red Cap portfolio. This has included the early identification of no go areas and constraints through discussions with key stakeholders (commenting authorities and NGOs) and early specialist input (bird nest surveys and VERA modelling). These constraints have been used, along with engineering constraints (slope, floodlines, access, turbine spacing, wind resource etc), to identify project risks and inform an initial layout for each of the projects which will be refined further by more detailed specialist studies and the EIA process.
- Management of the Environmental Assessment Practitioner for the Screening Phase of the project, specialist management and quality control for all related deliverables for the above mentioned 4 windfarm projects in the Red Cap portfolio.
- Handling of permit applications and liaison regarding letters of no objection that are required in addition to the environmental authorization to support BID ready status and financial close. These have in the past 6 months included input into water use licenses, townplanning applications, Section 53 applications, letters of no objection from exploration rights holders, SAAO, telecommunication

companies, technical studies to support the Astronomy Management Authority authorisation and land claims.

- Ad hoc input into the EIA Process and permitting for a further 6 projects in the Red Cap portfolio.

*Technical Director, Mott MacDonald*

- Conducting lenders' advisory roles, undertaking various due diligence assessments, construction monitoring and operational monitoring for projects within the renewable energy sector; assisting lenders and sponsors to manage their environmental and social compliance risks.
- Responsible for the technical delivery of the environmental team in South Africa, signing off on all deliverables released during this timeframe.
- Resource management for the South African E&S team.

Relevant project experience has included:

- Acquisition ESDDs for a wind and solar portfolio of 22 projects across South Africa (2020) for a confidential client - Environmental lead for an acquisition due diligence portfolio of 22 renewable energy assets in South Africa. Due diligence to advise on bid ready status and risks associated with financial close.
- Kipeto wind farm, Kenya, Lenders Technical Advisor (2019 and 2020) – quarterly construction monitoring for a 102 MW wind farm in Kenya
- Bridge Power, Ghana, Lenders Technical Advisor (2019 and 2020) – quarterly construction monitoring for a 200 MW gas power plant and associated infrastructure at the port and pipeline route to the facility in Tema, Ghana.
- Golden Valley Wind Farm, Eastern Cape, South Africa, Lenders Technical Advisor (2019 and 2020)- annual construction monitoring for a 120MW windfarm.
- Nxuba Wind Farm, Eastern Cape, South Africa, Lenders Technical Advisor (2019) bi-annual construction monitoring for a 148MW windfarm.
- Bokpoort CSP Plant, Northern Cape, South Africa, Lenders Technical Advisor (2019)-annual operations monitoring for a 50 MW CSP Plant.
- Redstone CSP Plant, Northern Cape, South Africa, Due diligence (2019).
- Khi CSP, Northern Cape, South Africa, Lenders Technical Advisor (2019 and 2020) annual operations monitoring for a 50 MW CSP Plant in the Northern Cape, South Africa.
- Xina CSP, Northern Cape, South Africa, Lenders Technical Advisor (2019 and 2020) - annual operations monitoring.
- Kaxu CSP, Northern Cape, South Africa, Lenders Technical Advisor (2019 and 2020) - annual operations monitoring.
- Tsanga Hydropower Project (2019)- advisor to one of the lenders with regard to environmental and social baseline data gaps and compliance with the lenders requirements for a 6MW hydropower scheme in eastern Zimbabwe.
- Witkop solar PV, Limpopo Province, South Africa, Lenders Technical Advisor (2019)- 30 MW solar PV Plant - annual operations monitoring.
- Soutpan solar PV, Limpopo Province, South Africa, Lenders Technical Advisor (2019) - 28 MW solar PV Plant – annual operations monitoring.

- Transnet LNG Import, current (2020) – Environmental and social lead for an FEL-1 study for the import of gas into South Africa. This project entails an analysis of the various configurations for this through 3 ports – Richards Bay, Ngqura and Saldanha Bay.
- Transnet Natural Gas Import and Network from Richards Bay to Gauteng, South Africa, Transnet (2019) – Provision of environmental advisory input to the Transnet and engineering team with regards to site selection, fatal flaws and the scope of the environmental authorisation studies required for Gas Import Facilities in the Port of Richards Bay and the transportation networks associated with the distribution thereof.

*Environmental Resources Management | Principal Environmental Scientist*

- Undertaking numerous environmental authorization studies to meet lender as well as legislative requirements within the energy sector – played multiple roles on these – environmental, social or stakeholder lead for these.
- Advisory services including due diligences and screening/fatal flaw analysis.
- Resettlement action plan development.
- Line manager during this duration providing mentoring and support to junior colleagues.

Relevant project experience has included:

- Batoka Gorge Hydroelectric Power Scheme, Zimbabwe and Zambia, Zambezi River Authority (2014 to 2018) – Stakeholder Engagement and Social Impact Assessment Lead for the bankable ESIA proposed development of the Batoka Gorge hydropower project including the dam, access roads, permanent camps, quarries and transmission lines in both Zambia and Zimbabwe.
- Ngonye Falls Hydropower Scheme, Zambia, Confidential Client (2018) – Social and stakeholder engagement lead for a due diligence undertaken in south-western Zambia according to the local legislation and IFC Performance Standards for the proposed development of a hydropower scheme at Ngonye Falls.
- Kalungwishi Hydropower Project, Zambia, Globeleq (2017) - Stakeholder engagement lead for the proposed hydropower development on the Kalungwishi River, northern Zambia. ESIA undertaken to meet the requirements of the Zambian legislation and IFC Performance Standards. This project was placed on hold following the completion of the Scoping Phase of the ESIA.
- Addendum to the Resettlement Action Plan (RAP) for Motlhotlo Community, Limpopo Province, South Africa, Anglo American Platinum (2018) – Project manager and resettlement lead for the update of the existing 2012 Resettlement Action Plan for the remaining 63 households in Motlhotlo. Project undertaken to meet the requirements of IFC Performance Standard 5
- Gas to Liquid Plant on the Afungi Peninsula, Mozambique, Confidential Client (2017) – Team and social lead for the delivery of a fatal flaw analysis and site selection process for the proposed development of a gas to liquids plant along with marine infrastructure and gas pipelines required to support the project.
- Two windfarm developments (Excelsior and Golden Valley), Western and Eastern Cape, South Africa, Confidential Client (2017) – Environmental and social lead in a due diligence for the potential acquisition of the Excelsior and Golden Valley windfarms following environmental authorisation, but prior to

financial close. Due diligence to meet the requirements of the IFC and South African legislation.

- LNG to Power Project in Richards Bay and Saldanha Bay, South Africa, Department of Energy and Transnet (2016)- Project Manager for the first phase of the ESIA (Scoping Phase) in Saldanha Bay and assisted with the report delivery for the Richards Bay component of the work. Undertaken to meet the requirements of the South African legislation.
- Short term energy solution in the form of a floating power plant in Saldanha Bay, South Africa, Department of Energy (2016) – Project Manager and Environmental Team Lead for the ESIA undertaken for the Floating Power Plant Project proposed in Saldanha Bay. Undertaken to meet the requirements of the South African legislation. The Draft ESIA Report for this project was produced, but never released into the public domain as the project went on hold.
- Screening Study and Fatal Flaw Analysis for a gas fired power plant and ancillary infrastructure in Saldanha Bay, South Africa, Confidential Client (2015-2016) – Project Manager and Environmental Team Lead for the Screening Study that was prepared for a client advising on site selection and advisory constraints.
- Gas Fired Power Plant in Saldanha Bay, Arcelor Mittal (2016) - Assisted in the review and inclusion of the specialist scope of work in the ESIA Report. Undertaken to meet South African regulatory requirements.

