

AUTHORISATIONS REPORT

DRAFT BASIC IMPACT ASSESSMENT FOR THE PROPOSED EXPANSION OF A
DANGEROUS GOODS STORAGE FACILITY WITHIN THE GREATER TUBATSE
LOCAL MUNICIPALITY, LIMPOPO PROVINCE

LEDET REF. NO:

ENVASS REF. NO: 101-17_18

Submitted to:

Limpopo Department of Economic Development, Environment and Tourism

"Your Partner in Calculating Environmental Solutions"

ENVASS

ENVIRONMENTAL ASSURANCE (Pty)Ltd



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Document Title	DRAFT BASIC IMPACT ASSESSMENT FOR THE PROPOSED EXPANSION OF A DANGEROUS GOODS STORAGE FACILITY WITHIN THE GREATER TUBATSE LOCAL MUNICIPALITY, LIMPOPO PROVINCE.		
Report Number	BAR-REP-101-17_18_DRAFT		
Version	0.0_DRAFT		
Date	December 2017		
Submitted to	Mr Jacques van Niekerk Email: Jacques.VanNiekerk@samancorCr.com		
Distribution	1 X Greater Tubatse Local Municipality 1 X Environmental Assurance (Pty) Ltd 1 X Limpopo Department of Economic Development, Environment and Tourism 1 X Greater Sekhukhune District Municipality 1 X Department of Water Affairs and Sanitation		
QUALITY CONTROL			
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Date	11/12/2017	12/12/2017	12/12/2017
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EXECUTIVE SUMMARY

Introduction and Project Description

Environmental Assurance (Pty) Ltd (ENVASS) was appointed by Tubatse Chrome (Pty) Ltd (hereinafter referred to as Tubatse Chrome) to apply for Environmental Authorisation for the proposed expansion of a dangerous goods storage facility. The study area is situated on the remaining extent of Portion 6 of the Farm Goudmyn 337 KT, in the town of Steelpoort, within the Greater Tubatse Local and Greater Sekhukhune District Municipalities in the Limpopo Province of South Africa (refer to Figure 1 and 2 for a locality map of the study area).

Tubatse Chrome (Pty) Ltd (hereinafter referred to as Tubatse Chrome), has an existing Pelletising and Sintering Plant (PSP), constructed in 2002, for which an Environmental Authorisation was obtained (Ref No. 16.4.28.50L1). In 2009 the Plant was upgraded, after Tubatse Chrome obtained an Environmental Authorisation for the upgrade (Ref No. 12/1/9-6/25-GS2). Tubatse Chrome currently, has Liquefied Petroleum Gas (LPG) tanks installed at the PSP with a combined capacity of 45 m³. Tubatse Chrome is authorised under an Air Emissions License (AEL) (Ref. No. 12/4/12L-s4/A1), to consume 1 620 tons per annum of LPG.

Samancor's Tubatse Chrome now intends to expand the fuel storage capacity by installing an additional 46 m³ tank that will contain Light Straight-run Naphtha (LSR). The combined capacity of "dangerous goods" stored at the PSP will, therefore, be 91 m³. Naphtha is listed in SANS 10228 as a "dangerous good". The LSR gas will supplement the consumption on the existing LPG fuelled system and alleviate the high cost associated with LPG usage.

The proposed activities triggers a listed activities in terms of the National Environmental Management Act, Act 107 of 1998, as amended and the EIA Regulations, 2014 (as amended), Listing Notice 1 and Listing Notice 3, which requires a Basic Impact Assessment. The Competent Authority (CA) is the Limpopo Department of Economic Development, Environment and Tourism (LEDET). This Basic Assessment Report contains all the required information as set out within Appendix 1 of the EIA Regulations, 2014 (GNR. 983).

Background

Samancor Limited's Tubatse Ferrochrome operation produces approximately 482 312 tons of ferrochrome annually, of which 99% is exported. The scope of the operations entails the pelletising and sintering of chromite fines, production of charge chrome per customer requirements, recovery of chrome from slag and services to support the production process. Ferrochrome is produced at Tubatse as high carbon charge chrome, which is an alloy of chromium and iron with a chromium content of typically 50 to 52% and 34 to 38% iron. Internal dumping, storage and handling of raw materials, and final product are handled by supporting services. This includes all inbound and outbound logistics. Tubatse Chrome sells the ferrochrome to Columbus Stainless to be utilised in the production of stainless steel products. The process involves six submerged arc furnaces, a chrome

recovery plant (CRP) and the PSP. The smelting complex includes Tubatse Chrome, a joint venture with Sinosteel and NST Ferrochrome (Pty) Ltd. The chrome complex was initially constructed as a three-furnace operation in 1975, through a joint venture between Gencor Limited and Union Carbide Inc (USA). The Union Carbide Inc shareholding was taken over by Samancor in 1975, and in 1989, Samancor acquired the Gencor Ltd shareholding. From 1989 to 1990, the plant was expanded to five furnaces and a sixth constructed in 1996. The PSP was constructed in 2002. In 2010 the PSP was upgraded and the existing water infrastructure of the complex was expanded.

The water infrastructure that was expanded in 2010 to include a new reverse osmosis water treatment plant (WTP). Other water infrastructure include:

- A stormwater system including a lined stormwater dam with a capacity of 30 000 m³, trenches, pipes and diversions;
- Boreholes from which groundwater is abstracted from two of the eight boreholes existing at the study area. Groundwater is currently used for domestic purposes;
- A desilting device was fitted to clean water abstracted from the Steelpoort River, before entering the Transfer Dam named “Bertha dam”. From the Transfer Dam, virgin water is pumped to the Tubatse main dam; and
- Two existing brine dams are used to collect and store concentrated brine (or waste water) from the forced evaporators. Additional brine dams were constructed in 2010, covering an area of approximately 4 hectares to handle the brine flow rate. This provided storage capacity for brine or salts for 30 years.

Upgrades to the pelletising plant, in 2010 resulted in an increase to the annual production of pellets from 520 000 to 620 000 tons. The upgrades reduced the production costs on both the ferrochrome furnaces and the pelletising plant and resulted in reduced pollution and water use.

No shut-down phase is required for the installation of the LSR storage tank, however the plant will be temporarily shut down during the connection of the new tank.

Legislative Requirements

NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NO. 107 OF 1998) (AS AMENDED) AND THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REGULATIONS OF 2014 (AS AMENDED)

The National Environmental Management Act, Act 107 of 1998 (as amended) [NEMA] strives to regulate national environmental management policy and is focussed primarily on co-operative governance, public participation and sustainable development. NEMA makes provisions for co-operative environmental governance by establishing principles for decision making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by Organs of State and to provide for matters connected therewith.

The proposed activity falls within the ambit of the scheduled activities listed in Government Notice (GN) No. 983 (as amended), and therefore requires compliance with the EIA Regulations of 2014 (as amended), promulgated in terms of the NEMA. The proposed activity requires a Basic Assessment process as listed activity 34 under Government Notice No R. 983 (as amended in 2017), and listed activity 22 of Government Notice No. R985 (as amended in 2017) are triggered.

Other Legislation requirements considered in this application for Environmental Authorisation include *inter alia*:

- Constitution of South Africa, 1996 (Act No. 108 of 1996) [as amended];
- National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) and associated regulations;
- National Environmental Management: Waste Management Act, 2008 (Act No. 59 of 2008) [as amended];
- National Environmental Management: Biodiversity Act, 2004 (Act No.10 of 2004) [as amended] and associated regulations;
- National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998);
- National Water Act, 1998 (Act No. 36 of 1998) [as amended];
- Animals Protection Act, 1962 (Act No. 71 of 1962);
- Societies for the Prevention of cruelty to Animals Act, 1993 (Act No. 169 of 1993);
- National Heritage Resource Act, 1999 (Act No. 25 of 1999);
- Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983);
- Promotion of Access to Information Act, 2000 (Act No. 2 of 2000);
- Hazardous Substances Act, 1973 (Act No.15 of 1973);
- Occupational Health and Safety Act, 1993 (Act No. 85 of 1993); and
- Provincial and local bylaws, policies and frameworks.

Receiving Environment

The Tubatse Chrome PSP is located approximately 1 km west of the centre of the Steelpoort town. The Steelpoort River is located a 1 km to the north of the study area, running from the south-west, towards the north-east. A rezoned industrial site, Ngulu Bulk Carriers, is located within 1 km to the west of the plant, including a small residential village for Ngululu Bulk Carriers employees. The plant is surrounded by informal settlements and rural communities to the north of the Steelpoort River and agricultural lands and activities taking place approximately 5 km to the south-east (refer to Figure 2 for an aerial photograph and Figure 3 for a map of the surrounding land uses. Figure 4, indicates the sensitivities on and surrounding the study area.

Topography

The area is undulating, sloping gently away from the mountain.

Geology and Soils

The study area falls in the eastern limb of the Bushveld Igneous Complex and is part of the Critical Zone of the Rustenburg Layered Suite. The Critical Zone is divided into the Upper and Lower Critical Zone, characterised by the Winterveld norite and anorthosite and the Mooihoek pyroxenite respectively. While 13 chromite layers occur in both zones, the 1m thick LG 6 chromite layer in the Mooihoek pyroxenites is the most significant and mined by Samancor Eastern Chrome Mines (ECM) (Steelpoort), along its strike. The mafic rocks are covered by a variable thickness of topsoil and colluvium (hillwash) with increasing thickness towards the foothills of the mountains. The weathered material is replaced or overlain along the river courses by alluvial deposits. The deposits form especially along the Steelpoort River a high yielding alluvial aquifer along the river course, often targeted for water supply purposes (Delta H Water Systems Modelling, 2014). The mafic rocks (pyroxenite, norite and anorthosite) of the Rustenburg Layered Suite of the Bushveld Igneous Complex (BIC), within which the study area is located, is overlain by a weathered material, hillwash and alluvial deposits (Delta H Water Systems Modelling, 2014).

Surface Water

The project area falls within the B41J quaternary catchment area within Water Management Area (WMA) 2, which is known as the Olifants WMA. The boundary of the WMA is Primary drainage region B. Major rivers include the Elands, Wilge, Steelpoort, Olifants and Letaba. The Olifants River originates to the east of Johannesburg and initially flows northwards before gently curving eastwards towards the Kruger National Park (KNP), where it is joined by the Letaba River before flowing into Mozambique. The Olifants WMA, covers an area of 54, 570 km². The Olifants catchment is divided into three management areas namely the Upper, Middle and Lower Olifants management zone. The Upper Olifants Sub-area is the most urbanised of the four sub-areas with the majority of the urban population located in Witbank and Middelburg. The population in these urban centres is projected to grow in the future. There are extensive coal mining activities in the sub-area both for export through Richards Bay and for use in the 6 active coal fired power stations in the sub-area. The presence of coal also led to the establishment of the steel manufacturing industries located in Middelburg and Witbank.

The surface water in the Steelpoort area consists of several non-perennial tributaries of the Steelpoort and Moopetsi Rivers, both feeding the perennial Olifants River. The site falls within the Olifants primary drainage region, lying in the lower reaches of the B41J quaternary catchment. The surface water uses in the area comprises mainly of agricultural activities (informal irrigation, livestock watering), informal domestic use (washing of clothes and dishes), recreational use (swimming) and mining activities in addition to the Ecological Reserve.

Biodiversity

In terms of ecological importance this area forms part of the Eastern Bankenveld eco and aquatic region. As can be seen in Figure 13, the predominant land uses are mining (Silica), semi-urban residential areas (informal and formal settlements), and agriculture (grazing). The land has been significantly disturbed by agriculture, urban sprawl and industrial and mining activities.

According to the delineation provided by Dallas (2005), the area is situated within the **Bushveld Bioregion**. Kleynhans *et al.* (2005) classifies the area as the **Eastern Bankenveld Level 1 Ecoregion** and describes the bushveld bioregion as consisting predominantly of plains with a low relief and with Mixed Bushveld being the definitive vegetation type. In the east, plains and lowlands with a moderate relief occur (Nortje, 2017).

Two vegetation types are located in close proximity to the study area i.e Sekhukhune Mountain Bushveld and Sekhukhune Plains Bushveld (SANBI, 2017). Characteristics of the Sekhukhune Mountain Bushveld type include:

- Dry, open to closed microphyllous and broad-leaved savanna on hills and mountain slopes that form concentric belts parallel to the northeastern escarpment;
- Open bushveld often associated with ultramafic soils on southern aspects;
- Bushveld on ultramafic soils contain a high diversity of edaphic specialists;
- Bushveld of mountain slopes generally taller than in the valleys, with a well-developed herb layer;
- Bushveld of valleys and dry northern aspects usually dense, like thicket, with a herb layer comprising many short-lived perennials;
- Dry habitats contain a number of species with xerophytic adaptations, such as succulence and underground storage organs;
- Both man-made and natural erosion dongas occur on footslopes of clays rich in heavy metals; and
- An increasing area along the Dwars River Subsuite is under pressure from mining activities and its associated urbanisation.

The Sekhukhune Plains Bushveld Vegetation Type has the following characteristics:

- It occurs mainly on semi-arid plains and open valleys between chains of hills and small mountains running parallel to the escarpment;
- Predominantly consists of short, open to close thornveld with an abundance of Aloe species and other succulents;
- Heavily degraded in places and overexploited by man for cultivation, mining and urbanization;
- Both man-made and natural erosion dongas occur in areas containing clays rich in heavy metals;
- Encroachment by indigenous microphyllous trees and invasion by alien species is common throughout the area;
- There is a high level of degradation of much of the remaining vegetation by unsustainable harvesting and utilization;

- Soils are shallow, gravel lithosols of the Mispah and Glenrosa forms (South African National Biodiversity Institute (SANBI) and Mucina & Rutherford (2006)).

Due to the small surface area and severe habitat degradation of the study unit, very little faunal species diversity was observed on the day of the assessment. The area of concern simply doesn't have the correct attributes to successfully house a variety of animal species. Although there are intact floral units left on site, the area is too fragmented by roads and other developments to allow free species migration similar to that of the surrounding environment.

Due to the severely degraded state of the study area only limited fauna was found on site – of these, the majority was avifauna.

From all the biodiversity assessments undertaken by the specialist (Nortje, 2017), it was clear that the study area is not deemed sensitive. Care must however be taken to reduce impacts on the adjacent properties through the implementation of all the mitigation measures proposed by the specialists. Due to the severe degradation encountered in the area no long-term impacts on the ecology can be foreseen.