*Principal Environmental Scientist, Self-employed*

- Subcontracted to various consultancies providing services relating predominantly to complex environmental authorisations for mining operations within South Africa. Was the project lead and team manager on these projects and responsible for all deliverables.

Relevant project experience has included:

- Integrated environmental authorisation (ESIA to cover water, air quality, waste and environmental requirements) for Limpopo West Mine, Lephalale, South Africa – Sasol Mining – 2014. Project manager and environmental lead for an ESIA to meet multiple authorisation requirements in compliance with the South African legislation for a proposed open pit coal mine in the Waterberg region.
- Integrated environmental authorisation (ESIA to cover water, air quality, waste and environmental requirements) for Zulti South Mine, Richards Bay, South Africa – Richards Bay Mining, 2014. Project manager and environmental lead for an ESIA to meet multiple authorisation requirements in compliance with the South African legislation for a heavy mineral sands operation along the coast south of Richards Bay.
- RAP Review for a Coal Mine and Power Plant Project in Maamba, southern Zambia – EMCO Energy Zambia Ltd – resettlement lead for the review of a RAP according to the IFC Performance Standards and the Zambian legislation.
- ESIA for the proposed Kusipongo Project in the Wakkerstroom Area, Mpumulanga, South Africa – Kangra Coal - Stakeholder engagement lead for the ESIA required for the expansion of the current coal mining operation to underground workings.
- ESIA for the Ethemba Dam Hydropower Project in Swaziland – Government of Swaziland – Stakeholder engagement lead for the ESIA undertaken for the Ethemba Dam ESIA for the development of a hydropower dam in southern



Swaziland. The ESIA was undertaken in accordance with the Swaziland legislation

*Principal Environmental Scientist, SRK*

- Environmental authorisation applications for mining operations within South Africa.
- Advisory input through fatal flaw analyses and input into acquisition due diligences.
- Resettlement action planning.
- Department Manager for the Environment Division for 2011-2012.

Specific project experience has included:

- RAP for approximately 100 households in response to the development of Zulti South Mine, Richards Bay, South Africa – Richards Bay Mining – Project manager and team member for a RAP for the proposed displacement (physical and economic) of approximately 100 households residing close to the dune cordon and within the safety exclusion zone of the proposed Zulti South heavy mineral sands mining operation.
- ESIA for the Kalumines Copper Mine in the Democratic Republic of Congo – TEAL Exploration and Mining Incorporated – Project manager and environmental lead for the ESIA undertaken for the for the development of a proposed copper mine in the area of Lumbumbashi, DRC. The ESIA was undertaken in accordance with the DRC legislation and IFC Performance Standards, but placed on hold prior to completion.
- ESIA for the proposed Rustenburg Deeps Project in the North-West Province of South Africa – Anglo Platinum – Project manager and environmental lead for the ESIA undertaken for the for the extension of the underground workings for Rustenburg Platinum Mine and associated above-ground infrastructure. The ESIA was undertaken to meet the South African Legislative Requirements.
- Screening Study for the proposed expansion of Lihobong Diamond Mine in Lesotho - European Diamonds plc – Project manager and environmental lead for a fatal flaw analysis and screening study to define the scope of work for the ESIA, for proposed mine expansions – expanded open pit, upgrade of processing plant and tailings dam expansion.
- ESIA for a proposed grinding plant development in Randfontein, South Africa – Lafarge Cement – Project manager and environmental lead for the proposed development of a new grinding plant for the processing of clinker from its Lichtenburg operations. This was preceded by a site selection exercise and undertaken to meet the South African legislative requirements.
- ESIA for the amendment of the mining operation for modifications to Lafarge’s processing plant in Lichtenburg, South Africa - Project manager and environmental lead for the proposed addition of a rail link and plant modifications at Lafarge’s existing cement processing facility in Lichtenburg. This was undertaken to meet the South African legislative requirements.
- Environmental fatal flaw analysis for two potential quarrying investments in Limpopo and Eastern Cape Provinces, South Africa – Lafarge Cement – Project manager and environmental lead in providing advisory inputs into two possible investments and identify constraints associated with these projects.
- Due diligence for Loulo Mine, Mali – Randgold Resources – Social and stakeholder engagement lead for the due diligence undertaken for Randgold Resources for Loulo Mine.



NADIA MOL, B.Sc.H, Pri.Sci.Nat

*Principal Associate, Environment & Energy*

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- Environmental fatal flaw analysis for Zara Gold mine development in central Eritrea – Government of Eritrea – Social and stakeholder engagement lead in reviewing work undertaken to date and advising on risks associated with a gold mine development in Eritrea.
- Mine closure plan updates for Richards Bay Minerals and QMM – South Africa and Madagascar – Rio Tinto - Social and stakeholder engagement lead for both of these closure plan updates advising on critical issues and developing an action plan for further activities require in the consideration of mine closure.
- ESIA for the installation of co-generation facilities at 3 of Samancor Chrome's operations - Mpumulanga, South Africa – Samancor- Project manager and environmental lead for the ESIA undertaken for the introduction of the cogeneration facilities at Samancor's Ferrometals, Middelburg Ferrochrome and Tubatse operations. The ESIA was undertaken to meet the South African Legislative Requirements

# **APPENDIX B: PUBLIC PARTICIPATION**

# **APPENDIX B1: PUBLIC PARTICIPATION DOCUMENTATION**

# PROPOSED PORT DURNFORD MINING OPERATION

## Port Durnford, Kwazulu-Natal Province

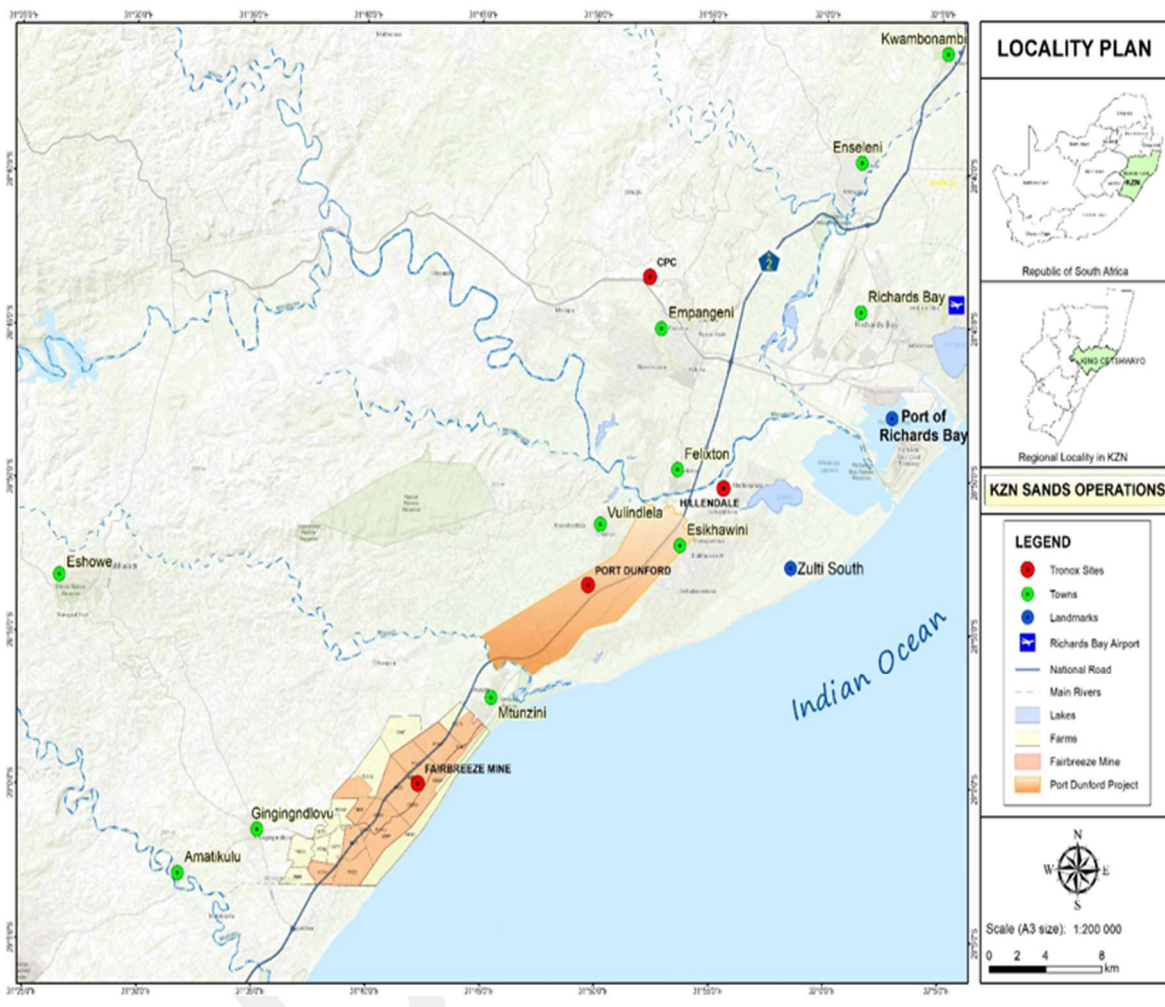
### BACKGROUND INFORMATION DOCUMENT

## INTRODUCTION TO THE PORT DURNFORD PROJECT

Tronox KZN Sands (Pty) Ltd (herein referred to as Tronox) currently operates the Fairbreeze mine which mines heavy mineral sands in the Richards Bay area. This is supported by a Tronox Mineral Separation Plant (MSP) and Smelter in the Empangeni area (see Figure 1). Tronox’s previous mining operation, Hillendale is currently in the mine closure phase.

In addition to these mining and processing projects, Tronox KZN Sands (Pty) Ltd (Tronox) is applying for a mining right over the following tenements:

- A renewed prospecting right (KZN 30/5/1/1/2/10708 PR) covering the following farms: Remainder of the farm Richards 16802, Remainder of the farm Birkett 16832 and Ruth 16833 (known as the Port Durnford lease area),
- Waterloo prospecting right (DMRE Ref: KZN30/5/1/1/2/296 PR) located on the following farms: Portion 1,2 and Rem of Lot 131 uMlalazi 14098; Rem of Lot 103 uMlalazi 13880 and Rem of Lot 104 uMlalazi 13853, and
- Penarrow located on the following farms: Remainder of Lot 132 uMlalazi 13602 and Portion 1 of Lot 132 uMlalazi 13602.



**Figure 1: Location of Tronox operations and Proposed Project in the Richards Bay area**



Tronox is now planning on converting these prospecting rights into a consolidated Mining Right and seeking environmental authorisation (EA) to support this. A full Scoping and Environmental Impact Reporting (EIR) Process is required in support of the application for environmental authorisation for the project. WSP Group Africa (Pty) Ltd (WSP) has been appointed as the Environmental Assessment Practitioner (EAP) to undertake the Scoping and EIR (S&EIR) Process.

## PURPOSE OF THE DOCUMENT

It is the intention of this Background Information Document (BID) to introduce and provide stakeholders with information about the proposed project. This document forms part of the stakeholder consultation process of the S&EIR process.

This BID provides information about the development, the environmental authorisation processes and the role of stakeholders in the process. It intends to encourage stakeholders to comment on the project and raise questions which will be utilised to inform the scope of the Environmental Impact Assessment (EIA). Aside from this document, at various stages of the respective environmental authorisation processes, information and reports will be made available for stakeholders to comment on.

### Who is a Stakeholder?

Any person, group of persons or organisation interested and/or affected by the proposed development.

*Register your interest by completing and returning the Registration and Comments Form attached herewith.*

WSP has been appointed by Tronox as the independent EAP to undertake the EA processes for the project and to facilitate a consolidated stakeholder engagement process.

To become a registered stakeholder and ensure all comments and queries regarding this project are accurately documented and addressed, please forward your contact details and comments on the attached response sheet to:

**Public Participation Office; WSP Group Africa (Pty) Ltd;**

**PO Box 6001, Halfway House, 1685;**

**Tel: 011 254 4800; Fax: 086 582 1561**

**E-mail: [gld.pp@wsp.com](mailto:gld.pp@wsp.com)**

## PROJECT DESCRIPTION

### Project Location

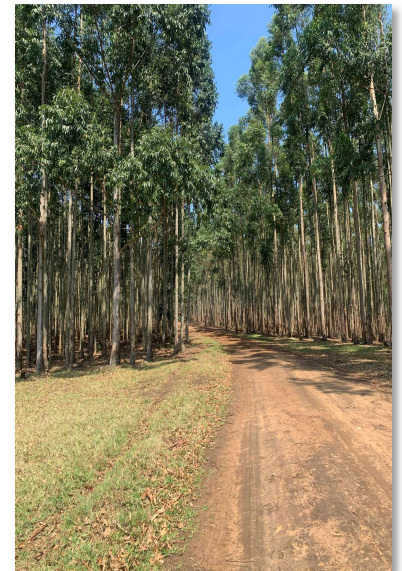
The prospecting rights are situated in the uMhlathuze Local Municipality and the King Cetshwayo District Municipality. It is located approximately 15km south-west of Richards Bay and is in close proximity to the following settlements/towns at different points along the boundaries:

- Mtunzini
- Port Dunford
- KwaDlangezwa
- Esikhawini
- Gobandlovu

The N2 highway as well as the R102 traverse the length of the prospecting rights area; the R102 being located to the northwest and the N2 running through the centre (see Figure 1).

### Project Timing

Tronox intends to mine the orebody in two phases: Phase 1 entails a low-rate mining operation (70400 tons per annum) which is intended to take place over the first 10 years of the life of the mine (LOM). Phase 2, is intended to replace the Fairbreeze mining operation and will entail an increase of production to 3000 tons per hour until mine closure in 2074.