Cultural Heritage

No significant archaeological or historical features have been observed on the study areas.

Socio-economic

The Fetakgomo- Greater Tubatse Local Municipality (hereinafter referred to as FGTLM). The FGTLM is located within the Sekhukhune District Municipality (SDM) of the Limpopo Province. The FGTLM is categorised as a category B4 municipality. This is defined in the 'State of Local Government in South Africa: Overview Report, the Department of Cooperative Governance (CoG) (2009:22) as municipalities which are mainly rural, located in economically depressed areas, consequently having difficulties in attracting and retaining skilled managers/professionals and are struggling from a revenue generation perspective. The political governance of the Municipality is operated on a collective executive system combined with a ward participatory system. According to the Provincial Gazette no 2735 s12 Notice, its short title: "Notice in terms of s12 of the Local Government: Municipal Structures Act, 1998 (Act 117 of 1998): Disestablishment of Existing Municipalities and Establishment of New Municipalities", dated 22 July 2016, LIM476 government municipality has a total of 39 wards. The FGTLM is the third largest municipality in the Limpopo Province in terms of wards, after Polokwane with 45 wards and Thulamela with 41 wards (FGTLM, 2017).

The municipality share borders with Makhuduthamaga Local Municipality in the Sekhukhune District, Lepelle Nkumpi Local Municipality in the Capricorn District Municipality and Thabachweu Local Municipality in the Ehlanzeni District Municipality of the Mpumalanga Province and Maruleng Local Municipality in Mopani District. The Municipality has a total population of 490 381 people (Statistics South Africa Community Survey, 2016). The population in the borders of the Municipality is growing rapidly

with the makeup of more females 251 923 (51%) than males 238 458 (49%). Of the 490 381 total population, 223 214 are young people. The youth represents 46% of the local population (FGTLM, 2017).

Need and Desirability

The proposed activity is located within an existing facility and heavy industrial area, the activity, therefore, fits the surrounding area and will not have a significant impact on the sense of place of the area. The main benefit of the proposed activity is that the LSR gas will supplement the consumption on the existing LPG fuelled system and alleviate the high cost associated with LPG usage. Tubatse Chrome provides various employment opportunities in the Steelpoort area and the benefit of cost reduction associated with the proposed activity, may assist in protecting the existing employment opportunities at Tubatse Ferrochrome, due to the operation being more cost-effective. Samancor's Tubatse Ferrochrome contributes to the National and Limpopo Provincial economy in terms of contributing to the Gross Domestic Product (GDP).

Alternatives

Alternatives are defined in the NEMA EIA Regulations (2014) as *“different means of meeting the general purpose and requirements of the activity, which may include alternatives to the: (a) property on which or location where the activity is proposed to be undertaken; (b) type of activity to be undertaken; (c) design or layout of the activity; (d) technology to be used in the activity; and (e) operational aspects of the activity and includes the option of not implementing the activity”*.

For the purpose of this application, the following Alternatives were considered (with Alternative 1 (the preferred alternative) assessed):

- **Location / Property Alternatives:** Existing Location (Alternative 1). No site alternatives were identified or assessed as the pelletising plant is an existing activity;
- **Activity Alternatives:** No activity alternatives were identified and assessed;
- **Design / Layout Alternatives:** Existing Layout (Alternative 1). No design alternatives were identified or assessed in this impact assessment.
- **Technology Alternatives:** No technology alternatives were identified or assessed.
- **Other alternatives (e.g. scheduling, demand, input, scale and design alternatives):** The following input alternatives have been considered: LSR gas is a fuel source that can supplement LPG gas in order to alleviate the high cost associated with LPG gas.
- **No-Go Alternative:** Compulsory.

Public Participation

The Public Participation Process (PPP) undertaken for the proposed development is in accordance with the requirements of Regulations 39 – 44 of the Environmental Impact Assessment Regulations (2014) [as amended] of NEMA and it forms an integral part of the Basic Assessment process.

The PPP tasks conducted to date include:

- Identification of key interested and affected parties (affected and adjacent landowners) and other stakeholders (Organs of State and other parties);
- Formal notification of the application to interested and affected parties (including all affected and adjacent landowners) and other stakeholders on xx January 2018, by means of publications in one newspaper; site notices erected at visible locations close to the site; and notifications sent directly to identified I&APs and other stakeholders by e-mail / fax / letter; and
- The Draft Basic Assessment Report (DBAR) and Environmental Management Programme (EMPr) are released to the public and all relevant Organs of State and authorities for review and comment for 30 calendar days (26 January 2018 to 26 February 2018).

All I&AP registrations and comments received is formerly recorded in the Comments and Responses Report and will be distributed with the Final Basic Assessment Report.

Environmental Impact Statement

The following key issues and potential impacts (direct and indirect cumulative), were identified:

- Erosion, sedimentation and contamination of soils;
- Hydrological surface water and groundwater contamination;
- Impacts on the adjacent water courses and biota;
- Spreading of alien invasive vegetation;
- Impact on surrounding land uses;
- Health and Safety Impacts;
- Noise impacts;
- Air quality impacts;
- Waste disposal impacts; and
- Socio-economic impacts.

None of the identified impacts are considered detrimental to the environment after mitigation, and requiring the prohibition of the proposed expansion from continuing. The majority of impacts has a low to medium significance rating before mitigation and a low to very low significance rating after mitigation. The low impact rating is mostly as a result of the proposed activity being located within an already transformed environment, although some natural vegetation remains on and surrounding the greater Tubatse Ferrochrome Complex as indicated in the photographs within this report. Impacts that have a significance rating of high before mitigation generally include air quality impacts (indirect impacts), and health and safety impacts (direct and indirect impacts). These impacts can, however, be mitigated to a low significance. From an environmental point of view, no reasons for not proceeding with the project could be identified.

Recommendations

Assuming effective implementation of the mitigation and monitoring as outlined in the EMPr report, the significance of impacts can be reduced to low and very low levels. Therefore, ENVASS recommends that the application for Environmental Authorisation (EA) should be considered favourably on condition that the mitigation measures stated herein and within the EMPr are effectively implemented.

In addition, the following recommendations could be considered to be included as conditions in the Environmental Authorisation:

- All the mitigation, management and monitoring measures and recommendations provided in the Environmental Management Programme (EMPr), to be implemented, should the development be approved;
- A competent design engineer must be appointed to supervise the construction of the proposed activity;
- That the existing EMPr be updated to include the management and monitoring of all activities at Tubatse Ferrochrome's operations in Steelpoort at the location of the plant. This will ensure that the applicant has one management document that could be implemented, which will streamline the implementation of mitigation and monitoring measures as opposed to having various documents to be complied with;
- The EMPr should be a condition of the approval by LEDET;
- The EMPr should be binding on all managers and contractors operating/utilising the site;
- The amendment of the Air Emissions License to be approved, before commencement of the proposed activity.

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Appendix G: Other information

DRAFT



**DEPARTMENT OF
 ECONOMIC DEVELOPMENT,
 ENVIRONMENT & TOURISM**
BASIC ASSESSMENT REPORT - EIA REGULATIONS, 2014

Basic Assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

File Reference Number:

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(For official use only)

NEAS Reference Number:

Date Received:

Due date for acknowledgement:

Due date for acceptance:

Due date for decision

Kindly note that:

1. The report must be compiled by an independent Environmental Assessment Practitioner.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the Department of Economic Development, Environment and Tourism as the competent authority (Department) for assessing the application, it may result in the rejection of the application as provided for in the regulations.
5. An incomplete report may be returned to the applicant for revision.
6. Unless protected by law, all information in the report will become public information on receipt by the department. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

7. The Act means the National Environmental Management Act (No. 107 of 1998) as amended.
8. Regulations refer to Environmental Impact Assessment (EIA) Regulations of 2014.
9. The Department may require that for specified types of activities in defined situations only parts of this report need to be completed. No faxed or e-mailed reports will be accepted.
10. This application form must be handed in at the offices of the Department of Economic Development, Environment and Tourism:-

<p><u>Postal Address:</u></p> <p>Central Administration Office Environmental Impact Management P. O. Box 55464 POLOKWANE 0700</p>	<p><u>Physical Address:</u></p> <p>Central Administration Office Environmental Affairs Building Cnr Suid and Dorp Streets POLOKWANE 0699</p>
<p>Queries should be directed to the Central Administration Office: Environmental Impact Management:-</p> <p>For attention: Mr E. V. Maluleke</p> <p>Tel: (015) 290 7138/ (015) 290 7167</p> <p>Fax: (015) 295 5015</p> <p>Email: malulekeev@ledet.gov.za</p>	

View the Department's website at <http://www.ledet.gov.za/> for the latest version of the documents.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES	NO
	X

If YES, please complete the form entitled "Details of specialist and declaration of interest" or appointment of a specialist for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

1 ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail¹:

Environmental Assurance (Pty) Ltd. (hereinafter referred to as ENVASS) was appointed as Environmental Assessment Practitioners to undertake a basic impact assessment process as part of the application for environmental authorisation for the expansion project.

Tubatse Chrome (Pty) Ltd (hereinafter referred to as Tubatse Chrome), has an existing Pelletising and Sintering Plant (PSP), constructed in 2002, for which an Environmental Authorisation was obtained (Ref No. 16.4.28.50L1). In 2009 the Plant was upgraded, after Tubatse Chrome obtained an Environmental Authorisation for the upgrade (Ref No. 12/1/9-6/25-GS2). Tubatse Chrome currently, has Liquefied Petroleum Gas (LPG) tanks installed at the PSP with a combined capacity of 45 m³. Tubatse Chrome is authorised under an Air Emissions License (AEL) (Ref. No. 12/4/12L-s4/A1), to consume 1 620 tons per annum of LPG.

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The proposed expansion triggers listed activities in terms of the National Environmental Management Act, Act 107 of 1998, as amended, and the EIA Regulations, 2014 (as amended in 2017) and Listing Notice 1 and Listing Notice 3, which requires a basic impact assessment process.

¹ Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

The proposed development triggers the following listed activity:

Table 1: Triggered listed activity of the proposed development

Listing Notice No.	Activity No.	Development Activity
R. 983, 08 December 2014 [as amended]	34	The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution.
R. 985, 08 December 2014 [as amended]	22	The expansion and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage facilities or infrastructure will be expanded by 30 cubic metres or more but no more than 80 cubic metres.

Approximately 482 312 tons of ferrochrome is produced at the plant, of which 99% are is exported. Tubatse Chrome sells the ferrochrome to Columbus Stainless to be utilised in the production of stainless steel products. The process involves six submerged arc furnaces, a chrome recovery plant (CRP) and the PSP. The Tubatse Chrome complex was initially constructed as a three-furnace operation in 1975, through a joint venture between Gencor Limited and Union Carbide Inc (USA). The Union Carbide Inc shareholding was taken over by Samancor in 1975, and in 1989, Samancor acquired the Gencor Ltd shareholding. From 1989 to 1990, the plant was expanded to five furnaces and a sixth constructed in 1996. The PSP was constructed in 2002. In 2010 the PSP was upgraded and the existing water infrastructure of the complex was expanded.

The water infrastructure that was expanded in 2010 to include a new reverse osmosis water treatment plant (WTP). The expansion was implemented in order to improve the quality of re-circulated process water and remediate the current Chrome 6 (Cr⁶⁺) pollution plume in the Tubatse groundwater resource that was evident at the time. The WTP removes Cr⁶, solids and salts and renders the water fit for industrial use. Hereby, the plant recycles a valuable natural resource and increased their water use efficiency by replacing water used from the Tubatse Dam. The WTP also results in lower volumes of water being abstracted from the Steelpoort River. Other water infrastructure include:

- A stormwater system including a lined stormwater dam with a capacity of 30 000 m³, trenches, pipes and diversions;
- Boreholes from which groundwater is abstracted from two of the eight boreholes existing at the study area. Groundwater is currently used for domestic purposes;
- A desilting device was fitted to clean water abstracted from the Steelpoort River, before entering the Transfer Dam named "Bertha dam". From the Transfer Dam, virgin water are pumped to the Tubatse main dam; and

- Two existing brine dams are used to collect and store concentrated brine (or waste water) from the forced evaporators. Additional brine dams were constructed in 2009, covering an area of approximately 4 hectares to handle the brine flow rate. This provided storage capacity for brine or salts for 30 years.

Upgrades to the pelletising plant, in 2010 resulted in an increase to the annual production of pellets from 520 000 to 620 000 tons. Upgrades to the scrubbing area resulted in less emissions and reduced air pollution. The upgrade was required to improve the efficiency of the supporting equipment and addressing the maintenance issues, ensuring in less and shorter maintenance intervals improving the availability of the plant. Upgrades included the installation of a new filtration unit, modifications to the scrubbing area and the replacement of the product screens with larger units. The WTP required additional power to operate. With the upgrades reduced the production costs on both the ferrochrome furnaces and the pelletising plant and resulted in less pollution and water use.

Pelletising and Sintering

The pelletising and sintering process is the production of pellets from fine ore concentrate produced by mining operations. Ore concentrate is milled together with coke breeze in a wet ball milling operation to the desired particulate size. Bentonite is then added to the process as a binder after which the mixture is pelletised. Sintering then takes place at approximately 1 350 °C (LPG is used as fuel in the sinter process and the LSR will supplement the LPG), which gives the pellets physical strength to carry the load in the furnaces and allows for an easier reduction reaction. The final product pellets are screened to ensure the correct size is supplied to the furnaces. Undersized pellets are returned to the circuit. Off-gases from the sintering process are treated in scrubbers and all the solids returned to the circuit for re-processing.

Smelting and Reduction

Ferrochrome production is essentially a carbothermic reduction operation, taking place at high temperatures. Chromite ore containing chrome oxide (Cr_2O_3) is reduced by carbonic materials or Reductants. Reductants used in the process are coal, anthracite, char and gas coke. Electrical energy is used through submerged arc open furnaces to generate enough energy for the reduction reaction to take place. Fluxes (quartzite and limestone) are added to alter the characteristic of the molten material in order to ensure effective tapping of metal and slag. The ferrochrome and slag are drained from the furnaces at regular intervals by means of the tapping process. The ferrochrome is further treated through a crushing and screening process to ensure that it complies with customer specifications before it is dispatched.