**Figure 3: Location of the Phase 2 infrastructure**

## LEGAL FRAMEWORK

The legislative context which applies to this project for the proposed applications includes the following key legislation:

- The National Environmental Management Act, (Act 107 of 1998) (NEMA)
- The Mineral and Petroleum Resources Development Act, (Act 28 of 2002) (MPRDA); and
- National Environmental Management: Waste Act (Act No 59 of 2008) (NEMWA)

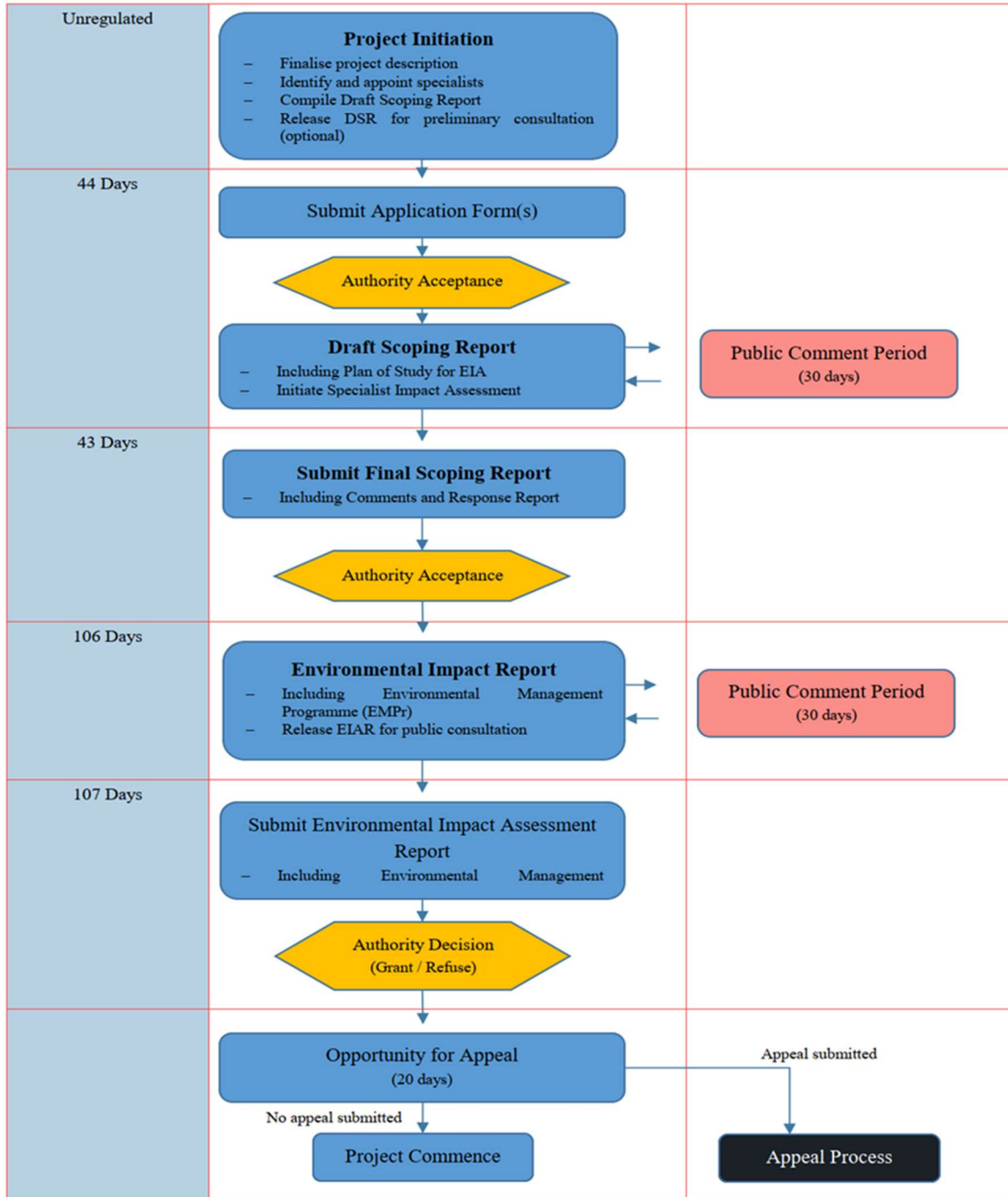
Various activities have been identified as triggering the requirement for authorisation, as detailed below:

Listing notice	Activity Number
<b>NEMA</b>	
<b>Listing Notice 1 (GN R. 983, as amended by GNR 327)</b>	Activity 9,10,11,12,13,14, 16,19,24,25,28,45 and 56
<b>Listing Notice 2 (GN R. 984, as amended by GNR 325)</b>	Activity 6, 15,16 and 17
<b>Listing Notice 3 (GN R. 985, as amended by GNR 324)</b>	Activity 2, 3, 10, 12, 14, and 18
<b>NEM:WA</b>	
<b>GN921 of 2003, Category A</b>	Activity 1
<b>GN921 of 2003, Category B</b>	Activity 1, 7, 11



Given that this proposed project entails a mining activity, a consolidated application will be made in terms of all three pieces of legislation with the Department of Mineral Resources and Energy (DMRE) as the competent authority.

In terms of the EA process we are currently in the Scoping Phase of the investigation. The S&EIR process is presented in Figure 4 below.



**Figure 4: Proposed EIA Process**

## STAKEHOLDER ENGAGEMENT

The purpose of stakeholder engagement is to consult with interested and affected parties in the public and private sectors as part of the decision-making process on projects which may affect them. The process aims to develop and maintain open channels of communication between the project team and stakeholders. This process provides stakeholders with the opportunity to express their views and concerns regarding the proposed project through project correspondence. The environmental assessment practitioner documents the views and concerns of stakeholders, and makes the project team and relevant authorities aware of issues that need to be considered during the compilation and evaluation of the potential risks and impacts associated with the project.

As such, it is intended that your involvement as a stakeholder on this project, will influence the following decisions:

- The scope of the investigations that will inform the EIA
- Project alternatives under consideration
- Methods for communication and involvement with stakeholders
- Mitigation measures that could be employed for the project

Additionally stakeholders have a local contextual understanding that needs to be recognised and considered.

Currently the project is in the Scoping Phase and initial communications are being had with stakeholders. The primary objectives of this round of engagement is to:

- Provide information about the proposed project
- Gather issues and concerns that stakeholders may have in this regard.

It is intended that stakeholders will be engaged through the following means:

- The placement of site notices notifying them of the proposed project, encouraging them to register as stakeholders and notifying them of the availability of the Draft Scoping Report.
- Through the placement of media notices (*Zululand Observer* and *Ilanga*) notifying them of the proposed project, encouraging them to register as stakeholders and notifying them of the availability of the Draft Scoping Report
- Distribution of a Notification Letter and Background Information Document to all stakeholders previously registered for the Fairbreeze Project
- Upon registration, forwarding this to any additional stakeholders
- Information sharing meetings in the communities immediately adjacent to the proposed mining operation, Richards Bay and Mtunzini
- Gathering comments on the Draft Scoping Report for a 30 day comments period.

Following this phase of engagement, the Draft Scoping Report will be Finalised and submitted to DMRE for review and approval.

Further stages of stakeholder engagement will involve further engagements and report review (EIA Report) and will be driven by the requirements of stakeholders identified in the first phase of engagement.