The ferrochrome slag is transported to the Chrome Recovery Plant (CRP) where trapped ferrochrome is recovered through a hydrometallurgical process. Recovered ferrochrome is sent to final products for sale as final product and processed slag is disposed on permitted slag dumps. Off gasses generated by the smelting process is captured and

passed through a bag filter plant for the removal of particulates. Bag filter dust captured are temporarily stored in a silo and thereafter disposed at an adequately authorised waste disposal facility (currently Holfontein).

30 MW Power Plants

Heat exchangers (boilers) recover heat energy from hot furnaces off-gas at Furnace 1-6. The boilers then generate steam from de-ionised water; steam generated is be used to turn turbines. The turbines are connected to generators, generating electricity for reuse in the electrical grid. Cooled steam exits the turbines and is transferred to air-cooled condensers, where it returns to a liquid state and re-circulated for re-use in the process.

Services

Internal dumping, storage and handling of raw materials, and final product are handled by supporting services. This includes all inbound and outbound logistics.

No shut-down phase is required for the installation of the LSR storage tank.

Raw materials input amounts to the following per annum:

- Concentrate chrome ore – 670 600 ton/annum;
- Bentonite – 11 400 ton/annum;
- Coke – 26 800 ton/annum.

The products of the PSP is chrome ore pellets at with a permitted production rate of 620 000 ton/annum.

Table 2: Appliances and measures to prevent air pollution

Drying zone 1 – Scrubber #1	
Media	Water
Gas volume	75 000 Nm ³ /h
Water volume	15-20 m ³ /h
Drying zone 2 – Scrubber #2	
Media	Water
Gas volume	75 000 Nm ³ /h
Water volume	15-20 m ³ /h
Heating zone – Scrubber #3	
Media	Water
Gas volume	88 000 Nm ³ /h
Water volume	10-15 m ³ /h

Sintering zone – Scrubber #4		
Media	Water	
Gas volume	52 000 Nm ³ /h	
Water volume	5-10 m ³ /h	
Furnace inlet de-dusting – Scrubber #5		
Media	Water	
Gas volume	40 000 Nm ³ /h	
Water volume	11 m ³ /h	
Furnace outlet de-dusting – Scrubber #6		
Media	Water	
Gas volume	40 000 Nm ³ /h	
Water volume	11 m ³ /h	
Final Product de-dusting – Scrubber #7		
Media	Water	
Gas volume	40 000 Nm ³ /h	
Water volume	11 m ³ /h	

Samancor Ltd. Tubatse Chrome Smelter, Steelpoort, Limpopo - Regional Locality Map

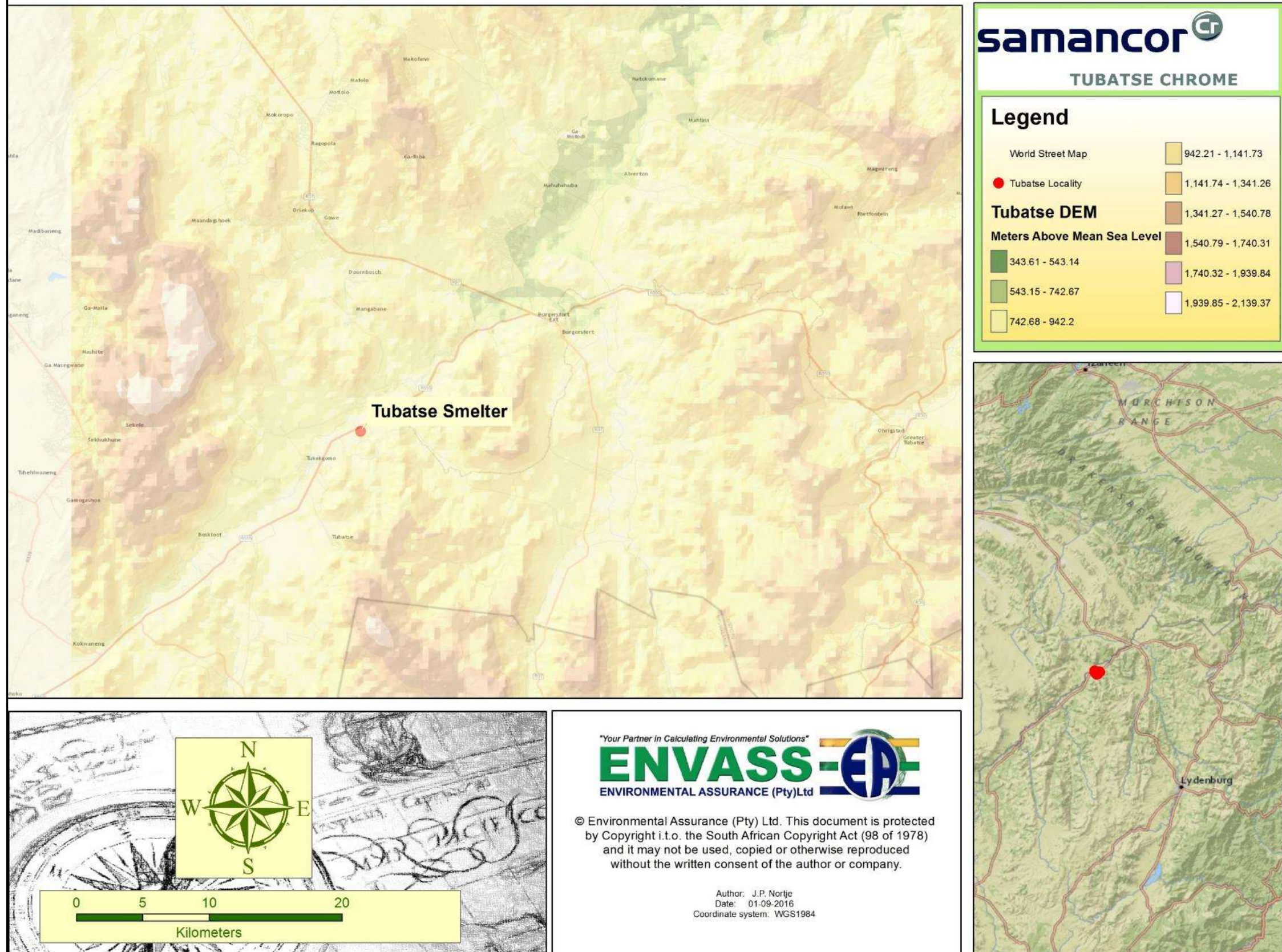
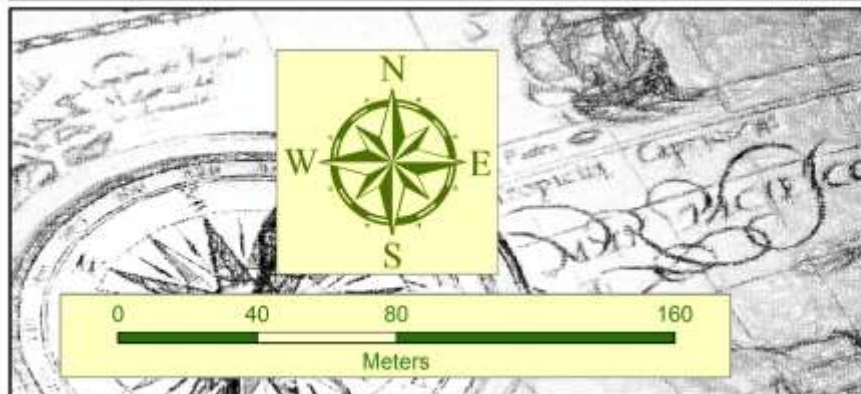


Figure 1: Regional Locality Map of Tubatse Chrome Smelter

Proposed LSR Tank Placement at Tubatse Chrome, Limpopo Province, South Africa



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Author: L. Taylor
Date: 21-01-2018
Coordinate system: WGS1984

Legend

- ◆ LSR Tank
- ◆ LSR Tank Alternative
- ◆ Existing LPG Gas Tanks

Figure 2: Aerial Photograph of the Pelletising Plant at Tubatse Chrome Smelter

2 FEASIBLE AND REASONABLE ALTERNATIVES

“**alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the Department may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

(a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative S1 (preferred or only site alternative) The pelletising plant.	24° 44' 34.78"	30° 11' 34.96"
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
No site alternatives were identified or assessed due to the pelletising plant being an existing plant.	N/A	N/A

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
No site alternatives were identified or assessed pelletising plant already exists.	N/A	N/A

In the case of linear activities: **N/A**

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

-	

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

(b) The type of activity to be undertaken

Alternative 1 (preferred alternative)		
Description:	Lat (DDMMSS)	Long (DDMMSS)
Alternative S1 (preferred or only site alternative) The pelletising plant.	24° 44' 34.78"	30° 11' 34.96"
Alternative 2		
Description:	Lat (DDMMSS)	Long (DDMMSS)
No activity alternatives were identified or assessed due to the pelletising plant being an existing plant.	N/A	N/A
Alternative 3		
Description:	Lat (DDMMSS)	Long (DDMMSS)
No activity alternatives were identified or assessed due to the pelletising plant being an existing plant.	N/A	N/A

(c) Lay-out or design alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
No design / layout alternatives were identified or assessed due to the pelletising plant being an existing plant.		
Alternative 2		
Description:	Lat (DDMMSS)	Long (DDMMSS)
No design / layout alternatives were identified or assessed due to the pelletising plant being an existing plant.	N/A	N/A
Alternative 3		
Description:	Lat (DDMMSS)	Long (DDMMSS)
No design / layout alternatives were identified or assessed due to the pelletising plant being an existing plant.	N/A	N/A

(d) Technology alternatives

Alternative 1 (preferred alternative)
No technology alternatives have been identified or assessed.
Alternative 2
-
Alternative 3
-

(e) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)
Input alternative – LSR instead of LPG.
Alternative 2
-
Alternative 3
-

(f) No-go alternative

Should the proposed expansion of the dangerous goods storage facility not take place, no LSR gas will be used to supplement the LPG, which will result in no cost savings for Tubatse Chrome.

Paragraphs 3 – 13 below should be completed for each alternative

3 ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites, if applicable.

Alternative:

Alternative S1 (preferred or only site alternative)

Alternative S2 (if any)

Alternative S3 (if any)

Latitude (S):			Longitude (E):		
24°	44'	34.78"	30°	11'	34.96"
°	'	"	°	'	"
°	'	"	°	'	"

In the case of linear activities: N/A

Alternative:

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Latitude (S):			Longitude (E):		
°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

4 PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	Size of the activity:
Alternative A1 (preferred or only site alternative)	
Footprint	Approximately 150 m²
Study area – the pelletizing plant is located within the Tubatse Ferrochrome Complex. The entire complex is approximately 600 hectares in extent.	Approximately 600 Ha
Alternative A2 (if any)	N/A
Alternative A3 (if any)	N/A

or,

for linear activities: N/A

Alternative:	Length of the activity:
Alternative A1 (preferred activity alternative)	m
Alternative A2 (if any)	m
Alternative A3 (if any)	m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur): **N/A**

Alternative:	Size of the site/servitude:
Alternative A1 (preferred activity alternative)	m ²
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

5 SITE ACCESS

Does ready access to the site exist?

YES X	NO
m	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

Tubatse Chrome has two existing access points on the site i.e.:

- The main entrance at: 24° 44' 20.95" S 30°11' 45.75 "E
- The heavy duty gate at: 24° 44' 26.59" S 30°11' 34.45 "E

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

6 SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by Department of Water Affairs);
 - ridges;
 - cultural and historical features;

- areas with indigenous vegetation (even if it is degraded or invested with alien species);

6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and

6.11 the positions from where photographs of the site were taken.

7 SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Photographs will be included in the final BAR for submission

8 FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

9 ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

Unknown

What is the expected yearly income that will be generated by or as a result of the activity?

Unknown

Will the activity contribute to service infrastructure?

YES

NO X

Is the activity a public amenity?

YES

NO X

How many new employment opportunities will be created in the development phase of the activity?

No new employment opportunities will be created as a result of the proposed activity.

What is the expected value of the employment opportunities during the development phase?

N/A

What percentage of this will accrue to previously disadvantaged individuals?

N/A

How many permanent new employment opportunities will be created during the operational phase of the activity?

No new employment opportunities will be created as a result of the proposed activity.

What is the expected current value of the employment opportunities during the first 10 years?

N/A

What percentage of this will accrue to previously disadvantaged individuals?