# **APPENDIX B2: PUBLISHED ADVERTISEMENTS**



The Department of Transport and Supply Chain Management at the University of Johannesburg is bringing the **Diploma in Road Transport Management (CEP\*)** to you in Durban!

*Specialise in Freight Transport Management or Passenger Transport Management.*

Plan your journey and advance your career today by applying for this unique 3-year, limited contact, NQF level 6 qualification. Requirement: Grade 12 certificate with diploma endorsement.

**Study schools and examinations available in Durban.**

**Applications now open.**

For more information click on <https://www.uj.ac.za/transport>.

\*CEP = Continuing Education Programme

CEP PROGRAMMES ARE NOT FUNDED BY NSFAS.

CEP programmes will continue despite National disasters, however mode of delivery could change.

**ILUNGELO LOKUMBA KANYE NEZINQUBO ZOKUHLOLA NOKUBIKA UMTHELELA KWEZEMVELO ISAZISO SESICELO SELUNGELO LOKUMBA ELIHLANGENE, ISIGUNYAZO SEZEMVELO KANYE NELAYISENSI YOKULAWULA UDOTI, LOKUMBA OKUHLONGOZWAYO E-PORT DURNFORD ESIFUNDAZWENI SAKWAZULU-NATALI**

Lapha kunikezwa isaziso mayelana:

- Nesiqondiso 41(2) se-GNR 982 (7 Ephreli 2017) esashicilelwa ngaphansi kwesigaba 24 no-24D soMthetho Wokulawulwa Kwezemvelo Kuzwelonke (No. 107 ka-1998) (NEMA) sokuthunyelwa kwesicelo sesigunyazo sezemvelo (EA) mayelana nemisebenzi ehlonzwe ngokuvumelana ne-GNR 983, 984 no-985 (7 Ephreli 2017)
- Isigaba 47(3) soMthetho Wokulawulwa Kwezemvelo Kuzwelonke: Udoti (uMthetho No. 59 ka-2008) (NEM:WA) kanye nohlu lwemisebenzi yokulawulwa kukadoti (GN 921), okudinga ukufakwa kwesicelo selayisensi yokulawulwa kukadoti (WML)
- Isigaba 49(f) soMthetho Wezimbiwa-phansi Nokuthuthukiswa Kwemithombo Ye-Petroleum (uMthetho No. 28 ka-2002) (MPRDA).

**INCAZELO NENDAWO**

- I-Tronox KZN Sands (Pty) Ltd (Tronox) njengamanje inamalungelo kulokhu okulandelayo:
- Ilungelo elivuselelwe lokufuna izimbiwa-phansi (KZN 30/5/1/1/2/10708 PR) elihlanganisa la mapulazi alandelayo: Ingxenywe esele ye-Richards 16802, Birkett 16832 Ingxenywe esele ye-Siqephu 1 no-Ruth 16833 (esaziwa ngokuthi indawo eqashiwe e-Port Durnford)
- Ilungelo lokufuna izimbiwa-phansi e-Waterloo (DMRE Ref: KZN30/5/1/1/2/296 PR) ekula mapulazi alandelayo: Isiqephu 1, 2 neNgxenywe esele ye-Lot 131 Umlalazi 14098 neNgxenywe esele ye-Lot 103 Umlalazi 13880 neNgxenywe esele ye-Lot 104 Umlalazi 13853, kanye
- Ne-Penarrow ekula mapulazi alandelayo: Lot 132 Umlalazi 13602 iNgxenywe esele no-Lot 132 Umlalazi 13602 Isiqephu 1

I-Tronox manje ihlela ukushintsha amalaysensi eLungelo Lokufuna Izimbiwa-phansi abe iLungelo Lokumba futhi ifune isigunyazo sezemvelo ukuze isekele lokhu. Kudingeka iNqubo Yokuhlola Nokubika Umthelela Kwezemvelo (S&EIR) ukuze kusekelwe le phrojekthi mayelana nemithetho echazwe ngenhla.

Indawo yamaLungelo Okufuna Izimbiwa-phansi ikuMasipala Wendawo uMhlathuze kanye noMasipala Wesifunda iNkosi uCetshwayo. Isebangeni elingaba u-15km eningizimu-ntshonalanga ye-Richards Bay futhi incikene nalezi zindawo zokuhlala/amadolobhana alandelayo ezindaweni ezihlukene emingceleni:

- Mtunzini
- Port Durnford
- Esikhawini
- Gobandlovu
- KwaDlangezwa

**IZICELO ZEZEMVELO**

I-WSP Group Africa (Pty) Ltd (WSP) iqokwe i-Tronox ukuba ibe uMhlaziyi Wezemvelo (Environmental Assessment Practitioner (EAP)), ukuba ilawule inqubo ye-S&EIR. Izinombolo zomsebenzi osohlwini olindelekile ezihlobene nephrojekthi ehlongozwayo zibonise lapha ngezansi. Uma ufisa ukuthola incinane ebanzi ngale misebenzi esohlwini, sicela uthinte i-EAP kule mininingwane enikeziwe ngezansi.

Isaziso Sohlu Notice 1 (GN R. 983, njengoba sichitshiyelwe i-GNR 327)	Umsebenzi 9,10,11,12,13,14, 16,19,24,25,28,45 no-56
Isaziso Sohlu 2 (GN R. 984, njengoba sichitshiyelwe i-GNR 325)	Umsebenzi 6, 15,16 no-17
Isaziso Sohlu 3 (GN R. 985, njengoba sichitshiyelwe i-GNR 324)	Umsebenzi 2, 3, 10, 12, 14, no-18
I-GN921 ka-2003, iSigaba A	Umsebenzi 1
I-GN921 ka-2003, iSigaba B	Umsebenzi 1, 7, 11

**UKUBHALISA**

Labo abafisa ukubhalisa njengabambiqhaza ukuze baveze uvo lwabo kule phrojekthi ehlongozwayo, kucelwa ukuba bathumele imininingwane yabo ehovisi lokubamba iqhaza komphakathi le-WSP kule mininingwane enikezwe ngezansi. Ababambiqhaza ababhalisile bayothunyelwa zonke izincwadi esikhathini esizayo futhi batshelwe ngamathuba engenziwe okubamba iqhaza kule nqubo. Ngaphezu kwalokho, amakhophi e-elektroniki encwadi yolwazi oluyisendlelo kanye nepheshana lokubhalisa nokubeza uvo lwale phrojekthi kuyatholakala uma ufuna ukukudawniloda kule webhusayithi elandelayo: <https://www.wsp.com/en-ZA/services/public-documents>.

**UKUZE UTHOLE ULWAZI OLWENGEZIWE, SICELA UXHUMANE NALABA:**  
Public Participation Office; WSP Group Africa (Pty) Ltd;  
PO Box 6001, Halfway House, 1685; Ucingo: 011 254 4800; Ifeksi: 086 582 1561  
I-imeyili: [gld.pp@wsp.com](mailto:gld.pp@wsp.com)

**INKATHI YOKUBUYEKEZA UHLAKA LOMBIKO WOKUHLOLA**

Uhlaka Lombiko Wokuhlola luzotholakala ku-WSP uma ulucela kanye/noma kulezi zindawo ezilandelayo ukuze lubuyekwezwe futhi kuphawulwe ngalo izinsuku ezingu-30 kusukela mhla ka-21 Novemba 2022 kuya kumhla ka-10 Januwari 2023.