N/A

9(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

NEED:			
i.	Was the relevant municipality involved in the application?	YES X	NO
ii.	Does the proposed land use fall within the municipal Integrated Development Plan?	YES X	NO
iii.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		
	-		

DESIRABILITY:			
i.	Does the proposed land use / development fit the surrounding area?	YES X	NO
ii.	Does the proposed land use / development conform to the relevant structure plans, Spatial development Framework, Land Use Management Scheme, and planning visions for the area?	YES X	NO
iii.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES X	NO
iv.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
	-		
v.	Will the proposed land use / development impact on the sense of place?	YES	NO X
vi.	Will the proposed land use / development set a precedent?	YES	NO X

vii.	Will any person's rights be affected by the proposed land use / development?	YES	NO X
viii.	Will the proposed land use / development compromise the "urban edge"?	YES	NO X
ix.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		
	The proposed activity is located within an existing facility and heavy industrial area, the activity, therefore, fits the surrounding area and will not have a significant impact on the sense of place of the area.		
BENEFITS:			
i.	Will the land use / development have any benefits for society in general?	YES X	NO
ii.	<p>Explain:</p> <p>The main benefit of the proposed activity is that the LSR gas will supplement the consumption on the existing LPG fuelled system and alleviate the high cost associated with LPG usage. Tubatse Chrome provides various employment opportunities in the Steelpoort area and the benefit of cost reduction associated with the proposed activity, may assist in protecting the existing employment opportunities at Tubatse Ferrochrome, due to the operation being more cost-effective. Samancor's Tubatse Ferrochrome contributes to the National and Limpopo Provincial economy in terms of contributing to the Gross Domestic Product (GDP).</p>		
iii.	Will the land use / development have any benefits for the local communities where it will be located?	YES X	NO
iv.	<p>Explain:</p> <p>The main benefit of the proposed activity is that the LSR gas will supplement the consumption on the existing LPG fuelled system and alleviate the high cost associated with LPG usage. Tubatse Chrome provides various employment opportunities in the Steelpoort area and the benefit of cost reduction associated with the proposed activity, may assist in protecting the existing employment opportunities at Tubatse Ferrochrome, due to the operation being more cost-effective. Samancor's Tubatse Ferrochrome contributes to the National and Limpopo Provincial economy in terms of contributing to the Gross Domestic Product (GDP).</p>		

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
Constitution of the Republic of South Africa, 1996 (Act No. 106 of 1996)	<p>The CSA is the supreme law of the country of South Africa. It provides the legal foundation for the existence of the republic, sets out the rights and duties of its citizens, and defines the structure of the government.</p> <p>The CSA states that every person has the right <i>(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –</i></p> <p><i>(i) prevent pollution and ecological degradation;</i></p> <p><i>(ii) promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</i></p>	South African Government	1996
National Environmental Management, 1998 (Act No. 107 Of 1998) [as amended] (NEMA)	<p>Section 24: Application for Environmental Authorisation</p> <p>Section 28: Duty of Care</p>	Limpopo Department of Economic Development, Environment and Tourism (LEDET)	1998
Environmental Impact Assessment Regulations	The proposed activity is listed in the EIA Regulations of 2014 (as amended in 2017) and published in Government	Limpopo Department of Economic Development,	2014

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
of 2014 (As amended in 2017)	Notice (GN) No. 594 in terms of Section 24 of NEMA and, therefore, requires environmental authorisation.	Environment and Tourism (LEDET)	
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	<p>The Biodiversity act provides for the management and protection of the country's biodiversity within the framework established by NEMA. Among other objectives, it provides for the protection of species and ecosystems in need of protection and sustainable use of indigenous biological resources. Also, to combat and control weeds as well as the elimination of invader plant species.</p> <p>During the construction, operational and decommissioning phases of the proposed activity, the prevention of alien invasive species spreading into the surrounding areas as well as the eradication thereof should be a priority. Mitigation measures in this report and the EMPr with regards to fauna and flora, should be implemented in order to adhere to this act.</p>	Department of Environmental Affairs (DEA)	2004
National Water Act, 1998 (Act No. 36 of 1998) [as amended]	The purpose of the act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account several factors. The factors specifically	Department of Water and Sanitation (DWS)	1998

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
	<p>applicable to the proposed activity are listed below:</p> <ul style="list-style-type: none"> • Promoting the efficient, sustainable and beneficial use of water in the public interest; • Facilitating social and economic development; • Protecting aquatic and associated ecosystems and their biological diversity; and • Reducing and preventing pollution and degradation of water resources. <p>The proposed activity does not trigger any water uses that are required to be authorised by the Department, however, the activity must comply with all the relevant regulations and guidelines that are provided for.</p>		
National Heritage Resources Act, 1999) Act No. 25 of 1999)	The purpose of the act is to regulate the country's heritage resources and provide an integrated and interactive system for the management of national heritage resources and makes provision for the potential destruction to existing heritage sites.	South African Heritage Resources Agency (SAHRA)	1999
Animals Protection Act, 1962 (Act No. 71 of 1962)	The act consolidates and amends the laws relating to the prevention of cruelty to animals. It is possible that the	The Department of Agriculture, Forestry and Fisheries	1962

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
	<p>proposed activity could have an effect on the surrounding biodiversity including fauna and adherence to this act is therefore crucial. Mitigation measures in this report and the EMPr with regard to fauna, should be implemented in order to adhere to this act.</p>	(DAFF)	
<p>Societies for the Prevention of cruelty to Animals Act, 1993 (Act No. 169 of 1993)</p>	<p>It is possible that the proposed activity could have an effect on the surrounding biodiversity including fauna, and adherence to this act is therefore crucial. Mitigation measures in this report and the specialist studies, and the EMPr with regards to fauna, should be implemented in order to adhere to this act.</p>	<p>The Department of Agriculture, Forestry and Fisheries (DAFF)</p>	<p>1993</p>
<p>Promotion of Access to Information Act, 2000 (Act No. 2 of 2000)</p>	<p>The purpose of the Promotion of Access to Information Act is to give effect to the constitutional right of access to any information held by the state, as well as information held by another person that is required for the exercise or protection of any right.</p> <p>The motivation for giving effect of the right to access to information is to foster a culture of transparency and accountability both in public and private bodies and to promote a society in which the people of South Africa have</p>	<p>The National Department of Justice and Constitutional Development</p>	<p>2000</p>

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
	<p>effective access to information to enable them to more fully exercise and protect all their rights.</p> <p>Stakeholders and Interested and Affected Parties affected by the proposed development, therefore have a right to access all documentation required by the competent authority to make an informed decision. The affected persons also have the right to comment and object on decisions that affects them.</p>		
<p>National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [as amended]</p> <ul style="list-style-type: none"> • Section 16 General duty in respect of waste management; • Section 17; Reduction, re-use, recycling and recovery of waste; • Section 21 General requirements for storage of hazardous and general waste. 	<p>The development activities will produce general and potentially hazardous waste which needs to be managed and disposed of according to best practices such as recycling, safe storage, etc.</p>	<p>Department of Environmental Affairs (DEA)</p>	<p>2008</p>
<p>Waste Classification and Management Regulations and Norms and Standards</p>	<p>The activities associated with the proposed expansion, shall be in</p>	<p>Department of Environmental Affairs (DEA) and the</p>	<p>2013</p>

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
<p>for the assessment of for landfill disposal and for disposal of waste to landfill, 2013 (Government Notice 634 – 635 of 2013) promulgated in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [as amended].</p>	<p>accordance with the regulations and Norms and Standards.</p>	<p>Department of Water and Sanitation (DWS)</p>	
<p>SANS 10234: Classification</p>	<p>The SANS 10234 – Global Harmonisation System (GHS) standard, sets the criteria for the classification of hazardous substances and mixtures, including waste, according to health, environmental and physical hazards, and includes communication elements for labelling and information required for Safety Data Sheets (SDS's). Unlike the Minimum Requirements, the SANS standard do not prescribe any specific obligations based on whether a waste is hazardous or not, nor the type of landfill where these wastes must be disposed of. Rather, the purpose is to ensure adequate and safe storage and handling of hazardous waste, and to</p>		

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
	inform the consideration of suitable waste management options.		
<p>Veld and Forest Fire Act, 1998 (Act No. 101 of 1998) [as amended]</p> <ul style="list-style-type: none"> Section 12 (1) <p>Duty of the landowner to prevent fire from spreading to neighbouring properties.</p>	<p>Cautionary steps in avoiding the spread of fires to and from neighbouring properties shall be taken.</p>	<p>The Department of Agriculture, Forestry and Fisheries (DAFF)</p>	<p>1998</p>
<p>Alien and Invasive Species Regulations (Government Notice 598 of 2014) and Alien and Invasive Species List, 2014 in terms of NEMBA (Government Notice 599 of 2014)</p> <p>Notice 2</p> <p>Exempted Alien Species in terms of Section 66 (1)</p> <p>Notice 3</p> <p>National Lists of Invasive Species in terms of Section 70(1) – List 1, 3-9 & 11</p> <p>Notice 4</p> <p>Prohibited Alien Species in terms of Section 67 (1) – List 1, 3-7, 9-10 & 12</p>	<p>It is the responsibility of the Applicant to ensure that all prohibited plant and animal species are eradicated as far as possible, during all phases of the activity.</p>	<p>The Department of Agriculture, Forestry and Fisheries (DAFF)</p>	<p>2014</p>

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
<p>Conservation of Agricultural Resources Act (no. 43 of 1983)</p> <p>Section 5</p> <p>Prohibition of spreading of weeds</p> <p>Section 12</p> <p>Maintenance of soil conservation works and maintenance of certain states of affairs</p> <p>Section 16</p> <p>Regional Conservation Committees</p>	<p>Listed invader/alien plants present on site which requires management measures to be implemented to strive to maintain the status quo environment through the guidelines provided by the Regional Conservation Committee.</p>	<p>The Department of Agriculture, Forestry and Fisheries (DAFF)</p>	<p>1983</p>
<p>National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) [as amended]</p> <p>Section 32</p> <p>Control of dust</p> <p>Section 34</p> <p>Control of noise</p>	<p>Impacts on surrounding landowners need to be managed through dust and noise mitigation measures.</p>	<p>The Limpopo Department of Economic Development, Environment and Tourism (LEDET)</p>	<p>2004</p>
<p>National Dust Control Regulations, 2013 (Government Notice 827 of 2013)</p> <p>Section 3</p> <p>Dust fall standard</p> <p>Section 4</p>	<p>Dust fallout need to be monitored in accordance to the standards set out in the monitoring programme with the specified measures due to the Applicant being liable to offences and penalties associated with non-conformance to dust which may</p>	<p>The Limpopo Department of Economic Development, Environment and Tourism (LEDET)</p>	<p>2013</p>

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
<p>Dust fall monitoring program</p> <p>Section 6</p> <p>Measures for control of dust</p> <p>Section 7</p> <p>Ambient air quality monitoring (PM10)</p> <p>Section 8</p> <p>Offences</p> <p>Section 9</p> <p>Penalties</p> <p>Section 53 (o) read with Section 32 of NEMAQA.</p>	<p>influence employees and surrounding landowners.</p>		
<p>National Pollution Prevention Plan Regulations, 2017 (Government Notice 712 of 2017)</p> <p>The purpose of the regulations is to prescribe the requirements that pollution prevention plans of greenhouse gases declared as priority air pollutants need to comply with in terms of section 29(3) of NEMAQA.</p>	<p>Coal mining is listed in Annexure A of the Regulations, requiring that an Air Pollution Prevention Plan be submitted. The plan is currently being drafted and will be submitted to the relevant Competent Authority for approval.</p>	<p>Limpopo Department of Economic Development, Environment and Tourism (LEDET)</p>	<p>2017</p>

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
Greenhouse gases generated from the production processes listed in Annexure A of the Regulations and their activities reported in accordance with the National Greenhouse Gas Emission Reporting Regulations.			
Hazardous Substances Act, 1973 (Act 15 of 1973) [as amended] Section 2 Declaration of grouped hazardous substances; Section 4 Licensing; Section 16 Liability of employer or principle Section 9 (1) Storage and handling of hazardous chemical substances Section 18 Offences	The Applicant must ensure the safety of people working with hazardous chemicals (specifically fuels), as well as safe storage, use and disposal of containers during the on-site operational phase together with the associated liability should non-compliance be at the order of the day.	Limpopo Department of Economic Development, Environment and Tourism (LEDET)	1973
Hazardous Chemical Substances Regulations,	Hazardous substances will be stored and utilised on the site and non-compliance to management measures	Limpopo Department of Economic Development,	1995

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
1995 (Government Notice 1179 of 1995) Section 4 Duties of persons who may be exposed to hazardous chemical substances Section 9A (1) Penalties	will result in prosecution of the Applicant in terms of his liabilities to the socio-economic environment.	Environment and Tourism (LEDET)	
NEMA: GN. 807 Public Participation Guideline, October 2012	Consultation with Interested and Affected Parties and Communities.	LEDET	2012
SANS 1929: Ambient Air Quality – Limits for Common Pollutants	Impacts on surrounding landowners need to be managed through dust mitigation measures.	LEDET	
SANS 1137: Standard test method for the collection and measurement of dust fall (settleable particulate matter).	Impacts on surrounding landowners need to be managed through dust mitigation measures.	-	-
SANS 10234: 2008 Globally Harmonised Systems of classification and labelling of chemicals (GHS) Government Notice 634. August 2013: Waste Classification	All dangerous goods on site need to be managed according to these standards.	LEDET	2008
SANS 10228:2006 The Identification and	All dangerous goods to be transported to and from the site need to be	LEDET	2006

Title of legislation, policy or guideline:	Applicability to the project:	Administering authority:	Date:
Classification of Dangerous Goods for Transport	managed according to these standards.		
ASTM d 1739, 1970 or equivalent approved protocol for dust monitoring.	Impacts on surrounding landowners need to be managed through dust mitigation measures.	LEDET	-

11 WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES X	NO
-------	----

If yes, what estimated quantity will be produced per month?

Unknown at this stage.

How will the construction solid waste be disposed of (describe)?

The Contractor will be responsible for disposal of construction waste. Construction solid waste will be transported to the nearest registered landfill site and disposed of accordingly. No burning or burying of solid waste will occur on site.

Where will the construction solid waste be disposed of (describe)?

The nearest registered landfill site.

Will the activity produce solid waste during its operational phase?

YES X	NO
----------	----

If yes, what estimated quantity will be produced per month?

The average volume and type of solid waste created varies from month to month. The solid waste volumes, will, however, not increase as a result of the proposed activity.

Tubatse Chrome has a comprehensive waste management system onto which all solid waste, are uploaded.

The following categories are recorded:

1. Recyclable Materials;
2. Food/Domestic;
3. Scrap Waste Metal;
4. Rubber/Conveyor belt;
5. Laboratory waste;
6. Oil Solid Waste (hazardous);
7. Used oil (hazardous);
8. Bag House Dust (Hazardous);
9. Filter Cake (Hazardous);
10. Tailings;
11. Slag (Non-hazardous);
12. Clinical Waste.

The above types of waste is not all applicable to the pelletising plant specifically, but is rather inclusive of all types of waste that may be generated by the Tubatse Ferrochrome Plant Smelter. The waste are further classified into hazardous and non-hazardous waste.

How will the solid waste be disposed of (describe)?

Solid waste are collected by registered providers of waste removal services.

Recyclable materials	Reclam
Food/Domestic Waste (Non-hazardous)	Vredelus Vervoer or Reclam
Scrap waste metal	Reclam
Oil solid waste	Interwaste
Used oil	Oilkol
Bag House Dust	DCLM and Enviroserv
Filter Cake	Enviroserv
Slag	Internal Management

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

All waste are disposed of by registered contractors at various registered landfill sites for the type of waste disposed, as indicated above.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the department to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?	YES X	NO
--	---------------------	----

If yes, inform the department and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?	YES	NO X
---	----------------	------

If yes, then the applicant should consult with the Department to determine whether it is necessary to change to an application for scoping and EIA.

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	YES	NO X
--	----------------	------

If yes, what estimated quantity will be produced per month?

m ³

Will the activity produce any effluent that will be treated and/or disposed of on site?	Yes	NO X
---	----------------	------

If yes, the applicant should consult with the Department to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	YES X	NO
---	----------	----

-

If yes, provide the particulars of the facility:

Facility name:	N/A		
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

No waste water will be generated by the proposed activity.

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
X	

If yes, is it controlled by any legislation of any sphere of government?

YES	NO
X	

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

Explanation:

11(d) Generation of noise

Will the activity generate noise?

YES X	NO
YES	NO X

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

General construction noise during the construction and operational phase will be generated. Noise mitigation measures are prescribed within the Environmental Management Programme (Appendix F).

12 WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

Municipal	water board	Groundwater	river, stream, dam or lake	other	the activity will not use water
		X			

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Litres

Does the activity require a water use permit from the Department of Water Affairs?

YES	NO X
-----	------

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

There will be no increase in the volume of water as a result of the expansion of the storage facility, as it will not result in an increase in production.

13 ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

The South African National Standards (SANS) 204 and XA regulations National Standard for Energy Efficiency in Building will be carefully applied to ensure and promote designs that minimise the 'carbon footprint' of the site on the environment and natural resources.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

-

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
(e.g. A):

Paragraphs 1 - 6 below must be completed for each alternative.

Has a specialist been consulted to assist with the completion of this section?

YES	NO
X	

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

Property description/physical address:

The remaining extent of Portion 6 of the Farm Goudmyn 377 KT.

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

-

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

"Industrial"

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to , to this application.

Is a change of land-use or a consent use application required?

YES	NO X
-----	---------

Must a building plan be submitted to the local authority?

YES	NO X
-----	---------

Locality map:

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and

locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)

1 GRADIENT OF THE SITE

Indicate the general gradient of the site

Alternative S1 (preferred or only site alternative)

Flat X	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
---------------	-------------	-------------	-------------	--------------	-------------	------------------

2 LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

Alternative S1 (preferred or only site alternative)

2.1 Ridgeline		2.6 Plain	X
2.2 Plateau		2.7 Undulating plain / low hills	
2.3 Side slope of hill/mountain		2.8 Dune	
2.4 Closed valley		2.9 Seafront	
2.5 Open valley			

The area is undulating, sloping gently away from the mountain. The mountain range and related features provide an attractive variety to the landscape promoting scenic tourism. Below is a DEM (digital elevation model) of the study area with 3D topography added (Figure 3). To the north-east of the study area, it can be seen where the escarpment ends and the landscape transitions into Lowveld from Bushveld.

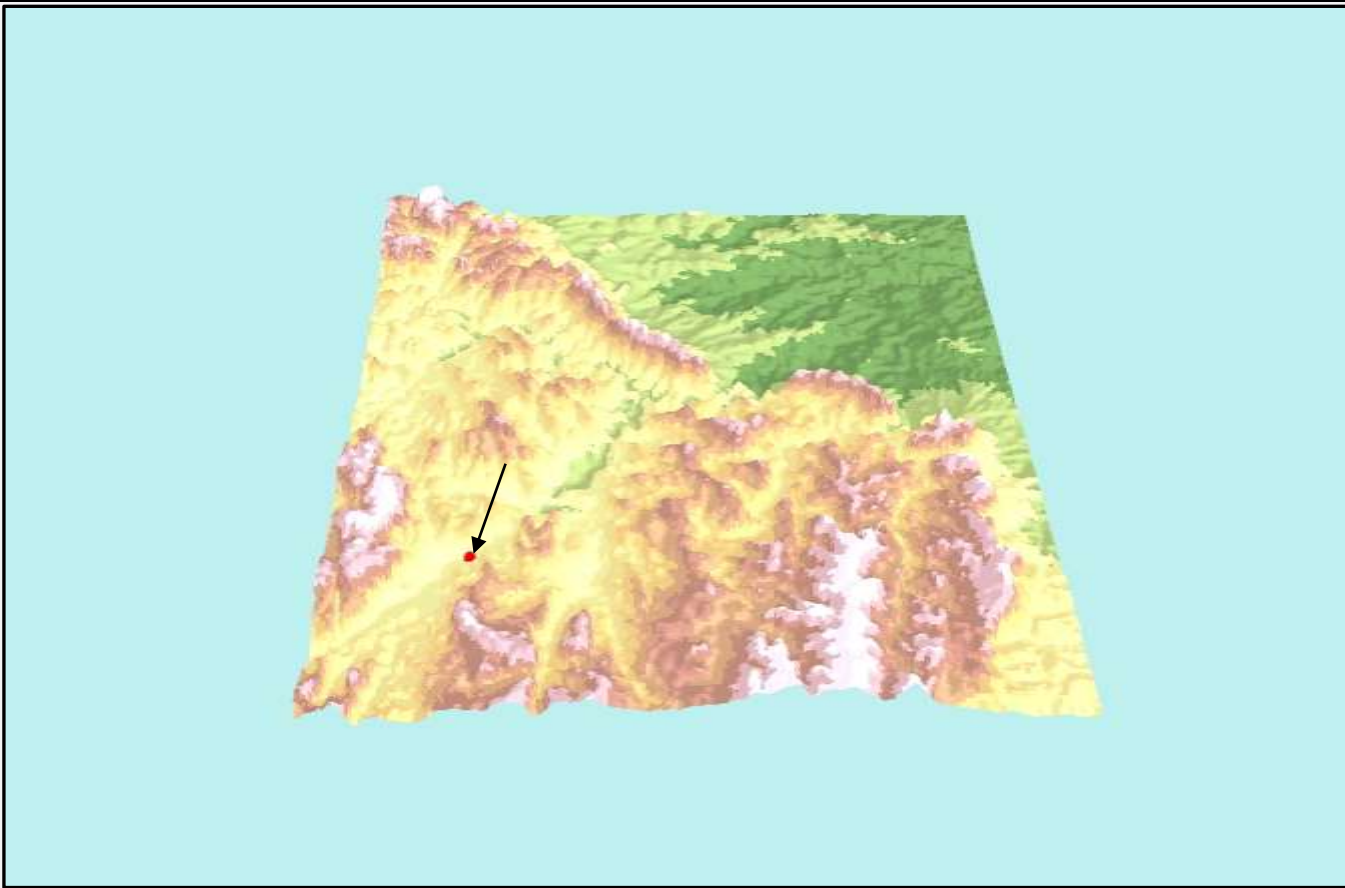


Figure 3: 3D model of the topography of the area

3 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

Alternative S1

- Shallow water table (less than 1.5m deep)
- Dolomite, sinkhole or doline areas
- Seasonally wet soils (often close to water bodies)
- Unstable rocky slopes or steep slopes with loose soil
- Dispersive soils (soils that dissolve in water)
- Soils with high clay content (clay fraction more than 40%)
- Any other unstable soil or geological feature
- An area sensitive to erosion

YES	NO X
YES	NO X
YES	NO X
YES	NO X
YES	NO X
YES	NO X
YES	NO X
YES	NO X

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4 GROUNDCOVER

Indicate the types of groundcover present on the site:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Alternative S1:

Natural veld – good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

Biodiversity

In terms of ecological importance this area forms part of the Eastern Bankenveld eco and aquatic region (refer to Figure 4). As can be seen in Figure 13 the predominant land uses are mining (Silica), semi-urban residential areas (informal and formal settlements), and agriculture (grazing). The land has been significantly disturbed by agriculture, urban sprawl and industrial and mining activities.

According to the delineation provided by Dallas (2005), the area is situated within the **Bushveld Bioregion**. Kleynhans *et al.* (2005) classifies the area as the **Eastern Bankenveld Level 1 Ecoregion** and describes the bushveld bioregion as consisting predominantly of plains with a low relief and with Mixed Bushveld being the definitive vegetation type. In the east, plains and lowlands with a moderate relief occur (Nortje, 2017).

Two vegetation types are located in close proximity to the study area i.e Sekhukhune Mountain Bushveld and Sekhukhune Plains Bushveld (SANBI, 2017) (Figure 5). Characteristics of the Sekhukhune Mountain Bushveld type include:

Dry, open to closed microphyllous and broad-leaved savanna on hills and mountain slopes that form concentric belts parallel to the northeastern escarpment;

- Open bushveld often associated with ultramafic soils on southern aspects;
- Bushveld on ultramafic soils contain a high diversity of edaphic specialists;
- Bushveld of mountain slopes generally taller than in the valleys, with a well-developed herb layer;
- Bushveld of valleys and dry northern aspects usually dense, like thicket, with a herb layer comprising many short-lived perennials;
- Dry habitats contain a number of species with xerophytic adaptations, such as succulence and underground storage organs;
- Both man-made and natural erosion dongas occur on footslopes of clays rich in heavy metals; and
- An increasing area along the Dwars River Subsite is under pressure from mining activities and its associated urbanisation.

The Sekhukhune Plains Bushveld Vegetation Type has the following characteristics:

- It occurs mainly on semi-arid plains and open valleys between chains of hills and small mountains running parallel to the escarpment;
- Predominantly consists of short, open to close thornveld with an abundance of Aloe species and other succulents;
- Heavily degraded in places and overexploited by man for cultivation, mining and urbanization;
- Both man-made and natural erosion dongas occur in areas containing clays rich in heavy metals;
- Encroachment by indigenous microphyllous trees and invasion by alien species is common throughout the area;
- There is a high level of degradation of much of the remaining vegetation by unsustainable harvesting and utilization;
- Soils are shallow, gravel lithosols of the Mispah and Glenrosa forms (South African National Biodiversity Institute (SANBI) and Mucina & Rutherford (2006)).

Due to the small surface area and severe habitat degradation of the study unit, very little faunal species diversity was observed on the day of the assessment. The area of concern simply doesn't have the correct attributes to successfully house a variety of animal species. Although there are intact floral units left on site, the area is too fragmented by roads and other developments to allow free species migration similar to that of the surrounding environment.

Due to the severely degraded state of the study area only limited fauna was found on site – of these, the majority was avifauna.

From all the biodiversity assessments undertaken by the specialist (Nortje, 2017), it was clear that the study area is not deemed sensitive. Care must however be taken to reduce impacts on the adjacent properties through the implementation of all the mitigation measures proposed by the specialists. Due to the severe degradation encountered in the area no long-term impacts on the ecology can be foreseen.

Hydrology

The project area falls within the B41J quaternary catchment area within Water Management Area (WMA) 2, which is known as the Olifants WMA (refer to Figure 6). The boundary of the WMA is Primary drainage region B. Major rivers include the Elands, Wilge, Steelpoort, Olifants and Letaba. The Olifants River originates to the east of Johannesburg and initially flows northwards before gently curving eastwards towards the Kruger National Park (KNP), where it is joined by the Letaba River before flowing into Mozambique. The Olifants WMA, covers an area of 54, 570 km². The Olifants catchment is divided into three management areas namely the Upper, Middle and Lower Olifants management zone. The Upper Olifants Sub-area is the most urbanised of the four sub-areas with the majority of the urban population located in Witbank and Middelburg. The population in these urban centres is projected to grow in the future. There are extensive coal mining activities in the sub-area both for export through Richards Bay and for use in the 6 active coal fired power stations in the sub-area. The presence of coal also led to the establishment of the steel manufacturing industries located in Middelburg and Witbank.

The surface water in the Steelpoort area consists of several non-perennial tributaries of the Steelpoort and Moopetsi Rivers, both feeding the perennial Olifants River. The site falls within the Olifants primary drainage region, lying in the lower reaches of the B41J quaternary catchment. The surface water uses in the area comprises mainly of agricultural activities (informal irrigation, livestock watering), informal domestic use (washing of clothes and dishes), recreational use (swimming) and mining activities in addition to the Ecological Reserve.

Samancor Ltd. Tubatse Chrome Smelter, Steelpoort, Limpopo - Ecoregions

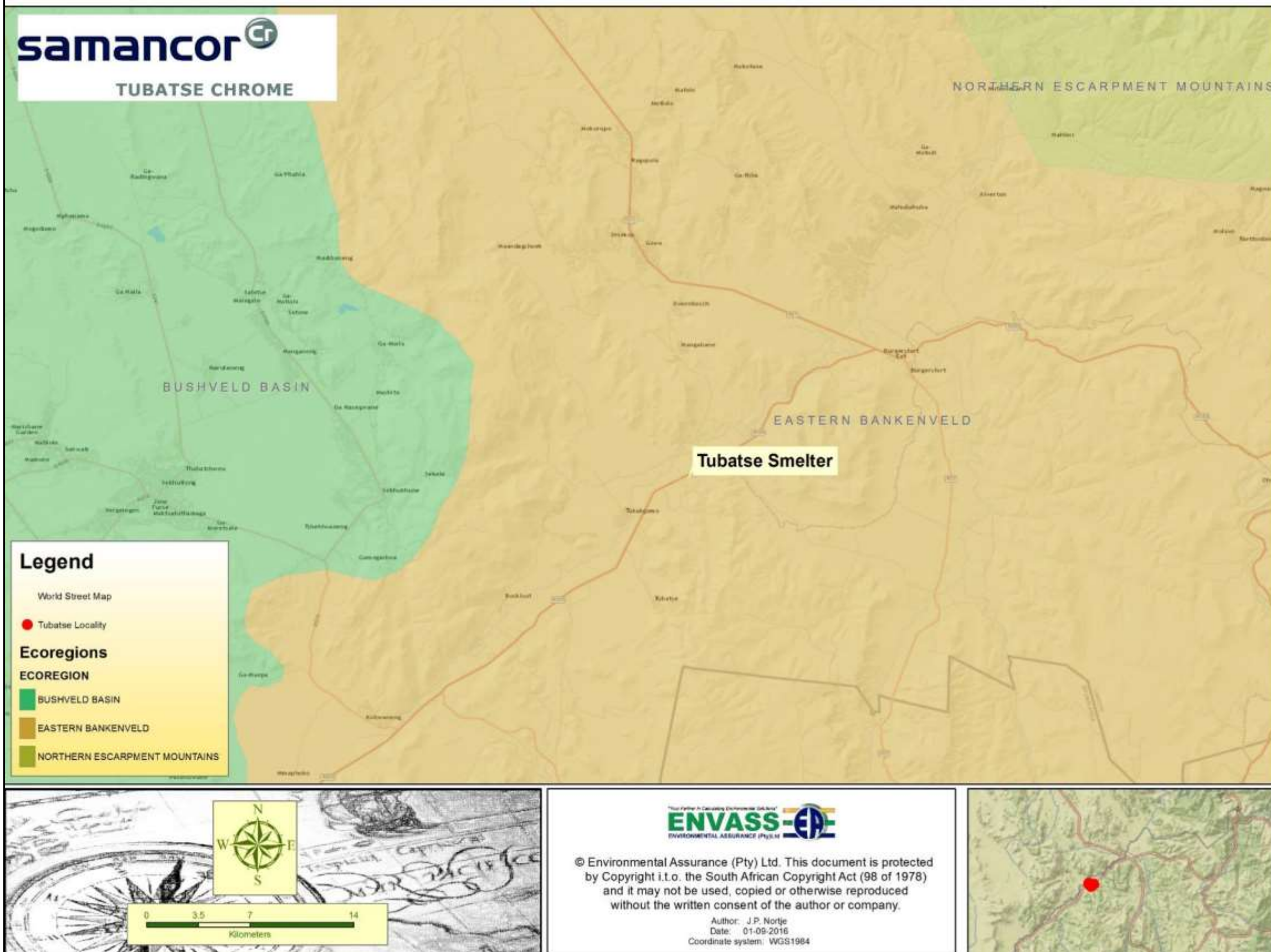
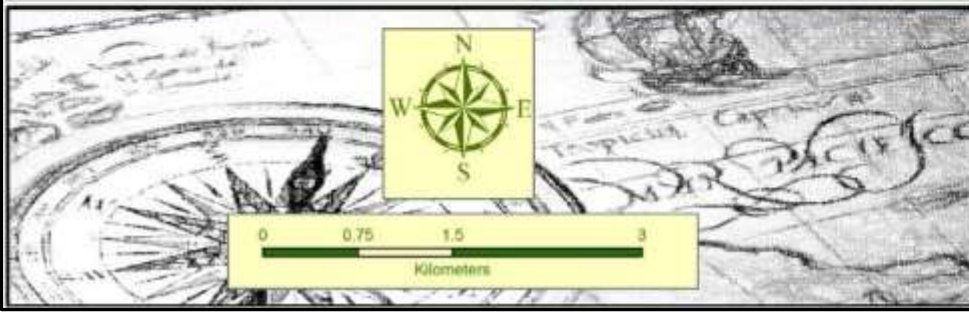