- IHhovisi LikaMasipala Umhlathuze, Civic Centre, Central Business, 5 Mark Strasse Street, Richards Bay, 3900
- Mkhwanazi Tribal Authority, Kwa Dlangezwa
- Esikhawini Library, H2 Inhlokohloko Street, Esikhawini, 3887
- Felixton Library, 1West End, Felixton, Empangeni, 3875
- Mtunzini SAPS, 1 Clarke Avenue, Mtunzini, 3867

I-WSP izobe isebenza ulwazi oluthile oluqondene naye njengonesasasa nohthekayo (I&AP) ngezinjongo zokuqalisa ukubhalisa kwakho njenge-I&AP nokugcina imininingwane yakho engolobaneni yethu yolwazi, uma uvuma ukuba senze kanjalo. I-WSP izosebenzisa le mininingwane ukuze ixhumane naye ngamanye amaphrojekthi afanele esikhathini esizayo. I-WSP njalo nje iyosebenza ulwazi oluqondene naye ngokuvumelana noMthetho Wokuvikelwa Kolwazi Lomuntu ka-2013. Unelungelo lokusebenzisa amalungelo akho njengombambiqhaza wolwazi futhi usitshelwe uma ufuna sicishe ukubhalisa kwakho njenge-I & AP noma uma ungasafuni ukuba imininingwane yokuxhumana naye ifakwe engolobaneni yethu yolwazi.



RICHARDS BAY  
INDUSTRIAL DEVELOPMENT ZONE

**T1.1: TENDER NOTICE AND INVITATION TO TENDER**

**RICHARDS BAY INDUSTRIAL DEVELOPMENT ZONE COMPANY SOC LTD**

Tenders are hereby invited for the Works included in the following Contract which is to be implemented by the Richards Bay Industrial Development Zone SOC Ltd (RBIDZ). It is estimated that only Tenderers who are registered with the CIDB as **Grade 2CE PE/ 3CE** or higher Contractors shall be eligible to tender for:

**CONTRACT NO. 1A/ZDO/026/22: PROVISION OF SLOPE STABILITY IN PHASE 1A**

Tender documents together with the Tender drawings may be obtained during office hours between 09h00 and 15h00 as from 18 November 2022 from the RBIDZ Office Complex, 4 Harbour Arterial, Alton, Richards Bay. A non-refundable cash payment of R500.00 paid into the RBIDZ's bank account, namely **Absa, Branch Code: 632005 Account No.: 4072219190. No Tender documents will be sold after 10:30 am on the date of the compulsory briefing meeting.**

Tenders are to be completed in accordance with the conditions attached to the documents and must be sealed and endorsed with the relevant Contract number and must be personally deposited in the official Tender box at the RBIDZ, RBIDZ Complex, 4 Harbour Arterial, Alton, Richards Bay **not later than 12:00 pm on 15 December 2022**, at which time tenders will be opened in public.

A compulsory briefing meeting and site inspection will be held on **23 November 2022** at 11:00 am at RBIDZ Phase 1A Site, Medway Road, Richards Bay (GPS co-ordinates 28°46'43.46" S 32°04'01.32"E). The Employer will not be available for inspection purposes on any other occasion. Tenderers are required to bring their tender documents to the site inspection for signature. Tenderers are to bring along their own PPE (pants, safety /closed shoes and safety vest). No PPE, no entry. **Tenderers without original tender documents and tenderers with original documents arriving after 11:00 am will not be allowed to attend the briefing meeting.** All queries relating to this tender and documents must be forwarded via email to [tenders@rbidz.co.za](mailto:tenders@rbidz.co.za).

Tenders will first be evaluated in terms of functionality, and thereafter in terms of price and preference on an 80/20 system as contemplated in the Preferential Procurement Policy of the RBIDZ and must score a minimum of 60% on functionality to be considered further in terms of price and preference. Tenderers who do not obtain the minimum functionality scoring will be regarded as non-responsive that will lead to the disqualification of the Tender Submission.

**It is a condition of tender that only tenderers that are EMEs and are B-BBEE Level 1 shall be eligible to tender. It is also a condition of tender that, a tenderer makes provision for contract participation goals as indicated in the tender document.**

**The RBIDZ is not bound to accept the lowest price, highest scoring or any tender and reserves the right to accept or not to accept any tender in whole or part thereof. The RBIDZ reserves the right to appoint a tenderer that best meets the requirements of the company on reasonable grounds.**

Telegraphic, telephonic, telex, electronic, e-mailed and late Tenders will not be accepted.

CEO, Richards Bay Industrial Development Zone Company SOC Ltd

**TIPS-OFFS ANONYMOUS HOTLINE**

Assist the RBIDZ to act against: fraud/corruption/conflict of interest/abuse of company resources/theft/unethical behaviour.

South Africa Toll Free: 0800 003 333

Free Fax: 0800 00 77 88

Email: [rbidz@tip-offs.com](mailto:rbidz@tip-offs.com)

976771



BUILDING SOUTH AFRICA  
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**TENDER NOTICE**

**CLOSING DATE FOR SUBMISSION: 29 November 2022 at 11:00am**

Afrostructures (PTY)Ltd invites experienced EME and QSE subcontractors to tender for subcontracts on SUBCONTRACT NO: **SANRAL N.002-250-2020/3- SC5/SC6/SC7**  
CONTRACT NAME: **THE REHABILITATION OF B112 – SARNIA ROAD GRADE SEPARATION ON N2 SECTION 25, KM 11.4 IN THE ETHEKWINI DISTRICT MUNICIPALITY**

This project is in the province of KwaZulu Natal and in the eThekweni District Municipality. Preferences are offered to prospective tenderers from the targeted area, namely, Ward 65, eThekweni Municipality.

Subcontractors are required for the following packages:

Works packages	Approximate duration	CIDB requirement
<b>N.002-250-2020/3-SC5-ROAD MARKING AND ROAD STUDS</b>	1 Month	1CE
<b>N.002-250-2020/3-SC6- PATCHING AND EDGE BREAK REPAIRS, STANDARD CRACK SEALING, ROAD RESTRAINT SYSTEMS (GUARD RAILS)</b>	2 Months	1CE
<b>N.002-250-2020/3-SC7- DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE AND STEELWORK, REPAIR AND REPLACEMENT OF ANCILLARY STRUCTURAL ELEMENTS</b>	4 Months	2CE

CIDB Regulation 25 (1B) will be applicable to this contract.

**Tenderers who satisfy the following criteria are eligible to submit tenders:**

1. At least 51% Black owned
2. Exempted Micro Enterprise (EME) or Qualifying Small Enterprise (QSE)
3. Registered with the South African Revenue Service
4. Registered on the National Treasury Central Supplier Database (CSD)
5. Registered as "active" with the Construction Industry Development Board (CIDB) for a CE class of construction work
6. Compliant with the Compensation for Occupational Injuries and Diseases Act (COIDA)
7. B-BBEE Level 1-4
8. Tender documents may be requested in an electronic format via e-mail from 14 November 2022 during the hours 08:00 AM to 16:00 (Monday to Friday).
9. Requests for tender documents may be sent to [sarnia@afrostructures.co.za](mailto:sarnia@afrostructures.co.za)
10. Tenderers must have access to Microsoft Office© 2013 and Acrobat Adobe © 9.0, or similar compatible software.