Figure 4: Ecoregions

Samancor Ltd. Tubatse Chrome Smelter, Steelpoort, Limpopo - Vegetation Types



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Author: J.P. Nortje
Date: 01-09-2016
Coordinate system: WGS1984



Figure 5: Vegetation Types of the Study and Surrounding Area

Samancor Ltd. Tubatse Chrome Smelter, Steelpoort, Limpopo - Quaternary Catchments

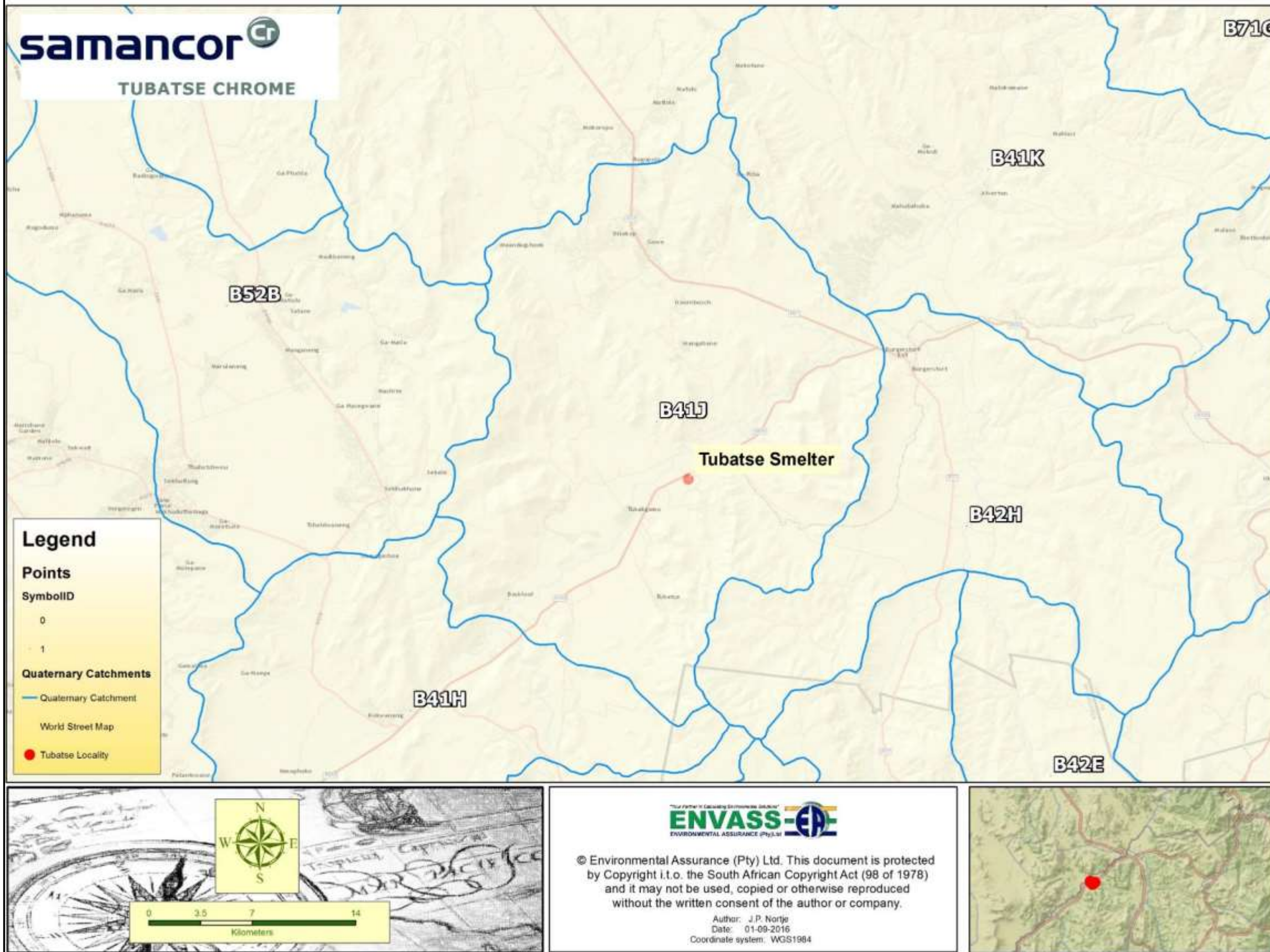


Figure 6: Quaternary Catchments of the study area

5 LAND USE CHARACTER OF SURROUNDING AREA

The Tubatse Chrome PSP is located approximately 1 km west of the centre of the Steelpoort town. The Steelpoort River is located a1 km to the north of the study area, running from the south-west, towards the north-east. A rezoned industrial site, Ngulu Bulk Carriers, is located within 1 km to the west of the plant, including a small residential village for Ngululu Bulk Carriers employees. The plant is surrounded by informal settlements and rural communities to the north of the Steelpoort River and agricultural lands and activities taking place approximately 5 km to the south-east (refer to Figure 2 for an aerial photograph and Figure 13 for a map of the surrounding land uses. Figure 14 indicates the sensitivities on and surrounding the study area and Figure 7 to Figure 12 for photographs of vegetation of the area on and surrounding the Tubatse Chrome Complex.



Figure 7: View towards the north, slag dumps visible



Figure 8: View towards the north-west, newly created access roads are visible



Figure 9: View towards the west, remaining natural vegetation is visible (right of picture)



Figure 10: Viewed toward the south-west, a small thicket of natural vegetation remains, though fragmented by access roads and fences



Figure 11: View towards the south of the study area, the transition from Sekhukhune Plains to Sekhukhune Mountain Bushveld becomes apparent

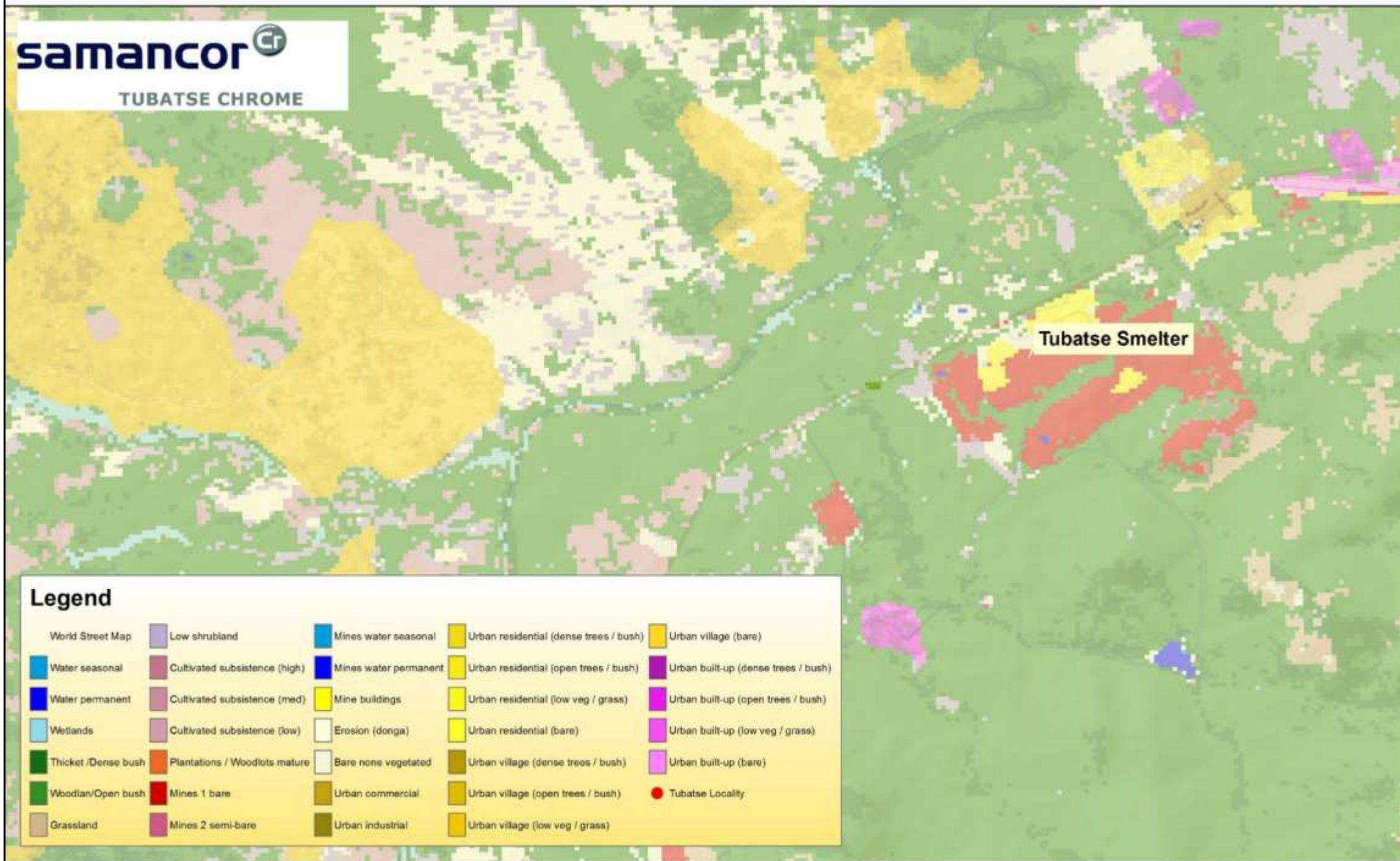


Figure 12: Slag dumps visible on the slightly undulating plain

DRAFT

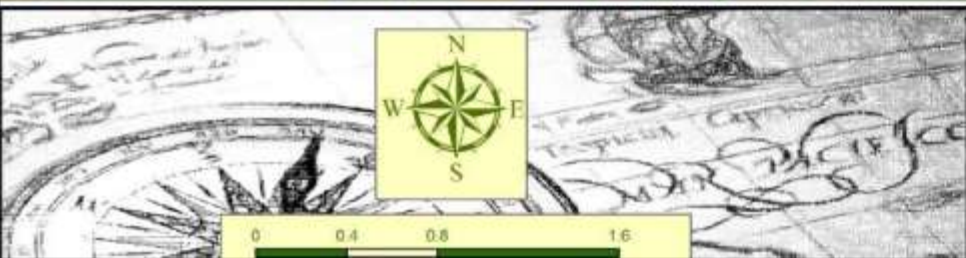
Samancor Ltd. Tubatse Chrome Smelter, Steelpoort, Limpopo - Land Cover Map

samancor^{CR}
TUBATSE CHROME



Legend

World Street Map	Low shrubland	Mines water seasonal	Urban residential (dense trees / bush)	Urban village (bare)
Water seasonal	Cultivated subsistence (high)	Mines water permanent	Urban residential (open trees / bush)	Urban built-up (dense trees / bush)
Water permanent	Cultivated subsistence (med)	Mine buildings	Urban residential (low veg / grass)	Urban built-up (open trees / bush)
Wetlands	Cultivated subsistence (low)	Erosion (donga)	Urban residential (bare)	Urban built-up (low veg / grass)
Thicket /Dense bush	Plantations / Woodlots mature	Bare none vegetated	Urban village (dense trees / bush)	Urban built-up (bare)
Woodland/Open bush	Mines 1 bare	Urban commercial	Urban village (open trees / bush)	Urban built-up (bare)
Grassland	Mines 2 semi-bare	Urban industrial	Urban village (low veg / grass)	Urban built-up (bare)
				● Tubatse Locality



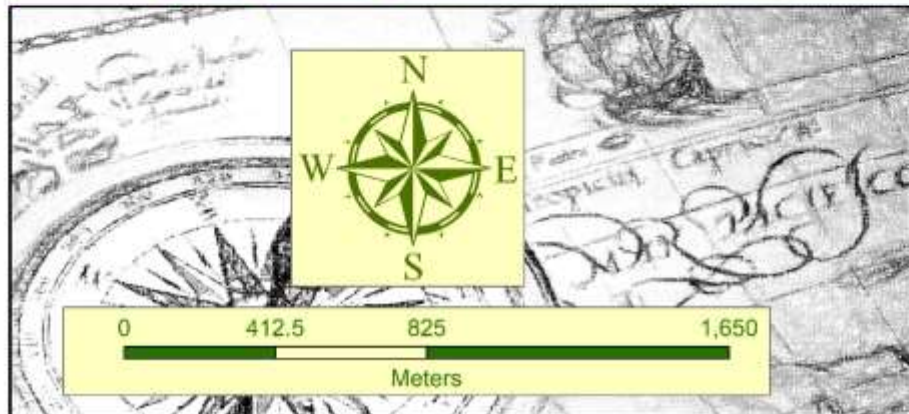
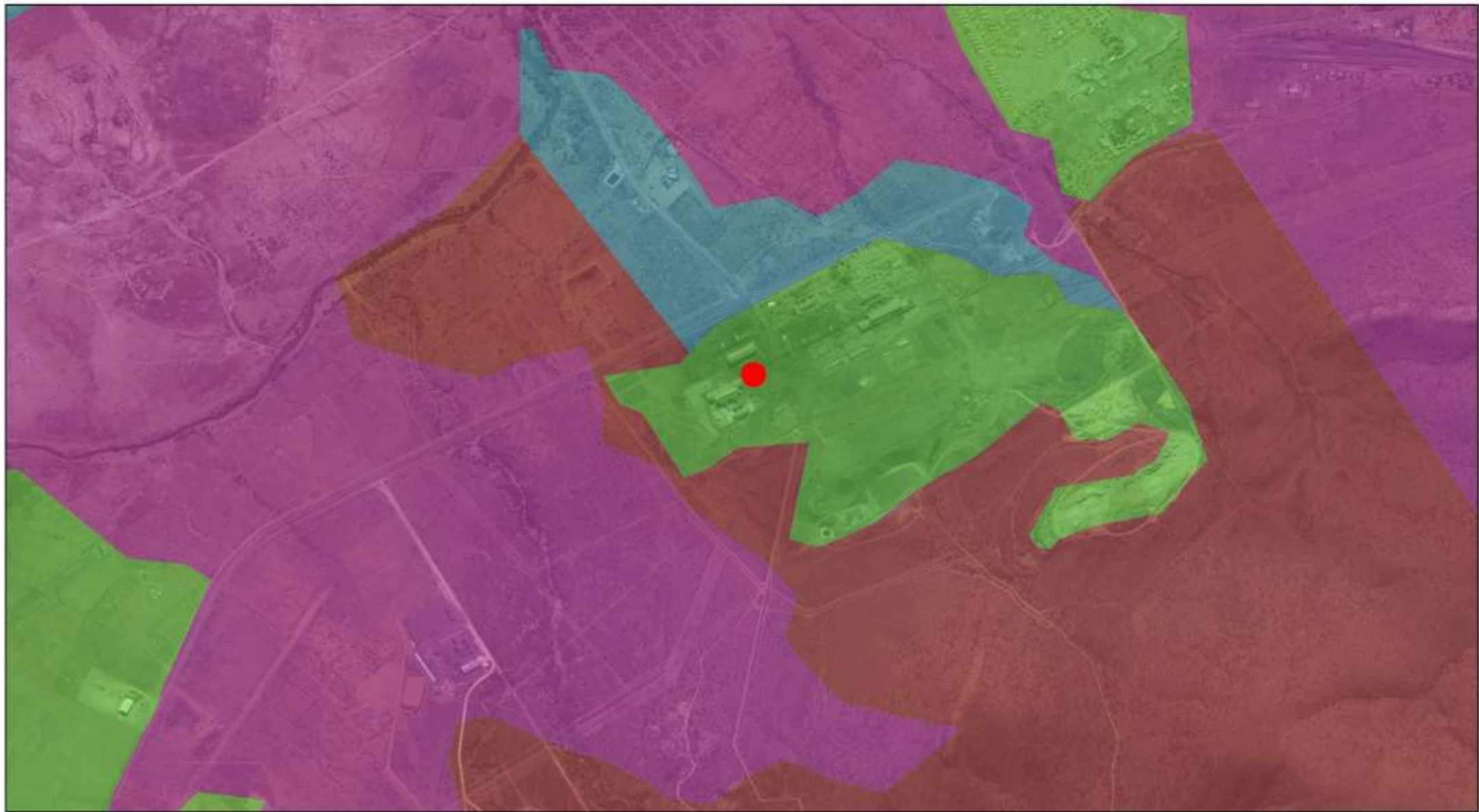
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Author: J.P. Nortje



Figure 13: Surrounding land use classes

Conservation Status of the Tubatse Chrome Operations, Limpopo Province, South Africa



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Author: L. Taylor
 Date: 21-01-2018
 Coordinate system: WGS1984

Legend

- Tubatse Chrome

Limpopo Conservation Plan

- Critical Biodiversity Area 1, CBA1
- Critical Biodiversity Area 2, CBA2
- Ecological Support Area 1, ESA1
- Ecological Support Area 2, ESA2

Figure 14: Sensitivity of the Study and Surrounding Area

Indicate land uses and/or prominent features that does currently occur within a 500 m radius of the site and give description of how this influences the application or may be impacted upon by the application:

5.1 Natural area	X	5.22 School	
5.2 Low density residential		5.23 Tertiary education facility	
5.3 Medium density residential		5.24 Church	
5.4 High density residential		5.25 Old age home	
5.5 Medium industrial ^{AN}		5.26 Museum	
5.6 Office/consulting room	X	5.27 Historical building	
5.7 Military or police base/station/compound		5.28 Protected Area	
5.8 Spoil heap or slimes dam ^A	X	5.29 Sewage treatment plant ^A	X
5.9 Light industrial		5.30 Train station or shunting yard ^N	
5.10 Heavy industrial ^{AN}	X	5.31 Railway line ^N	
5.11 Power station		5.32 Major road (4 lanes or more)	
5.12 Sport facilities		5.33 Airport ^N	
5.13 Golf course		5.34 Harbour	
5.14 Polo fields		5.35 Quarry, sand or borrow pit	
5.15 Filling station ^H		5.36 Hospital/medical centre	
5.16 Landfill or waste treatment site	X	5.37 River, stream or wetland	
5.17 Plantation		5.38 Nature conservation area	
5.18 Agriculture		5.39 Mountain, koppie or ridge	
5.19 Archaeological site		5.40 Graveyard	
5.20 Quarry, sand or borrow pit		5.41 Other land uses (describe)	
5.21 Dam or Reservoir	X		

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity?

-

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity?

If YES, specify and explain:	-
If NO, specify:	There will be no impact.

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:	-
If NO, specify:	-

6 CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?

YES	NO X
Uncertain	

If YES, explain:	-
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If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist:

-

Will any building or structure older than 60 years be affected in any way?

YES	NO X
YES	NO X

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

1 ADVERTISEMENT

The Public Participation Process (PPP) will be undertaken in accordance with the requirements of Regulation 41(2) – 41(6). The proof of advertisement placement and proof of the site notices will be included in Appendix E1 of the Final Basic Assessment Report.

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the department) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the department;

- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the department, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2 CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the department in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (v) the manner in which and the person to whom representations in respect of the application may be made.

3 PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the department in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of these Regulations.

Advertisements and notices must make provision for all alternatives.

4 DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the department to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5 COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in these Regulations and be attached to this application. The comments and response report must be attached under Appendix E.

6 AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

No issues have been raised yet, all issues and concerns will be recorded in the Comments and Responses Report to be attached in Appendix E3 in the Final Basic Assessment Report.

Name of Authority informed:	Comments received (Yes or No)
Department of Water and Sanitation (DWS)	-
Department of Agriculture, Forestry and Fisheries (DAFF)	-
Department of Rural Development and Land Reform (DRDLR)	-
Department of Environmental Affairs (DEA)	-
Department of Trade and Industry (PTA)	-
Limpopo Department of Economic Development, Environment and Tourism (LEDET)	-
Limpopo Department of Agriculture	-
Limpopo Department of Cooperative Governance, Human Settlements and Traditional Affairs	-
Limpopo Department of Social Development	-
Limpopo Department of Health	-
Limpopo Department: Public Works, Roads and Infrastructure	-
Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs	-
Department of Agriculture Burgersfort	-
Department of Health - Lydenburg	-
Department of Social Development - Modimolle	-
Department of Labour - Mokopane	-
Department of Health and Social Development - Polokwane	-
Greater Tubatse Local Municipality	-
Greater Sekhukhune District Municipality	-
Steelpoort and Burgersfort Local Council	-
Greater Giyani Local Municipality	-
Kgamalekana Tribal Authority	-

Name of Authority informed:	Comments received (Yes or No)
Pulana Maroga Tribal Authority	-
Roka Pasha Bhokwane Tribal Authority	-
South African Heritage Resources Agency (SAHRA)	-
South African National Biodiversity Institute - Department of Environmental Affairs	-
Mpumalanga Parks Board	-
Eskom	-
Limpopo Provincial Heritage Resources Agency (LIHRA)	-
Limpopo Tourism Agency	-
Roads Agency Limpopo SOC Ltd (RAL)	-

7 CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub regulation to the extent and in the manner as may be agreed to by the department.

Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

YES	NO
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If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

No issues have been raised yet, all issues and concerns will be recorded in the Comments and Responses Report to be attached in Appendix E3 in the Final Basic Assessment Report.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

No issues have been raised yet, all issues and concerns will be recorded in the Comments and Responses Report to be attached in Appendix E3 in the Final Basic Assessment Report

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Annexure E):

-

2 IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

Table 3: Summary of the Possible Impacts Associated with the Proposed Development during the Planning and Design Phase

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
PLANNING AND DESIGN PHASE			
No impacts associated with this phase was identified.			

Table 4: Summary of the Possible Impacts Associated with the Proposed Development during the Construction Phase

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
CONSTRUCTION PHASE			
GEOLOGY AND SOILS			
Contamination of soils through: <ul style="list-style-type: none"> • Indiscriminate disposal of waste; and • Accidental spillage of chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from construction vehicles and other chemicals from construction activities e.g. paints. 	Medium	Please refer to Section 8.1 of the EMPR	Very Low
Contamination of stormwater runoff and groundwater, caused by: <ul style="list-style-type: none"> • Erosion; • Sediment release; • Chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from construction vehicles; • Improper handling, storage and disposal of substances and hazardous chemicals; • Incorrect waste management; 	Medium	Please refer to Section 8.1 of the EMPR	Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
CONSTRUCTION PHASE			
<ul style="list-style-type: none"> • Effluent discharges and seepage, due to a lack of stormwater management; • Pollutants from hazardous production waste and general waste generated on site. 			
<p>Alien species may encroach onto the surrounding natural areas. Alien species generally out-compete indigenous species for water, light, space and nutrients as they are adaptable to changing conditions and are able to easily invade a wide range of ecological niches. Alien invader plant species pose an ecological threat as they alter habitat structure, lower biodiversity (both number and “quality” of species), and change in nutrient cycling and productivity, and modify food webs. This negatively affects the ability of the disturbed area to maintain floral biodiversity, which will lead to the subsequent further degradation of the surrounding area.</p>	Low	Please refer to Section 8.1 of the EMPR	Very Low
<p>Disturbance and loss of fauna through noise, light and air and water pollution and hunting, trapping and killing of fauna.</p>	Low	Please refer to Section 8.1 of the EMPR	Very Low
<p>No cultural heritage resources occurs on site and it is highly unlikely that any objects will be uncovered or disturbed, as these objects generally occurs below ground level and no earthworks are planned as part of the construction / installation of the tank.</p>	Very Low	Please refer to Section 8.1 of the EMPR	Very Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
CONSTRUCTION PHASE			
No significant visual impact is expected to occur as a result from the installation of the LSR tank.	Very Low	Please refer to Section 8.1 of the EMPR	Very Low
Nuisance and health risks caused by an increase in the ambient noise level as a result of noise impacts associated with the construction vehicles and equipment and activities.	Low	Please refer to Section 8.1 of the EMPR	Very Low
Disturbance due to vibrations caused by construction vehicles.	Low	Please refer to Section 8.1 of the EMPR	Very Low
Fugitive dust emissions: Vehicle entrainment of dust from paved roads. On entering the TFC site, trucks delivering raw materials for use at the pelletising plant travel on a section of paved road of approximately 400 m in length. These trucks have an average pay load of 28 tons and an average weight of 33 tons. Site specific particle size analysis determined the silt loading of the paved surface to be 307 g/m ² . The TFC entrance road is swept on a regular basis and a control efficiency of 75% were applied to emission calculations.	Medium	Please refer to Section 8.1 of the EMPR	Low
Vehicle entrainment of dust from unpaved roads. Raw material is delivered to the West Plant bunkers via truck. These trucks with a pay load of 28 tons and an average weight of 33 tons move on a section of unpaved road that is approximately 230 m long and passes in front of the West Plan bunkers. A 25% silt content of the material on the surface of the unpaved road section was determined through site specific particle size	Medium	Please refer to Section 8.1 of the EMPR	Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
CONSTRUCTION PHASE			
analysis.			
Generation of general waste, litter and building rubble and hazardous material during the construction phase.	Low	Please refer to Section 8.1 of the EMPR	Very Low
The change in traffic patterns as a result of heavy vehicles and other traffic entering and exiting the site, on the surrounding road infrastructure and existing traffic.	Very Low	Please refer to Section 8.1 of the EMPR	Very Low
Access Control	High	Please refer to Section 8.1 of the EMPR	Low
Possibility of construction activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners, visitors and workers.	High	Please refer to Section 8.1 of the EMPR	Low
Increased risk to public health and safety: Dangerous areas and activities poses health risks and possible loss of life to construction workers and visitors to the site.	High	Please refer to Section 8.1 of the EMPR	Low
Security risks: Trespassing of workers on adjacent properties and possible crime e.g. poaching.	Medium	Please refer to Section 8.1 of the EMPR	Low
Damage or destruction of existing infrastructure in the near vicinity of the proposed activities. Impacts on existing infrastructure, services and servitudes.	Medium	Please refer to Section 8.1 of the EMPR	Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
CONSTRUCTION PHASE			
Negative – Socio-economic impact on farmers and surrounding land owners and users due to negative impacts on groundwater, dust pollution, noise pollution etc.	Low	Please refer to Section 8.1 of the EMPR	Very Low