Rates of Wages and Conditions of Labour Requirements

The subcontractor shall be registered with the Bargaining Council for the Civil Engineering Industry (Government Notice R.490 – Part III in Government Gazette No. 37750) and rates for Wages and Conditions of Labour agreed by the Bargaining Council for the Civil Engineering Industry shall apply to the Subcontractor except where a specific industry publishes its own Wage Rates and Conditions of Labour.

**TENDER CLARIFICATION BRIEFING**

A compulsory tender clarification briefing with representatives of the Project Management Team will take place on the **21 November 2022 at 09:00**. Tenderers must register for the Compulsory Tender Clarification Briefing by completing Form A1.1 - Certificate of Intention to Submit a Tender which is found in the tender document. The completed form must be sent to [sarnia@afrostructures.co.za](mailto:sarnia@afrostructures.co.za) by **18 November 2022 at 12:00**. An Invitation will be sent only to tenderers who return Form A1.1. Failure to submit this certificate may result in the tenderer being deemed non-responsive. Tenderers are required to bring a hard copy of FORM A1: CERTIFICATE OF TENDERER'S BRIEFING to the briefing to be signed Afrostructures on the day.

**TENDER SUBMISSION**

The closing time for submission of tenders is **Tuesday, 11:00 on 29 November 2022**. Tender documents must be submitted electronically only to [sarnia@afrostructures.co.za](mailto:sarnia@afrostructures.co.za). The tender results summary will be sent to all tenderers via e mail upon completion of the collation of the results.

Only the below listed elements of the tender document must be returned on the submission:

- a) Form of Offer (pdf)
- b) All returnable schedules (pdf)
- c) Completed pricing schedule (pdf)

Queries relating to these documents may be addressed to :

Contact person: Londeka Buthelezi

Tel / email: 076 696 4661 – [sarnia@afrostructures.co.za](mailto:sarnia@afrostructures.co.za)

**0856 SALES/ MARKETING**

**A CAREER IN SALES**

For enthusiastic & self motivated Individuals.

Join the leading sales Company in SA.

Marketing an Exclusive brand of products. Opportunity To grow into management exists, at Our Richards Bay branch.

Interviews will Be conducted in Richards Bay.

- No experience necessary
- Full training provided
- Attractive salary package
- Normal company benefits

Call: Courtney 087 135 5684

SR010351

**0877 DOMESTIC EMPLOYMENT/ ACCOM.**

Beware, do not pay any money in advance for any employment you are offered. That is not the way business operates. Don't pay money to obtain the position, medicals, uniforms, etc.

Isexwayiso kwabafuna imisebenzi. Ungalokothi ukhokhe imali kumuntu okununusela ngomsebenzi. Noma ethi kumele ukhokhele umfaniswano wokusebenza, okukanye ufuna imali yokuthi uyoxilongwa ngokwezempilo ungalokothi, yazi ukuthi yiqola lelo, baleka

**NONHLAHLA JOBE** Seeks F/T, S/I/O, Eng, Kids, Cooks, Refs Tel: 079 958 5321

NW001829

**NOZI NGONYAMA** Seeks P/T, S/O, Eng, Kids, Cooks, Refs Tel: 078 330 3973

NW001824

**0900 LEGALS**

**0910 PUBLIC/ LEGAL NOTICES**

**NOTICE**

**FORM JJJ LOST OR DESTROYED DEED**

Notice is hereby given in terms of Regulation 68 of the Deeds Registries Act, 1937, of the intention to apply for the issue of a certified copy of Title Deed No. TG455/1969(KZ) passed by Province of KwaZulu-Natal in favour of BENNEDICTA SIMELANE in respect of certain Erf 615 NGWELEZANA A, REGISTRATION DIVISION GU, PROVINCE

OF KWAZULU-NATAL, which has been lost or destroyed. All interested persons having objection to the issue of such copy are hereby required to lodge the same in writing with the Registrar of Deeds at Pietermaritzburg, Room 411, High Court Building, 300 Pietermaritz Street, PIETERMARITZBURG within two weeks from the date of the publication of this notice. Dated at Mtubatuba this 26th day of October 2022

TV MADELA INC 47Jan Smuts Avenue MTUBATUBA 3935

Tel: 035 550 1207 Ref. No. 21/SG87/001 /Mpumbe

14-11-2022

SR010388

**NOTICE**

**LOST OR DESTROYED DEED**

Notice is hereby given in terms of Regulation 68 of the Deeds Registries Act, 1937, of the intention to apply for the issue of a further certified copy of T38955/2010 passed by ERASMUS JACOBUS SMIT, IDENTITY NUMBER 6010195023083, MARRIED OUT OF COMMUNITY OF PROPERTY, in favour of KRISHNA - LOKA FARMING AGRICULTURAL PRIMARY CO-OPERATIVE LIMITED, REGISTRATION NUMBER 2009/007186 /24, in respect of certain THE FARM WELTEVREDE NO. 16162, REGISTRATION

DIVISION FU, PROVINCE OF KWAZULU-NATAL, IN EXTENT 249,7660 (TWO HUNDRED AND FORTY NINE COMMA SEVEN SIX SIX ZERO) Hectares which has been lost or destroyed. All interested persons having objection to the issue of such copy are hereby required to lodge the same in writing with the Assistant Registrar of Deeds at Room 411, High Court Building, 300 Pietermaritz Street, Pietermaritzburg within two weeks from the date of the publication of this notice. Dated at ESHOWE this 9TH DAY OF SEPTEMBER 2022

Applicant WYNNE & WYNNE ATTORNEYS, 73 Osborn Road Eshowe, 3815, E-mail address conveyancing @wynnewynne.co.za Contact number 035 474 1121

14-11-2022

SR010384

**NOTICE**

**FORM JJJ**

Notice is hereby given in terms of regulation 68 of the Deeds Registries Act, 1937, of the intention to apply for the issue of a certified copy of Deed of Transfer Number T23147 /2020 in respect of certain PORTION 7 OF THE FARM LOT H33 NUMBER 13042 REGISTRATION DIVISION GV PROVINCE OF KWAZULU-NATAL IN EXTENT 6,0671 (SIX

COMMA ZERO SIX SEVEN ONE) HECTARES which property is owned by JOZINI CRUSHERS CC Registration Number 1997 /012158/23 which has been lost or destroyed. All person having objection to the issue of such copy are hereby required to lodge the same in writing with the Registrar of Deeds at Pietermaritzburg within two weeks after the date of the publication of this notice. Dated at EMPANGENI on this 09 day of NOVEMBER 2022

LUCAS WILHELMUS LANDMAN 7 ADDISON STREET KINGFISHER COURT EMPANGENI 3880 Sulize.m @bothasinc.co.za Tel. 035 792 2011

14-11-2022

SR010395

**You are the eyes and ears of the police STOP CRIME**  
To report a crime phone Crime Stop 08600 10 111



# Does cruise control save fuel? Maybe not!

With fuel prices at record highs, vehicle owners are desperate to save even a few cents at the pumps and will try anything they are told, 'saves fuel'.