Table 5: Summary of the Possible Impacts Associated with the Proposed Development during the Operational Phase

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
OPERATIONAL PHASE			
Contamination of soils through: <ul style="list-style-type: none"> • Indiscriminate disposal of waste; and • Accidental spillage of chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from delivery vehicles and other chemicals. 	Medium	Please refer to Section 8.2 of the EMPR	Very Low
Contamination of stormwater runoff and groundwater, caused by: <ul style="list-style-type: none"> • Erosion; • Sediment release; • Chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from delivery vehicles; • Improper handling, storage and disposal of substances and hazardous chemicals; • Incorrect waste management; 	Medium	Please refer to Section 8.2 of the EMPR	Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
OPERATIONAL PHASE			
<ul style="list-style-type: none"> • Effluent discharges and seepage, due to a lack of stormwater management; • Pollutants from hazardous production waste and general waste generated on site. 			
<p>Alien species may encroach onto the surrounding natural areas. Alien species generally out-compete indigenous species for water, light, space and nutrients as they are adaptable to changing conditions and are able to easily invade a wide range of ecological niches. Alien invader plant species pose an ecological threat as they alter habitat structure, lower biodiversity (both number and “quality” of species), and change in nutrient cycling and productivity, and modify food webs. This negatively affects the ability of the disturbed area to maintain floral biodiversity, which will lead to the subsequent further degradation of the surrounding area.</p>	Medium	Please refer to Section 8.2 of the EMPR	Very Low
<p>Disturbance and loss of fauna through noise, light and air and water pollution and hunting, trapping and killing of fauna.</p>	Low	Please refer to Section 8.2 of the EMPR	Very Low
<p>No cultural heritage resources occurs on site and it is highly unlikely that any objects will be uncovered or disturbed, as these objects generally occurs below ground level and no earthworks are planned as part of the operational phase.</p>	Very Low	Please refer to Section 8.2 of the EMPR	Very Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
OPERATIONAL PHASE			
No significant visual impact is expected to occur as a result from the installation of the LSR tank.	Very Low	Please refer to Section 8.2 of the EMPR	Very Low
Nuisance and health risks caused by an increase in the ambient noise level as a result of noise impacts associated with the construction vehicles and equipment and activities.	Medium	Please refer to Section 8.2 of the EMPR	Low
Disturbance due to vibrations caused by delivery vehicles.	Medium	Please refer to Section 8.2 of the EMPR	Low
Stack emissions (including NO _x , PM, NO ₂) including: <ul style="list-style-type: none"> - Off-gas from the sintering furnace's heating, drying and sintering zones; - Off-gas from the sintered pellet handling plant (the screening station, product discharge points and conveyors); 	High	Please refer to Section 8.2 of the EMPR	Low
Fugitive dust emissions including Particulate Matter and Total Suspended Particulate emissions: Process fugitive emissions: Process fugitive particulate emissions as a result of sintering and handling operations within the pelletising plant building PM10 emissions are assumed to be 75% of total particulate emissions, which is a conservative assumption.	High	Please refer to Section 8.2 of the EMPR	Low
Fugitive dust emissions: Materials handling Materials handling points associated with the pelletising plant include raw	High	Please refer to Section 8.2 of the EMPR	Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
OPERATIONAL PHASE			
material delivery by truck and conveyor transfer points.			
<p>Fugitive dust emissions: Vehicle entrainment of dust from paved roads.</p> <p>On entering the TFC site, trucks delivering raw materials for use at the pelletising plant travel on a section of paved road of approximately 400 m in length. These trucks have an average pay load of 28 tons and an average weight of 33 tons. Site specific particle size analysis determined the silt loading of the paved surface to be 307 g/m². The TFC entrance road is swept on a regular basis and a control efficiency of 75% were applied to emission calculations.</p>	Medium	Please refer to Section 8.2 of the EMPR	Low
<p>Vehicle entrainment of dust from unpaved roads.</p> <p>Raw material is delivered to the West Plant bunkers via truck. These trucks with a pay load of 28 tons and an average weight of 33 tons move on a section of unpaved road that is approximately 230 m long and passes in front of the West Plan bunkers. A 25% silt content of the material on the surface of the unpaved road section was determined through site specific particle size analysis.</p>	Medium	Please refer to Section 8.2 of the EMPR	Low
<p>Generation of general waste, litter and building rubble and hazardous material during the operational phase.</p>	Medium	Please refer to Section 8.2 of the EMPR	Very Low
<p>Traffic associated with the bulk delivery of LSR.</p>	Medium	Please refer to Section 8.2 of the EMPR	Medium

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
OPERATIONAL PHASE			
Access Control	High	Please refer to Section 8.2 of the EMPR	Low
Possibility of operational activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners, visitors and workers.	High	Please refer to Section 8.2 of the EMPR	Low
Increased risk to public health and safety: Dangerous areas and activities poses health risks and possible loss of life to construction workers and visitors to the site.	High	Please refer to Section 8.2 of the EMPR	Low
Security risks: Trespassing of workers on adjacent properties and possible crime e.g. poaching.	Medium	Please refer to Section 8.2 of the EMPR	Low
Damage or destruction of existing infrastructure in the near vicinity of the proposed activities. Impacts on existing infrastructure, services and servitudes.	Medium	Please refer to Section 8.2 of the EMPR	Low
Negative – Socio-economic impact on farmers and surrounding land owners and users due to negative impacts on groundwater, dust pollution, noise pollution etc.	Medium	Please refer to Section 8.2 of the EMPR	Low
Positive – Cost reduction as a result of LSR gas supplementing the use of high cost LPG.	High (+)	N/A	High (+)

Table 6: Summary of the Possible Impacts Associated with the Proposed Development during the Operational Phase

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
DECOMMISSIONING PHASE			
GEOLOGY AND SOILS			
Contamination of soils through: <ul style="list-style-type: none"> • Indiscriminate disposal of waste; and • Accidental spillage of chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from construction vehicles and other chemicals from construction activities e.g. paints. 	Medium	Most of the impacts associated with the construction phase will also be applicable during the decommissioning phase, and mitigation measures for the construction phase, should be implemented during the decommissioning phase, where applicable. Refer to Section 8.1 of the EMPR	Very Low
Contamination of stormwater runoff and groundwater, caused by: <ul style="list-style-type: none"> • Erosion; • Sediment release; • Chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from construction vehicles; 	Medium	Refer to Section 8.1 of the EMPR	Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
DECOMMISSIONING PHASE			
<ul style="list-style-type: none"> • Improper handling, storage and disposal of substances and hazardous chemicals; • Incorrect waste management; • Effluent discharges and seepage, due to a lack of stormwater management; • Pollutants from hazardous production waste and general waste generated on site. 			
<p>Alien species may encroach onto the surrounding natural areas. Alien species generally out-compete indigenous species for water, light, space and nutrients as they are adaptable to changing conditions and are able to easily invade a wide range of ecological niches. Alien invader plant species pose an ecological threat as they alter habitat structure, lower biodiversity (both number and “quality” of species), and change in nutrient cycling and productivity, and modify food webs. This negatively affects the ability of the disturbed area to maintain floral biodiversity, which will lead to the subsequent further degradation of the surrounding area.</p>	Low	Refer to Section 8.1 of the EMPR	Very Low
<p>Disturbance and loss of fauna through noise, light and air and water pollution and hunting, trapping and killing of fauna.</p>	Low	Refer to Section 8.1 of the EMPR	Very Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
DECOMMISSIONING PHASE			
No cultural heritage resources occurs on site and it is highly unlikely that any objects will be uncovered or disturbed, as these objects generally occurs below ground level and no earthworks are planned as part of the construction / installation of the tank.	Very Low	Refer to Section 8.1 of the EMPR	Very Low
No significant visual impact is expected to occur as a result from the decommissioning of the LSR tank.	Very Low	Refer to Section 8.1 of the EMPR	Very Low
Nuisance and health risks caused by an increase in the ambient noise level as a result of noise impacts associated with the construction vehicles and equipment and activities.	Low	Refer to Section 8.1 of the EMPR	Very Low
Disturbance due to vibrations caused by construction vehicles.	Low	Refer to Section 8.1 of the EMPR	Very Low
Fugitive dust emissions: Vehicle entrainment of dust from paved roads. On entering the TFC site, trucks delivering raw materials for use at the pelletising plant travel on a section of paved road of approximately 400 m in length. These trucks have an average pay load of 28 tons and an average weight of 33 tons. Site specific particle size analysis determined the silt loading of the paved surface to be 307 g/m ² . The TFC entrance road is swept on a regular basis and a control efficiency of 75% were applied to emission calculations.	Medium	Refer to Section 8.1 of the EMPR	Low
Vehicle entrainment of dust from unpaved roads.	Medium	Refer to Section 8.1 of the	Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
DECOMMISSIONING PHASE			
Raw material is delivered to the West Plant bunkers via truck. These trucks with a pay load of 28 tons and an average weight of 33 tons move on a section of unpaved road that is approximately 230 m long and passes in front of the West Plan bunkers. A 25% silt content of the material on the surface of the unpaved road section was determined through site specific particle size analysis.		EMPR	
Generation of general waste, litter and building rubble and hazardous material during the construction phase.	Low	Refer to Section 8.1 of the EMPR	Very Low
The change in traffic patterns as a result of heavy vehicles and other traffic entering and exiting the site, on the surrounding road infrastructure and existing traffic.	Very Low	Refer to Section 8.1 of the EMPR	Very Low
Access Control	High	Refer to Section 8.1 of the EMPR	Low
Possibility of construction activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners, visitors and workers.	High	Refer to Section 8.1 of the EMPR	Low
Increased risk to public health and safety: Dangerous areas and activities poses health risks and possible loss of life to construction workers and visitors to the site.	High	Refer to Section 8.1 of the EMPR	Low
Security risks: Trespassing of workers on adjacent properties and possible crime e.g. poaching.	Medium	Refer to Section 8.1 of the EMPR	Low

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
DECOMMISSIONING PHASE			
Damage or destruction of existing infrastructure in the near vicinity of the proposed activities. Impacts on existing infrastructure, services and servitudes.	Medium	Refer to Section 8.1 of the EMPR	Low
Negative – Socio-economic impact on farmers and surrounding land owners and users due to negative impacts on groundwater, dust pollution, noise pollution etc.	Low	Refer to Section 8.1 of the EMPR	Very Low

Table 7: Summary of the Possible Impacts Associated with the No-Go Alternative

Description of Impact	Significance Pre-Mitigation	Mitigation Measures	Significance Post-Mitigation
No negative impacts on the socio-economic and biophysical environment	Medium	N/A	Medium
Negative - No cost reduction of fuel sources.	High	Implement the proposed activity.	N/A

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix G.

Refer to Appendix G1 and G2:

G1 – ENVASS Impact Rating Methodology

G2 – Impact Assessment (Preferred alternative assessed – construction and operational phases and the No-Go Alternative impacts).

DRAFT

3 ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative 1 (preferred alternative)

The significance of impacts before and after mitigation are summarised in Table 3 to Table 7. The impacts were assessed with reasonable confidence as indicated in the impact assessment table attached in Annexure G.

The majority of impacts has a low to medium significance rating before mitigation and a low to very low significance rating after mitigation. The low impact rating is mostly as a result of the proposed activity being located within an already transformed environment, although some natural vegetation remains on and surrounding the greater Tubatse Ferrochrome Complex as indicated in the photographs within this report. Impacts that have a significance rating of high before mitigation generally include air quality impacts (indirect impact), and health and safety impacts (direct and indirect impact). These impacts can, however, be mitigated to a low significance.

Existing infrastructure, including powerlines, bulk services including sewage and water supply and roads already exist on the study area. The developed footprint of the Tubatse Pelletising Plant will not spatially increase. Samancor have health, safety and environmental policies in place and safety inductions are regularly carried out for workers and visitors to the site. The Tubatse Complex is generally well managed in terms of these policies. The proposed activity is, therefore, supported from a biophysical and socio-economic environment perspective, on condition that all relevant approvals in terms of environmental legislation is obtained and all mitigation measures strictly implemented and impacts monitored.

No-go alternative (compulsory)

Status quo will remain, except for the cost reduction in fuel will not realise and, therefore,

SECTION E: RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES X	NO
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If “NO”, indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

-

If “YES”, please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the department in respect of the application:

Assuming effective implementation of the mitigation and monitoring as outlined in the EMPr report, the significance of impacts can be reduced to a low significance. Envass, therefore, recommends that the application for Environmental Authorisation (EA) should be considered favourably on condition that the mitigation measures stated herein and within the EMPr are effectively implemented.

In addition, the following recommendations could be considered to be included as conditions in the Environmental Authorisation:

- All the mitigation, management and monitoring measures and recommendations provided in the Environmental Management Programme (EMPr), to be implemented, should the development be approved;
- A competent design engineer must be appointed to supervise the construction of the proposed activity;
- That the existing EMPr be updated to include the management and monitoring of all activities at Tubatse Ferrochrome’s operations in Steelpoort at the location of the plant. This will ensure that the applicant has one management document that could be implemented, which will streamline the implementation of mitigation and monitoring measures as opposed to having various documents to be complied with;
- The EMPr should be a condition of the approval by LEDET;
- The EMPr should be binding on all managers and contractors operating/utilising the site;
- The amendment of the Air Emissions License to be approved, before commencement of the proposed activity.

Is an EMPr attached?

YES X	NO
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The EMPr must be attached as Appendix F.

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Impact Rating Methodology and Impact Assessment

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SECTION G: DECLARATION BY THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I, Cornelius Johannes Retief declare that I –

- (a) act as the independent environmental practitioner in this application;
- (b) do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010;
- (c) do not have and will not have a vested interest in the proposed activity proceeding;
- (d) have no, and will not engage in, conflicting interests in the undertaking of the activity;
- (e) undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2006;
- (f) will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- (g) will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the Department in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the Department may be attached to the report without further amendment to the report;
- (h) will keep a register of all interested and affected parties that participated in a public participation process; and
- (i) will provide the Department with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.



Signature of the Environmental Assessment Practitioner:

Environmental Assurance (Pty) Ltd

Name of company:

2018-01-24

Date:

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Appendix C: Facility illustration(s)

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