While there are many gimmicks, gadgets and additives out there (most of which are useless), it's commonly believed and trusted that using a vehicle's cruise control function does bring down fuel consumption.

However, for this to become reality, this technology needs to be used correctly.

Incorrect use of a vehicle's cruise control function could actually cause motorists to use more fuel.

Here's what the experts say, courtesy of MasterDrive:

"While cruise control can boost fuel economy considerably, this is only when driving on a constant, flat surface. On inclines, cruise control reacts to gradient changes slower than a driver.

"When drivers reach the top of a hill, they decrease their pressure on the accelerator much faster than cruise control can sense gradient change. The same applies when driving in traffic.

"Firstly, cruise control is never recommended in heavy traffic because of the potential for something to go wrong.

"If, however, a driver uses cruise control in moderate traffic and is consequently adjusting or stopping and restarting regularly, they will not get the most fuel saving benefits out of cruise control, safety concerns aside.

"A Natural Resources

Canada Study found cruise control could potentially reduce fuel consumption by 20% - if used correctly.

"If you are consistently adapting your cruise control between 110km/h and 120km/h, for example, as opposed to keeping it at a consistent 120km/h, you are unlikely to see this saving.

"If you find you regularly need to adjust your speed, driver anticipation and correct following distances are more likely to get a bigger saving than using your cruise control.

"Yet, if adaptive cruise control (ACC) manages following distances for you, can the same be said for ACC?"

"According to a study conducted across Europe in 2012, it found the sensors that adapt the speed according to traffic, result in fuel savings.

"However, most of these studies are conducted in open highway settings where there are minimal adaptations. Additionally, the savings are around 2.8%, thus negligible at best."

The conclusion here is that, while there is a place for cruise control in saving fuel, this function can also have the opposite effect.

MasterDrive offers the following advice: "Before deciding to use cruise control, look at the driving conditions and decide if they allow for it.

"Also, do not sacrifice safety for reducing fuel consumption, for example, using cruise control in wet weather.

"There is a place for all car technology, but requires the correct use to get the most benefit from it."

• PUBLIC / LEGAL NOTICES •

**MINING RIGHT AND SCOPING AND ENVIRONMENTAL IMPACT REPORTING PROCESSES**

**NOTIFICATION OF APPLICATION FOR AN INTEGRATED MINING RIGHT, ENVIRONMENTAL AUTHORISATION AND WASTE MANAGEMENT LICENCE FOR THE PORT DURNFORD PROPOSED MINING OPERATION IN KWAZULU-NATAL PROVINCE**

**Notice is given in terms of:**

- Regulation 41(2) of GNR 982 (7 April 2017) published under section 24 and 24D of the National Environmental Management Act (No. 107 of 1998) (NEMA) for submission of application for environmental authorisation (EA) in respect of activities identified in terms of GNR 983, 984 and 985 (7 April 2017)
- Section 47(3) of the National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA) and the list of waste management activities (GN 921), requiring submission of a waste management license (WML) application
- Section 49(f) of the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (MPRDA).

**DESCRIPTION AND LOCATION**

Tronox KZN Sands (Pty) Ltd (Tronox) is applying for a mining right for the following tenements:  
 • A renewed prospecting right (KZN 30/5/1/1/2/10708 PR) covering the following farms: Remainder of Richards 16802, Birkett 16832 Remainder and Portion 1 and Ruth 16833 (known as the Port Durnford lease area).  
 • Waterloo prospecting right (DMRE Ref: KZN30/5/1/1/2/296 PR) located on the following farms: Portion 1,2 and Rem of Lot 131 uMlalazi 14098 and Rem of Lot 103 uMlalazi 13880 and Rem of Lot 104 uMlalazi 13853, and  
 • Penarrow located on the following farms: Lot 132 uMlalazi 13602 Rem and Lot 132 uMlalazi 13602 Portion 1  
 Environmental authorisation is required to support this. A Scoping and Environmental Impact Reporting (S&EIR) Process is required to support this project in terms of the legislation detailed above.  
 The Prospecting Rights area is situated in the uMhlathuze Local Municipality and the King Cetshwayo District Municipality. It is located approximately 15km south-west of Richards Bay and is adjacent to the following settlements/towns at different points along the boundaries:  
 • Mtunzini  
 • Port Durnford  
 • Esikhawini  
 • Gobandlovu  
 • KwaDlangezwa

**ENVIRONMENTAL APPLICATIONS**

WSP Group Africa (Pty) Ltd (WSP) has been appointed as the Environmental Assessment Practitioner (EAP) by Tronox, to manage the S&EIR process. The anticipated listed activity numbers associated with the proposed project are reflected below. Should you wish to obtain a more detailed description of these listed activities, please contact the EAP at the details provided below.

Listing Notice 1 (GN R. 983, as amended by GNR 327)	Activity 9,10,11,12,13,14, 16,19,24,25,28,45 and 56
Listing Notice 2 (GN R. 984, as amended by GNR 325)	Activity 6, 15,16 and 17
Listing Notice 3 (GN R. 985, as amended by GNR 324)	Activity 2, 3, 10, 12, 14, and 18
Gn921 of 2003, Category A	Activity 1
Gn921 of 2003, Category B	Activity 1, 7, 11

**Registration**

Parties wishing to formally register as stakeholders in order to offer their comment on the proposed project are requested to forward their details to the WSP public participation office as per the details provided below. Registered stakeholders will be forwarded all future correspondence and notified of additional opportunities to participate in the process. In addition, electronic copies of the background information document and registration & comment sheet for the project are available for download at the following website: <https://www.wsp.com/en-ZA/services/public-documents>.

**FOR MORE INFORMATION, PLEASE CONTACT:**  
 Public Participation Office; WSP Group Africa (Pty) Ltd;  
 PO Box 6001, Halfway House, 1685; Tel: 011 254 4800; Fax: 086 582 1561  
 E-mail: [gld.pp@wsp.com](mailto:gld.pp@wsp.com)

**DRAFT SCOPING REPORT REVIEW PERIOD**

The Draft Scoping Report will be made available from WSP on request and/or at the following venues for review and comment for 30 days from **21 November 2022 to 10 January 2023**.

- Umhlathuze Municipal Office, Civic Centre, Central Business, 5 Mark Strasse Street, Richards Bay, 3900
- Mkhwanazi Tribal Authority, KwaDlangezwa
- Esikhawini Library, H2 Inhlakholoko Street, Esikhawini, 3887
- Felixton Library, 1West End, Felixton, Empangeni, 3875
- Mtunzini SAPS, 1 Clarke Avenue, Mtunzini, 3867

WSP will be processing certain personal information about you as an interested and affected party (I&AP) for purposes of enabling your registration as an I&AP and storing of your details on our database, if you consent for us to do so. WSP will use these details to contact you about other relevant projects in the future. WSP will always process your personal information in accordance with the Protection of Personal Information Act 4 of 2013. You are entitled to exercise your rights as a data subject and let us know if you wish to be deregistered as an I & AP or if you no longer want your contact details to be included on our database.

sq010398-46-22





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Magwa Crescent West, Waterfall City  
Midrand, 1685  
South Africa

[wsp.com](http://wsp.com)